

TROPICAL AFRICAN FLOWERING PLANTS

Ecology and Distribution

Vol.12 – Poaceae / Gramineae

Part One (Genera A–H)



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Conservatoire
et Jardin botaniques
de Genève
2023



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PART ONE (GENERA A–H)



*In memory of Pierre Poilecot (1950–2012),
a great specialist of grasses whose drawings figure in this book.
Photograph by Bruno Rosset, 2011.*

Cover page illustration: *Aristida pungens*,
photograph by Cyrille Chatelain.

Back cover illustration: *Hyparrhenia rufa*,
drawing by Pierre Poilecot (see p. 338 and map p. 341).

JEAN-PIERRE LEBRUN – ADÉLAÏDE L. STORK
– P. POILECOT †

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VILLE DE GENÈVE
ÉDITIONS DES CONSERVATOIRE ET JARDIN BOTANIKUES
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ACKNOWLEDGEMENTS

The final editorial work on this *Poaceae* volume started in the autumn of 2019. Then, in early 2020 the shock: scientific institutions (worldwide) closed. The reason: the emergence and rapid propagation of the virus SARS-CoV-2. However, at the Conservatoire et Jardin botaniques de Genève (Switzerland) rapid decisions were made by the Direction. Younger colleagues helped us to continue our work – and our home, not quite equipped for such a task, became our main working place. Boxes of documents arrived during the first few weeks of the lockdown. Then it was decided that we could work one day a week at the Institution – a much appreciated gesture. Readers may understand that we wish to thank, our then Director, Dr. P.-A. Loizeau, and our colleagues Dr. M. Callmander and Dr. C. Chatelain for their outstanding practical assistance. Thanks to them our work could continue without too long an interruption. Also, the Library staff did not forget us, and in particular Mr. P. Boillat, Head Librarian, encouraged us in a quite personal way. For Easter the traditional

eggs (of chocolate) arrived at our home, a gift much appreciated. After a couple of months we could return to our office at the Botanical Gardens.

It is true that the final editing of this volume slowed down. However, much help was received from colleagues at Geneva. Mr. N. Fumeaux is appreciated for his help with nomenclature and literature search. Once again, we wish to thank Dr. C. Chatelain for his never-failing assistance with the maps and final editorial work. We also appreciate Mr. Th. Stuber's efficient and clever assistance in handling the final manuscript. We extend our thanks to Mrs. P. Méricout (Créteil, France) for her practical help with the manuscript, and to Mr. M. Christe of our Printing Office for the final meticulous work on this volume.

Our Institute has a new Director, Dr. N. Schoenenberger, since June 2022. We thank him sincerely for having received us so well, and for his encouragement and support.

New combination

Deschampsia flexuosa (L.) Trin. subsp. *afromontana* (C. E. Hubb.) J.-P. Lebrun & Stork 189

I. INTRODUCTION

This volume represents the first part (out of two) of the family *Poaceae*, one of the largest families of monocots. It covers 120 genera and 823 species of indigenous plants, about half of the total of grasses in tropical Africa. However, a number of introduced taxa are also mentioned in our list [within square brackets]. They are not included in these figures.

The generic concept adopted by us is usually the same as that used in several traditional floras, and in our *Enumération* 3: 212–292 (1995). However, the last two decades have seen profound changes in techniques and approaches to the subject. Changes are inevitable, and in the main lines we follow the concept of the World Checklist of Selected Plant Families, version of February 2015, when our compilation started.

* * *

The descriptions of the species and the ecological notes figuring in our checklist are mainly borrowed or adapted from the floras and articles cited under each taxon or in our *Enumération* Volume 3.

* * *

Readers may notice that we still use the name “Zaire” for the now known “Democratic Republic of Congo”. Names of many countries have changed more or less recently. Our choice is such in order to avoid confusion with “Congo” (-Brazzaville). Such confusions are often seen in publications appearing now.

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III. HOW TO USE THIS BOOK

For each species there is a description and a simplified map of distribution. In a few cases two species figure on the same map but with different symbols.

The text is conceived in the following manner, based upon our “*Enumération*”, Vol. 1 (J.-P. Lebrun & A. L. Stork 1991).

- Bibliographical references are sometimes given at the beginning of families and genera, as appropriate. They mostly refer to monographs or articles published after the issuing in 1997 of Volume 4 of our “*Enumération*” (an updating of the bibliographies is found at the end of each volume in the chapter “Additions et corrections...”).
- Basionym and synonym(s) are only cited if they do not figure in the “*Enumération*”.
- A short description, mainly with regard to life form, is given, e.g. tree, shrub, subshrub, liane, (annual, perennial) herb, and to the height of the plant; for trees sometimes also other characters, such as diameter and/or girth of the bole or presence of buttresses, are mentioned. Presence of rhizomes, tubers or bulbs and of spectacular features, such as showy flowers, exceptionally small or large leaves, flattened or rounded shoots, etc., or particular uses, are often specified.
- Ecological data are recorded, sometimes in rather detailed form if known; range of altitude is generally given.
- If a species comprises two or more intraspecific taxa, this is mentioned, but their names are not always quoted, as most of them appear in our “*Enumération*”. However, there may have been changes since the publication in 1991, and in this case the names figure in the text.
- Extraterritorial geographical distribution is given (i.e. not marked on the accompanying map of distribution which includes only the tropical part of Africa as defined in our “*Enumération*”).

* * *

On the maps of distribution (Fig. 1) we indicate the northern and southern limits of our area, as well as the political

frontiers of the countries within these borders. Arrows (at the margin of the continent, W Africa) indicate the situation of four particular countries, viz. Western Sahara, Guinea Bissau, Togo, and Benin.

The main phytochoria, based upon Frank White’s classification and indicated on the maps that figure in Volume 1 of this Series (p. 19), have been slightly modified. In the following list Section B has been split into two areas. From North to South, and East to West the phytochoria are (Figs. 1 and 2):

- A. Southern Sahara-Sindian zone [corresponding to the southern part of White’s phytochorion XVII (Sahara regional transition zone)].

- B. Sahelian-Sudano-Zambezian zone:

Ba. Sahel regional transition zone [corresponding to White’s zone XVI];

Bb. Sudano-Zambezian zone [corresponding to the following phytochoria of White: III (Sudanian regional centre of endemism), XI (Guinea-Congolia/Sudania regional transition zone); X (Guinea-Congolia/Zambezia regional transition zone); II (Zambezia regional centre of endemism); XIII (Zanzibar-Inhambane regional mosaic); and the north-eastern tip of XV, i.e. the southernmost part of Mozambique]; the enclosed parts of the “Afromontane archipelago-like regional centre of endemism” (VIII) and of the “Afroalpine archipelago-like region of extreme floristic impoverishment” (IX) have not been taken into account here (precluded by the small scale of our map).

- C. Guineo-Congolian rain-forest zone [corresponding to phytochorion I of White (Guineo-Congolian regional centre of endemism)].

- D. Ethiopian Afromontane zone [the northern part of White’s phytochorion VIII (see above under Bb)].

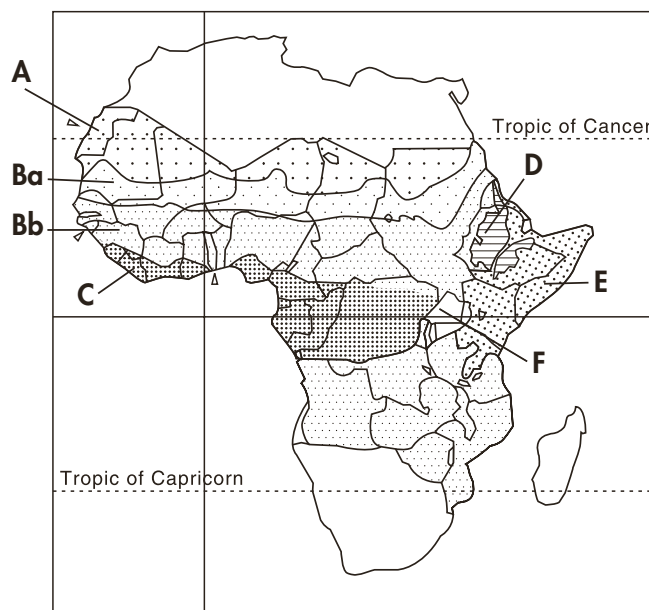


Fig. 1. – Main phytogeographical zones of tropical Africa used in the present work. For zones A through F, see explanations in the text.

- E. Somalia-Masai/Afroriental zone [phytochorion IV of White (Somalia-Masai regional centre of endemism) and the northernmost part of XIII (see above under Bb)]. The “Afromontane” (VIII) and “Afroalpine” (IX) archipelago-like regional centres are included (see above under Bb).

- F. Lake Victoria mosaic [White's phytochorion XII (Lake Victoria regional mosaic)]. As is the case in our zones Bb and E, the "Afromontane" (VIII) and "Afroalpine" (IX) archipelago-like regional centres are included here (see above under Bb).

Madagascar is not included in our compilation although present on the map (Fig. 1). The maps are based on literature records at our disposal; thus they indicate, but not exhaustively. In certain cases it has even been impossible to find the exact locality. Although it will always be possible to add dots on the maps, we believe that in most cases such additions will not change fundamentally the general pattern of distribution for a particular species.

The distribution of the species is shown on the maps in the following way:

- For small countries only one dot is used. For larger countries, and in particular if the distribution falls into different phytochoria, two (or more) dots are present.
- Dots are also placed in particular "subdivisions" of large countries, according to those given in the following florae: *Adumbratio Florae Aethiopicae*, *Flora of Ethiopia and Eritrea*, *Flora of Somalia*, *Flora of Tropical East Africa*, *Flora Zambesiaca*, *Flore du Congo Belge et du Ruanda-Urundi* (succeeded by *Flore du Congo Belge, du Rwanda et du Burundi*, and ultimately by *Flore d'Afrique centrale*), and *Conspectus Florae Angolensis*.

Readers will notice that plants seem to be more common (as dots are more numerous) in the eastern part of tropical Africa. This is often an illusion due to the subdivision of large countries mentioned above.

At more or less regular intervals, and at the end of a family, one or two maps are left blank, in order to allow for mapping of newly described species (or species overlooked by the compilers).

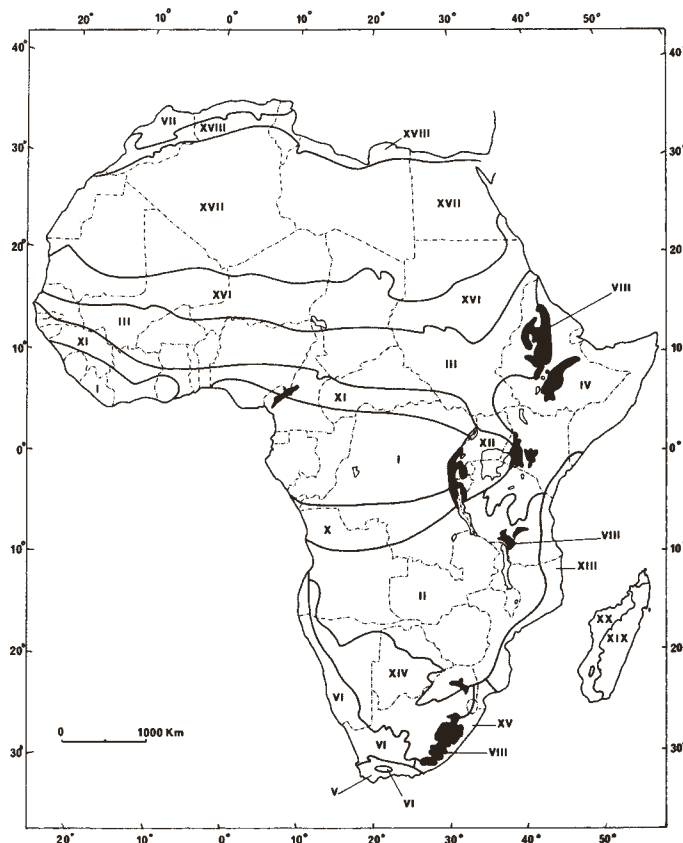


Fig. 2. – Main phytochoria of F. White (1983): p. 38 (cf. quotations in the text). See also "Enumération", vol. 1: pp. 24–25 (1991).

BASIC REFERENCE

WHITE, F. (1983). The vegetation of Africa: A descriptive memoir to accompany the Unesco/AETFAT/UNSO vegetation map of Africa. Unesco, Paris.

IV. POACEAE/GRAMINEAE: INTRODUCTORY NOTES AND BIBLIOGRAPHY

A. INTRODUCTORY NOTES

“It might be tempting to hope that molecular methods will uncover true phylogeny and create real stability. There are several reasons why this is a false hope: there are not the resources to investigate every species in depth, sequencing technology and analysis will continue to improve, and the limits of genus, even if it is monophyletic, are a matter of opinion and fashion. Names will continue to change as authors issue the latest bulletin of microphylogeny... if a species is moved to a new genus and the name changes, at least be cautious in adopting it, and perhaps even ignore it. It doesn't really matter!” A. Orange in British Lichen Soc. Bull. 117: 45–46, (2005).

Grasses are the most economically important plant family including cultivated rice, corn/maize, bread wheat, sugar cane, and bamboos. This is why grasses are also the most thoroughly studied and the best taxonomically documented of the large flowering plant families in spite of their high species number (citation from Vorontsova, Kew Bull. 69: § 9511: 1, 2014). The number of estimated species/genera varies according to the sources; a few examples, cited here in chronological order: Vinay & Rinku (2009) give >11.000 species in 908 genera; Vorontsova (Kew. Scientish 42: 6, 2012) cites 11.500 species, and later (in 2014: 1) 11.290 species in 707 genera; Soreng & al. (J. Syst. Ecol. 53: 117, 2015) give c. 12.074 species in 771 genera, and later (ibid. 55: 259–290, 2017) 11.506 species in 768 genera; Christenhusz & al. (2017: 206) estimate c. 11.000 species in c. 792 genera, and finally, Vorontsova & al. (Identification guide to grasses and bamboos in Madagascar, 2018) cite c. 12.000 species.

But “classifications are constantly changing to keep up to date with increasing knowledge. We are currently in a period of faster change as plant classification is realigned into monophyletic groups following the widespread availability of DNA sequence data. But how many species change their name as a classification is updated?” (Vorontsova 2012: 6). Vorontsova & Simon (Taxon 61: 735, 2012) compared the species names accepted by the traditional classification system in GrassBase with those accepted by the recent results compiled in GrassWorld. They estimated that 10%–20% of grass species will have moved to a different genus by the time the realignment is complete. For a subset of species in the tribes *Paniceae* and *Paspaleae* comprising 2.070 species, 362 (= 17%) moved to a different genus.

In November 2006 Kew published on the internet the most definitive checklist of monocotyledons. This World Checklist consolidates the accepted names of all 75.000 species, along with the associated synonyms (a total of 200.000 names) into a searchable electronic database (currently, data on the grasses are available separately at www.kew.org/data/grasses-db.html (cf. Nature 444/7116: 136 of 9.XI.2006, and Cuttings 4/1: 5, 2007).

“GrassBase is probably the first electronic name checklist of accepted names to be compiled for an entire angiosperm family” (Vorontsova & Simon, l.c.). It is taken as a model system representing the consensus classification in 1986. — GrassWorld is a “copy of GrassBase data taken in 2002... [It is] continuously updated to follow phylogenetic concepts according to current literature... All new names published in peer-reviewed publications to reflect monophyly have been accepted as proposed” (idem, l.c.).

A comparison of two 2015 classifications is due to Soreng & al. (J. Syst. Evol. 55: 277–281, 2017).

Our compilation of *Poaceae* is a compromise between traditional and new molecular systematics. Akeroyd (in Contrib. Bot. Cluj-Napoca 49: 29–37, 2014, referring to Flora Europaea) warned:

“generic name changes... should never be taken lightly... Changes are inevitable but too many among familiar genera and species confuse most users outside the rarified world of professional taxonomy. A phylogeny redraws the existing system, its practitioners should remain mindful of the consequences of these changes, which affect not just taxonomy users but also the vegetation taxa used in phytosociology... We should do well... by consistently taking a conservative, but flexible and open-minded approach to taxonomy... appealing... to tradition and common sense.” It is also to remember that “regional floristic specialists are commonly in disagreement with taxonomic group specialists regarding species delimitation... The variation in species concepts is such, however, that a species-level consensus may never be reached” (Vorontsova & al. in Phytokeys 48: 78–79, 2014).

Grasses “dominate the herbaceous layer of several biomes (grasslands, savannas and managed rangelands) which together cover half the Earth's land surface” (Griffith & al. in Global Ecol. Biogeogr. 24: 305, 2015). According to Vinay & Rinku (Notulae Bot. Horti. Agrobot. Cluj-Napoca 37/1: 59, 2009) grasses cover one fifth of the earth. They “occur globally in every habitat and on every continent, including Antarctica (*Deschampsia antarctica*) and Greenland” (Christenhusz & al., Plants of the World: 206, 2017). However, many grass species have been introduced into areas where they are not native and have established as neophytes or become feral or even invasive. Grass-gardening has increasingly gained importance in certain countries, and grass species are used as, e.g., ornamentals. They are thus spread by plant- and seed trading (Englmaier & Münch in Neilreichia 10: 97–125, 2019).

The family *Poaceae* has contributed crop species that provide 80% of the annual global food... in fact, four of the top crops that feed the world are cereal crops: wheat (*Triticum aestivum* L.), rice (*Oryza sativa* L.), corn (= Maize, *Zea mays* L.), and barley (*Hordeum vulgare* L.). For other uses sugar cane (*Saacharum officinarum* L.), bamboos, forage and lawn grasses should be added.

“As a group so fundamental to the human civilization the grasses have always been well studied and the cumulative body of knowledge... is considerably greater than that available for any other group of plants... Plant morphology and spikelet structure are largely uniform across the family” (Vorontsova & al. in PhytoKeys 48: 74, 2014). However, “Keys using floral characteristics are the most accurate way to identify grasses but mature plants or portions of those plants without complete spikelets are often the only available fragment... Moreover, identification using floral characteristics requires special training in grass taxonomy that is not available to interested amateurs and field ecologists” (Review of “Grasses of Egypt”, K. M. Ibrahim & al. in Smithson. Contrib. Bot. 103: 1–201, 2016, in Plant Press, N. S. 19/2: 6, 2016).

Basic questions regarding photosynthetic pathways (C_3 – C_4) in *Poaceae* need to be clarified. This family alone contains at least 22 separate transitions from C_3 to C_4 photosynthesis, with many C_4 species including such major crops as maize, sorghum, sugar cane, according to Teisher & al. (Syst. Bot. 44: 32, 2019). These same authors indicate that “over 60 independent origins of C_4 photosynthesis collectively constitute one of the most striking examples of parallel evolution in plants”. The advantages of C_4 photosynthesis over the ancestral C_3 pathway under certain environmental conditions have been well documented. Water use efficiency is generally higher in C_4 plants..., giving them a competitive advantage in arid environments and under more intense light. It has been shown that C_4 photosynthesis represents an adaptation to open habitats and a potential preadaptation to arid ones (Teisher & al., l.c.). “ C_4 species have evolved an efficient

mechanism for reducing the negative effects of photorespiration in warm climates... leading to differences in carbon capture, water use, phenology and quantum yield compared with C₃ species... Conversely, C₃ grasses have a competitive advantage in cool environments where respiration is reduced... As such, C₃ and C₄ grasses often segregate along temperature gradients... However, ... factors like fire, herbivory and competition are also known to modify the C₃:C₄ grass ratio” (Griffith & al. in *Global Ecol. Biogeogr.* 24: 305, 2015). The microenvironmental heterogeneity generated by neighbouring plants could promote different responses in co-occurring C₃ and C₄ grasses (G. Fernandez & al. in *Austral. Ecol.* 39: 533, 2014).

* * *

Grass fossils are rare due to their herbaceous habit and the dry habitat that they are often associated with. The most common fossils are pollen. The subject has been treated by C. A. E. Strömberg in *Ann. Review of Earth & Planetary Sciences* 39: 517–544, 2011.

* * *

The Bibliography figuring below comprises two main sections, the second one listing literature relating especially to bamboos and rattans. The bambusoid grasses are naturally distributed in all continents except Europe and Antarctica... the occurrence of bamboo is greatest with concentrations in eastern and southern Asia, and South and Central America” (Ohrnberger 1999: 11). “The lowest diversity of woody bamboos is found in Africa, where five species representing five genera occur... The greatest potential bamboo richness... is in East Africa, especially around Lake Victoria, and in southern Africa in Zambia and Zimbabwe” (Bystriakova & al. 2004: 10). The number of species present in each country of Continental Africa is found in Bystriakova & al.: l.c., and Bystriakova & Kapos 2006: 13.

Bamboos, in particular, are receiving increasingly attention as a renewable resource owing to their “fast growth, economic value, widespread availability, and physical properties comparable to that of wood” (Buziquia & al. in *Biodiv. Conserv.* 28: 3695–3711, 2019). Bamboos are, e.g. used for reforestation of degraded areas, for controlling soil erosion, for stabilization of river banks, and as substitute for timber. Bamboo has proved to be an appropriate material for numerous products: handles for umbrellas, handbags and teapots; toothpicks, chopsticks, kebab skewers, incense sticks. It is used in food, clothing and shelter, and for its ornamental value in horticulture (cf. S. Lucas, 2013). However, bamboos have an invasive potential, with negative consequences. Introduction of bamboo in a new area needs preliminary studies to minimize the risk for the local vegetation.

B. BIBLIOGRAPHY

The books and articles listed below were mostly published or seen by us after the publication of our “Énumération” Volumes 3 (pp. 212–292, 297, 1995) and 4 (pp. 652–660, 1997). They refer to the general biology of grasses, morphology/anatomy/palynology, as well as to general systematics and classification. Literature referring to bamboos is treated apart.

General literature, general systematics, manuals

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V. THE CHECKLIST: Poaceae / Gramineae Part One (Genera A–H)

V. THE CHECKLIST

(ACHNERIA)

Achneria fasciculata Peter = **Poa kilimanjarica**

(ACHYRODES)

Achyrodes aureum (L.) Kuntze = **Lamarckia aurea**

ACRACHNE / 1

Genus of 3 species in the Old World tropics, one [*A. racemosa*] from Cape Verde Isl. E-wards to Asia and Australia, one in Madagascar [*A. perrieri* (A. Camus) S. M. Phillips] and one in India [*A. henrardiana* (Bor) S. M. Phillips].

Acrachne racemosa (B. Heyne ex Roth) Ohwi, incl. var. *sumanensis* Aggarwal & C. S. Purohit; Costa & al., Checklist Angola grasses: 10, 2004; Quattrocchi, CRC World Dict. Grasses 1: 15, 2006; Dobignard & Chatelain, Index synonym. Fl. Afr. N. 1: 204, 2011; Peterson & al. in Taxon 64: 450, 453, 2015; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015; Kellogg in K. Kubitzki, Fam. & genera vascul. pl. 13: 384–385, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 259, 1974; Gibbs Russell, Grasses south. Afr.: 31, 1990, Thulin, Fl. Somal. 4: 189, 1995; Fl. Eth. & Eritrea 7: 138, 1995; Fl. Zambes. 10/2: 160, 1999; Poilecot in Boissiera 56 (Niger): 231, 1999; Boulos, Fl. Egypt 4: 266, 2005; Fl. China 22, Ill.: 682, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 187, 2013; Ibrahim & al., Grasses Mali: 25, 2018.

bas.: *Eleusine racemosa* B. Heyne ex Roth.

syn.: *E. verticillata* Roxb.; *Acrachne verticillata* (Roxb.) Lindl. ex Chiov.; *A. eleusinoides* Wight & Arn. ex Steud.; *Leptochloa racemosa* (B. Heyne ex Roth) Kunth; *L. schimperiana* Hochst.; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Tufted annual herb; culms 15–75 cm tall, erect or geniculately ascending; leaf blades 7–20 cm long, 5–12 mm wide, tapering to a fine hair-like tip; inflorescence of several – many slender ascending secund spikes 1.5–10 cm long, these mainly grouped in whorls of 2–5 and either clustered subdigitately towards top of culm or arranged along a central axis to 15 cm long; spikelets 0.5–1.3 cm long, 6–25-flowered, whitish green or brownish; grain c. 1 mm long, rugose, surface *finely and densely granular* as in *Eleusine* or *Dactyloctenium*.

Stony ground or among rocks in deciduous bushland; *Acacia* shrubland; disturbed soils; sandy humid soils in hollows; muddy-clayey soil; under wood with *Acacia nilotica*; weed of cultivations; 0–1800 m alt. Not common.

Cape Verde Isl.; Namibia, Botswana, Swaziland, S. Africa; S Asia, incl. Arabia, Pakistan, Sikkim (Nelumbo 59: 53, 2017), China, E-wards to N Australia. Naturalized in Egypt.

Can sometimes be mistaken for *Eleusine multiflora*.

SYNONYMS:

Acrachne eleusinoides Wight & Arn. ex Steud.

= **Acrachne racemosa**

vatovae Chiov. = **Eragrostis vatovae**

verticillata (Roxb.) Lindl. ex Chiov. = **Acrachne racemosa**

(ACRATHERUM)

Acratherum kotschi Hochst. ex Link = **Aristida funiculata**

miliaceum Link = **Arundinella nepalensis**

pumilum Hochst. ex A. Rich. = **A. pumila**

ACRITOCHAETE / 1

Monotypic genus; in mountains of tropical Africa.

Acritochaete volkensii Pilg.; Agnew, Upl. Kenya wild flow., ed. 3: 438, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015; Kellogg in Kubitzki, Fam. & gen. vascul. pl. 13: 323, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 659, 1982; van der Zon, Gramin. Cameroun 2: 301, 312 (map), 1992 (Wagen. Agric. Univ. Papers 92.1); Velayos & al., Fl. Guinea Ecuat. 12: 146, 2015.

syn.: *Oplismenus volkensii* (Pilg.) Mez ex Peter

Annual straggling plant, decumbent at base, rooting at lower nodes, culms weak, 0.3–1 m long; leaf blades linear, 3–14 cm long, 0.3–1.5 cm wide; inflorescence of 2–4 *scattered* racemes *along an axis* (unbranched); racemes loose, 3–9 mm long, bearing spikelets on only one side, these 3–9 mm long, hairy, each with 2 long often tangled awns 1–2 cm long.

In shade of evergreen and bamboo forest; sometimes forming colonies; forest-grassland transition; forest with *Podocarpus latifolius*, *Olea capensis* subsp. *hochstetteri*, *Syzygium guineense* subsp. *afromontanum*; disturbed forest; along pathsides; 1700–3300 m alt. – Widespread but rare (Lye & al. in Lidia 4: 155, 2000).

Not in Malawi (Burrows & Willis, Pl. Nyika Plateau: 366, 2005).

– Bioko/Fernando Poo.

ACROCERAS / 6

Acroceras Stapf, Fl. Trop. Afr. 9: 621, 1920.

Comment by I. Friis & S. Phillips in Fl. Ethiopia & Eritrea 1 (Appendix): 270, 2009: *Acroceras* is a spelling error, it should read *Acrocera*.

Twenty (or 18) species in Africa, Madagascar, India, SE Asia (Kellogg in Kubitzki, Fam. & gen. vascul. pl. 13: 328, 2015). Formerly placed in *Panicum* L.

Acroceras amplexans Stapf 1920; Renier, Fl. Kwango 1: 36, 1948 (as *A. basicladum*); Lye & al. in Lidia 4: 155, 2000; Fl. Eth. & Eritrea 2/1: 460, 2000; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015; Sosef in Pl. Ecol. Evol. 149: 357, 2016; Schmidt & al. in Phytotaxa 304: 24, 2017 (map Burkina Faso). – Icon.: van der Zon, Gramin. Cameroun 2: 242, 243 (map), 1992; Poilecot, Boissiera 50: 349, 1995 (Ivory Coast); idem, ibid. 56: 396, 1999 (Niger); Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 797, 2010; César & Chatelain, Fl. ill. Tchad: 227, 2019; Sosef in Pl. Ecol. Evol. 149: 357, 2016; Ibrahim & al., Grasses Mali: 26, 2018.

syn.: *A. basicladum* Stapf; *Panicum amplexans* (Stapf) Pilg. 1931, nom. illeg., non Chapm. 1878; *P. zizanioides* var. *angustatum* A. Chev., nom. nud.; *P. bandunduense* Vanderyst, nom. provis.; *Neohusnotia amplexans* (Stapf) C. C. Hsu

ACROCERAS AMPLECTENS

Annual weak-stemmed stoloniferous herb with spindly branches; culms 0,3–1 m long, rooting at glabrous nodes; leaf blades linear, 40–20 × 0,3–1 cm, *base cordate or amplexicaul*; inflorescence 10–30 cm long in 2–5 racemose spikes each 3–12 cm long, ± divergent, rachis glabrous; spikelets in pairs, one subsessile, the other on 4–8 mm long pedicel, each pair overlaps the other; spikelets 4–6 mm long, glabrous.

Marshy or damp places; shallow water; abandoned ricefields; humid riverbanks; often with *Echinochloa colona*, *Panicum parvifolium*, *Paspalum scrobiculatum*, *Setaria sphacelata*, *Oryza longistaminata*, *Leersia hexandra*, *Sacciolepis africana*, *S. cymbiandra*, *Andropogon africanus*, *A. perligulatus*, *Brachiaria mutica*, etc.; temporary hollows with *Panicum fluviicola*, *Eragrostis gangetica*, *E. atrovirens*, *Vetiveria nigriflora*, etc.; grass swamp in open *Combretum* woodland; *Raphia* swamp; farm bush; inselbergs (Porembski & Brown, *Candollea* 50: 357, 1995); near sea-level–1200 m alt.

Similar to *A. zizanioides* but a straggling and thinner annual with amplexicaul leaf blade bases.

A. attenuatum Renvoize; Fl. Trop. E. Afr., Gramin. 3: 567–568, 1982; Lye & al. in *Lidia* 4: 155, 2000.

Annual mat-forming herb; culms 20–40 cm long, prostrate, rooting at lower nodes; leaf blades broadly linear-lanceolate, 5–18 × 0,5–2 cm, constricted at base; inflorescence 6–12 cm long; racemes 2–6 cm long with distant pedicellate spikelets, often secondarily branched and panicle-like; spikelets elliptic, 3–4 mm long, turning black at maturity.

Forest, in shade; 0–1200 m alt.

Near *A. gabunense* but spikelets shorter (not 4,5–5,5 mm), leaf blade narrower (not 1–4 cm wide).

A. gabunense (Hack.) Clayton; Fl. Trop. E. Afr., Gramin. 3: 567, 1982; Phillips in Timberlake & Kativu, eds., *African plants: biodiversity...* 8–9, 1999; Costa & al., *Checklist Angola grasses*: 10, 2004; Parmentier & al. in Belg. J. Bot. 139: 74, 2006; Lejoly & al., *Cat.-fl. Kisangani & Tshopo in Taxonom.* 30: 231, 2010; Chatelain & al., *Cartes distrib. pl. Côte d'Ivoire*, 245 2011; Darbyshire & al., *Pl. Sudan & S. Sudan*: 117, 2015. – Icon.: Fl. Gabon 5: 19, 1962; van der Zon, *Gramin. Cameroun* 2: 242, 243 (map), 1992; Poilecot, *Boissiera* 50: 353, 1995 (Ivory Coast); Velayos & al., *Fl. Guinea Equat.* 12: 147, 2015; Vande weghe & al., *Pl. à fleurs Gabon*: 173, 2016.

bas.: *Panicum gabunense* Hack.

syn.: *P. mayumbense* Franch.; *P. hensii* K. Schum.; *Commelinidium gabunense* (Hack.) Stapf; *C. mayumbense* (Franch.) Stapf; *C. nervosum* Stapf; *Echinochloa nervosa* (Stapf) Roberty

Perennial herb; culms 20–60 cm long, scrambling from a prostrate base; leaf blades lanceolate-ovate, 2–10 × 1–4 cm, base constricted, tip acute; inflorescence a lax panicle 3–20 cm long with racemes 2–7 cm long, rhachis pubescent; spikelets lanceolate, 4,5–6 mm long, glabrous.

Forest in shade; forest gallery; primary and secondary rain-forest; forest islands in Guinean savannas; soils not marshy; with *Leptaspis zeylanica*, *Pseudochinolaena polystachya*, *Oplismenus hirtellus*, *Cyrtococcum chaetophyllum*, *Streptogyna crinita*, etc.; “dense very shady rather damp woods; soon disappearing never to return after the first cultivation” (fide Rendle, *Cat. Afr. plants Welwitsch*, 2/1: 172, 1899); inselbergs; 30–1300 m alt.

ACROCERAS

A. hubbardii (A. Camus) Clayton; Fl. Trop. E. Afr., Gramin. 3: 564, 1982; Vorontsova & Simon in *Taxon* 61: 738, 2012. – Icon.: Fl. Mascareignes 203, Gramin.: 124, 2019 (*Panicum hubbardii* Renvoize comb. nov., p. 123).

bas.: *Brachiaria hubbardii* A. Camus

syn.: *B. hubbardii* var. *halophila* A. Camus; *Panicum hubbardii* (A. Camus) Renvoize comb. nov. (l. c.).

Annual or short-lived perennial creeping herb; culms 5–20 cm long, rooting at nodes; leaf blades linear, 1–4 × 0,1–0,2 cm; inflorescence an ovoid head 0,5–1,5 cm long, made up of short crowded racemes, these up to 0,5 cm long, with 5–30 spikelets, sometimes reduced to a pair of spikelets; spikelets sessile or on short pedicels, elliptic, 2–3 mm long.

Shady path sides; sea-level.

Madagascar, Mascarene Isl.

A. macrum Stapf; Fl. Eth. & Eritrea 1: 460, 2000 (in key); Siebert & al. in *Bothalia* 34: 70, 2004; Agnew, *Field guide up. Kenya grasses*: 44, 2006; Sosef in *Pl. Ecol. Evol.* 149: 357, 2016 (typification). – Icon.: Fl. Trop. E. Afr., Gramin. 3: 566, 1982; Fl. Zambes. 10/3: 51, 1989; Fl. Eth. & Eritrea 7: 211, 1995; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 256, 2012.

syn.: *Panicum gimmae* Fiori; *Neohusnotia macra* (Stapf) C. C. Hsu

Rhizomatous perennial herb, densely tufted; culms 0,2–1 m long, decumbent below, rarely tufted, nodes glabrous; leaf blades linear, flat or convolute, 3–16 × 0,1–0,8 cm, base as wide as sheath or slightly cordate; inflorescence 5–25 cm long; racemes 2–8 cm long, mostly rather short and appressed to the central axis, their rachis glabrous; spikelets oblong, 4–4,8 mm long, glabrous.

Streambanks; pond margins; swampy places; wet or marshy grassland; in shallow water; sometimes forming floating mats; open wood; 1000–2400 m alt.

Namibia, Botswana, S. Africa.

A very palatable grass.

A. zizanioides (Kunth) Dandy; Renier, *Fl. Kwango* 1: 36, 1948; Fl. Trop. E. Afr., Gramin. 3: 565, 1982; van der Zon, *Gramin. Cameroun* 2: 241, 243 (map), 1992; Fl. Eth. & Eritrea 2/1: 460, 2000; Cheek & al., *Pl. Kupe...* 442, 2004; Parmentier & al. in Belg. J. Bot. 139: 74, 2006; Lejoly & al., *Cat.-fl. Kisangani & Tshopo in Taxonom.* 30: 232, 2010; Chatelain & al., *Cartes distrib. pl. Côte d'Ivoire*, 245, 2011; Darbyshire & al., *Pl. Sudan & S. Sudan*: 117, 2015; Sosef in *Pl. Ecol. Evol.* 149: 357, 2016; Schmidt & al. in *Phytotaxa* 304: 24, 2017. – Icon.: Fl. Gabon 5: 23, 1962; Cook, *Aquat. pl. book*: 136, 1990; Poilecot in *Boissiera* 50: 351, 1995 (Ivory Coast); Fl. Eth. & Eritrea 7: 211, 1995; Lisowski, *Fl. Rép. Guinée* 2: fig. 528, 2009; Velayos & al., *Fl. Guinea Equat.* 12: 148, 2015; Vande weghe & al., *Pl. à fleurs Gabon*: 173, 2016.

bas.: *Panicum zizanioides* Kunth

syn.: *P. oryzoides* Sw. 1788, nom. illeg., non Ard. 1763; *P. ogowense* Franch.; *P. lutetense* K. Schum.; *P. guluense* Vanderyst, pro. syn., nom. invalid; *Acroceras oryzoides* Stapf; *Echinochloa zizanioides* (Kunth) Roberty; further synonyms in *World Checklist of Selected Plant Families*, Roy. Bot. Gard., Kew.

Perennial herb; culms slender, 0,3–1 m long, scrambling from a prostrate base, nodes glabrous with aerial roots; leaf blades ± lanceolate, 4–15 × 0,6–2,6 cm, *base broadly rounded* and constricted or subamplexicaul; inflorescence 10–25 cm long, racemes 4–12 cm long and mostly divergent, rachis glabrous and

ACROCERAS ZIZANIOIDES

sometimes secondary branching; spikelets lanceolate, 4,5–6,5 cm long, glabrous.

Damp places; shallow water in forest shade; river banks; clayey, humus-bearing soils; with *Leersia hexandra*, *Setaria sphacelata*, *Sacciolepis africana*, *S. cymbiandra*, *Leptochloa caerulea*, ... in pools; clearings and humid grounds in forest with *Oplismenus hirtellus*, *Panicum brevifolium*, *Cenotheca lappacea*, *Cyrtococcum chaetophorum*; on marshy soils with *Oryza eichingeri*; shade in coastal forests; secondary rain-forest; ricefields; inselbergs (Porembski & Brown in Candollea 50: 357, 1995); 0–1600 m alt. Bioko/Fernando Poo, ? S. Tomé (Figueiredo & Smith, Bothalia 41: 66, 2011); S Asia from India to Vietnam, New Guinea; Mexico, C. & S. America (Fl. Mesoamericana 6: 329, 1994; Cat. seed plants W. Indies: 714, 2012).

In sterile state difficult to distinguish from *A. amplexans*.

SYNONYMS:

Acroceras basicladum Stapf = ***Acroceras amplexans***
oryzoides Stapf = ***A. zizanioides***

(ACROCHAETE)

Acrochaete pseudaristata Peter = ***Setaria pseudaristata***

(ADENOCHLOA)

Adenochloa Zuloaga, Plant Syst. Evol. 301: 1697, 2015.

syn.: *Polyneura* Peter 1929, nom. illeg., non (J. Agardh) Kykin.

“The name of the new genus makes reference to the presence of glandular hairs on vegetative and/or reproductive portions of the plant” (Zuloaga & al., o.c.: 1698). An African genus, with 1 species also in Madagascar (*A. hymeniochila*).

“All taxa share membranous-ciliate ligules, lax and open inflorescences, ellipsoid to oblongoid spikelets, the lower glume present... species in this clade are non-Kranz” (o.c.: 1695).

VORONTSOVA, M. S. (2018). Revision of the group previously known as *Panicum* L. (Poaceae: Panicoideae) in Madagascar. *Candollea* 73: 143–186.

ZULOAGA, F. O. & al. (2015). Phylogeny of sections Clavelligeriae and Pectinatae of *Panicum* (Poaceae, Panicoideae, Paniceae): establishment of the new subtribe Dichantheliinae and the genus *Adenochloa*. *Plant Syst. Evol.* 301: 1693–1711.

In our compilation we maintain the following taxa in ***Panicum***.

SYNONYMS:

Adenochloa adenophora (K. Schum.) Zuloaga
= ***Panicum adenophorum***
adenophylla (Pilg.) Zuloaga = ***P. adenophyllum***
claytonii (Renvoize) Zuloaga = ***P. claytonii***
ecklonii (Nees) Zuloaga = ***P. ecklonii***
flacciflora (Stapf) Zuloaga = ***P. flacciflorum***
habrothrix (Renvoize) Zuloaga = ***P. habrothrix***
hymeniochila (Nees) Zuloaga = ***P. hymeniochilum***
lukwangulensis (Pilg.) Zuloaga = ***P. lukwangulense***
nigromarginata (Robyns) Zuloaga = ***P. nigromarginatum***
pectinella (Stapf) Zuloaga = ***P. pectinellum***
sadinii (Vanderyst) Zuloaga = ***P. sadinii***

[AEGILOPS]

Genus of some 28 species (annuals) in Europe, Mediterranean Region, SW Asia E-wards to Pakistan.

[*Aegilops lorentii* Hochst.]

syn.: *A. biuncialis* Vis.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual herb with numerous erect or geniculate culms 5–10–30 cm long, branching at base; leaf blades short ciliate; spike 2–3 cm long with 1(–2) rudimentary spikelets; fertile spikelets 2, ellipsoid; awns of the upper glumes 3 (Flora of Iraq 9, Gramineae, by Bor: 176, 178, 1968).

Reported from Cape Verde Islands.

Mediterranean Region E-wards to Iran; Canary Islands.

AELUROPUS / 2

Genus of 6 (or 8) species in the Mediterranean Region, N Africa, Asia (Kellogg in Kubitzki, ed., Fam. & gen. vascul. pl. 13: 372, 2015).

Aeluropus lagopoides (L.) Trin. ex Thwaites; Fl. Pakistan 143, Poac.: 63, 1982; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 208, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015. – Icon.: Fl. Iraq 9, Gramin.: pl. 7.3 (p. 31), incl. var. *mesopotamica* (Nábelek) Bor p. 424, 1968; Naegolé, Les graminées des pâturages de Mauritanie: 81, 1977 (Pâturages & cultures fourragères Etude 5, FAO, Rome); Audru & al., Pl. vascul. Djibouti 2/2: 844, 1994; Thulin, Fl. Somal. 4: 170, 1995; Fl. Eth. & Eritrea 7: 94, 1995; Boulos, Fl. Egypt 4: 246, 2005. – Pl. 1.

bas.: *Dactylis lagopoides* L.

syn.: *D. repens* Desf.; *D. brevifolia* J. König ex Willd. 1797, nom. superfl.; *Aeluropus repens* (Desf.) Parl.; *A. littoralis* (Gouan) Parl. var. *repens* (Desf.) Coss. & Durieu, and fa. *imbricata* Maire, and subsp. *repens* (Desf.) Trab.; *A. massauensis* (Fresen.) Mattei; *A. niliacus* (Spreng.) Steud.; *Dactylis massauensis* (Fresen.) Steud.; *Distichlis sudanensis* Beetle (Revista Argent. Agron. 22: 89, 1955, with fig.; ibid. 25: 195, 1958); further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial shrubby or sword-forming herb with long creeping stolons; culms 15–30 cm long, erect or creeping at base; leaf blades narrow, spreading, distichous, rigid, pungent, 1,5–3 cm long, 2–3 mm wide, glabrous or pilose; inflorescence a globose to oblong head to 2 cm long, 1–1,5 cm wide, sometimes reduced to a solitary raceme, of densely crowded spikelets; these elliptic-oblong, laterally compressed, 2,5–4,5 × 1,5–2 mm, 4–8-flowered; lemmas hairy.

Salty alkaline clayey soils; saline flats; sandy seashores down to high water mark; around saline pools inland; extremely salt tolerant (to 33 g % of total salt in soil solution, fide Naegelé, o.c.: 80); 0–500 m alt (> 500 m in Sudan).

SE Europe; N Africa from Morocco to Somalia, Red Sea coasts through SW Asia, Middle East to C Asia and India, Sri Lanka.

BHATT, A. & al. (2020). Effects of light temperature, salinity, and maternal habitat on seed germination of *Aeluropus lagopoides* (Poaceae): an economically important halophyte of arid Arabian deserts. *Botany* 98: 117–125.

AELUROPUS

A. littoralis (Gouan) Parl., incl. subsp. and vars. (See Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 209, 2010); Daget in Ecol. Medit. 40: 60, 2015.– Icon.: Maire, Fl. Afr. N. 3: 70, 1955; Boulos, Fl. Egypt 4: 246, 2005; Fl. China 22, Poaceae, Ill.: 639, 2007 [as *A. pungens* (M. Bieberstein) K. Koch var. *pungens*].

bas.: *Poa littoralis* Gouan

syn.: *Aeluropus intermedius* Regel; *A. littoralis* subsp. *intermedius* (Regel) Tzvelev; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial stoloniferous herb to 30 cm tall; leaf blades narrow, distichous, rigid, pungent, glabrous or with tubercle-based hairs; inflorescence spike-like, elongate, comprising several widely spaced racemes; racemes with densely crowded spikelets; these elliptic, c. 3 mm long, 6–9-flowered; lemmas glabrous.

Sebkha sides; saline soils and seepings at base of littoral hamada; near sea-level.

Mediterranean Region, E-wards to E Asia (Mongolia, China).

In Flora of Libya 145: 232–233, 1988, the possibility of hybridization between the two species in N. Africa is suggested.

SYNONYMS:

Aeluropus arabicus (Spreng.) Steud. = **Odyssea mucronata**

intermedius Regel = *Aeluropus littoralis*

littoralis (Gouan) Parl. subsp. *intermedius* (Regel)

Tzvelev = **A. littoralis**

littoralis var. *repens* (Desf.) Coss. & Durieu, incl. fa.

imbricata Maire, and subsp. *repens* (Desf.) Trab.

= **A. lagopoides**

massauensis (Fresen.) Mattei = **A. lagopoides**

mucronatus (Forssk.) Asch. = **Odyssea mucronata**

niliacus (Spreng.) Steud. = **Aeluropus lagopoides**

pungens (M. Bieberstein) K. Koch = **A. littoralis**

pungens (Vahl) Boissier = **Odyssea mucronata**

repens (Desf.) Parl. = **Aeluropus lagopoides**

(AETHONOPOGON)

Aethonopogon praemorsus Hack. ex Kuntze

= **Polytrias indica**

AFROTRICHLORIS / 2

Genus of 2 species in NE tropical Africa, characterised by the “enormous lateral lobes of the lemmas”. Phylogenetic placement not resolved according to Peterson & al. in Taxon 64: 453–455, 2015.

Afrotrichloris hyaloptera Clayton – Icon.: Clayton, Kew Bull. 21: 106, 1967; Thulin, Fl. Somalia 4: 209, 1995; Fl. Eth. & Eritrea 7: 164, 1995.

Densely tufted perennial herb; culms wiry, 30–70 cm long; leaf blades tough, flexuous or curling, to 25 cm long, 1.5 mm wide, tip setaceous; inflorescence of 1 raceme 14–22 cm long; spikelets sessile, densely imbricate, with 1 fertile floret and a cluster of sterile lemmas, straw-coloured; lobes of fertile lemma 6–9 mm long, acute, ciliate along lateral nerves, pubescent between, central awn purplish, 1.5–3 cm long.

Mixed bushland on orange sand, open bushland on dry sandy soils; 120–400 m alt.

AFROTRICHLORIS

A. martinii Chiov.; Clayton, l.c.; Thulin, Fl. Somalia 4: 211, 1995; Fl. Eth. & Eritrea 7: 165, 1995.

Tufted perennial herb; culms wiry, to 60 cm long; inflorescence raceme 5–14 cm long; fertile floret lemma appressed pubescent, 3.5–5 mm long, with lobes 14–35 mm long, 1-nerved, attenuate into a fine awn.

Fixed dunes with grass or low shrubs, mostly near the coast; 0–360 m alt.

× AGROPOGON / 1

syn.: × *Polypogonagrostis* (Asch. & Graebn.) Maire & Weiller, Fl. Afr. N. 2: 151, 1953, nom. illeg.

A hybrid *Agrostis stolonifera* L. × *Polypogon monspeliensis* (L.) Desf.

× **Agropogon lutosus** (Poir.) P. Fourn.; Fl. Eth. & Eritrea 7: 46, 1995; Quattrocchi, CRC World dictionary of grasses 1: 33–34, 2006.

bas.: *Agrostis* × *lutosus* Poir.

syn.: *A. littoralis* With. 1796, nom. illeg., non *A. littoralis* Lam.; *A. × subaristata* Aitch. & Hemsl.; *Polypogon* × *littoralis* Sm.; *P. × major* Hack. ex Trab.; *P. × lutosus* (Poir.) Hitchc.; × *Agropogon littoralis* C. E. Hubb.; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial loosely tufted herb; culms to 60 cm long, geniculately ascending or creeping, rooting at lower nodes; leaf blades flat, 3–20 cm long, 0.2–1 cm wide, scabrid, especially towards tip; panicle lanceolate to narrowly ovate or oblong, dense, lobed, 2–18 cm long; spikelets 2–3 mm long, disarticulating above the persistent glumes.

Damp and saline places.

W & S Europe, Mediterranean Region, temperate Asia from Pakistan and Afghanistan to N India; introduced in Australia, USA.

SYNONYM: See above.

(AGROPYRON)

Agropyron elymoides (Hochst. ex A. Rich.) P. Candargy

= **Elymus africanus**

repens (L.) P. Beauv. = **E. repens**

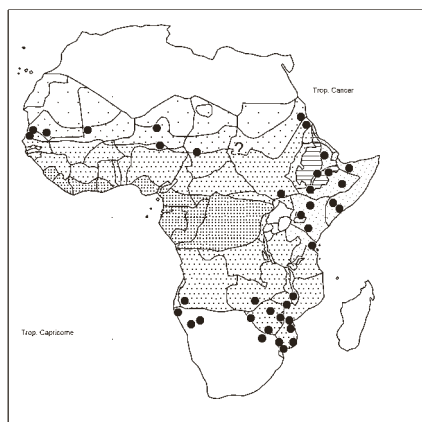
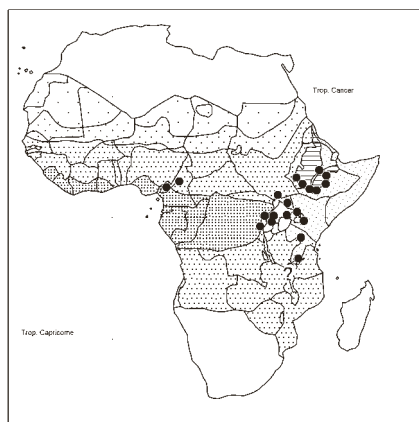
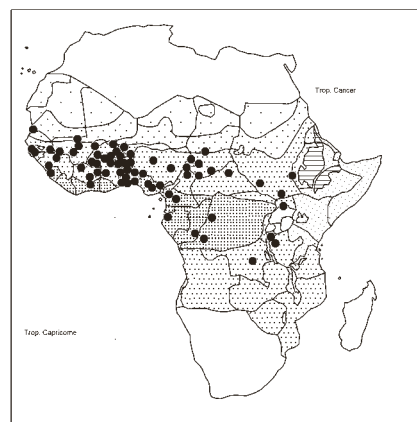
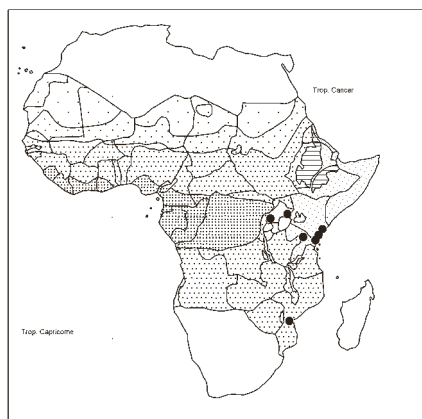
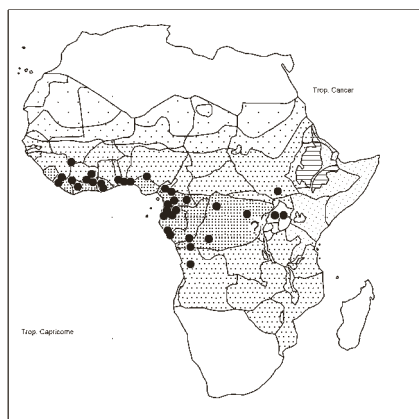
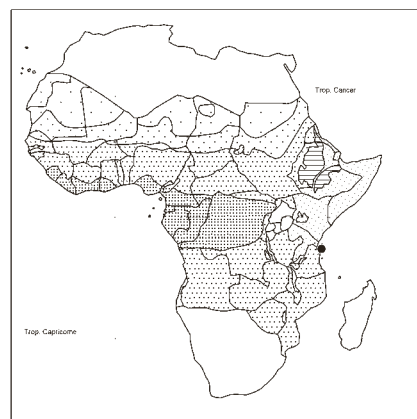
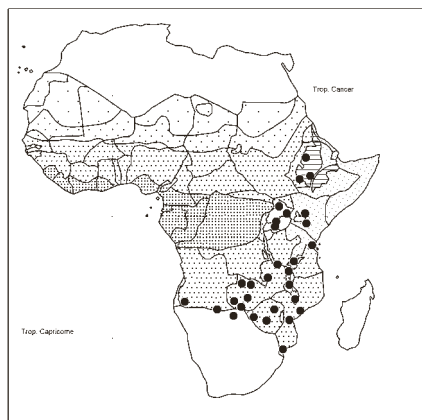
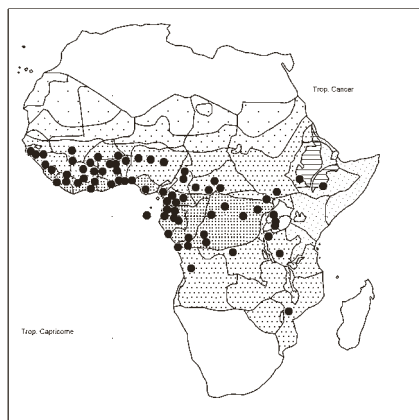
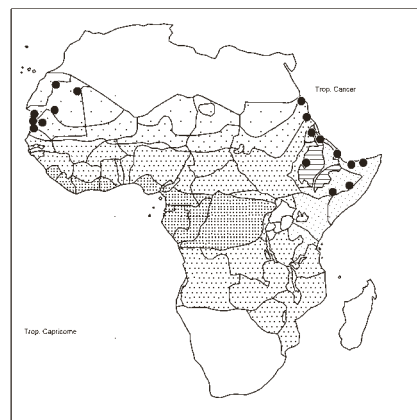
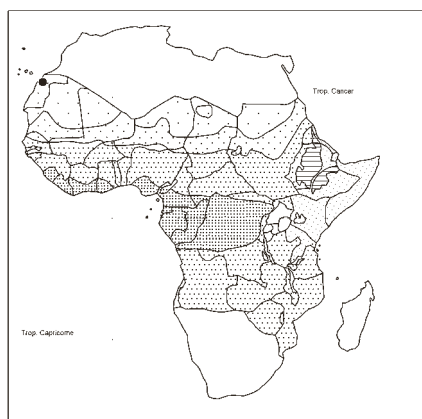
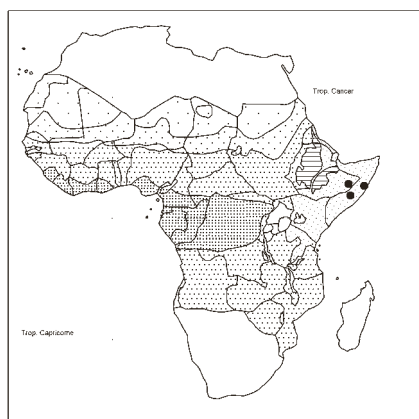
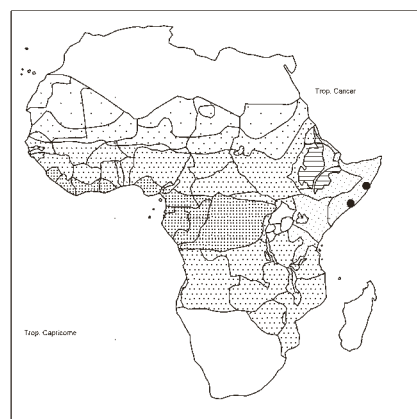
AGROSTIS / 16 + 1 ?

Agrostis L. 1753, nom. cons.

syn.: *Lachnagrostis* Trin.

Genus of c. 220 species (234 spp. Given by Kellogg in Kubitzki, Fam. & gen vascul. pl. 13: 236, 2015) distributed globally in temperate regions and on tropical mountains (Saarela & al. in PhytoKeys 87: 63, 2017), as well as on subantarctic islands.

“Previous classifications of *Agrostis* have been mostly regional in nature, and we are not aware of any worldwide synthetic classification of the genus (Saarela & al., o.c.: 63). The latter authors also present a brief review of the classification history of *Agrostis*. They continue (p. 64–67): “Taxonomy... is complicated by hybridization among species of *Agrostis* sects. *Agrostis* and *Vilefa*, and some hybrids are fertile... Although the current taxon sampling... is

*Acrachne racemosa**Acritochaete volkensis**Acroceras amplexens**Acroceras attenuatum**Acroceras gabunense**Acroceras hubbardii**Acroceras macrum**Acroceras zizanioides**Aeluropus lagopoides**Aeluropus littoralis**Afrotrichloris hyaloptera**Afrotrichloris martinii*

AGROSTIS

relatively limited in the context of overall species diversity..., our analysis add new knowledge to our understanding of *Agrostis* phylogeny and confirm a close relationship between *Agrostis*, *Chaetopogon*, *Polypogon* and *Lachnagrostis*... *Lachnagrostis* is a genus of ca. 20 species of annuals and perennials with inflorescences often shedding and dispersing as a whole, spikelets one- to (sometimes) two-flowered with a rachilla extension, glumes longer than florets, ... unawned or with an abaxial awn... There is no overlap in the species of *Lachnagrostis* in the ITS and matK trees, so we are unable to make conclusions about the affinities of *Lachnagrostis*... Future work should aim to confirm and better characterize these lineages.”

As these phylogenies have not included adequate representation, Brown (Muelleria 34: 23, 2015) pointed out that “morphological assessments have a role to play in segregating species into circumscribed genera.” As a result he transferred three South African *Agrostis* taxa to *Lachnagrostis*, a genus of “31 species endemic to Australia... and New Zealand”, viz. *L. eriantha* (Hack.) A. J. Br., *L. huttoniae* (Hack.) A. J. Br., and *L. polypogonoides* (Stapf) A. J. Br.

Distinguishing species of *Agrostis* is not always an easy matter. Writing about the treatment of this genus in *Flora Gallica* (Tison & de Foucault, 2014), M. Rand (in BSBI News 128: 5–6, 2015) recalls an earlier author (Chater, Flora of Cardiganshire, 2010) who made the following remark: “it is often virtually impossible to identify plants of *Agrostis* to species, especially in the many cases where members of the *A. capillaris/gigantea/stolonifera* group are tufted, lack both stolons and rhizomes, and have intermediate ligules”. This is also true for several African species whose variation is incompletely understood, especially “in those species from the upper parts of the high mountains” of Africa, including Ethiopia (Fl. Eth. & Eritrea 7: 46, 1995).

BROWN, A. J. (2016). A morphological search for *Lachnagrostis* among the South African *Agrostis* and *Polypogon* (Poaceae). *Muelleria* 34: 23–46 [2015].

FREY, L. (1997). Karyology of the genus *Agrostis* (Poaceae) – a review. *Fragm. Florist. Geobot.* 42: 361–400.

SAARELA, J. M. & al. (2017). Molecular phylogenetics of cool-season grasses in the subtribes Agrostidinae, Anthoxanthinae, Aveninae, Brizinae, Calothecinae, Koeleriinae and Phalaridinae (Poaceae, Pooideae, Poae, Poae chloroplast group 1). *PhytoKeys* 87: 1–139 [63–72].

(*Agrostis capillaris* L.) Thulin, Fl. Somalia 4: 153, 1995.

A. capillaris is a perennial rhizomatous herb 20–70 cm tall with tufted culms and linear leaves and an open elliptic panicle to 20 cm long. It is known from Europe, SW Asia, Afghanistan to N China (where it is probably introduced; fide Fl. China 22, Texts: 342–343, 2006); also introduced in N. America. Its presence in N. Africa is doubtful (fide Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 213, 2010).

A specimen associated with Somalia is present at K, said to originate from Mogadishu in 1958 and then grown in the USDA Plant Introduction Garden in Ames, Iowa. “It is unlikely that this temperate species occurs in Somalia, and the most probable explanation is that the plant distributed from Ames was an accidental contamination of the garden.”

A. continuata Stapf; F. Trop. E. Afr., Gramin. 1: 111, 1970; Chapano & al., Checklist Zimbabw. Grasses: 3, 2002; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 144–145, 2006; Gereau & al., Lake Nyasa florist. checklist: 85, 2012; Brown in Muelleria 34: 25, 2016.

syn.: *A. makoniensis* Stent & J. M. Rattray; *A. whytei* C. E. Hubb.; *A. natalensis* Stapf; *A. radula* Mez; *A. phalaroides* Hack.

AGROSTIS CONTINUATA

Perennial tufted herb; culms 30–70 cm long, erect or ascending; leaf blades flat, 8–25 cm long, 2–3 mm wide; inflorescence a contracted, subspiciform panicle 5–20 cm long; branches fascicled, densely spiculate; spikelets oblong, 3–5 mm long, green or purple; lemma awned.

Streamsides; wet places; seepage areas; c. 1800–3000 m alt.

S. Africa, Swaziland.

A. diffusa S. M. Phillips 1986, nom. illeg., non Spreng. 1824 (= *A. capillaris* L.) nec Host 1809 (= *A. gigantea* Roth subsp. *gigantea*). – Icon.: Kew Bull. 41: 139, 1986; Fl. Eth. & Eritrea 7: 50, 1995.

syn.: *A. kilimandscharica* sensu Cufod. 1968, non Mez

Perennial loosely tufted; culms slender, straggling, ascending 0.4–1 m long; leaf blades linear, flat, 23–32 × 0.2–0.4 cm, acute; inflorescence a panicle, large, open, elliptic to ovate, to 30 cm long, 17 cm wide; branches loosely ascending to *divaricate*, filiform, with *distant spikelets*; these oblong or gaping, 3.3–4.8 mm long; lemma lanceolate, hairy, awned sub-basally.

Bamboo forest; scrubland; often in moist situation; 1500–3500 m alt.

Closely related to *A. kilimandscharica* var. *sororia* (C. E. Hubbard) Hedberg (with large spikelets).

A. gracilifolia C. E. Hubb.; Fl. Trop. E. Afr., Gramin. 1: 112, 1970; Fl. Eth. & Eritrea 7: 51, 1995; Agnew, Field guide upl. Kenya grasses: 23, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 413, 2013. – Icon.: Opera Bot. 121: 53, 1993 (partial).

Perennial densely tufted herb; culms slender, erect, 5–60 cm tall; leaves very narrow, soft, wavy, 2–25 cm long, 1–2 mm wide; inflorescence an open, narrow panicle, ± oblong, 2–20 cm long, with stiffly spreading branches dividing in 3's; spikelets lanceolate-oblong, 2–4 mm long; lemma hairless, awned from ¼ above base.

Variable species, with a wide range in culm height and spikelet size; also small morphological differences exist between the populations on different mountains, which were at one time assigned to different species, but are better accommodated at subspecific level (Fl. Eth. & Eritrea 7: 51, 1995). Thus 3 subspecies are distinguished: – subsp. **bryophila** (C. E. Hubb.) S. M. Phillips (bas.: *A. bryophila* C. E. Hubb.); very loosely tufted at base; lowest internodes thin, elongate, trailing below the densely clustered leaves; blades fairly soft, loosely rolled, folded or flat, 1–2 mm wide, striate; ligule < 3 mm long, obtuse; spikelets 2.5–3.7 mm long; lemma glabrous; awn 3.2–5.3 mm long, weakly geniculate, often almost straight; palea subequalling lemma. *Carex runsso-roensis* bog, often among *Sphagnum* moss; 3300–4400 m alt.; – subsp. **gracilifolia** (syn.: *A. volkensii* Stapf var. *deminuta* Pilg.; *A. dissitiflora* C. E. Hubb.; *A. leptophylla* C. E. Hubb.; *A. bryophila* var. *elgonensis* C. E. Hubb.); densely tufted plant; leaf blades stiffly filiform, tightly involute, 0.3–0.6 mm wide, smooth or striate; ligule < 3 mm long; spikelets 2.4–4 mm long; lemma glabrous or loosely pilose near margins; awn 2.5–4 mm long, clearly geniculate; palea subequalling lemma. Common, sometimes dominant in moist tussock grassland near summits of mountains, extending into *Erica* heath and bamboo and *Hypericum*, *Hagenia* zones; 3200–4250 m alt.; – subsp. **parviflora** S. M. Phillips; culms loosely tufted; leaf blades soft, flat or loosely folded, 1–1.6 mm wide, striate; lemma thinly pilose on the back; awn 1.4–3.3 mm long, clearly geniculate; palea ⅓–⅔ the length of lemma. Grassland among *Erica*; moist places on rocky summits; 3600–4100 m alt. The variation in Ethiopian populations is still incompletely understood.

AGROSTIS

A. isopholis C. E. Hubb. – Icon.: Troupin, Fl. Rwanda 4: 177, 1988 (lemma).

Perennial tufted herb; culms slender, erect from a geniculate base, 40–75 cm long, simple or branched from lower nodes, 3–4-noded, glabrous; leaf blades glabrous, linear, 10 cm long, c. 1 mm wide, stiff, tip fine, hard; panicle narrowly oblong, 7.5–16 cm long, to 2.5 cm wide, erect, loose, with fascicles branches filiform to capillary, flexuose, loosely divided above, the lower to 6.5 cm long; lateral pedicels 2–4 mm long; spikelets narrowly elliptic to oblong, 2–3 mm long, purplish.

Grassy clearings, forming dense tufts; swamp; 2200–3700 m alt. Not collected in Rwanda since 1930.

A. keniensis Pilg.; Fl. Trop. E. Afr., Gramin. 1: 108, 1970; Lye & al. in Lidia 4: 155, 2000; Agnew, Field key upl. Kenya grasses: 23, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 413, 2013. – Icon.: Fl. Eth. & Eritrea 7: 48, 1995 (spikelet).

syn.: *A. tricholemma* C. E. Hubb.

Perennial, loosely tufted herb; culms erect, 0.7–1.2 m tall; leaf blades flat, to 20 cm long, 3 mm wide, glabrous; inflorescence a linear to narrowly oblong panicle, 15–50 cm long, loose to moderately dense, branches slender, ascending; spikelets lanceolate, 3–4 mm long, green or purplish, shining; awn arising from lower 1/3 of lemma.

Forest edges; stream banks; 2200–3200 m alt.

Very similar to *A. schlechteri* Rendle [*Lachnagrostis schlechteri* (Rendle) Rúgolo & A. M. Molina] from S. Africa (not *A. schlechteri* Jord. & Verl. from WC & SW Europe, Morocco).

A. kilimandscharica Mez, incl. var. *densior* Rendle, var. *micrantha* Pilg., and var. *sororia* (C. E. Hubb.) Pilg.; Fl. Trop. E. Afr., Gramin. 1: 110–111, 1970; Phillips in Kew Bull. 41: 134–137, 1986; Gereau & al., Lake Nyasa florist. checklist: 85, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015; Mbuni & al. in PhytoKeys 120: 24, 2019. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 175, 1955 (as *A. burtii*); Agnew, Field key upl. Kenya grasses: pl. 1/20 p. 64, 2006 (panicle branch); Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

syn.: *A. burtii* C. E. Hubb.; *A. leioclada* C. E. Hubb.; *A. sororia* C. E. Hubb.; *A. friesiorum* C. E. Hubb.; *A. bogdanii* Bogdan, nom. nud.

Straggling or tufted perennial herb; culms 30–90 cm long, slender, geniculately ascending or erect; leaf blades 5–20 cm long, 1–4 mm wide, flat, glabrous; inflorescence a linear to narrowly oblong or sometimes ovate panicle 5–22 cm long, branches flexuous and ascending with crowded spikelets, sometimes spreading and open; spikelets oblong, 2.5–4.5 mm long, green or purple; lemma hairy.

Forest clearings; bamboo thicket and grassland; usually in moist or shady places; scrub; *Helichrysetum*; volcanic ashes; with *Senecio johnstonii*; recent lava; *Ericetum*; river sides between stones; seasonal swamps; rock face near waterfall; 2000–4000 m alt.

Highly variable (Phillips distinguishes 3 vars., viz., vars. *densior*, *kilimandscharica*, and *sororia*).

Not in Ethiopia (= *A. diffusa* S. M. Phillips).

A. lachnantha Nees, incl. var. *glabra* Gooss. & Papendorf; Fl. Trop. E. Afr., Gramin. 1: 106–107, 1970; Lye & al. in Lidia 4: 155–156, 2000; Siebert & al. in Sabonet News 7/3: 213, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 338, 2005; Victor & al. in Bothalia 42: 203–204, 2012; Brown in Muelleria 34: 25, 31, 36–37, 45, 2015. – Icon.: Fl. Eth. & Eritrea 7: 48, 1995; Cope, Fl. Arab. Penins. & Socotra 5/1: 47, 2007; van Oudtshoorn, Guide grasses south. Afr.: 124, 2012.

AGROSTIS LACHNANTHA

syn.: *A. vestita* Hochst. ex A. Rich.; *A. dregeana* Steud.; *A. huttoniae* (Hack.) C. E. Hubb.; *Lachnagrostis lachnantha* (Nees) Rúgolo & A. M. Molina; *L. huttoniae* (Hack.) A. J. Br.; *Calamagrostis huttoniae* Hack.; *C. welwitschii* Rendle 1899, nom. illeg.; *Podosemum lachnanthum* (Nees) Nees; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual or short-lived perennial, loosely tufted herb; culms 30–90 cm long, ascending or erect; leaf blades flat, 7–20 cm long, 2–4 mm wide, flaccid; inflorescence a narrow, loosely contracted panicle 5–30 cm long, 1–3 cm wide; spikelets 2–2.5 mm long, light green, shining; lemma awn-less.

Streamsides; damp places in shade; moist places; lawns on lavas; thicket-grown marshes; damp grassland; streamsides; pond margins; rocks in river; gravelly river sandbanks; open woodland; 500–3000 m alt.

Namibia, S. Africa, Lesotho, Swaziland; Yemen.

Brown in Muelleria 34: 40, 2015, considers *Lachnagrostis (Agrostis) huttoniae* as a good species.

A. mannii (Hook. f.) Stapf; Cable & Cheek, Pl. Mt Cameroon: LXVIII, 1998; Onana & Cheek, Red Data Book flow. pl. Cameroon: 376, 2011; Onana, Fl. Cameroun 40: 241, 2013. – Icon.: Phillips in Kew Bull. 41: 139, 1986 (subsp. *aethiopica*, details); van der Zon, Gramin. Cameroun 2, flore: 74, 1992; Fl. Eth. & Eritrea 7: 50, 1995 (details); Velayos & al., Fl. Guinea Ecuat. 12: 149, 2015. bas.: *Deyeuxia mannii* Hook. f.

syn.: *Calamagrostis mannii* (Hook. f.) Engl.

Loosely tufted perennial herb 0.15–1 m tall; culms erect or ascending; leaves variable, convoluted, to 20 cm long; inflorescence a lax, open panicle, lanceolate to oblong, 10–35 cm long, branches flexuose, filiform, to 4 cm long; spikelets at branch extremities, oblong to gaping, 3.2–5.5 mm long, purple.

Grassland; forest edge; fringe of marsh; black clay wet soil; 1850–3800 m alt.

Bioko/Fernando Poo (subsp. *mannii*).

Comprises 2 subspp.: – subsp. *aethiopica* S. M. Phillips with granulose or smooth glumes and subequal lemma (3.3–3.9 mm), awn little exerted (3.5 mm long); in Ethiopia; – subsp. *mannii* with smooth glumes (2.2–2.8 mm long), awn well exerted from spikelet (4–7 mm long); in W Cameroon, Bioko).

Closely related to *A. producta*.

A. pilgeriana C. E. Hubb.; Fl. Trop. E. Afr., Gramin. 1: 107–108, 1970; Agnew, Field guide upl. Kenya grasses: 23, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 413, 2013.

Perennial spreading herb with stolons; culms 0.7–1 m long, geniculately ascending from a prostrate base; leaf blades flat, to 14 cm long, 3 mm wide, glabrous; inflorescence a ± dense, columnar, linear to oblong panicle 10–20 cm long, branches scaberulous, slender, spreading or ascending; spikelets narrowly elliptic, 2.5–3 mm long, green or purple; lemma awned from below the middle.

Swampy places in bamboo thicket; 2800–3125 m alt.

A. producta Pilg.; Phillips in Kew Bull. 41: 132–133, 1986; Lye in Lidia 4: 156, 2000; Agnew, Field key upl. Kenya grasses: 23, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 413, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 109, 1970; Fl. Zambes. 10/1: 90, 1971; Burrows & Willis, Pl. Nyika Plateau, Malawi: 339, 2005.

AGROSTIS PRODUCTA

syn.: *A. greenwayi* C. E. Hubb.; *Calamagrostis producta* Mez ex Peter 1931, pro syn.

Perennial compactly tufted herb with base clad in fibrous remains of old leaf sheaths; culms 30–80 cm tall, erect, whole plant to 1.2 m tall when flowering; leaf blades to 25 cm long, 2 mm wide, flat; inflorescence a loose, ovate to narrowly oblong panicle 5–20 cm long, branches flexuous; spikelets oblong, c. 4 mm long, purple or green; lemma awned from near base, awn to 7 mm long. Grassland; moor; rocky outcrops in *Loudetia* grassland; dominant in meadows; rocky area with grassland and scattered, low ericaceous scrub, low subshrubs and herb in rock crevices; pathsides; stream silt; 1800–4000 m alt.

Sometimes confused with *A. volkensii*, *A. kilimandscharica*, *A. mannii* subsp. *aethiopica*, *A. diffusa* S. M. Phillips, but *A. producta* has densely granular glumes and the rachilla is extended as an awn-like bristle, 1–3 mm long.

A. quinqueseta (Steud.) Hochst.; Fl. Trop. E. Afr., Gramin. 1: 111–112, 1970; Puff & Sileshi, Pl. Simen: 247, 2005. – Icon.: Troupin, Fl. Rwanda 4: 177, 1988 (inflorescence); van der Zon, Gramin. Cameroun 2: 74, 79 (map), 1992; Fl. Eth. & Eritrea 7: 48, 1995; Agnew, Field guide upl. Kenya grasses: pl. 1/21 p. 64, 2006 (panicle branch); Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013. – Pl. 2.

bas.: *Anomalotis quinqueseta* Steud.

syn.: *Trisetaria quinqueseta* (Steud.) Hochst.; *Agrostis alpicola* Hochst. 1855, non *Sporobolus alpicola* Hochst. ex A. Rich. 1851 (= *A. sclerophylla*); *Agr. mildbraedii* Pilg.; *Agr. congesta* C. E. Hubb.

Perennial tufted herb from a short slender rhizome; culms slender (to wiry), ascending, 0.15–1 m tall; leaf blades linear, flat, 4–25 cm × 2–4 mm, stiff, glabrous or with a few scattered hairs; inflorescence a narrow to linear, spiciform, dense panicle 4–25 cm long; spikelets narrowly oblong, 3–4.5 mm long, green or purplish; lemma awned from near base, awn 3–5 mm long.

Moist places in moor; often among *Erica* bushes in the open or in light shade; clearings; meadows; scrubland; grasslands; in *Hagenia* zone; with *Alchemilla* and *Senecio*; 2500–4300 m alt.

A. schimperiana Hochst. ex Steud. – See under **Polypogon schimperianus** (Hochst. ex Steud.) Cope

A. sclerophylla C. E. Hubb.; Puff & Sileshi, Pl. Simen: 246, 2005; Phillips in Symb. Bot. Upsal. 35/2: 137, 2011; Agnew, Upl. Kenya wild flow., ed. 3: 413, 2013. – Icon.: Fl. Eth. & Eritrea 7: 48, 1995.

syn.: *A. depressa* Mez ex Pilg. 1926, nom. illeg., non Vasey 1886; *Vilfia alpicola* (Hochst. ex A. Rich.) Steud.; *Sporobolus alpicola* Hochst. ex A. Rich. 1851, non *Agrostis alpicola* Hochst. 1855 [= *A. quinqueseta* (Steud.) Hochst.].

Densely tufted perennial herb forming firm low cushions; culms 2–6 cm tall, erect; leaf blades subulate, stiff, glabrous, 0.5–2 cm long; inflorescence a narrowly ovate panicle c. 1 cm long, open with short stiff branches bearing 5–12 spikelets; these narrowly oblong, 2.5–3 mm long, green or purplish; lemma glabrous, unawned.

Streamsides; rock crevices; dry barren slopes; 4200–4400 m alt.

A. stolonifera L. 1753 (non Leers 1775), incl. subsp. *eu-alba* R. Lit. 1922, subsp. *scabrida* (Maire & Trab.) Gamisans and subsp. *scabriglumis* (Boiss. & Reuter) Maire, and var. *aristata* Neillr. and var. *longipaleata* (Maire & Trab.) Maire, and var. *scabriglumis* (Boiss. & Reuter) C. E. Hubb., as well as many other subsp. and

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vars. (cf. Dobignard & Chatelain, Index synon. fl. Afrique N. 1: 215–216, 2010; and World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew); Maire, Fl. Afrique N. 2: 119–126, 1953. – Icon.: Maire, o.c.: 120; Boulos, Fl. Egypt 4: 173, 2005; Fl. China 22, Ill.: 459, 2007; César & Chatelain, Fl. ill. Tchad: 184, 2019.

syn.: *A. scabrida* Maire & Trab.; *A. scalariglumis* Boiss. & Reuter; *A. alba* sensu auct., non L.; etc. (cf. above).

Perennial stoloniferous herb without rhizomes, 0.65–1.2 m tall; leaves linear, 3–30 cm × 2–5 mm; inflorescence an open panicle 2–32 cm long, open at anthesis, contracted before and after; spikelets condensed about the branches and branchlets, lower branches often naked below; spikelets 1.8–3 mm long; lemma unawned.

Ecology in Chad not specified, probably damp soils; 2250 m alt. Madeira; N. Africa; throughout Europe; temperate Asia E-wards to China; widespread as an introduced weed in Réunion, Australia, the Americas (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 714, 2012).

A. taylorii C. E. Hubb.; Fl. Trop. E. Afr., Gramin. 1: 107, 1970. – Icon.: Troupin, Fl. Rwanda 4: 177, 1988.

Perennial loosely tufted herb; culms 5–30 cm tall, slender, ascending from a short creeping base; leaf blades to 12 cm long, 2 mm wide, flat, glabrous; inflorescence an ovate (-oblong) panicle 8–14 cm long, open, loose, the branches stiff and smooth; spikelets elliptic-lanceolate, 2.5–3 mm long, green tinged purple.

Along streams in moist ground in moor; grassy clearings in forest with *Hagenia abyssinica*, *Hypericum lanceolatum*; under *Erica* bushes; 3400–4000 m alt.

(**A. tibestica** Miré & Quézel); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 216, 2010. – Icon.: Bull. Soc. Bot. France 106: 137, 1959; César & Chatelain, Fl. ill. Tchad: 183, 2019.

Perennial densely tufted herb; culms 30–60 cm tall with leaf blades 12 cm long; inflorescence a contracted linear panicle 6–10 cm long, tinged violet, with ascending branches; spikelets 1-flowered, numerous, 2.5–3 mm long; lemma 2.5 mm long, dentate at tip, with awn 1.5 mm long.

Volcanic lappiaz, on edges of water holes; c. 3000 m alt. (N Chad, Tibesti, Emi Koussi).

Taxonomic status uncertain. Said to be near *A. pilgeriana*. Not mapped.

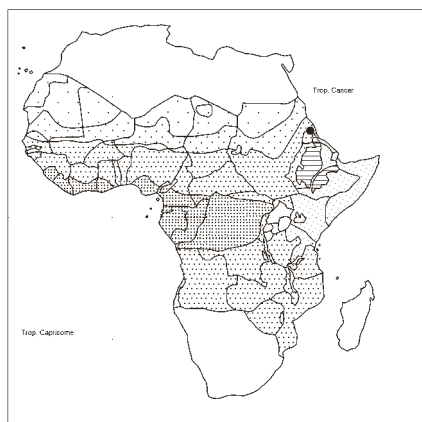
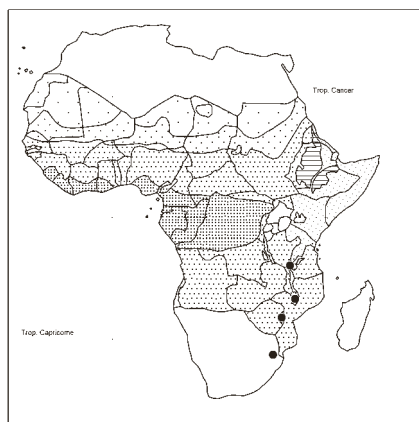
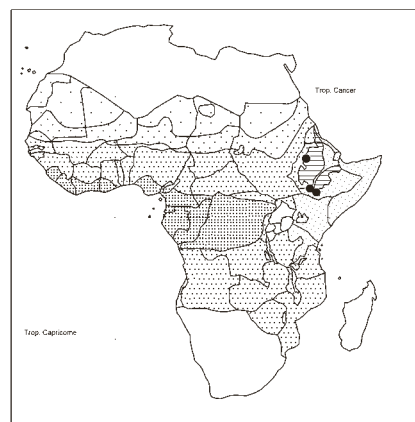
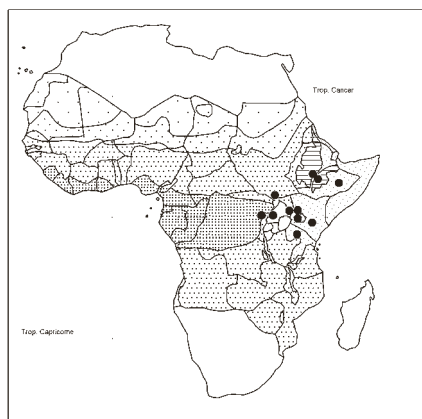
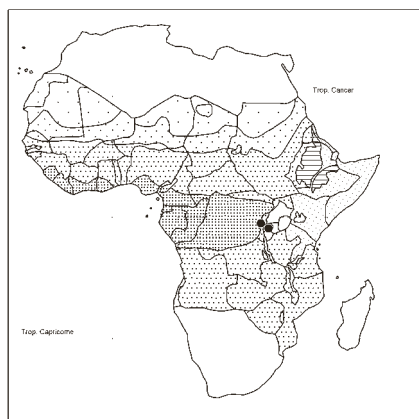
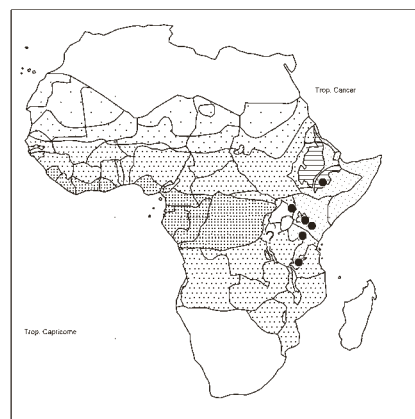
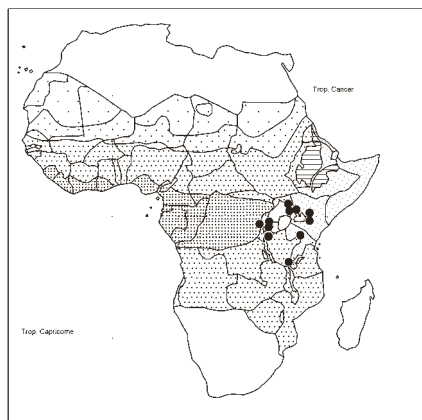
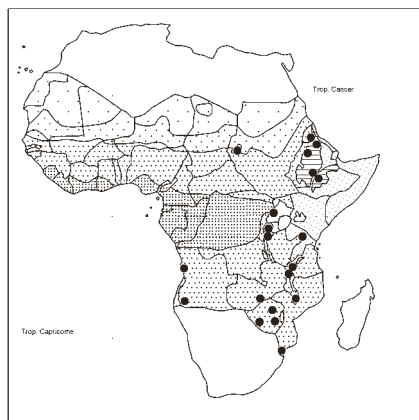
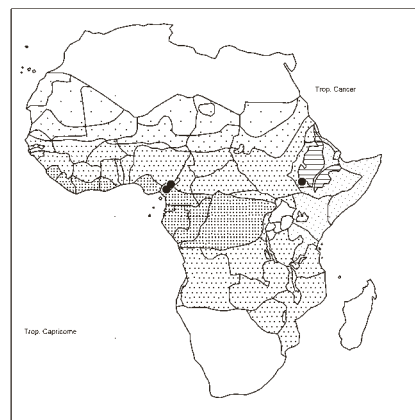
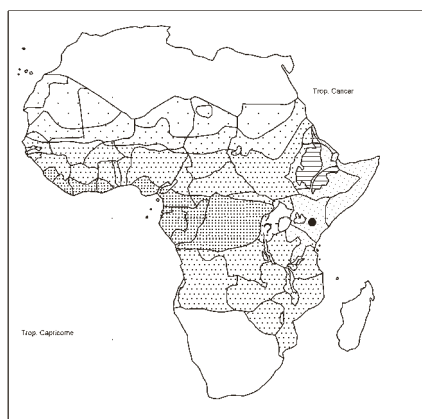
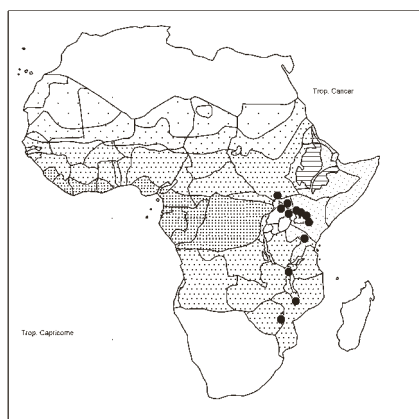
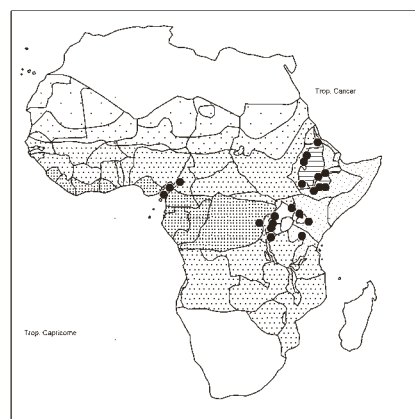
A. trachyphylla Pilg., incl. var. *majuscula* Pilg.; Fl. Trop. E. Afr., Gramin. 1: 113, 1970; Lye & al. in Lidia 4: 156, 2000. – Icon.: Repert. Spec. Nov. Regni Veg. Beih. 40, Anh. 1, Lfg. 4: pl. 49, 1936 (as *A. chaetophylla*); Agnew, Field key upl. Kenya grasses: pl. 1/22 p. 64, 2006 (panicle branch); Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

syn.: *A. chaetophylla* Peter

Perennial densely tufted herb forming small tussocks; culms erect, 6–50 cm tall; leaf blades filiform, stiff, involute, to 15 cm × 1 mm; inflorescence a linear panicle, contracted, 3–15 cm long, dense; spikelets lanceolate, 3–4.5 mm long, purple; lemma pubescent, with awn 3 mm long.

Moist ground in grassland and moor; edge of marshes; rocky humid slopes; *Senecio* forest; grassy glades on slopes; soil in rocks; 3500–4900 m alt.

A. volkensii Stapf (“volckensii”); Fl. Trop. E. Afr., Gramin. 1: 113–114, 1970; Fl. Eth. & Eritrea 7: 49–50, 1995; Lye & al. in Lidia 4: 156–157, 2000; Agnew, Field key upl. Kenya grasses: 24, 2006. – Icon.: Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

×*Agropogon* ×*lutosus**Agrostis continuata**Agrostis diffusa* S.M. Phillips 1986*Agrostis gracilifolia**Agrostis isopholis**Agrostis keniensis**Agrostis kilimandscharica**Agrostis lachnantha**Agrostis mannii**Agrostis pilgeriana**Agrostis producta**Agrostis quinqueseta*

AGROSTIS VOLKENSII

syn.: *A. uhligii* C. E. Hubb., incl. var. *contracta* C. E. Hubb.
Densely tufted perennial herb; culms slender, erect, 6–60 cm tall; leaf blades filiform to 10 cm long, 1 mm wide, stiff, *striate beneath*; inflorescence a loose, rarely contracted, panicle, narrowly oblong, 3–15 cm long, *branches flexuous*; spikelets lanceolate, 2–4.5 mm long, purplish.

Grassland, also disturbed, moor in open, often moist places; 3000–4850 m alt.

Similar to *A. gracilifolia* but leaves stiff. Sometimes confused with *A. trachyphylla* that has, however, leaf blades without striations beneath and a contracted panicle. According to Fl. Trop. E. Afr., l.c., specimens from Mt Kenya seem intermediate: they have inflorescence characters of *A. volkensii* but leaves of *A. trachyphylla*. May also be confused with *A. producta*: in *A. producta* the old basal leaf sheaths split into fine fibres, whereas in *A. volkensii* they remain papery, the leaves are linear, the glumes are densely granular-asperulous, and the lemmas are hairy.

SYNONYMS:

Agrostis abyssinica Ehrenb. & Hemprich ex Trin.

= **Sporobolus robustus**

aculeata (L.) Scop. = **Crypsis aculeata**

africana Poir. = **Sporobolus africanus**

alba L. var. *schimperiana* (Hochst. ex Steud.) Engl.

and var. *simensis* (Hochst. ex Steud.) Engl.

= **Polypogon schimperianus**

alba sensu auct., non L. = **Agrostis stolonifera**

alpicola Hochst. = **Agr. quinqueseta**

arenaria Gouan, non Schur = **Sporobolus pungens**

australis L. = **Gastridium ventricosum**

barbata Pers. var. *senegalensis* Pers. = **S. robustus**

bogdani Bogdan, nom. nud. = **Agrostis kilimandscharica**

bryophila C. E. Hubb. = **Agr. gracilifolia** subsp. **bryophila**

byrophila var. *elgonensis* C. E. Hubb. = **Agr. gracilifolia**

subsp. **gracilifolia**

burtii C. E. Hubb. = **Agr. kilimandscharica**

capensis Willd., non Steud. nec (L.) Lam.

= **Sporobolus africanus**

chaetophylla Peter = **Agrostis trachyphylla**

chionogeiton Pilg. = **Colpodium chionogeiton**

congener Schumach. = **Sporobolus virginicus**

congesta C. E. Hubb. = **Agrostis quinqueseta**

coromandeliana (Retz.) P. Beauv.

= **Sporobolus coromandelianus**

depressa Mez ex Pilg., non Vasey = **Agrostis sclerophylla**

dissitiflora C. E. Hubb. = **Agr.**

gracilifolia subsp. **gracilifolia**

dregeana Steud. = **Agr. lachnantha**

elator Steud. = **Uruchondra setulosa**

epigejos (L.) Raspail = **Calamagrostis epigejos**

extensa Schumach. & Thonn. = **Sporobolus pyramidalis**

fissa Stapf = **Polypogon schimperianus**

friesiorum C. E. Hubb. = **Agrostis kilimandscharica**

greenwayi C. E. Hubb. = **Agr. producta**

hirtella Hochst. ex Steud. = **Polypogon schimperianus**

holciformis M. Bieb. = **Piptatherum holciforme**

huttoniae (Hack.) C. E. Hubb. ex Gooss. & Papendorf

= **Agrostis lachnantha**

indica Forssk., non L. = **Sporobolus pyramidalis**

kentrophyllum K. Schum. = **S. ioclados**

kilimandscharica sensu Cufod. 1968, non Mez

= **Agrostis diffusa**

leioclada C. E. Hubb. = **Agr. kilimandscharica**

lendigera (L.) Brot. = **Gastridium ventricosum**

AGROSTIS

leptophylla C. E. Hubb. = **Agrostis gracilifolia** subsp.

gracilifolia

littoralis With 1796, non Lam. = × **Agropogon lutosus**

× *lutosus* Poir. = × **A. lutosus**

makeniensis Stent & J. M. Rattray = **Agrostis continuata**

mildbraedii Pilg. = **Agr. quinqueseta**

natalensis Stapf = **Agr. continuata**

oreades Peter = **Colpodium chionogeiton**

owariensis Schult. = **Sporobolus pyramidalis**

parvula Schult. = **S. minutus**

phalaroides Hack. = **Agrostis continuata**

phleoides (Nees & Meyen) E. Desv.

= **Gastridium phleoides**

procera Retz. = **Eriochloa procera**

pungens Schreb., non Muhl. nec Pall. ex Georgi

= **Chloris radiata**

radiata L. = **Sporobolus pungens**

radula Mez = **Agrostis continuata**

scabrida Maire & Trab. = **Agrostis stolonifera**

scabriglumis Boiss. & Reut. = **Agr. stolonifera**

schimperiana Hochst. ex A. Rich., incl. var. *carinata* Engl.

and fa. *pallida* Chiov. = **Polypogon schimperianus**

simensis Hochst. ex Steud. = **P. schimperianus**

sororia C. E. Hubb. = **Agrostis kilimandscharica**

spicata Vahl, non Wulfen nec Thunb. = **Sporobolus spicata**

stolonifera L. var. *densiflora* (Guss.) Chiov.

= **Polypogon viridis**

stolonifera var. *scabriglumis* (Boiss. & Reut.) C. E. Hubb.,

and subsp. *scabriglumis* (Boiss. & Reut.) Maire

= **Agrostis stolonifera**

stolonifera var. *schimperiana* Peter

= **Polypogon schimperianus**

× *subaristata* Aitch. & Hemsl. = × **Agropogon lutosus**

tricholemma C. E. Hubb. = **Agrostis keniensis**

uhligii C. E. Hubb., incl. var. *contracta* C. E. Hubb.

= **Agr. volkensii**

ventricosa Gouan = **Gastridium ventricosum**

vestita Hochst. ex A. Rich. = **Agrostis lachnantha**

virginica Forssk. = **Sporobolus spicatus**

volkensii Stapf var. *deminuta* Pilg. = **Agrostis gracilifolia**

subsp. **gracilifolia**

whytei C. E. Hubb. = **Agr. continuata**

AIRA / I

Genus of 6 (or 8?) species in Europe, Mediterranean region, Iran; weedy elsewhere in temperate regions of the world (Kellogg in K. Kubitzski, ed., *Fam. & gen. vascul. pl.* 13: 241, 2015). Delicate tufted annuals; glumes longer than flowers, unawned.

Aira caryophyllea L., incl. var. *latigluma* (Steud.) C. E. Hubb., var. *biaristata* (Emb. & Maire) Maire, var. *reverchonii* (Murb.) Maire, etc. (See World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew); Robyns & Tournay, *Fl. spermat. Parc Natl. Albert* 3: 179, 1955; Puff & Sileshi, *Pl. Simen*: 247, 2005; Dobignard & Chatelain, *Index synonym. fl. Afr. N.* 1: 217, (2010); Darbyshire & al., *Pl. Sudan & S. Sudan*: 117, 2015; Kipkoech & al. in *PhytoKeys* 131: 112, 2019; Sáez, Ll. & al. in *Syst. Bot.* 45: 83, 2020 (in key). – Icon.: *Fl. Trop. E. Afr., Gramin.* 1: 85, 1970; *Fl. Zambes.* 10/1: 80, 1971; Troupin, *Fl. Rwanda* 4: 179, 1988; van der Zon, *Gramin. Cameroun* 2: 70, 71 (map), 1992; Blyttia 50/2: 78, 1992; *Fl. Eth. & Eritrea* 7: 39, 1995; Burrows & Willis, *Pl. Nyika Plateau, Malawi*: 339, 2005; Agnew, *Field guide upl. Kenya grasses: pl.* 1/17 p. 65, 2006 (panicle branch);

AIRA CARYOPHYLLEA

Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 150, 2015; Vilda Växter 2020/1: 15, (2020). – Pl. 3.

syn.: *A. latigluma* Steud.; *A. mucronulata* Sennen; etc.

Annual herb; culms 3–40 cm long, loosely tufted or solitary, erect or geniculate; leaf blades filiform or sub-setaceous, 1–5 cm × 1 mm; inflorescence a loose, ovate to oblong panicle 1–12 cm long, branches bare at base with spikelets in little clusters towards tips; pedicels pear-shaped at tip; spikelets c. 2,5 mm long, 2-flowered.

Shallow or well-drained soils in grassland and moor, usually in thin soil; along roads; disturbed places in grassland and rocky soils; abandoned fields; rocky area with grassland and scattered low ericaceous scrub, low subshrubs and herbs in rock crevices; 2000–4500 m alt.

Madeira, Canary Isl., Cape Verde Isl. (Brochmann & Rustan in García de Orta, Sér. Bot. 16: 23, 2002); Mediterranean region, N. Africa, to African mountains; Bioko/Fernando Poo; Europe to Caucasus, Tibet to W Himalaya (map in G. Hegi, Ill. Flora Mitteleuropa, ed. 3, 1/3, 1(2) Poaceae: 299, 1998); introduced in S. Africa, S Australia, New Zealand, the Americas.

Specimens from Ethiopia, E. Africa, Jebel Marra (Sudan) approach and intergrade with *A. cupaniana* Guss. The differences between the two species are given by Wickens (Jebel Marra, Kew Bull., Add. Ser. 5: 166, 1976): in *A. caryophyllea* the pedicel tip is pear-shaped, but expanded into an annular cushion in *A. cupaniana*; in *A. caryophyllea* the spikelet length is 2,5 mm, vs. 2 mm; lemma/glume ratio 3:4, vs. 5/7; glume apex acute, vs. apex obtuse; callus bearded, vs. glabrous.

SYNONYMS:

Aira bicolor Schumach. = **Tricholaena monachne**
caerulea L. = **Molinia caerulea**
caespitosa L. (or Muhl. ?) = **Deschampsia caespitosa**
capensis (Thunb.) Steud., non L. f. = **Koeleria capensis**
flexuosa L. = **Deschampsia flexuosa**
indica L. = **Sacciolepis indica**
latifolia (Hochst. ex A. Rich.) Steud.
 = **Deschampsia caespitosa** subsp. **caespitosa**
latigluma Steud. = **Aira caryophyllea**
mucronulata Sennen = **A. caryophyllea**
pictigluma Steud. = **Pentameris pictigluma**
subviolaceum Ehrenb. ex Trin. = **Sporobolus minutus**

(AIROCHLOA)

Airochloa alopecurus (Nees) Nees, incl. var. *brevifolia* Nees
 = **Koeleria capensis**
capensis (Thunb.) Nees = **K. capensis**
uniflora Hochst. = **K. capensis**

(ALECTORIDIA)

Alectoridia quartiniana A. Rich. = **Arthraxon hispidus**

ALLOEOCHAETE / 6

Genus of 6 species in E and S Tropical Africa. Perennial tufted herbs with mainly basal leaves; leaf blades disarticulating from the sheath; sheath bases densely hairy to tomentose; inflorescence narrow with branches branched and spikelets compressed; lemmas with tufted hairs and awned (Quattrocchi, CRC World dictionary of grasses 1: 80–81, 2006; Kellogg in Kubitzki, ed., Fam. & gen. vascul. pl. 13: 404, 2015). Treated in Fl. Zambes. 10/2: 9–12, 1999.

KABUYE, C. H. S. & S. A. RENVOIZE (1975). The genus *Alloeochaete*, tribe Danthonieae (Gramineae). *Kew. Bull.* 30: 569–577.

Alloeochaete andongensis (Rendle) C. E. Hubb.; Kabuye & Renvoize, o.c.: 574–575. – Icon.: Hook. Ic. Pl. 35: pl. 3418, 1940; García de Orta, Sér. Bot. 1: pl. I & II after p. 92, 1973.

bas.: *Danthonia andongensis* Rendle

Tufted perennial herb, very elegant, glabrous, with strong, densely fibrous rhizome; culms springing from among the closely massed last year's sheaths, erect, to 60 cm tall; basal leaf sheaths hardened, shiny; blades linear, 12–30 cm × 4 mm, rigid, apex pungent; inflorescence a narrowly oblong panicle, 10–20 × 4 cm, branches ascending with spikelets from the base; spikelets lanceolate, 10–15 mm long, pale straw-yellow.

Rocks; 1000 m alt.

A. geniculata Kabuye; Strugnell & al., Checklist spermat. Mt. Mulanje, Malawi: 145, 2006.

Tufted perennial herb to c. 65 cm long; culms slender, semi-procumbent; outer leaf sheaths breaking up into a 5 cm deep cushion of fibres, inner sheaths glabrous; blades c. 16,5 cm long, 3,5 mm wide; inflorescence a lax lanceolate panicle to 25 cm long; spikelets lanceolate, to 15 mm long, straw-coloured tinged with purple.

Grassland; shrubby hillsides and amongst rocky slabs; on shallow soil over rocks; c. 2000 m alt.

Very close to *A. gracillima*.

A. gracillima Kabuye; Strugnell & al., Checklist spermat. Mt. Mulanje, Malawi: 145, 2006.

Tufted perennial herb to 70 cm tall; culms slender, bulbous at base; leaf sheaths woolly; leaf blades linear, to 30 cm × 4–6 mm, minutely hairy beneath, glabrous above; inflorescence a contracted, linear panicle to 16 cm long, purple; spikelets linear-lanceolate, to 12 mm long.

In shallow peaty soils among rocks; c. 2100 m alt.

A. namuliensis Chippind.; Harris & al. in Kew Bull. 66: 249, 2011; Darbyshire & al. in PhytoKeys 136: 78, 2019. – Icon.: J. S. Afric. Bot. 11: 103, 1945.

Densely tufted perennial herb; culms to 80 cm tall, with bulbous base; outer leaf sheaths shiny, breaking up into fibres, inner ones densely tomentose with dirty white hairs; leaf blades linear, pungent, 17–45 cm × 6 mm; inflorescence a broadly ovate panicle 13–14,5 cm long, branches spreading, with spikelets ± from the base; spikelets oblong, 6–12 mm long, straw-coloured, tinged with purple.

Grassland in thin soil covering granite rocks; 1500 m alt.

A plant from the mountain region of Mt Chipero, Mt Mabu, Mt Namuli in N. Mozambique, with several endemics, e.g., *Crotalaria namuliensis*, *Isoglossa namuliensis*, *Helixanthera schizocalyx*.

ALLOEOCHAETE

A. oreogena Launert; Strugnell & al., Checklist spermat. Mt. Mulanje, Malawi: 145, 2006. – Icon.: Launert, Garcia de Orta, Sér. Bot. 1: pl. II after p. 92, 1973; Fl. Zambes. 10/2: 8, 1999.

Perennial tussocky herb to 2 m tall, with a large tree trunk-like structure to 1,5 m tall and formed from a compact mass of culms, dead fibrous leaf sheaths and woolly hairs; leaf blades linear to 1,2 m long, 2 cm wide, drooping; inflorescence a dense panicle, oblong to lanceolate, 20–42 cm long; spikelets linear-lanceolate, 15–26 mm long, green tinged with purple.

Grassland, by rocky streamsides; steep rocky grassy hillsides amongst rocks; c. 2100 m alt.

A. ulugurensis Kabuye

Perennial tufted herb to 1 m tall; culms narrowed to the base with a vertical rhizome to 2 mm Ø; leaf sheaths papery; blades linear, to 70 cm long, 8 mm wide; inflorescence a small, contracted, lanceolate-ovate-oblong panicle 12–14 cm long, 6 mm wide; spikelets linear-lanceolate, to c. 10 mm long (awn excluded); and differs thus from *A. oreogena* (inflorescence 20–42 cm long, spikelets 20–26 mm long); *lemmas without side tufts of hairs*.

On mountain peak (Uluguru Mts).

ALLOTEROPSIS / 5

Genus of 5 species in the Old World tropics and subtropics: Africa, Asia and Australia.

Inflorescence of unbranched branches with spikelets borne on one side.

Alloteropsis angusta Stapf; Fl. Trop. E. Afr., Gramin. 3: 615–616, 1982; Fl. Zambes. 10/3: 60, 1989; van der Zon, Gramin. Cameroun 2: 256, 1992; Lye & al. in Lidia 4: 157, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 432–433, 2013.

Perennial straggling herb; culms slender, wiry 0,5–1 m long; basal leaf sheaths ± glabrous, not bulbously thickened; blades 5–15 cm long, 1–2 mm wide; inflorescence of 2–3 digitate slender racemes 4–13 cm long; spikelets not crowded, ± ovate, 2,5–4 mm long, pointed, dark green.

Swamps, wet swamp with *Miscanthus*; seasonally wet grassland; 1100–2000 m alt.

Perhaps only an impoverished form of *A. semialata*.

A. cimbicina (L.) Stapf; Friis & Vollesen in Willdenowia 14: 365, 1984; Klaasen & Craven, Checklist grasses Namibia: 7, 2003 (map); Agnew, Field key upl. Kenya grasses: 45, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 433, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 117, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 618, 1982; Fl. Zambes. 10/3: 63, 1989; van der Zon, Gramin. Cameroun 2: 257, 261 (map), 1992; Thulin, Fl. Somalia 4: 225, 1995; Fl. Eth. & Eritrea 7: 217, 1995; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 99, 2002; Fl. China 22, Ill.: 727, 2007.

bas.: *Milium cimbicinum* L.

syn.: *Alloteropsis latifolia* (Peter) Pilg.; *A. quintasii* (Mez) Pilg.; *Axonopus cimbicinus* (L.) P. Beauv.; *Ax. latifolius* Peter; *Urochloa cimbicina* (L.) Kunth; *U. quintasii* Mez; *U. fasciculata* (Roem. & Schult.) Kunth; *Panicum cimbicinum* (L.) Retz.; *P. fasciculatum* Lam. 1798, nom. illeg.; *Oplismenus fasciculatus* Roem. & Schult.; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

ALLOTEROPSIS CIMICINA

Annual tufted herb; culms erect or ascending 0,3–1,2 m tall, nodes hairy; leaf blades clasping the stem at base, narrowly lanceolate-ovate, 3–15 × 0,5–2 cm, margins tuberculate-ciliate; inflorescence of 4–11 racemes, usually in a whorl; racemes 7–25 cm long, the lowest part bare; spikelets ± ovate, 4–5 mm long.

Old (dryland) cultivations; wet flushes over rocky outcrops of basement complex, with scattered *Terminalia brownii*, *Acacia*, *Commiphora*, *Seasamothamnus rivae*; dry open places, particularly on old farmland; open savanna woodland, often bordering damp tracks; sandy soil among rocks; 0–1900 m alt.

Namibia, Botswana, S. Africa; Madagascar; India, Sri Lanka, E-wards to China, New Guinea, N Australia, Pacific Islands.

A. paniculata (Benth.) Stapf; Renier Fl. Kwango 1: 35, 1948; van der Zon, Gramin. Cameroun 2: 258, 261 (map), 1992; Duarte & al. in Portugal. Acta Biol. 19: 434, 2000; Lisowski, Fl. Rép. Guinée 1: 447, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011; Sosef in Pl. Ecol. Evol. 152: 100, 2019 (Gabon). – Icon.: Bosser, Gramin. pât. cult. Madagascar: 146, 1969; Poilecot in Boissiera 50: 419, 1995; Fl. Mascareignes 203, Gramin.: 140, 2018; Ibrahim & al., Grasses Mali: 26, 2018; César & Chatelain, Fl. ill. Tchad: 228, 2019.

bas.: *Urochloa paniculata* Benth.

syn.: *Axonopus paniculatus* (Benth.) A. Chev.; *Echinochloa paniculata* (Benth.) Roberty; *Panicum benthamii* Steud. 1853, nom. superfl.; *Oplismenus benthamii* C. Cordem. 1895, nom. superfl.; *Mezochloa aubertii* (Mez) Butzin; *Panicum aubertii* Mez

Annual herb, decumbent often forming large tufts; culms 0,6–1,5 m long, nodes glabrous; leaf blades narrowly lanceolate, ± amplexicaule at base; inflorescence of 8–25 racemes, usually in 2 or more whorls; racemes 9–20 cm long with spikelets nearly to base; spikelets narrowly elliptic, c. 4 mm long.

Moist soils; marshy places; ricefield (fallow); river sides; sandy river banks; with *Paspalum scrobiculatum*, *Leersia hexandra*, *Leptochloa caerulea*, *Chloris robusta*, *Panicum laxum*; 0–1200 m alt.

Mauritius, Madagascar, Réunion.

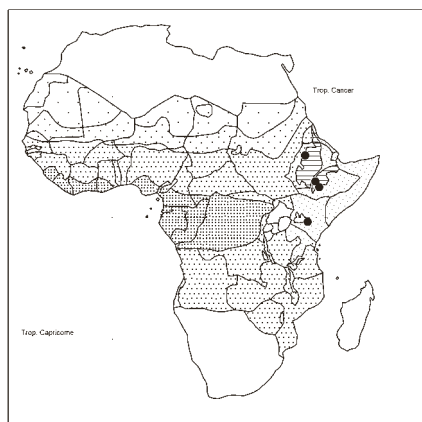
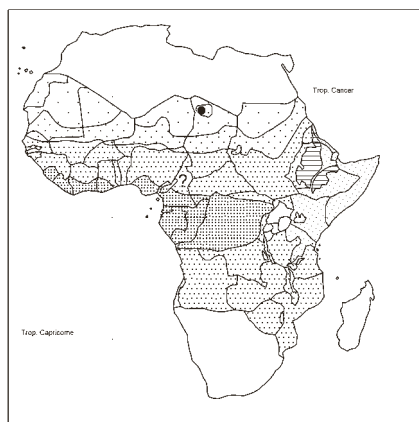
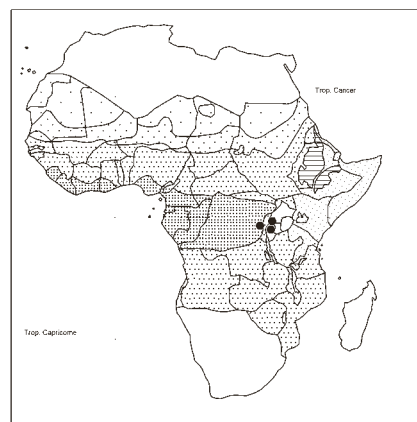
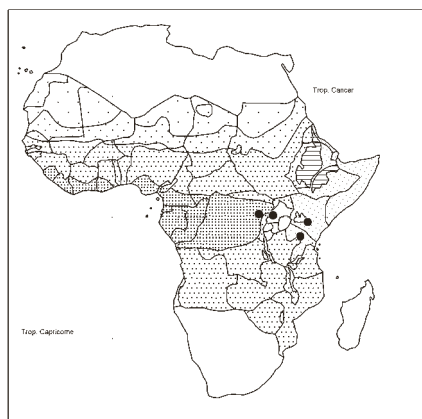
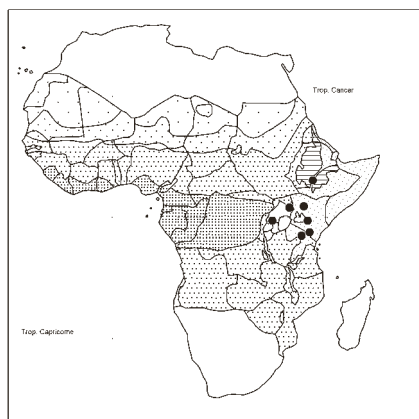
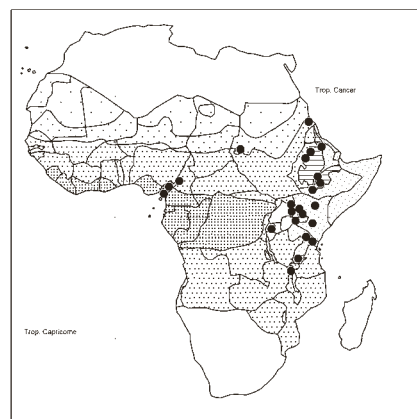
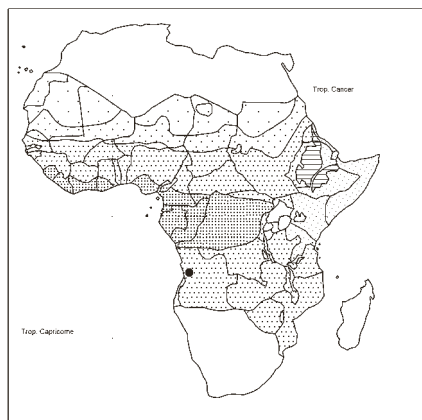
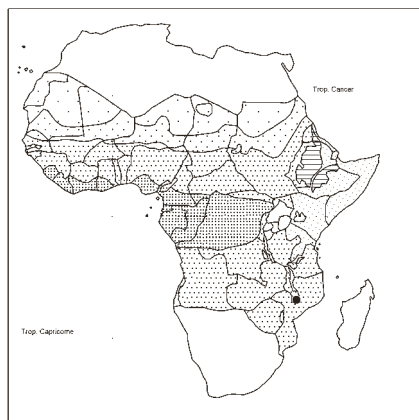
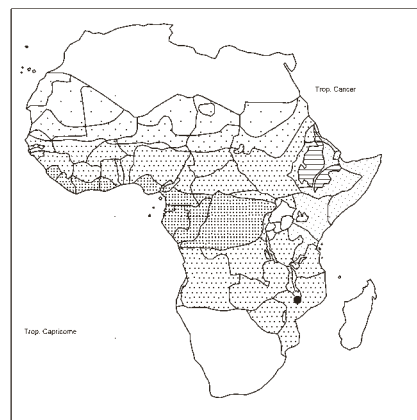
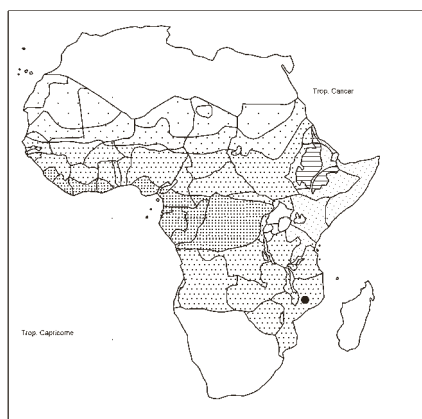
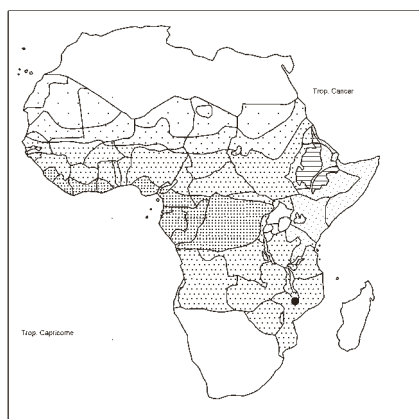
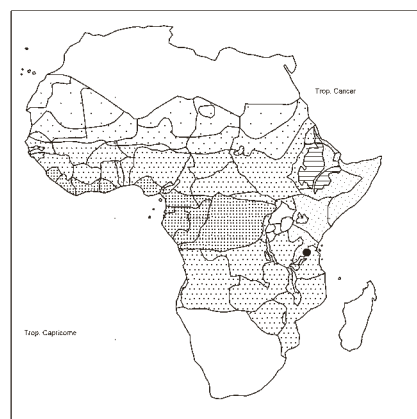
A. papillosa Clayton; Siebert & al. in Bothalia 34: 70, 2004; Agnew, Field key upl. Kenya grasses: 45, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 433, 2013.

Perennial tufted herb; culms 40–70 cm tall; basal leaf sheaths silky hairy, ± bulbously thickened; blades linear, 4–25 cm × 2–10 mm, margins tuberculate-ciliate; inflorescence of 4–10 racemes, usually in 1 whorl; racemes 3–20 cm long, base often bare; spikelets narrowly ovate, 2,5–5 mm long.

Seasonally wet grassland, particularly on black clay; 0–2000 m alt.

The plant combines the vegetative habit of *A. semialata* but with inflorescence and spikelet characters of *A. cimbicina*. Hybrid origin possible (Fl. Trop. E. Afr., Gramin. 3: 617, 1982).

A. semialata (R. Br.) Hitchc.; Renier, Fl. Kwango 1: 34, 1948; Liebenberg & Fossey in Bot. J. Linn. Soc. 137: 243–248, 2001; Fl. China 22, Texts: 519, 2006; Agnew, Upl. Kenya wild flow., ed. 3: 433, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: Robyns, Fl. agrost. Congo belge 2: 59, 1934; Bosser, Gramin. pâtur. cult. Madagascar: 350, 1969; Burrows & Willis, Pl. Nyika Plateau, Malawi: 339, 2005; van der Zon, Gramin. Cameroun 2: 257, 261 (map), 1992; Fl. Eth. & Eritrea 7: 217, 1995; Fl. China 22, Ill.: 728, 2007 (2 vars.); Lisowski, Fl. Rép.

*Agrostis sclerophylla**Agrostis stolonifera**Agrostis taylori**Agrostis trachyphylla**Agrostis volkensii**Aira caryophylla**Alloeochaete andongensis**Alloeochaete geniculata**Alloeochaete gracillima**Alloeochaete namuliensis**Alloeochaete oreogena**Alloeochaete ulugurensis*

ALLOTEROPSIS SEMIALATA

Guinée 2: fig. 529, 2009; Malaisse & al., Copper-Cobalt flora upper Katanga & Copperbelt: 380, 2016.

bas.: *Panicum semialatum* R. Br.

syn.: *Urochloa semialata* (R. Br.) Kunth; *Paspalum semialatum* (R. Br.) Eyles; etc.

Perennial densely tufted herb shortly rhizomatous; basal sheaths silky pubescent to tomentose, often bulbously thickened; culms 0,2–1,5 m tall; leaf blades linear, 10–50 cm × 1–10 mm; inflorescence of 2–8 racemes, digitate; racemes 2–22 cm long, with well spaced spikelets to base; spikelets narrow, 5–7 mm long, pointed yellow to purple.

Seasonal swamps; open deciduous bushland and grassland, often on heavy soils; also clay soils; open places in savanna woodland *Protea* grassland; high plateau and copper steppe savannas; dembo; miombo; 20–2600 m alt.

Old World tropics and subtropics; S. Africa; Madagascar; India, Sri Lanka, Himalaya, E-wards to Malaysia, China, Australia, Pacific islands.

Polymorphic species; “unique among grasses in possessing leaf anatomy corresponding to both C₃ and C₄ photosynthetic types. These physiological variants correspond very approximately to the color variants recognized below, which have been raised to subspecific rank for that reason. However, other morphological characters that have been used to separate the subspecies in South Africa do not result in a division into two taxa in China, so the subspecies are not upheld here. Investigations in South Africa have shown var. *eckloniana* to be diploid (2n = 18), whereas var. *semialata* comprises a polyploid series from tetraploid to octoploid” (Fl. China 22: 519, 2006).

Two subspecies are distinguished, the distinguishing characters given in Fl. Zambes. 10/3: 60–61, 1989, are:

– leaf blade narrow, rolled upwards, tapering gradually to apex, and sparsely hairy; nerves of basal sheaths usually enlarged (but often stripped off during collection to reveal inner sheaths which always have slender nerves); spikelets loosely arranged = subsp. **semialata**;

– leaf blade broad, flat, densely hairy, narrowing abruptly at apex; nerves of basal sheaths slender; spikelets congested = subsp. **eckloniana**.

– Subsp. **eckloniana** (Nees) Gibbs Russ. [bas.: *Bluffia eckloniana* Nees; syn.: *Alloteropsis semialata* var. *ecklonii* (Stapf) Stapf; *A. eckloniana* (Nees) Hitchc.; *A. semialata* var. *eckloniana* (Nees) C. E. Hubb.; *Axonopus semialatus* (R. Br.) Hook. f. var. *ecklonianus* (Nees) Peter; etc.]; with C₃ photosynthesis; in Africa from Tanzania to S. Africa; Himalaya to S. China, Pacific islands;

– subsp. **semialata** [syn. *Pterochlaena catangensis* Chiov.; *Alloteropsis homblei* Robyns; *A. gwebiensis* Stent & J. M. Rattray; etc. See World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew]; with C₄ photosynthesis; in tropical Africa, Asia, Australia, Pacific islands.

SYNONYMS:

Alloteropsis eckloniana (Nees) Hitchc.

= **Alloteropsis semialata** subsp. **eckloniana**

gwebiensis Stent & J. M. Rattray = **A. semialata** subsp.

semialata

homblei Robyns = **A. semialata** subsp. **semialata**

latifolia (Peter) Pilg. = **A. cimicina**

quintasii (Mez) Pilg. = **A. cimicina**

semialata var. *ecklonii* (Stapf) Stapf = **A. semialata** subsp. **eckloniana**

ALOPECURUS / I

Genus of 29 species (Doğan, o.c.; but 50 according to Agafonov & al. in Feddes. Repert, 131: 141, 2020) in “almost all non-tropical regions of both hemispheres and, to a certain extent, in the alpine tropics with its main distribution, in southwest Asia”. The estimate of the number of species varies according to the authors, e.g., between 40 and 50 species (Fl. China 22, Texts: 365, 2006), 25–30(–50) species according to Quattrocchi (CRC World dictionary of grasses 1, A–D: 84, 2006), 52 species in north temperate regions and S. America (Kellogg in K. Kubitzki, ed., Fam. & gen. vascul. pl. 13: 254, 2015), whereas 8 species are recognised for Africa by World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew (2015).

DOĞAN, M. (1999). A concise taxonomic revision of the genus *Alopecurus* L. (Gramineae). *Turkish J. Bot.* 23: 245–262.

Alopecurus baptarrhenius S. M. Phillips – Icon.: Fl. Eth. & Eritrea 7: 53, 1995.

Annual or short-lived perennial herb; culms erect or ascending, 10–30 cm long; leaf blades narrowly linear, to 10 cm × 1–3 mm; inflorescence a cylindrical, linear-oblong panicle 2,5–4,5 cm long; spikelets elliptic, 3–4,5 mm long; *anthers bright orange-brown* clothing the panicle and persisting.

Shallow water; wet mud of streams and lakes; locally abundant; 2700–4000 m alt.

Very closely related to *A. aequalis* Sobol., a “wide-spread semi-aquatic species of north temperate regions” to the Andes.

The hybrid **Alopecurus arundinaceus** Poir. × **A. pratensis** L., a single specimen, is reported from Ethiopia in Bale, on marshy ground at 3000 m alt. (Fl. Eth. & Eritrea 7: 53, 1995). “It was presumably carried by migratory birds from the Baltic region where it occurs frequently.” It is a more robust plant than *A. baptarrhenius* and is readily distinguished by its more robust tufted habit (c. 1 m tall), larger spikelets (5 mm) and acute glumes.

SYNONYMS:

Alopecurus monspeliensis L. = **Polypogon monspeliensis**
typhoides Burm. f. = **Pennisetum glaucum**
ventricosus (Gouan) Huds. = **Gastridium ventricosum**

(AMPHILOPHIS)

Amphilophis feracidula Stapf 1916 = **Bothrichloa radicans**
glabra (Roxb.) Stapf, incl. var. *haenkei* (J. Presl)

E. G. Camus & A. Camus = **B. bladhii**

haenkei (J. Presl) Haines = **B. bladhii**

insculpta (Hochst. ex A. Rich.) Stapf = **B. insculpta**

insculpta var. *vegetior* (Hack.) Stapf = **B. bladhii**

intermedia (R. Br.) Stapf, incl. var. *acidula* (Stapf) Stapf

= **B. bladhii**

odorata (Lisboa) A. Camus = **B. bladhii**

radicans (Lehm.) Stapf = **B. radicans**

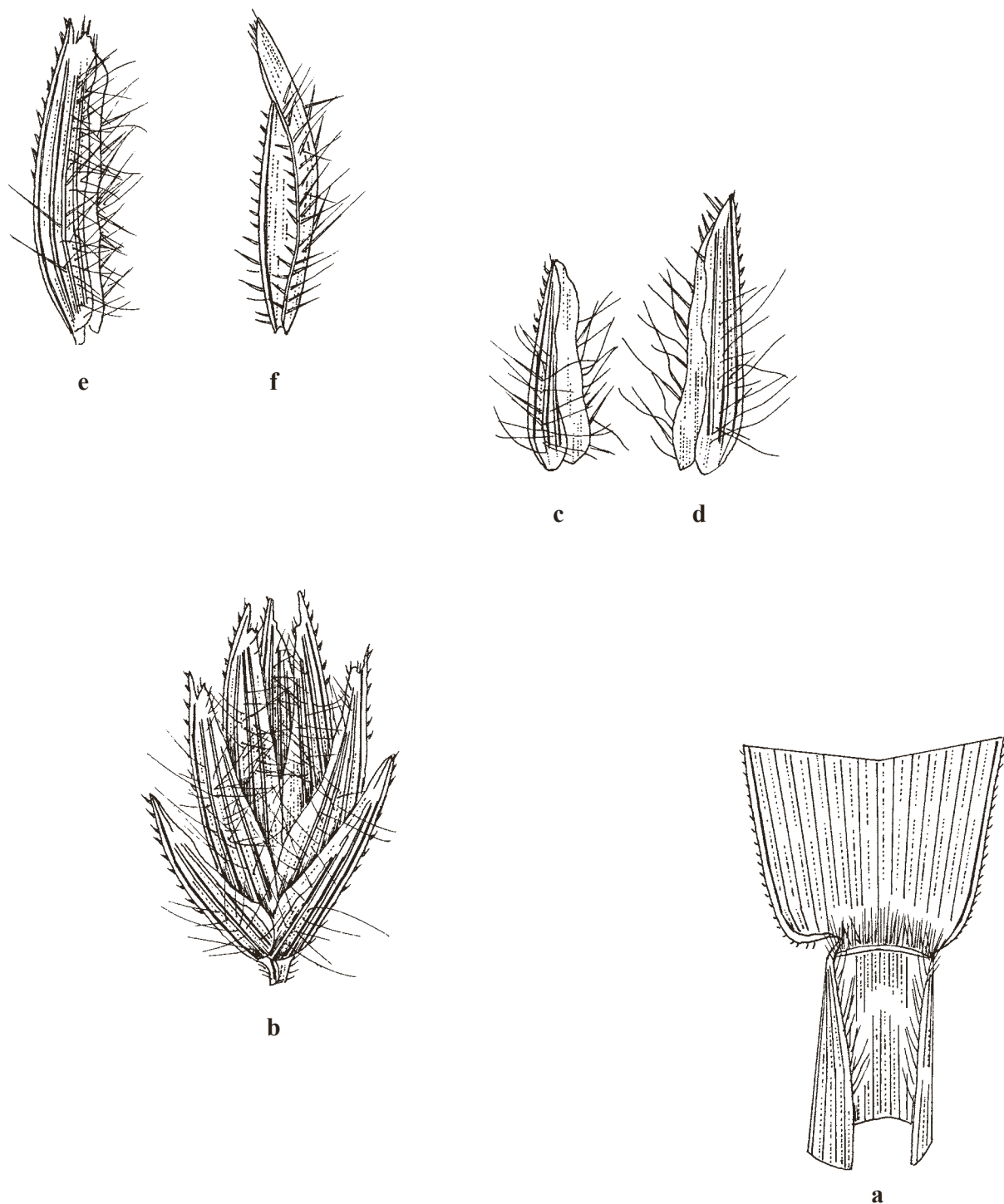


Plate 1. *Aeluropus lagopoides* (L.) Trin. ex Thwaites, see p. 25
 a: ligule; b: spikelet (×15); c–d: glumes lower and upper; e–f: lemma and palea.

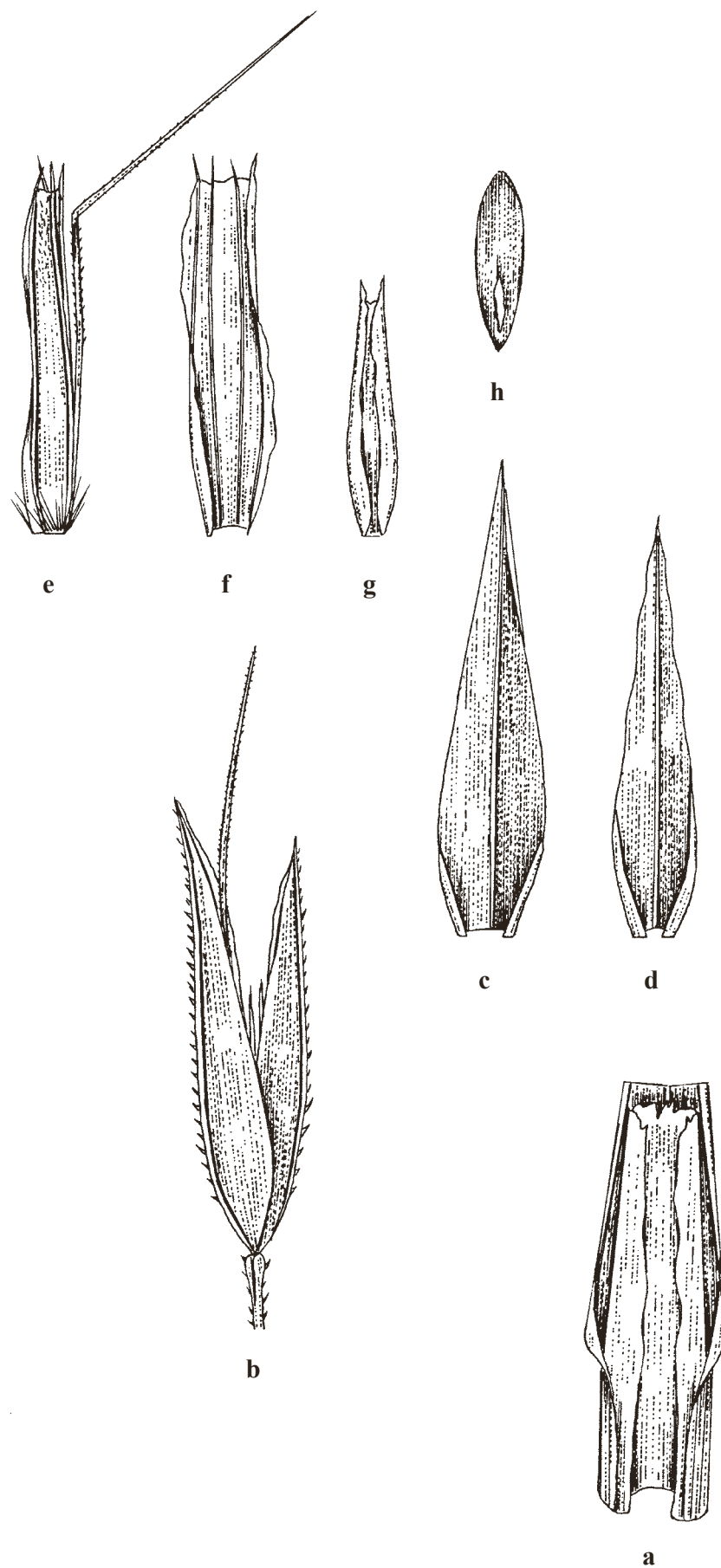


Plate 2. *Agrostis quinqueseta* (Steud.) Hochst., see p. 30
a: ligule; b: spikelet; c-d: glumes lower and upper; e-f: lemma lateral and ventral view; g: palea; h: caryopsis.

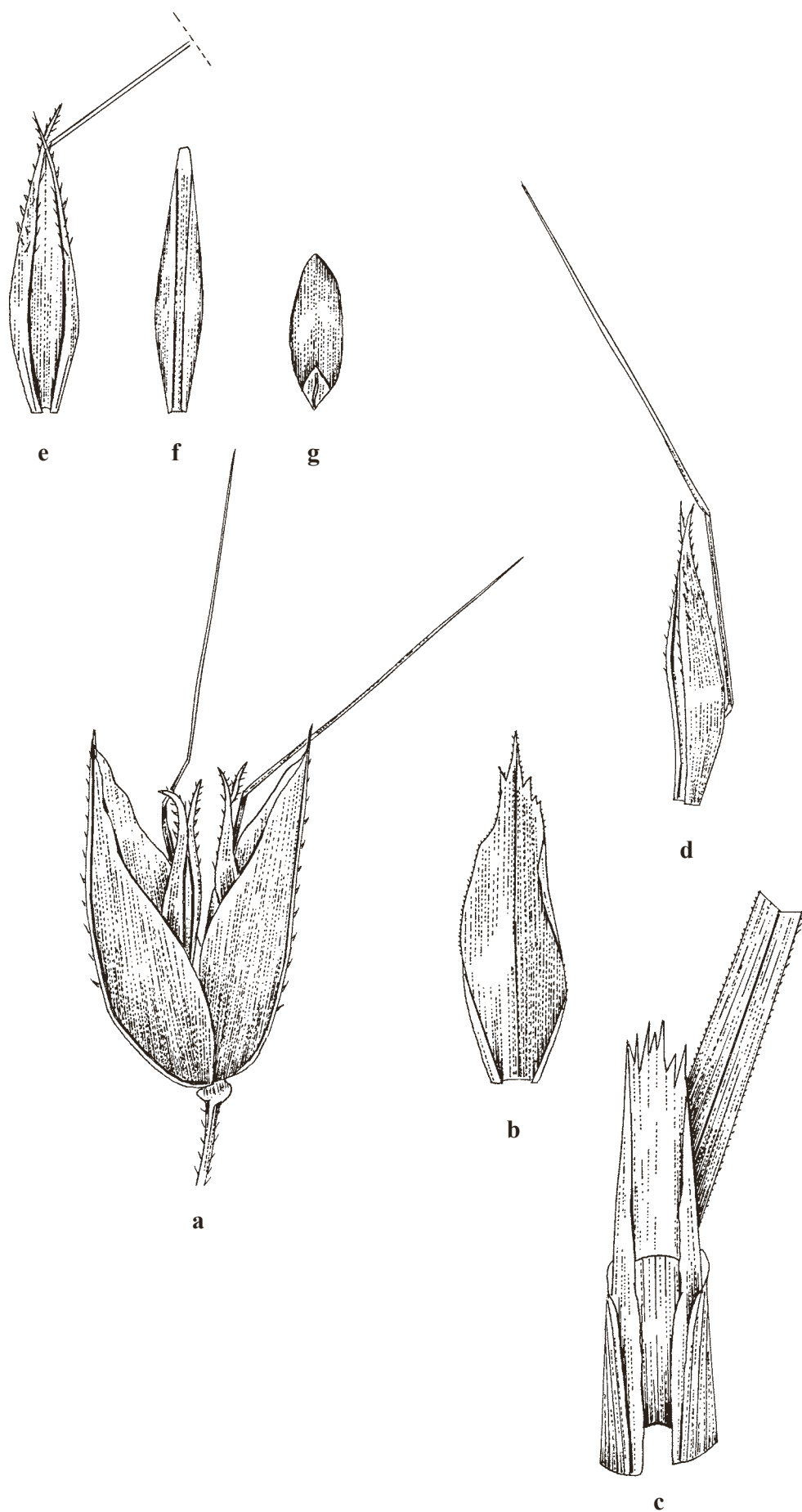


Plate 3. *Aira caryophyllea* L., see p. 32
 a: spikelet ($\times 15$); b: glume; c: ligule; d: lemma; e: lemma with awn; f: palea; g: caryopsis.



Plate 4. *Anadelphia afzeliana* (Rendle) Stapf, see p. 41
a: habit; b: ligule; c: inflorescence; d: spikelet; e: rachis; f-g: glumes; h: lemma;
i: fertile lemma apex lobed with twisted column; j: floret.

ANADELPHIA / 15

Anadelphia Hack. 1885. Syn.: *Andropogon* L. subgen. *Anadelphia* (Hack.) Hack.; *Andropogon* sect. *Pobeguinea* Stapf; *Monium* Stapf.; *Pobeguinea* (Stapf) Jacq.-Fél.

Genus of 14 species, in tropical Africa.

Inflorescence axes unbranched, with few spikelets widely separated on the axis (Kellogg in K. Kubitzki, ed., Fam. & gen. vascul. pl. 13: 308, 2015).

Anadelphia afzeliana (Rendle) Stapf; Renier, Fl. du Kwango 1: 31, 1948 (as *A. arrecta*); Fl. Gabon 5 bis: 12–13, 1999; Lisowski, Fl. Rép. Guinée 1: 447, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 245, 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 504 (map), 505, 1992; Poilecot in Boissiera 56: 628, 1999 (Niger); Poilecot, Guide Liber. Grasses: 9, 2015; Velayos & al., Fl. Guinea Ecuat. 12: 151, 2015; Vande weghe & al., Pl. fleurs Gabon: 174, 2016; Ibrahim & al., Grasses Mali: 27, 2018; César & Chatelain, Fl. ill. Tchad: 263, 2019. – Pl. 4.

bas.: *Andropogon afzelianus* Rendle

syn.: *A. ericocoleus* K. Schum. 1897, nom. superfl.; *A. arrectus* Stapf; *A. glaucopurpureus* Stapf; *Anadelphia arrecta* (Stapf) Stapf; *Pobeguinea arrecta* (Stapf) Jacq.-Fél.; *P. afzeliana* (Rendle) Jacq.-Fél.; *Hypogynium arrectum* (Stapf) Roberty

Perennial, densely tufted, bluish green herb 1–2 m tall; culms slender, basally branched; leaves linear, 30–40 cm × c. 5 mm; inflorescence a ramose panicle 30–35 cm long, racemes numerous, c. 2 cm long; 2 sessile spikelets per raceme, 5–9 mm long; pedicellate spikelets 8–12 mm long; spatheoles 2–3,5 cm long, tinged with yellow or brown.

Sandy or sandy-clayey humid soils; alluvial banks of streams with pools with *Oryza longistaminata*; *A. afzeliana* is associated with *Vetiveria nigriflora*, *Digitaria leptorhachis*, *Eragrostis atrovirens*, *Hyperthelia dissoluta*, etc.; soil on cuirasse; wooded savanna; meadows with *Loudetia*, *Rhytachne*; savanna with *Hyparrhenia diplandra*, *Andropogon macrophyllus* on mud compact or ± gravelly; meadow on conglomerate with *Monocymbium*, *Anadelphia leptocoma*, *Panicum* spp.; near coastal humid and compact sands; 0–1500 m alt.

A poor grazing grass but grazed when young. Used as thatching grass.

Cf. *A. chevalieri*, an annual plant, below.

A. bigeniculata W. D. Clayton; Lisowski, Fl. Rép. Guinée 1: 447, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011. – Icon.: Kew Bull. 20: 284, 1966; Poilecot in Boissiera 50: 633, 1995.

Annual herb 30–60 cm tall; culms erect, glabrous; leaves linear, 8–30 cm × 1–2 mm; inflorescence paniculate, narrowly elliptic, 15–25 cm long, of solitary racemes 1 cm long and enclosed in linear spatheoles 1,5–2,5 cm long; each raceme with 2–3 spikelets; sessile spikelets linear, c. 4 mm long, pedicellate spikelets 5 mm long.

Ironstone outcrops in thin soil; lateritic skeletal soil in wooded savanna; small depressions on rocky soil, with *Tripogon minimus*, *Andropogon curvifolius*, *Microchloa indica*, *Brachyachne obtusiflora*, *Parahyparrhenia annua*, *Loudetia togoensis*, etc.

A. chevalieri Reznik; Lisowski, Fl. Rép. Guinée 1: 447, 2009.

syn.: *Pobeguinea chevalieri* (Reznik) Jacq.-Fél.

Annual “handsome” herb to 1 m tall, of rapid growth; culms glabrous; leaf blades narrowly linear, 6–7 cm × 2 mm; inflorescence

ANADELPHIA CHEVALIERI

a scanty panicle 30 cm long, with 2 unequal racemes at each node; peduncles c. 3 mm long, ciliate; racemes with 2 sessile and 3 pedicellate spikelets, densely white-hairy; *sessile spikelets* oblong-linear, 12–13 mm long, *pedicellate spikelets* lanceolate, acute, 15–25 mm long; spatheoles c. 5 cm long, tinged with purple.

Humid meadows on sandstone slabs.

Close to *A. afzeliana*, a perennial plant with longer leaves, larger panicle, sessile and pedicellate spikelets small and spatheoles shorter.

A. funerea (Jacq.-Fél.) Clayton; Lisowski, Fl. Rép. Guinée 1: 447, 2009; Couch & al., Threatened habitats & tropical important plant areas (TIPAs) of Guinea, West Africa: Table A, 2019. – Icon.: Jacques-Félix in Rev. Int. Bot. Apol. Agric. Trop. 30: 187, 1950 (under *Monium*).

bas.: *Monium funereum* Jacq.-Fél. (n° 1850, lectotype).

Annual tufted herb 0,9–1 m tall; culms rooting at lower nodes; leaf blades linear, glabrous; inflorescence a long, narrow panicle of spatheoles and racemes; *pedicellate spikelets absent*; sessile spikelets c. 10 mm long, 1 in each raceme, awn, geniculate, of fertile lemma 10–12 cm long.

In mud and shallow water on impermeable lateritic plateau; low altitude.

A little-known species, distinguished from *A. macrochaeta* mainly by the *extraordinary long awn* (Clayton in Kew Bull. 20: 281, 1966). Not seen since 1937 (Couch & al., l.c.).

A. hamata Stapf; Fl. Gabon 5 bis: 13, 1999; Sosef & al., Checklist vascul. pl. Gabon: 181, 2006. – Icon.: Fl. Gabon 5: 195, 1962 (under *Pobeguinea*).

syn.: *Pobeguinea hamata* (Stapf) Jacq.-Fél.; *Hypogynium hamatum* (Stapf) Roberty; *Andropogon achtenii* Robyns

Perennial herb; culms slender, reddish, 0,5–1,25 m tall; leaf blades linear, pubescent, to 20 cm × 1,5–5 mm; inflorescence a loose panicle, interrupted, 30–60 cm long; spathes and spatheoles (c. 2,5 cm long) narrow; racemes exerted from the spatheole tip, peduncle longer than spatheole, filiform, 1–3 cm long; pedicels thin, ciliate, 4–5 mm long; *sessile spikelets* 2–4, c. 7 mm long; awn of fertile lemma 1,2–2 cm long; pedicellate spikelets 6–7 mm long.

Swampy meadows on leached sands.

A. leptocoma (Trin.) Pilg.; Fl. Gabon 5b: 13, 1999; Lisowski, Fl. Rép. Guinée 1: 447, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011; Poilecot, Guide Liber. Grasses: 8, 77, 81, 167, 2015; Schmidt & al. in Phytotaxa 304: 31, 2017. – Icon.: Rev. Int. Bot. Appl. Agric. Trop. 30: 181, 1950 (as *A. longifolia*); Poilecot in Boissiera 50: 631, 1995; idem, ibid. 56: 629, 1999; Ibrahim & al., Grasses Mali: 27, 2018. – Plate 5.

bas.: *Andropogon leptocomus* Trin.

syn.: *A. tenuiflorus* Stapf; *Anadelphia virgata* Hack.; *A. longifolia* Stapf; *A. publiglumis* Stapf; *A. tenuifolia* Stapf; *A. trisetata* Reznik; *Hypogynium leptocomum* (Trin.) Roberty; *Sorghum leptocomum* (Trin.) Kuntze

Perennial “handsome” herb 0,9–1,8–2 m tall with spreading rootstock; culms erect, flattened, glabrous, reddish; leaf sheaths glabrous, basal ones flattened; blades narrower than sheaths, linear, to 70 cm × 6 mm; inflorescence paniculate, loose, to 50 cm long with many short racemes, these 1–1,5 cm long; each raceme with 3–5 sessile spikelets 4–5 mm long; pedicellate spikelets 1–3 per raceme, 6–7 mm long; spikelets rarely pilose; awn geniculate, 8–16 mm long.

Savannas with *Loudetia phragmitoides* on humid soils; humus-bearing hollows on inselbergs with *Loudetia simplex*,

ANADELPHIA LEPTOCOMA

L. arundinacea, *Panicum griffonii*; in very dense stands; shallow soils; 50–1600 m alt.

Grass of low grazing value, but good for thatching.

A. liebighiana H. Scholz; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011. – Icon.: Willdenowia 7: 584, 1975 (details); Poilecot in Boissiera 50: 637, 1995.

Perennial herb 0,8–1 m tall; culms erect, glabrous; leaf sheaths glabrous; blades linear, 1–2 mm wide, apex setaceous; inflorescence paniculate, narrow, 25–30 cm long with solitary racemes 2–3 cm long, densely hairy, with 3–10 sessile spikelets each 5–6 mm long; pedicellate spikelets linear, 8–9 mm long.

Inselbergs, on thin soil, with *Loudetia simplex*, *L. arundinacea*, *Urelytrum muricatum*, *Schizachyrium sanguineum*, *Rhytachne triaristata*, etc. (Prombski & Brown in Candollea 50: 357, 1995).

A. lomaensis (A. Camus) Jacq.-Fél.; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011; Poilecot, Guide Liber. Grasses: 3, 14, 2015. – Icon.: J. Agric. Trop. Bot. Appl. 1: 211, 1954; Adam, Fl. descript. Mts Nimba 6: 2150, 1983; Poilecot in Boissiera 50: 635, 1995. – Pl. 6.

bas.: *Schizachyrium lomaense* A. Camus (species now often cited under this name).

Annual herb c. 20–25 cm tall; culms slender, simple, glabrous; leaf sheaths glabrous, basal ones flattened; blades linear, 11–12 cm × c. 2–3 mm, glabrous; inflorescence paniculate, very loose, narrow, with solitary erect racemes, 2–2,5 cm long, spatheoles purple; sessile spikelets c. 3 mm long, awn 11–12 mm long; pedicellate spikelets c. 4–5 mm long.

Humid swampy soils, meadows on humid rocks; 500–1900 m alt.

A. macrochaeta (Stapf) Clayton; Lisowski, Fl. Rép. Guinée 1: 447–448, 2009. – Icon.: Rev. Int. Bot. Appl. Agric. Trop. 30: 185, 1950 (details; under *Monium*).

bas.: *Monium macrochaetum* Stapf

syn.: *Hypogynium macrochaetum* (Stapf) Roberty

Annual slender herb 30–60 cm tall; inflorescence paniculate with spatheolate racemes; sessile spikelets 6–7 mm long with 2-dentate glume; awn geniculate, 4,5–6 cm long; *pedicellate spikelets absent*.

Ironstone outcrops, bowé.

A. polychaeta Clayton; Lisowski, Fl. Rép. Guinée 1: 448, 2009. – Icon.: Kew Bull. 20: 282, 1966.

Annual herb 40–80 cm tall; culms tufted, reddish; leaf blades linear, 10–30 cm × 1–5 mm, often involute; inflorescence paniculate with numerous spatheoles, 20–25 cm long; racemes single, to 2 cm long; sessile spikelets oblong, 2 per raceme, 5,5–7 mm long; awn 1,5–4 cm long; pedicellate spikelets linear, 6 mm long.

Damp grassy places.

A. pumila Jacq.-Fél.; Clayton in Kew Bull. 20: 283, 1966; Lisowski, Fl. Rép. Guinée 1: 448, 2009. – Icon.: Rev. Int. Bot. Appl. Agric. Trop. 30: 179, 1950; J. Agric. Trop. Bot. Appl. 5: 553, 1958.

syn.: *Hypogynium pumilum* (Jacq.-Fél.) Roberty

Annual tufted herb 15–60 cm tall; culms filiform; leaf blades narrowly lanceolate, 3–4 cm × 1–2 mm; inflorescence paniculate, loose, of distant racemes with filiform peduncles and subtended by spatheoles; sessile spikelets 4–6 per raceme, linear-lanceolate, 5,5–7 mm long; awn once geniculate, 2–4 cm long; pedicellate spikelets lanceolate, much longer and wider than sessile ones.

Dry sandy soils; hardpan; humid ridges on sandstone slopes.

ANADELPHIA

A. scyphofera Clayton – Icon.: Kew Bull. 20: 279, 1966; Fl. Zambes. 10/4: 142, 2002.

Annual herb; culms 10–40 cm tall, rounded, slender, ramose at base; leaf blades filiform, 3-edged, to 20 cm × 0,5 mm, glabrous; inflorescence paniculate, linear, to 30 cm × 0,5 mm Ø, glabrous, 3–4 noded, rays 1–4 per node; spatheoles 2,5–3,5 cm long; sessile spikelets 6–7 mm long; awn 12–14 mm long; pedicellate spikelets 2–4 mm long, reduced to the glumes.

Damp shallow soil over sandstone or laterite; lateritic dambo; c. 1400 m alt.

Remarkably similar to *A. macrochaeta* but upper glume awned, and pedicellate spikelets present. Distinguished from all other species of *Anadelphia* by a unique trumpet-shaped appendage at tip of the peduncle (to which the epithet alludes).

A. trepidaria (Stapf) Stapf; Clayton in Kew Bull. 20: 283, 1966; Lisowski, Fl. Rép. Guinée 1: 448, 2009. – Rev. Int. Bot. Appl. Agric. Trop. 30: 181 (as *Monium rufum*), 183 (as *M. congestum*), 185 (as *M. monianthum*), 1950 (details).

bas.: *Andropogon trepidarius* Stapf

syn.: *Monium trepidarium* (Stapf) Jacq.-Fél.; *Hypogynium trepidarium* (Stapf) Roberty; *Monium congestum* Jacq.-Fél.; *M. monianthum* Jacq.-Fél.; *M. rufum* Jacq.-Fél.

Annual herb 30–60 cm tall; culms slender; leaf sheaths tight, > 2,5 cm long; blades narrowly linear, 4–12,5 long, apex setaceous; inflorescence paniculate, loose, 15–30 cm long, to 5–10 cm wide; spatheoles very narrow, 1,2–2 cm long; racemes reduced to 1 sessile and 1 pedicellate spikelet, the sessile 3,5–5 mm long; awn 1,5–4 cm long.

Ironstone outcrops; savannas; humid plateau.

Grazed. Good for thatching.

A. trichaeta (Reznik) Clayton; Jacques-Félix in Rev. Int. Bot. Appl. Agric. Trop. 30: 174, 1950 (under *Pobeguinea*); Clayton in Kew Bull. 20: 277, 280, 1966; Lisowski, Fl. Rép. Guinée 1: 448, 2009.

bas.: *Monium trichaetum* Reznik

syn.: *Pobeguinea trichaete* (Reznik) Jacq.-Fél.; *Hypogynium trichaetum* (Reznik) Roberty

Annual slender herb 30–60 cm tall; inflorescence paniculate with racemes of only 1 sessile spikelet each, this 5,5–7 mm long; upper glume with awn 4–9 mm long, and lower glume produced into 2 awns to 5 mm long.

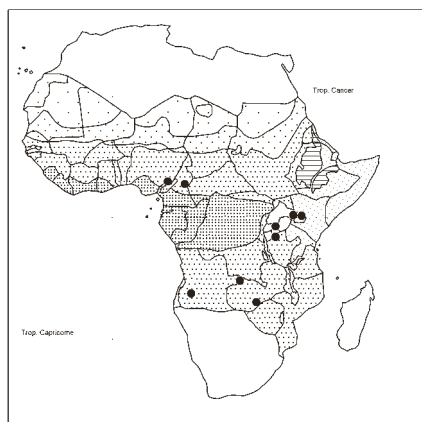
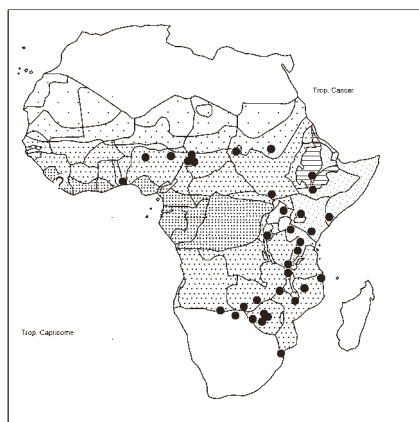
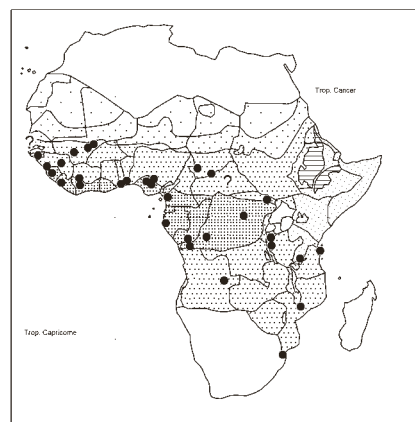
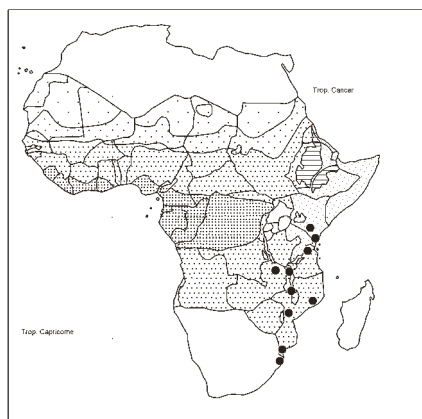
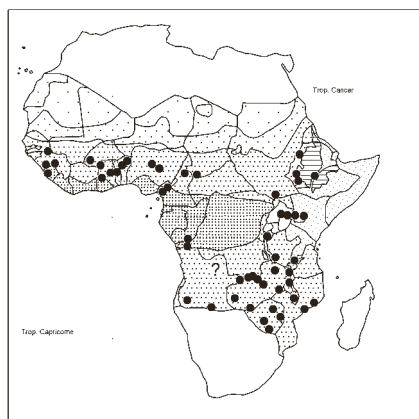
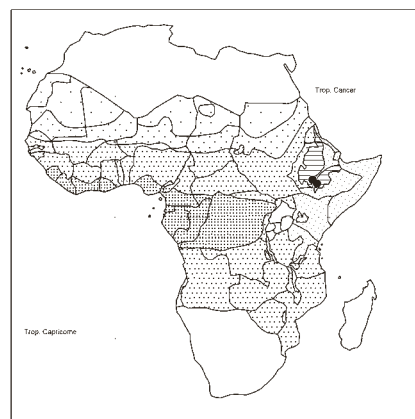
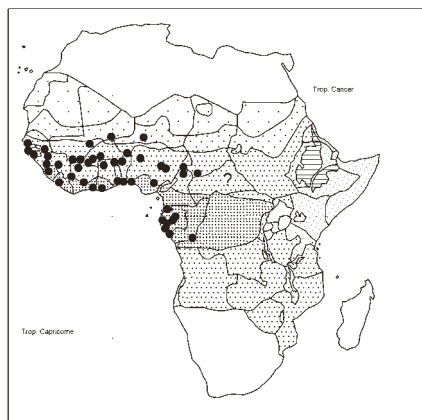
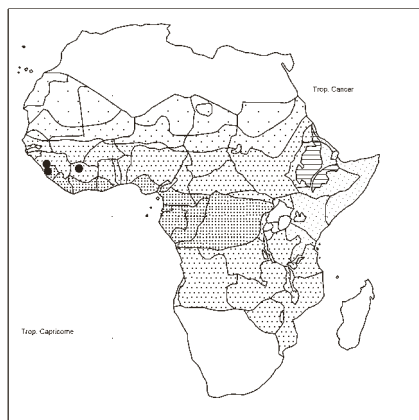
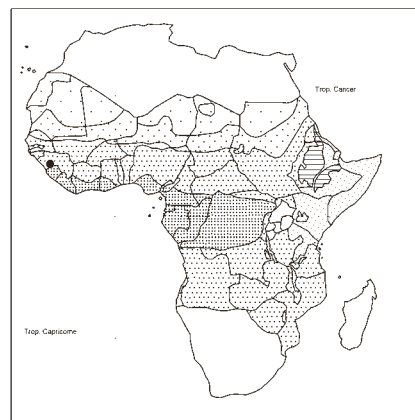
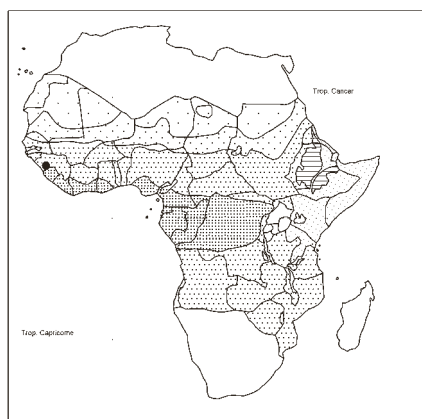
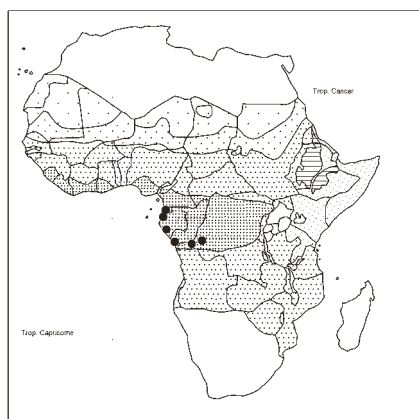
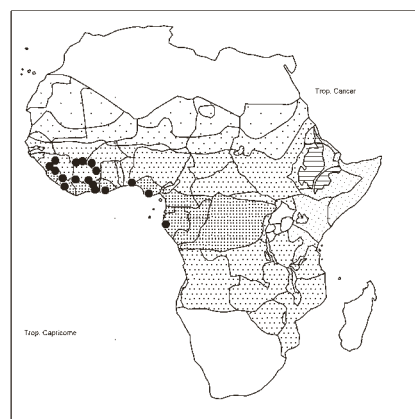
Shallow soils; ironstone outcrops.

A. trispiculata Stapf; Clayton in Kew Bull. 20: 276, 280, 1966; Fl. Gabon 5b: 13, 1999; Fl. Zambes. 10/4: 143, 2002; Lisowski, Fl. Rép. Guinée 1: 448, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011. – Icon.: Fl. Gabon 5: 195, 1962 (as *Pobeguinea gabonensis*); Poilecot in Boissiera 50: 627, 1995.

syn.: *Pobeguinea trispiculata* (Stapf) Jacq.-Fél.; *P. gabonensis* Koechlin; *Hypogynium trispiculatum* (Stapf) Roberty

Perennial tufted herb to 1,2 m tall; culms stout, erect, unbranched; leaf blades linear, 25–30 cm × 3–5 mm, glabrous except towards base; inflorescence paniculate, stiffly linear, branches appressed to main axis; spatheoles linear-lanceolate, 2–3 cm long; racemes exerted from side of spatheole, with 1 sessile spikelet 8–10 mm long, and 2 pedicellate spikelets each c. 10 mm long; pedicels filiform, short; awn 3–7 cm long.

Swampy savannas; locally abundant, forming dense stands with *Rhytachne rothboelliioides*, *Panicum parvifolium*, *P. congoense*,

*Alloteropsis angusta**Alloteropsis cimicina**Alloteropsis paniculata**Alloteropsis papillosa**Alloteropsis semialata**Alopecurus baptarrhenius**Anadelphia afzeliana**Anadelphia bigeniculata**Anadelphia chevalieri**Anadelphia funerea**Anadelphia hamata**Anadelphia leptocoma*

ANADELPHIA TRISPICULATA

Loudetia phragmitoides, *Paspalum scrobiculatum*, *Anadelphia afzeliana*, etc.; 0 – ? m alt

SYNONYMS:

Anadelphia arrecta (Stapf) Stapf = **Anadelphia afzeliana**
longifolia Stapf = **A. leptocoma**
pubiglumis Stapf = **A. leptocoma**
tenuifolia Stapf = **A. leptocoma**
triseta Reznik = **A. leptocoma**
virgata Hack. = **A. leptocoma**

(ANATHERUM)

Anatherum africanum (Franch.) Roberty
 = **Andropogon africanus**
cyrtocladum (Stapf) Roberty = **A. kelleri**
fulvibarbe (Trin.) Keng = **Chrysopogon fulvibarbis**
glabrum (Roxb.) Schult. = **Bothriochloa bladhii**
montanum (Roxb.) Schult. = **B. bladhii**
muricatum (Retz.) P. Beauv. = **Chrysopogon zizanioides**
zizanioides (L.) Hitchc. & Chase = **C. zizanioides**

ANDROPOGON / 39

Genus of about 100–126 species in temperate, subtropical and tropical regions worldwide (Quattrocchi, CRC world dictionary of grasses I, A–D: 108–132, 2006; Vorontsova & al., o.c.: 193, 2013; Kellogg in K. Kubitzki, ed., Fam. & gen. vascul. pl. 13: 313, 2015). It is a polymorphic genus. No global treatment exists. *Diectomis* Kunth is a “monotypic pantropical weedy genus with an unbranched inflorescence and pedicellate spikelets larger than the sessile spikelets”. It is recognised as separate from *Andropogon* by, e.g., Vorontsova & al. (o.c.), but treated as a part of *Andropogon* by Clayton and others; we follow the latter’s concept in including *Diectomis* in *Andropogon* (*A. fastigiatus* Sw.). The “genus as a whole would benefit from more comprehensive assessment of species limits” (Kellogg, l.c.). The “consistency of species concepts across broad geographical areas can be problematic”. A brief comparison between some Madagascar endemics and the most morphologically similar species in Africa is presented by Vorontsova & al. (o.c.)

Andropogon is one of the dominant grass genera of savannas, and *A. gayanus* is an important source of fodder for grazing animals. However, it is also an invasive weed in shady areas of savannas and open woodland worldwide. *Andropogon* species are used for thatching and in erosion control.

In our area two species (viz. *A. aridus* and *A. incomptus*) are known only from the type gathering.

MASHAU, A. C. & al. (2022). *Andropogon dewetii* (Poaceae: Panicoideae: Andropogoneae), a new species from South Africa. *Kew Bull.* 77: 293–299 (with key to other species).

VORONTSOVA, M. S. & al. (2013). Revision of *Andropogon* and *Diectomis* (Poaceae: Sacchareae) in Madagascar and the new *Andropogon itremoensis* from the Itremo Massif. *Kew Bull.* 68: 193–207.

Andropogon abyssinicus R. Br. ex Fresen.; Fl. Trop. E. Afr., Gramin. 3: 772–773, 1982; Puff & Sileshi, Pl. Simen: 251, 2005; Figueiredo & Smith, Pl. Angola: 195, 2008. – Icon.: Fl. Eth. & Eritrea 7: 323, 1995 (spikelet).

syn.: *A. polyatherus* Hochst. ex A. Rich., incl. var. *genuinus* subvar. *scabriglumis* Hack., subvar. *glabrescens* (Hochst. ex Steud.) Hack., subvar. *multinervis* (Hochst. ex Steud.)

ANDROPOGON ABYSSINICUS

Hack., var. *plagiopus* (Hochst. ex Steud.) Hack. subvar. *intermedius* Chiov.; *A. polyatherus* subvar. *apterus* Hack.; *A. glabrescens* Hochst. ex Steud.; *A. plagiopus* Hochst. ex Steud.; *Sorghum abyssinicum* (R. Br. ex Fresen.) Kuntze

Annual loosely tufted *annual* herb; culms geniculate ascending, 30–80 cm tall; leaf blades flat, 5–25 cm long, 1–7 mm wide; racemes terminal, paired, 1–15 cm long, usually villous; sessile spikelets 5–11 mm long; pedicellate spikelets 5–9 mm long, usually both glumes awned.

Open grassland; disturbed ground; weed of pasture and arable land; 1400–3000 m alt.

Confused with *A. amethystinus*, *A. distachyos* (perennial!).

A. africanus Franch.; Renier, Fl. Kwango 1: 27, 1948; Fl. Trop. E. Afr., Gramin. 3: 775–776, 1982; Fl. Zambes. 10/4: 63, 2002; Lisowski, Fl. Rép. Guinée 1: 448–449, 2009; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 245, 2011; Vorontsova & al. (2013): 195, (in table); Schmidt & al. in Phytotaxa 304: 32, 2017 (map). – Icon.: van der Zon, Gramin. Cameroun 2: 431, 432 (map), 1992; Poilecot in Boissiera 50: 557, 1995; idem, ibid. 56: 589, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 152, 2015; Ibrahim & al., Grasses Mali: 28, 2018; César & Chatelain, Fl. ill. Tchad: 256, 2019.

syn.: *A. prolixus* Stapf; *A. linearis* Stapf; *A. kalinaensis* Vanderyst 1920, nom. provis.; *A. incanellus* Clayton; *Anatherum africanum* (Franch.) Roberty

Perennial tufted herb; culms 0.5–2.5 m tall, usually branched; leaf blades flat or folded, linear, 10–40 cm × 2–7 mm, abruptly acute; inflorescence of *paired racemes* gathered into a loose false panicle; racemes 3–4.5 cm long; sessile spikelet 4–6 mm long; pedicellate spikelet 4–7 mm long; awn geniculate.

Seasonally flooded grassland; abundant and sometimes in almost pure stands; with *Vetiveria fulvibarbis*, *V. nigriflora*, *Setaria sphacelata*, *Andropogon perligulatus*, *A. fastigiatus*, *A. canaliculatus*, etc.; swampy hollows on inselbergs, rocky outcrops, lateritic pans with *Acroceras amplexans*, *Brachiaria distachyoides*, *Oryza brachyantha*, *Paspalum scrobiculatum*; savannas in lagoons with *Seteria sphacelata*, *Loudetiopsis ambiens*, *Anadelphia arrecta*, *Loudetia phragmitoides*, etc.; swampy meadow; wet sandy areas; river banks; near sea-level–1950 m alt.

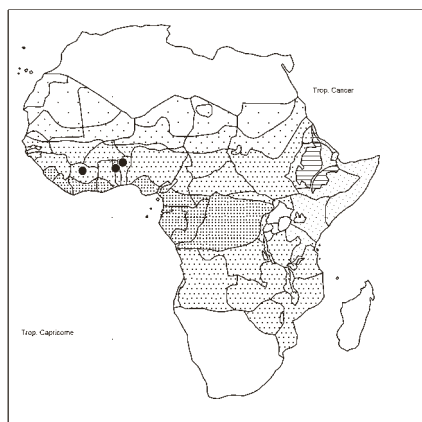
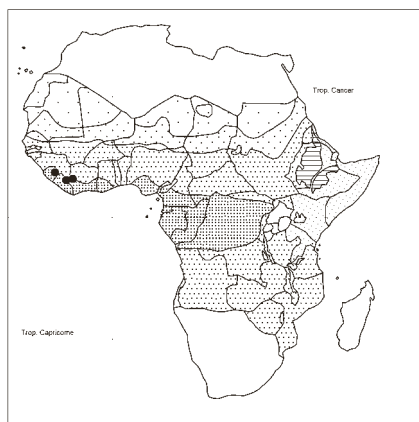
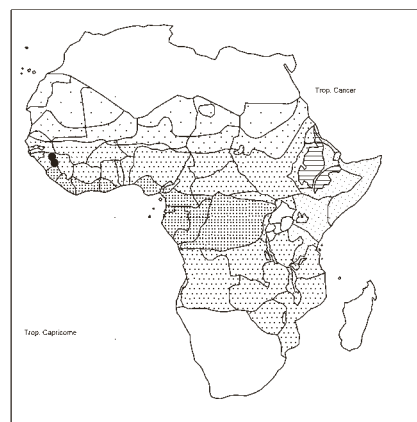
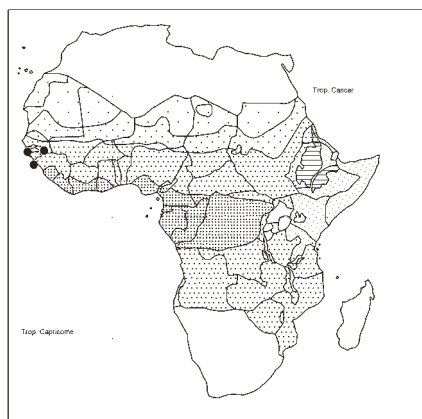
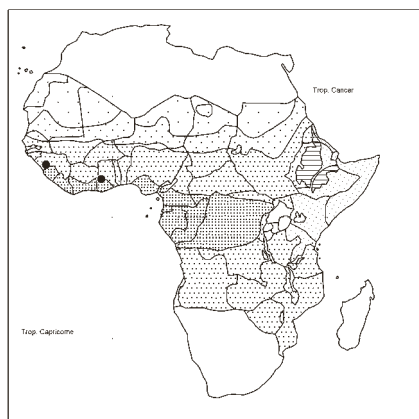
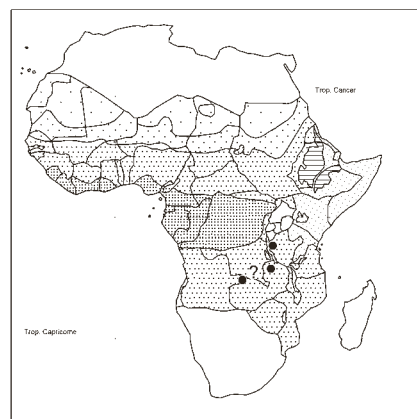
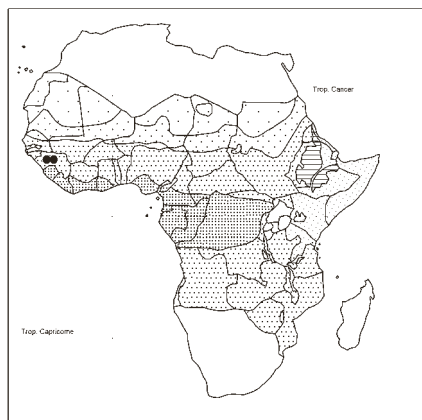
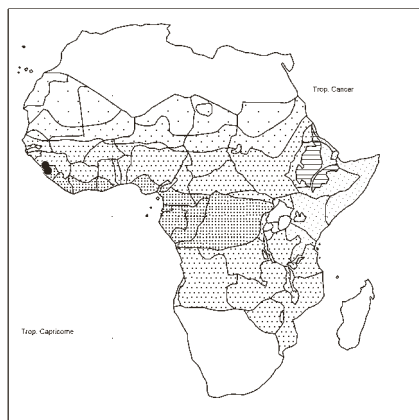
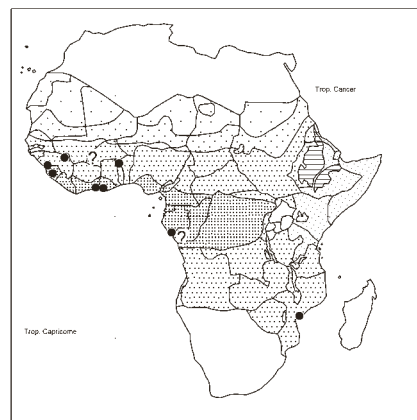
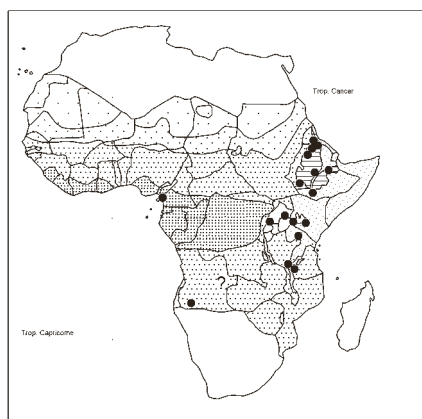
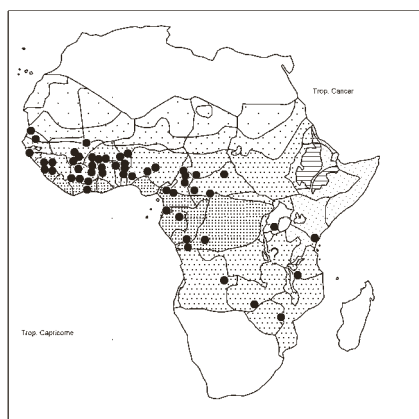
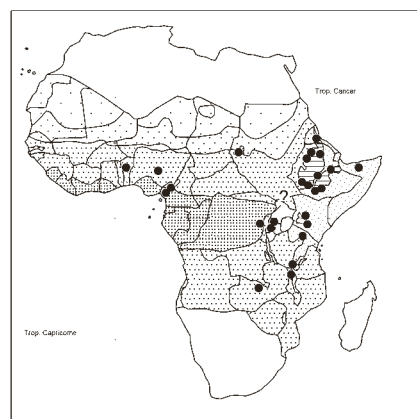
For inselbergs and *A. africanus* community, See Parmentier & al. in Belg. J. Bot. 139: 74, 2006; Müller in Folia Geobot. 42: 41, 2007.

Related to *A. eucomus* and *A. ligulatus*, but in *A. africanus* the racemes are not always so clearly plumose.

A. amethystinus Steud., excl. var. *breviaristatus* Hack. and var. *lima* (Hack.) Stapf (both = *A. lima*); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 54, 1955; van der Zon, Gramin. Cameroun: 427, 429, 1992; Thulin, Fl. Somalia 4: 260, 1995 (determination uncertain); Fl. Zambes. 10/4: 64, 66, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 338, 2005; Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: Troupin, Fl. Rwanda 4: 183, 1988 (details); Velayos & al., Fl. Guinea Ecuat. 12: 153, 2015. – Pl. 7.

syn.: *A. pratensis* Hochst. ex Hack., incl. subvar. *pilosus* Hack., and var. *pseudoabyssinicus* Chiov.; *A. humilis* Hochst. ex A. Rich.; *A. kilimandscharicus* Pilg.; *A. seemanianus* Pilg.; *A. homogamus* Stapf; *A. pilosellus* Stapf; *A. longipes* Hack.; *Sorghum amethystinum* (Steud.) Kuntze; *S. humile* (Hochst. ex A. Rich.) Kuntze; *S. longipes* (Hack.) Kuntze

Perennial herb, either *straggling with wiry rhizomes or in short dense tufts*; culms 8–80 cm long, branched below; leaf blades often falcate, 1–15 cm × 1–4 mm; racemes paired, terminal, 2–8 cm long, purplish; pedicels much longer than racemes; sessile

*Anadelphia liebighiana**Anadelphia lomaensis**Anadelphia macrochaeta**Anadelphia polychaeta**Anadelphia pumila**Anadelphia scyphofera**Anadelphia trepidaria**Anadelphia trichaeta**Anadelphia trispiculata**Andropogon abyssinicus**Andropogon africanus**Andropogon amethystinus*

ANDROPOGON AMETHYSTINUS

spikelets 5–8–12 mm long; pedicellate spikelets 4–8 mm long, *l-awned*; awn geniculate.

Stream banks, lake margins; grassland; open areas in *Erica* forest; in cracks of rocks often in wet situations; open places in evergreen forest; road beds in cultivation; moorland; (? 200–300–) 2000–4100 m alt.

Very variable in both habit and spikelet details.

Bioko/Fernando Poo; Togo ?; Somalia “with some hesitation”; S. Africa, Lesotho; Arabian Peninsula (map by Cope, Fl. Arab. Penins. 5/1: 292, 294, map 456, 2007); India, Myanmar.

A. appendiculatus Nees, excl. var. *polycladus* Hack. (= *A. gayanus* var. *polycladus*); Fl. Zambes. 10/4: 67–68, 2002. – Icon.: van Oudtshoorn, Guide grasses south. Afr.: 218, 2012.

syn.: *Sorghum appendiculatum* (Nees) Kuntze; *Leptopogon appendiculatus* (Nees) Roberty

Perennial densely tufted herb; culms erect, 0,3–1,1 m tall, branched with slender internodes, *yellowish with reddish tinge*; basal leaf sheaths compressed, keeled; blades filiform, 15–25–50 cm × 3–6 mm, folded, keeled, tapering to a very fine point; racemes to 10 in subdigitate groups, 9–10 cm long, flexuous, (sparsely) pubescent, *dark red*; peduncles longer than racemes; sessile spikelet c. 5 mm long, *awn* geniculate, c. 1 cm long; pedicellate spikelet male, c. 4 mm long.

Grassland; dambos; c. 2000 m alt.

S. Africa, Lesotho, Swaziland.

The inflorescence is similar to that of *A. brazzae* but in *A. appendiculatus* it is *yellowish-red*, and *awn* of sessile spikelet c. 1 cm long (not awnless).

A. aridus Clayton; Thulin, Fl. Somalia 4: 259, 1995.

Perennial, densely tufted herb; *culms branched throughout forming cushions to 25 cm high*; leaves 3–5 cm × 1 mm, blade much reduced; racemes solitary or paired, 2–3 cm long, terminal; sessile spikelet c. 6 mm long, awn to 15 mm long; pedicellate spikelet c. 5 mm long.

Stony hillsides; 1000 m alt.

Known only from the type collected in 1939.

A. auriculatus Stapf; Lisowski, Fl. Rép. Guinée 1: 449, 2009; Parmentier & al. in Belg. J. Bot. 139: 74, 2006; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 245, 2016. – Icon.: van der Zon, Gramin. Cameroun 2: 441, 1992; Poilecot in Boissiera 50: 573, 1995; Fl. Gabon 5b: 15, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 151, 2015; César & Chatelain, Fl. ill. Tchad: 258, 2019.

syn.: *A. guineensis* Steud. 1854, nom. illeg., non Schumach. 1827 nec P. Beauv. ex Hochr. 1898; *Cymbachne guineensis* var. *auriculata* (Stapf) Roberty

Perennial tufted herb to 1,5 m tall; culms erect, flattened, glabrous; leaf sheaths flattened, imbricate at culm base; leaf blades linear, 25–30 cm × 4 mm, glabrous, narrowed at base into a false petiole; inflorescence loose, panicular to 60 cm long of paired greenish racemes each 3–4 cm long; sessile spikelets fertile, lanceolate, 5–6 mm long, greenish; pedicellate spikelets male or neutral, awned (awn geniculate, c. 1,5 cm long).

Sandy beaches; sandy soils in coastal savannas with *Anadelphia afzeliana*, *Eragrostis domingensis*, *Panicum repens*, *Sporobolus pyramidalis*, *Melinis repens* on poor soils; in pure stands in coconut palm plantations; peaty humus hollow on rocky outcrop; densely wooded savanna on sand; 0–700 m alt.

ANDROPOGON

A. brazzae Franch.; Renier, Fl. Kwango 1: 27, 1948; Fl. Zambes. 10/4: 67, 2002. – Icon.: César & Chatelain, Fl. ill. Tchad: 256, 2019.

syn.: *Pollinia catangensis* Chiov.

Caespitose, rhizomatous perennial herb; culms to 2,3 m tall, erect, branched, glabrous; basal leaf sheaths distichous, keeled; blades glabrous, 0,2–1 m × 2–6 mm, keeled, often folded, tapering to a very fine point; racemes to 15 in subdigitate groups, 6–12 cm long, unequal, slender, flexuous; peduncles longer than racemes; sessile spikelets 4,3–6,3 mm long; pedicellate spikelets, 4,5–7,5 mm long. Flood plains; river banks; sandy loams; karstic hollows; ?–900–1370 m alt.

Namibia, Botswana.

A. canaliculatus Schumach., incl. var. *fastigiatus* Stapf and var. *fyffei* Stapf; Fl. Trop. E. Afr., Gramin. 3: 782, 1982; van der Zon, Gramin. Cameroun 2: 438, 439 (map), 1992; Poilecot in Boissiera 56: 582, 1999; Fl. Zambes. 10/4: 73–74, 2002; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 245, 2011; Schmidt & al. in Phytotaxa 304: 32, 2017. – Icon.: Poilecot in Boissiera 50: 569, 1995; Ibrahim & al., Grasses Mali: 28, 2018; César & Chatelain, Fl. ill. Tchad: 257, 2019.

syn.: *A. eucnemis* Trin.; *A. macleodiae* Stapf; *Cymbachne ciliata* var. *canaliculata* (Schumach.) Roberty; *Sorghum eucneme* (Trin.) Kuntze

Tufted perennial herb; culms 0,25–2 m tall; leaf blades linear, 10–40 cm × 1–5 mm; inflorescence of paired racemes, usually to 8 loosely gathered into a false panicle (occasionally terminal); racemes 3–9 cm long, purplish; sessile spikelet 4–6 mm long; pedicellate 3,5–4,5 mm long.

Mainly in moist or swampy places; sandy thin soil on pans; with *Andropogon shirensis*, *Vetiveria fulvibarbis*, *Brachiaria jubata*, *Ctenium newtonii*, *Monocymbium ceresiiforme*, *Hyparrhenia subplumosa*, *Schizachyrium sanguineum*, *S. schweinfurthii*; savannas; grasslands; 0–2300 m alt.

Very closely allied to *A. perligulatus*.

A. chevalieri Reznik; Duarte & al. in Portugal. Acta Biol. 19: 434, 2000; Lisowski, Fl. Rép. Guinée 1: 449, 2009. – Icon.: Poilecot in Boissiera 50: 575, 1995; Ibrahim & al., Grasses Mali: 29, 2018.

syn.: *A. felicis* Reznik; *A. pseudauriculatus* Mimeur; *Cymbachne guineensis* var. *chevalieri* (Reznik) Roberty and subvar. *felicis* (Reznik) Roberty

Annual tufted herb to 2–2,5 m tall; culms glabrous, 2–3-noded, branched in upper part; leaf blades ± linear, 20–40 cm × 2–8 mm, apex setaceous-acuminate, base narrowed into a false petiole; inflorescence a false panicle of paired racemes each to 6 cm long; sessile spikelet fertile, 5–10 mm long; pedicellate spikelet male or neutral, slightly shorter.

Dry, rocky or thin soils; lateritic plateau with *Andropogon pseudapricus*, *Loudetia togoensis*, *L. simplex*, *Diheteropogon hagerupii*, *Sporobolus festivus*.

Intergrading with *A. auriculatus*. – Spikelet length very variable, even in the same inflorescence.

A. chinensis (Nees) Merr.; Lisowski, Fl. Rép. Guinée 1: 449, 2009; Fl. Gabon 5b: 14, 1999; Lye in Lidia 4: 157, 2000; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 245, 2011; Schmidt & al. in Phytotaxa 304: 32, 2017 – Icon.: Fl. Trop. E. Afr., Gramin. 3: 769, 1982; van der Zon, Gramin. Cameroun 2: 434 (map), 436, 1992; Fl. Eth. & Eritrea 7: 526, 1995; Poilecot in Boissiera 50: 561, 1995; idem, ibid. 56: 591, 1999; Fl. Zambes. 10/4: 65, 2002

ANDROPOGON CHINENSIS

(details); Müller, Grasses Namibia: 50–51, 2007; van Oudtshoorn, Guide grasses south. Afr.: 236, 2012; César & Chatelain, Fl. ill. Tchad: 257, 2019.

bas.: *Homeoatherum chinense* Nees

syn.: *Andropogon schinzii* Hack.; *A. pseudoschinzii* Stapf; *A. patris* Robyns; *A. lindiensis* Pilg., incl. var. *hirsutissimus* Pilg.; *A. spanianthus* Pilg.; *A. sylvaticus* C. E. Hubb.; *A. ascinodis* C. B. Clarke; *A. apricus* var. *indicus* Hack. and var. *chinensis* (Nees) Hack.; *Cymbachne angustata* var. *chinensis* (Nees) Roberty; *C. angustata* var. *indica* (Hack.) Roberty; *C. amplexens* subvar. *schinzii* (Hack.) Roberty; *C. guineensis* subvar. *lindiensis* (Pilg.) Roberty; *Sorghum schinzii* (Hack.) Kuntze

Perennial tufted herb, grey-blue green; culms 0,6–2 m tall, branched; leaf blades linear, 10–40 cm × 1–8 mm, ± glaucous, sheath auricles to 4 mm long; inflorescence (very) hairy, of paired (rarely more) racemes, gathered into a loose, sometimes scanty, false panicle; racemes 3–10 cm long; sessile spikelet 5–8 mm long; pedicellate spikelet 4–7 mm long, pallid to purplish, awn 2–3,5 cm long.

Among rocks; on steep hillsides; poor sandy soils in deciduous bushland and wooded grassland; ferruginous soils; thin gravelly soils; old clearings and fallows; thin stony soils; *Acacia* woodland; open forests with *Hyparrhenia subplumosa*, *H. smithiana*, *Andropogon schirensis*, *Schizachyrium sanguineum*, *Ctenium newtonii*, *Loudetia simplex*, *L. arundinacea*, *Monocymbium cereisiiforme*, *Elionurus ciliaris*, *Panicum phragmitoides*; 0–1800 m alt. Namibia, Botswana, S. Africa; Madagascar (Vorontsova & al. in Kew Bull. 68: 196, 2013; likely introduced); Yemen (Cope, Fl. Arab. Penins. 5/1: 295, map 460, 2007); India, E-wards to Vietnam, S China,

Variable. Confused with *A. pseudapricus*, *A. schirensis*.

A. chrysostachyus Steud.; Puff & Sileshi, Pl. Simen: 251, 2005. – Icon.: Fl. Eth. & Eritrea 7: 326, 1995.

syn.: *A. ferrugineus* Hochst. ex Steud.; *Leptopogon chrysostachyus* (Steud.) Roberty; *Sorghum chrysostachyum* (Steud.) Kuntze

Perennial densely tufted herb from a tough horizontal rootstock clothed in pale subcoriaceous leaf sheaths; culms 0,1–1,1 m tall; leaf blades flat, tough, 2–40 cm long, 1–5 mm wide, glaucous, midrib white; inflorescence of 2–3–9 golden brown racemes each 3–14 cm long, these borne upon a central axis to 4 cm long; internodes and pedicels *fulvously ciliate*; sessile spikelet 5–8 mm long, awn 1,5 cm; pedicellate spikelet 4–8 mm long.

(Open) grassland, often on wet soils; often dominant in overgrazed pastures; 1700–3100 m alt.

(**A. crossotus** Cope, Kew Bull. 39: 833, 1984) – Icon.: Cope, Fl. Arabian Peninsula...: 293 (fig.), 295, 2007.

Cited by Cope (2007) from Djibouti. Otherwise cited as endemic to Yemen.

A. curvifolius Clayton; Lisowski, Fl. Rép. Guinée 1: 449, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 245, 2011. – Icon.: Poilecot in Boissiera 50: 555, 1995.

Perennial densely tufted herb to 1 m tall; culms erect, slender, yellow, glabrous; leaf blades filiform, *curved*, 25–60 cm × c. 0,5 mm; inflorescence a false panicle c. 30 cm long with numerous (c. 10 pairs of) racemes, these 3,5–4,5 cm long, loose, flexuous; sessile spikelet linear, fertile, 4,5–6,5 mm long, awn 1,6–2,2 cm long; pedicellate spikelet male or neutral, c. 5 mm long.

ANDROPOGON CURVIFOLIUS

Savannas; thin soils on rock outcrops or lateritic pans; rock crevices; sometimes in small, dense stands, with *Loudetia simplex*, *L. togoensis*, *Sporobolus festivus*, *Andropogon perligulatus*, *Ctenium newtonii*, *Microchloa indica*, *Tripogon minimus*, *Heteropogon contortus*; inselbergs (Porembski & Brown in Candollea 50: 357, 1995).

Closely allied to *A. africanus* but that species grows in swamps and has a dense basal tuft of flat leaves with an abruptly narrowing tip.

A. distachyos L., incl. var. *dasystachys* Hack., var. *hirtus* Chiov., subvar. *alpinus* Chiov., and subvar. *luxurians* Chiov.; van der Zon, Gramin. Cameroun 2: 426, 427 (map), 1992. – Icon.: Bull. Torrey Bot. Club 83: 183, 1956; Fl. Trop. E. Afr., Gramin. 3: 769, 1982 (spikelet); Chaudhary, Grasses Saudi Arabia: 425, 1989; Fl. Eth. & Eritrea 7: 323, 1995 (spikelet); Fl. Zambes. 10/4: 65, 2002 (idem); Boulos, Fl. Egypt 4: 335, 2005; Cope, Fl. Arab. Penins. 5/1: 293, map 455, 2007; César & Chatelain, Fl. ill. Tchad: 258, 2019 (details).

syn.: *A. sanguinarius* Schreb.; *Pollinia distachya* (L.) Spreng.; *Apluda distachya* (L.) P. Beauv.; *Holcus distachyos* (L.) Roem. & Schult.; *H. liburnicus* Scop.; *Sorghum distachyon* (L.) Kuntze; *Chrysopogon distachyos* (L.) L. Rossi

Perennial tufted, slightly decumbent herb; culms 0,25–1 m long; base of plant with *silky hairs*; leaf blades linear, 6–20 cm × 1–5 mm; racemes paired, terminal, 4–14 cm long, with cilia on the internodes and pedicels; sessile spikelet 0,8–1,6 cm long, awn 4–10 mm; pedicellate spikelet 0,6–1 cm long.

Rocky slopes in grassland; open and disturbed places in forest, grassy clearings; field borders; damp ground; 1400–3700 m alt. Canary Isl.; south. Europe; N. Africa; S. Africa; Arabian Peninsula. Sometimes confused with *A. amethystinus*.

A. eucomus Nees; Klaassen & Craven, Checklist grasses Namibia: 8, 2003 (maps *A. eucomus*, *A. huillensis*). – Icon.: Bosser, Gramin. patur. cult. Madagascar: 264, 1969; Fl. Trop. E. Afr., Gramin. 3: 769, 1982 (as *A. laxatus*, spikelet); van der Zon, Gramin. Cameroun 2: 431, 1992 (idem); Fl. Zambes. 10/4: 2002 (subsp. *huillensis*; spikelet); van Oudtshoorn, Guide grasses south. Afr.: 46–47, 2012 (incl. *A. huillensis*).

Perennial tufted herb; culms 0,4–> 1 m tall, much branched above; leaf blades 2–50 cm long, 1–4 mm wide, tip abruptly acute; inflorescence of 2–6 groups of digitate racemes loosely gathered into a false panicle; racemes 2–4 cm long, *plumose*; internodes and pedicels *plumose*, (silky) *hairs* 0,7–1 cm long; sessile spikelet 2–5,5 mm long; pedicellate spikelet vestigial (subsp. *eucomus*), or reduced to 1 sterile glume (subsp. *huillensis*).

Marshy places; damp peaty, sandy or gravelly soils in dambo, meadows, open forest; riverbanks; coastal sand; roadsides; rather dry wooded pastures; rather damp rich pastures; rather poor wooded meadows; lava ashes; 0–2300 m alt.

Namibia, Botswana, S. Africa, Swaziland; Comoros, Madagascar.

Comprises 2 subsp.: – subsp. **eucomus** (syn.: *Eriopodium kraussii* Hochst., pro syn.); – subsp. **huillensis** (Rendle) Sales (bas.: *Andropogon huillensis* Rendle; syn.: *A. huillensis* var. *minor* Rendle and var. *africanus* Rendle; *A. ternatus* var. *africanus* Rendle; *A. elionuroides* Vanderyst; *A. argenteopilosus* De Wild.; *A. laxatus* Stapf; *A. perrieri* A. Camus).

The species complex *A. eucomus* / *A. ligulatus* / *A. africanus* has clear links with species of the New World; an overall revision is needed.

ANDROPOGON

A. fastigiatus Sw.; van der Zon, Gramin. Cameroun 2: 433–434, 1992; Lye & al. in Lidia 4: 157, 2000; Fl. Zambes. 10/4: 74, 2002; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Vorontsova & al. in Kew Bull. 68: 205, 2013 (under *Diectomis*); Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: Bosser, Gramin. pâtre cult. Madagascar: 262, 1969; Poilecot in Boissiera 50: 547, 1995; idem, ibid. 56: 587, 1999; Cope Fl. Arab. Penins. 5/1: 293, 2007; César & Chatelain, Fl. ill. Tchad: 255, 2019.

syn.: ***Diectomis fastigiata*** (Sw.) P. Beauv.; *Pollinia fastigiata* (Sw.) Spreng.; *Sorghum fastigiatum* (Sw.) Kuntze; *Cymbachne fastigiata* (Sw.) Roberty; *Diectomis fasciculata* P. Beauv.; *Andropogon diatherus* Steud.; *A. hochstetteri* Steud.; *Heteropogon hochstetteri* (Steud.) Andersson

Annual tufted herb 0,15–2 m tall, orange-brown when dry; culms branched in upper part; most leaves basal; *ligule acute*, 4–7 mm long; blades linear, 5–30 cm × 1–4 mm; inflorescence of single terminal racemes each 3–5 cm long, gathered into a leafy panicle; *sessile spikelet 4–5 mm long*, awn 1–2 cm long; *pedicellate spikelet 5–9 mm long*, ± twice the size of the sessile one.

Deciduous bushland; wooded grassland; often on dry soils; wooded savannas or ironstone soils with *Hyparrhenia involucreta*, *Loudetia togoensis*, *Microchloa indica*, *Andropogon gayanus*, *A. pseudapricus*, *Diheteropogon amplexans*; banded vegetation with the same species and *Elionurus elegans*, *Loxodera ledermannii*, *Schizachyrium brevifolium*, *Panicum walense*; depressions in dunes with *Tetrapogon conchriiformis*, *Trichoneura mollis*, *Aristida funiculata*, *A. adscensionis*, *A. mutabilis*; (dry) sandy soils, sandy-clayey soils in temporarily flooded places; scattered on rocky outcrops; gravelly or sandy waste lands, roadsides; near the coast – 2450 m alt.

The association *Andropogonetum fastigiati* is described by J. Müller from inselbergs on lateritic crust or pisolites in sandy-loamy or silty soil from Ivory Coast (Candollea 63: 60–61, 2008; cf. also Porembski & Brown in Candollea 50: 357, 1995; Tindano & al. in Bois Forêts Trop. 325/3: 25, 2015).

Pantropical. Cape Verde Isl.; Botswana, S. Africa; Madagascar (probably introduced); Yemen; SE Asia from India E-wards to Philippines; Mexico, C. & N S. America, West Indies (Acevedo-Rodríguez & Strong, Catalog seed pl. W. Indies: 715, 2012).

A. festuciformis Rendle; Fl. Zambes. 10/4: 68, 2002; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Lisowski, Fl. Rép. Guinée 1: 449, 2009. – Icon.: Ibrahim & al., Grasses Mali: 29, 2018.

syn.: *A. schlechteri* Hack.; *A. yunguensis* Vanderyst, nom. provis.; *Hypogynium schlechteri* (Hack.) Pilg; *H. spathiflorum* sensu Renier 1948, non Nees

Perennial delicate tufted herb; culms 0,6–1,4 m tall, erect, much-branched above, *reddish* throughout; leaves glabrous; basal sheaths *distichous*, *keeled*; blades linear, 5–28 cm × 2–4 mm, keeled, apex a very fine point; racemes solitary, condensed, gathered into fascicles of 1–6 at regular intervals along culm, 3–4 cm long, slender, flexuous, dark red; spikelets similar, 3–5 mm long, pedicellate ones male; *awnless*.

Moist places; boggy grassland; flood plains; near streams; 400–1500 m alt.

S. Africa.

Related to *A. brazzae*, a much more robust species with long raceme internodes resulting in open racemes (not condensed). – Also similar to *A. mannii*, also a small plant (for the genus) with reddish racemes in clusters, but the spikelets of that species are awned and the racemes clearly exerted from the spatheoles.

ANDROPOGON

A. gabonensis Stapf; Renier, Fl. Kwango 1: 27, 1948; van der Zon, Gramin. Cameroun 2: 442–443, 1992; Fl. Gabon 5b: 14, 1999; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Parmentier & al. in Belg. J. Bot. 139: 74, 2006. – Icon.: Fl. Gabon 5: 171, 1962; Velayos & al., Fl. Guinea Ecuat. 12: 155, 2015.

syn.: *A. briei* De Wild.; *A. lombia* Vanderyst, nom. prov.; *Cymbachne guineensis* subvar. *gabonensis* (Stapf) Roberty

Perennial herb 2–4 m tall; culms terete, to 1 cm Ø; leaf blades linear, 20–50 × 1–2,5 cm, apex acuminate; inflorescence a contracted, narrow panicle 0,5–1 m long; racemes paired, one sessile, the other pedicellate, 3–6 cm long; sessile spikelets lanceolate, 5–7 mm long, awn c. 1 cm long; pedicellate spikelet c. 4 mm long, male.

Clayey-sandy soils rich in humus; hollows; swamps; riverbanks; forest edges; roadside and post-cultivation vegetation; inselbergs in savannas; generally abundant; in places may grow so densely as to become almost impossible (Fl. Trop. Afr. 9: 261, 1919); 100–260 m alt.

(**A. gambiensis** A. Chev., Rev. Bot. Appl. Agric. Trop. 13: 870, 1933); Fl. W. Trop. Afr., ed. 2, 3/2: 489, 1972.

Annual, not tufted herb; culms 2–3 m tall, rooting at lower nodes. – This description is inadequate.

Described from Senegal, at Ouassoudou on the borders of Gambia, near the confluent river Niéniko, where it forms large partly submerged “jungles” (locally called “fara”) of culms in 20–60 cm deep water.

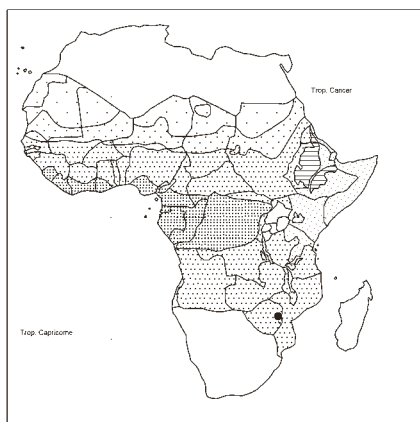
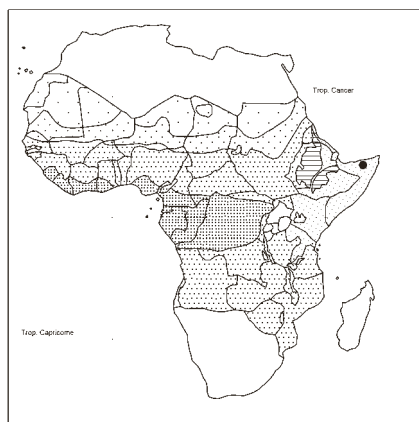
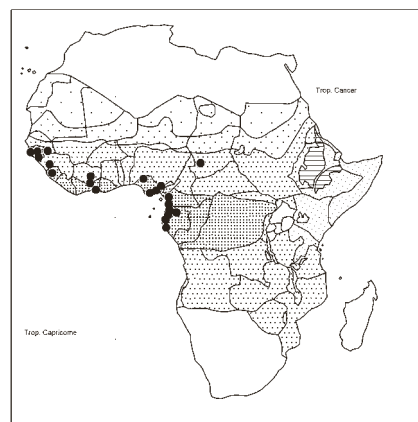
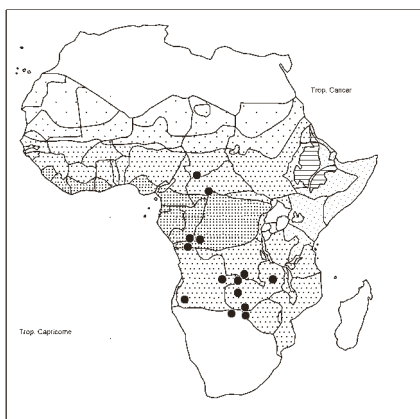
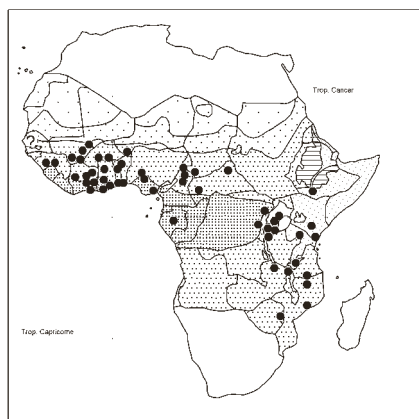
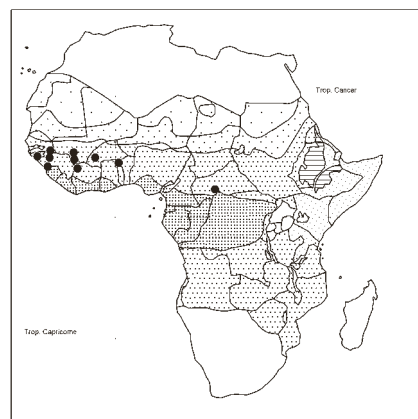
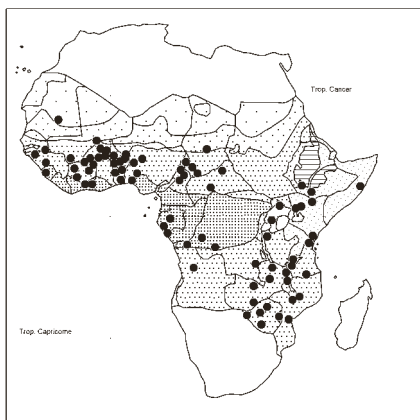
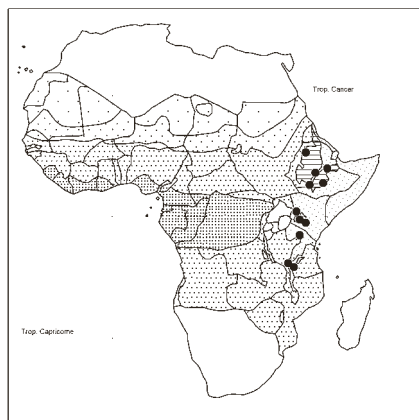
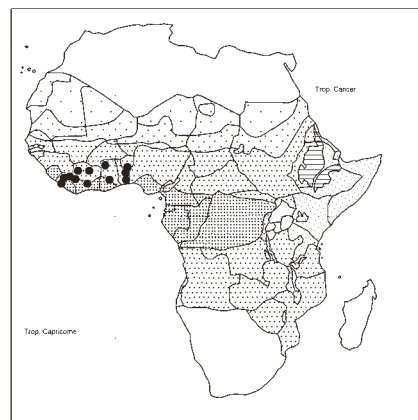
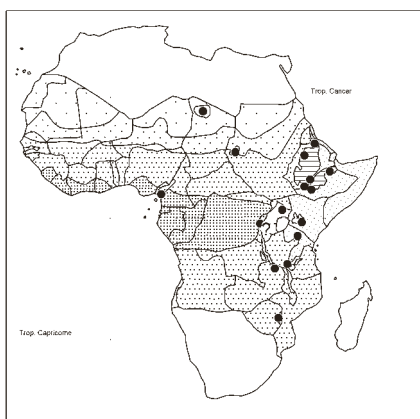
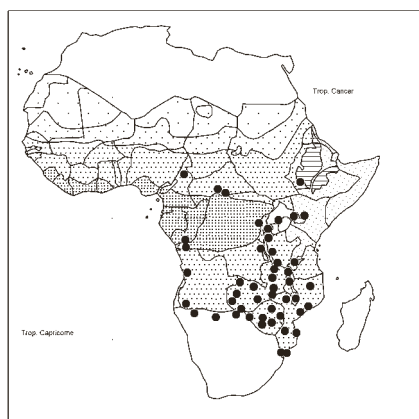
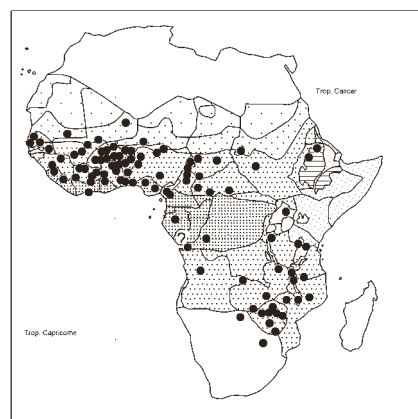
The identify of this plant is uncertain. Type: Chevalier 34662, missing. Apparently a *Schizachyrium*. Not mapped.

A. gayanus Kunth – “Blue grass” or “Gamba grass” – J. Ecol. 52: 255, 1964; Bowden in J. Linn. Soc., Bot. 59: 77–80, 1964; idem, ibid. 64: 77–80, 1971; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 177–179, 1994; Thulin, Fl. Somalia 4: 260–261, 1995; Steentoft, Flow. pl. W. Africa: 326, 2008; Lisowski, Fl. Rép. Guinée 1: 449, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015 (with 4 vars.); Schmidt & al. in Phytotaxa 304: 32, 2017. – Icon.: Engler & Prantl, Natürl. Pflanzenfam. 14e: 170, 1940; Fl. Trop. E. Afr., Gramin. 3: 777, 1982; van der Zon, Gramin. Cameroun 2: 441, maps p. 443–446, 1992 (var. *polycladus*); Poilecot in Boissiera 50: 577, 1995; idem, ibid. 56: 594–597, 1999 (4 vars.); Fl. Gabon 5: 171, 1962; idem 5b: 15, 1999 (var. *polycladus*); Fl. Zambes. 10/4: 64, 2002 (spikelet); Müller, Grasses Namibia: 52–53, 2007 (var. *polycladus*, with map); van Oudtshoorn, Guide grasses south. Afr.: 56, 2012; Velayos & al., Fl. Guinea Ecuat. 12: 156, 2015; Ibrahim & al., Grasses Mali: 30, 2018. – Pl. 8.

syn.: *Sorghum gayanum* (Kunth) Kuntze; *Cymbachne guineensis* subvar. *gayana* (Kunth) Roberty

Perennial tufted herb, tussocks up to 1 m Ø; culms 1,2–3,5 m tall, erect, branched above, glaucous; leaf blades 20–50(–80) cm long, 0,4–2,2 cm wide, reduced to the midrib, i.e. petiole-like, at base, tapering to a fine point at tip; inflorescence of paired racemes gathered into a large leafy false panicle; racemes 4–10 cm long; sessile spikelet 6–9 mm long, awn geniculate, 1,3–4 cm long; pedicellate spikelet male, 5–8 mm long.

Seasonal swamps; floodplains with *Vetiveria nigriflora*, *V. fulvibarbis*, *Andropogon africanus*, *A. perligulatus*, *Setaria sphacelata*, *Panicum fluviicola*, *Eragrostis japonica*, *Hyparrhenia rufa*, *Paspalum scrobiculatum*, etc...; also in xerophytic grassland on dolerite, sandy or clayey soils; deciduous bushland; wooded grassland; termite mounds; black cotton soil; fallow lands; roadsides; oozing pan with *Anadelphia leptocoma*, *Chasmopodium caudatum*; sometimes in vast monospecific populations; inselbergs

*Andropogon appendiculatus**Andropogon aridus**Andropogon auriculatus**Andropogon brazzae**Andropogon canaliculatus**Andropogon chevalieri**Andropogon chinensis**Andropogon chrysostachyus**Andropogon curvifolius**Andropogon distachyos**Andropogon eucomus**Andropogon fastigiatus*

ANDROPOGON GAYANUS

(Porembski & Brown in Candollea 50: 357, 1995; Tindano & al. in Bois For. Trop. 325: 25, 2015); 30–2450 m alt. – A drought and fire tolerant plant, frequently in shady areas of savannas and open woodland; on a wide range of soils; it is especially adapted to soils of low fertility. The plant produces up to 11 t/ha biomass.

Cape Verde Isl. (Brochmann & Rustan in Garcia de Orta, Sér. Bot; 16: 23, 2002); Namibia, S. Africa, Botswana, Swaziland. Introduced in S Asia, Australia, C. & S. America (map in Weber, Invasive plant species of the World, ed. 2: 41, 2017).

A polymorphic species with W. Africa as the main centre of variation. 4 varieties are currently recognised, but in the Flora Zambesiaca area, some of the features of the plants relate to more than one of the West African varieties. “The four varieties have not been described consistently and a deeper study of the whole range of variation... is much needed, especially of var. *tridentatus*..., reputedly with a high proportion of diploids...” (Fl. Zambes. 10/4: 69, 2002). The varieties are based on hairiness of culms, size and hairiness of the spikelets. The following varieties are accepted: – var. **gayanus** [syn.: *A. guineensis* Schumach. 1827, non Steud. 1854; *A. reconditus* Steud.; *A. infrasulcatus* Reznik; *Cymbachne guineensis* (Schumach.) Roberty, with many subvars. (See World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew)]; – var. **bisquamulatus** (Hochst.) Hack. [bas.: *Andropogon bisquamulatus* Hochst.; syn.: *A. cordofanus* Hochst.; *A. gayanus* var. *cordofanus* (Hochst.) Hack.; *A. aethiopicus* Rupr. ex Steud., pro syn.; *A. bisquamulatus* var. *argyrophoeus* Stapf; *A. gayanus* var. *argyrophoeus* (Stapf) Stapf; *Cymbachne guineensis* var. *bisquamulata* (Hochst.) Roberty, and subvar. *cordofana* (Hochst.) Roberty]; – var. **polycladus** (Hack.) Clayton [bas.: *Andropogon appendiculatus* var. *polycladus* Hack.; syn.: *A. squamulatus* Hochst.; *A. gayanus* var. *squamulatus* (Hochst.) Stapf; *A. hylophilus* Engl. 1894, nom. nud.; *A. helophilus* K. Schum.; *A. dewevrei* De Wild.; *A. ringoetii* De Wild.; *Cymbachne guineensis* subvar. *squamulata* (Hochst.) Roberty, and subvar. *helophila* (K. Schum.) Roberty]; – var. **tridentatus** Hack. [syn.: *Andropogon tridentatus* Hochst. 1844, nom. illeg.; *A. tomentellus* Steud.; *Cymbachne guineensis* subvar. *tridentata* (Hack.) Roberty, and subvar. *tomentella* Steud.) Roberty]. – A key to the subspecies figures in Fl. W. Trop. Afr., ed. 2, 3/2: 484, 1972.

A good grazing grass, and utilised as cultivated pasture; and sometimes used for veld restoration; also used for thatching.

Sometimes difficult to distinguish from *A. gabonensis*.

TOLEDO, J. M. & al., ed. (1990). *Andropogon gayanus* Kunth. A grass for tropical acid soils. Centro Internacional de Agricultura Tropical, Cali, Colombia (Publ. N° 90), The Tropical Pastures Program and the Publication Unit. IX + 381 pp.

A. greenwayi Napper; Fl. Trop. E. Afr., Gramin. 3: 771–772, 1982. – Icon.: Thulin, Fl. Somalia 4: 261, 1995.

Perennial herb, mat-forming, shortly rhizomatous; culms wiry, 15–80 cm long; blades mainly basal, flat, 2–10 cm × 1–4 mm, glaucous; racemes paired (rarely more), terminal, 3–7 cm long; sessile spikelet 7–11 mm long, *light green*; pedicellate spikelet 6–10 mm long, *awnless*.

Short open grassland; forest glades; around edges of cultivated fields; volcanic and calcareous (especially gypsum) soils; 1000–2100 m alt.

Yemen (Cope, Fl. Arab. Penins. 5/1: 294, 2007).

Closely related to *A. amethystinus*.

ANDROPOGON

A. heterantherus Stapf; Fl. Trop. E. Afr., Gramin. 3: 780, 782, 1982.

syn.: *Ischaemum chrysatherum* K. Schum., nom. subnud.

Perennial *rambling* herb; culms 0.6–1.2 m tall, *wiry*, leafy; leaf blades lanceolate, 3–18 cm × 3–8 mm, broadest at base, tip long acuminate; inflorescence of paired (–3) racemes, loosely borne in a scanty false panicle; racemes 4–5 cm long; sessile spikelet c. 6 mm long, awn c. 10 mm long; pedicellate spikelet c. 5 mm long.

Coastal scrub; 0–100 m alt.

A. incomptus Clayton; Lisowski, Fl. Rép. Guinée 1: 449, 2009; Couch & al., Threatened habitats & tropical important plant areas of Guinea, West Africa: Table A, 2019.

Perennial densely tufted herb; culms to 2.5 m tall, base to 4 mm Ø; leaf blades to 20 cm long, to 4 mm wide, acute; inflorescence a false panicle to 60 cm long, 5–7-noded; *racemes solitary*, c. 1 cm long; sessile spikelet 3–4 mm long, *lemma of fertile floret bilobed, awned*; pedicellate spikelet 4 mm long. Closely allied to *A. festuciformis*, that has, however, lemma of fertile floret entire, awnless.

Grassy places.

Known only from the type collected in 1956. Not seen since then.

A. ivorensis Adjan. & Clayton; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011. – Icon.: Adjanohoun in Adansonia, N. S. 3: 402, 1963 (details); Poilecot in Boissiera 50: 565, 1995; Ibrahim & al., Grasses Mali: 30, 2018.

Perennial herb to > 2 m tall; leaf blades linear, to 50–60 × 1 cm, flat, glabrous; inflorescence a false open panicle of paired racemes each to 15 cm long; sessile spikelet 6–8 mm long; pedicellate spikelet male or neutral, 8–12 mm long.

Savannas with deep, rich, clayey-sandy soils, ± humid; often at foot of schistose hills with *Andropogon canaliculatus*, *Loudetia simplex*; marshy meadows.

Also in Cameroun? Not cited by van der Zon, Gramin. Cameroun 2, 1992.

This species is a link between *Andropogon* and *Diheteropogon*.

A. kelleri Hack. ex Schinz; Fl. Eth. & Eritrea 7: 321–322, 1995. – Icon: Thulin, Fl. Somalia 4: 260, 1995.

syn.: *A. cyrtocladus* Stapf; *Anatherum cyrtocladum* (Stapf) Roberty

Perennial suffrutescent rhizomatous plant forming bushes to 2–3.6 m tall, 1.8 m Ø; culms 0.6–2 m long, woody below, profusely branched above, producing many short leafy shoots with imbricate leaf sheaths; leaf blades 2–10 cm long, 2–4 mm wide, constricted at collar; racemes single (or paired), terminal 2–3 cm long, on the short leafy branches, long-exserted on filiform peduncles; sessile spikelet 5–6.5 mm long, awn 1–2.5 cm long; pedicellate spikelet 6–7 mm long.

Bushland in silty or sandy depressions overlying limestone or gypsum, or on dry stony soils; 180–1520 m alt.

Similar to the Socotran *A. bentii* Stapf (cf. Cope, Fl. Arab. Peninsula... 5/1: 294, 2007).

A. lacunosus J. G. Anderson; Fl. Trop. E. Afr., Gramin. 3: 770, 1982; van der Zon, Gramin. Cameroun 2: 425, 427 (map), 1992; Fl. Zambes. 10/4: 63–64, 2002.

Perennial delicate straggling herb 30–60 cm tall; culms to 40 cm long, wiry; leaf blades 7–24 cm long, 3–5 mm wide, apex a very fine point; racemes in terminal pairs (or 3), digitate, 2.5–5 cm long, exserted from spatheoles only at maturity; spikelets similar,



Plate 5. *Anadelphia leptocoma* (Trin.) Pilg., see p. 41
 a: habit; b: ligule; c: inflorescence; d: spikelet; e: rachis; f: callus; g-h: lower glumes of sterile floret;
 i-j: lemma; k: caryopsis; l: pedicel; m: callus; n-o-p: lemma and palea.

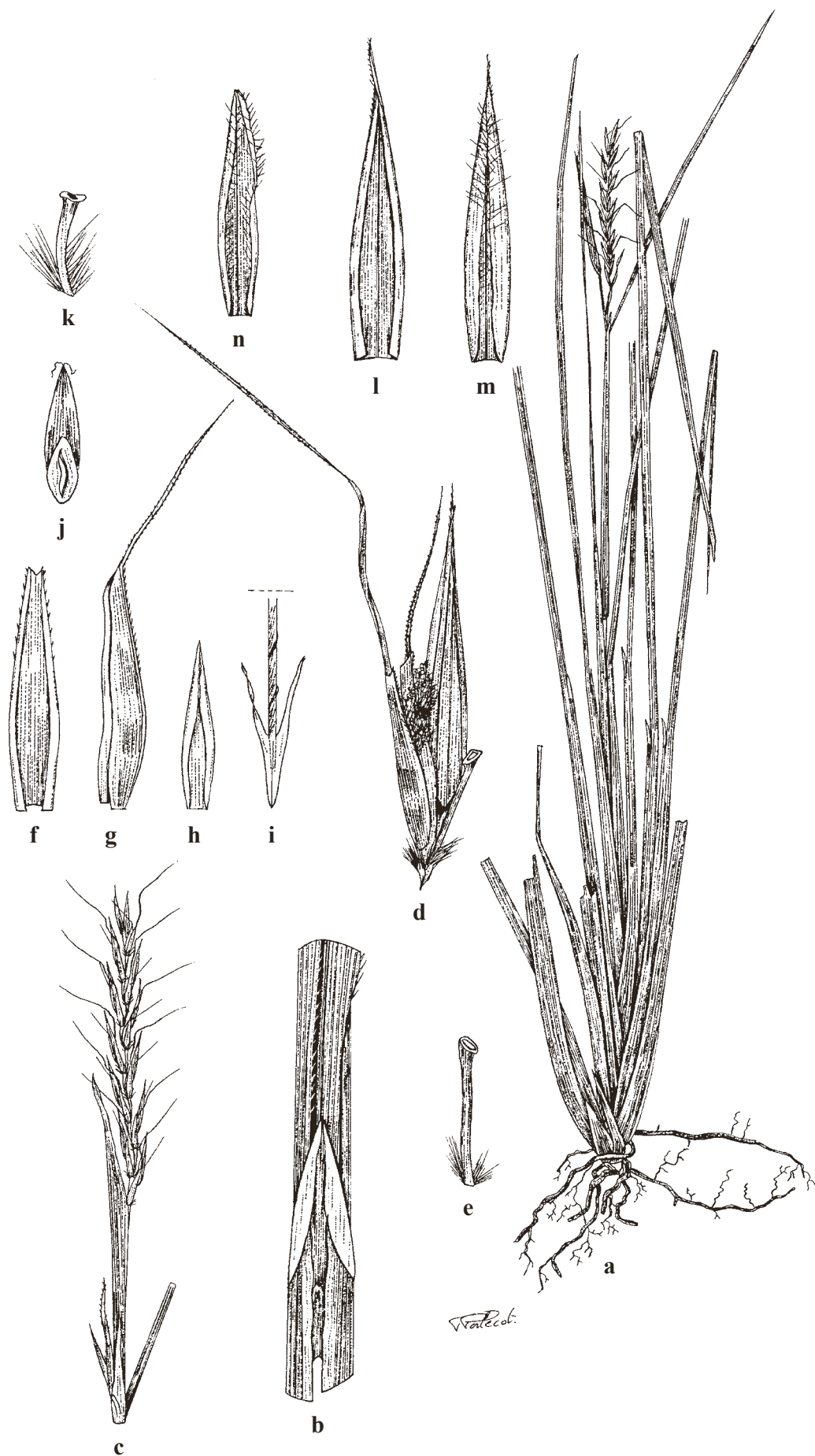


Plate 6. *Anadelphia lomaensis* (A. Camus) Jacq.-Fél., see p. 42
a: habit; b: ligule; c: inflorescence; d: spikelet; e: callus; f-g: glumes ventral and side view;
h-i: lemma; j: caryopsis; k: callus; l-m: lemma; n: palea.



Plate 7. *Andropogon amethystinus* Steud., see p. 44
a: ligule; b: spikelet; c-d: rachis; e-f: glumes; g-h: lemma; i-j: glumes of upper floret; k: lemma.



Plate 8. *Andropogon gayanus* Kunth, see p. 48
 a: habit; b: ligule; c: inflorescence; d: spikelet; e: rachis; f-g: glumes lower and upper;
 h-j: lemma; k: pedicel; l-m: glumes; n-o: lemma; p: palea.

ANDROPOGON LACUNOSUS

5–8 mm long, the sessile *pitted on either side of a median groove*; inconspicuous pits also present on the leaves.

Wet or swampy places; grassland, near water; c. 1460–1800 m alt. S. Africa, Swaziland.

Rarely collected.

Allied to *A. distachyos*.

A. leprodes Cope – Icon.: Kew Bull. 50: 110, 1995 (spikelet); Thulin, Fl. Somalia 4: 261, 1995 (idem).

Perennial densely tufted herb to 50 cm tall; *culms* unbranched, *arising from a basal cushion* derived from the remains of old leaf-sheaths; blades flat, *glaucous*, 2–7 cm long, 1–2 mm wide; racemes 2–4, subdigitate, terminal, 4–6 cm long; sessile spikelet 6–9 mm long, awn 1.5–2 cm long; pedicellate spikelet 4–7 mm long.

Gypsum plains; 1340–1740 m alt.

(**A. leucostachyus** Kunth); A. Chevalier in Rev. Bot. Appl. Agric. Trop. 13/148: 866, 1933; Fl. W. Trop. Afr., ed. 2, 3/2: 489, 1972; Quattrocchi, CRC World Dictionary of Grasses: 124–125, 2006; Sylvester, Generic key grasses Belize in Edinb. J. Bot. 74: 63, 2017.

syn.: See Quattrocchi, l.c.

Perennial, erect, densely tufted herb; culms 0.3–1 m tall; inflorescence with silky-white hairs; racemes subdigitate, clustered; sessile spikelet awnless; pedicellate spikelet rudimentary.

A tropical American species collected in Senegal around 1820.

A. ligulatus (Stapf) Clayton; Fl. Trop. E. Afr., Gramin. 3: 774, 1982; Fl. Zambes. 10/4: 63, 2002.

bas.: *A. laxatus* Stapf var. *ligulatus* Stapf

syn.: *A. laxatus* Stapf var. *kigulatus* Stapf

Perennial tufted herb; culms 0.3–1.2 m tall, unbranched; leaf blades linear, 7–60 cm × 1–2 mm, *tip finely attenuate*; inflorescence of 2(–4) paired terminal racemes, each 4–9 cm long, ± plumose, long-exserted from spatheoles; spikelets similar, 5–7 mm long, sessile one with an awn 1–2 cm long, geniculate.

Wet places in dambos, bogs; marshy grassland; 1200–1550 m alt.

Intermediates with *A. mannii* exist.

A. lima (Hack.) Stapf; van der Zon, Gramin. Cameroun 2: 429–430, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 179, 1994; Fl. Zambes. 10/4: 66, 2002; Puff & Sileshi, Pl. Simen: 250–251, 2005; Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: Troupin, Fl. Rwanda 4: 183, 1988 (leaf blade with midrib); Fl. Eth. & Eritrea 7: 323, 1995 (spikelet).

bas.: *A. amethystinus* var. *lima* Hack.

syn.: *A. amethystinus* var. *breviaristatus* Hack.; *Eulalia hydrophila* Chiov., incl. var. *filiformis* Chiov.; *Pollinia hydrophila* Chiov., pro syn.

Perennial herb forming tussocks; culms 0.45–1 m tall, unbranched; leaf blades 6–50 cm long, 2–4 mm wide, *stiffly erect*, scabrid, almost reduced to the keel, midrib occupying ± 1/3 the width of the upper surface, apex a very fine point; racemes 2(–5) in terminal pairs, 4–6–15 cm long, very narrow, long exserted from spatheoles, purplish; sessile spikelet 6–9 mm long, awn geniculate 1–1.5 cm long; pedicellate spikelet 5–8 mm long, male.

Moist places is grassland, damp grassland; meadow; sometimes dominant, but seems to be rare in Fl. Zambes. area; 2100–4000 m alt.

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A. macrophyllus Stapf, incl. var. *pilosus* Reznik; van der Zon, Gramin. Cameroun 2: 439–440, 442 (map), 1992; Lisowski, Fl. Rép. Guinée 1: 449, 2009; César & al., Suppl. catal. pl. vascul. Burkina-Faso: 11, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Poilecot, Guide Liber. grasses: 20, 2015. – Icon.: Poilecot in Boissiera 50: 571, 1995. – Pl. 10.

Perennial herb 2.5–4.3 m tall; culms erect, glabrous, very ramosa towards apex; leaves to 1 m long, 2–4 cm wide; blade flat, glabrous, dark green, midrib white, narrowing into a false petiole at base; inflorescence a false rich panicle > 1 m tall, with terminal paired racemes, green or tinged purple, 4–8 cm long; sessile spikelet fertile, 5–6 mm long, awn 1–1.5 cm long; pedicellate spikelet 4–5 mm long, male or neutral.

Swampy places, swampy savanna, forest edges; in soils rich in organic matter or clay; granitic soils; often with *Andropogon tectorum*, *A. gayanus* var. *polycladus*, *Chasmopodium caudatum*, *Panicum fluviicola*, etc.; sometimes dominant; termite mounds; inselbergs (Parmentier & al. in Belg. J. Bot. 39: 74, 2006); ?–450 m alt.

? Bioko / Fernando Poo.

May be difficult to distinguish from *A. gayanus*.

A. mannii Hook. f.; Fl. Zambes. 10/4: 66–67, 2002; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Vorontsova & al. in Kew Bull. 68: 195, 2013 (in table); Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: van der Zon, Gramin. Cameroun 2: 428–429, 1992; Poilecot in Boissiera 50: 551, 1995; Velayos & al., Fl. Guinea Ecuat. 12: 157, 2015.

syn.: *A. flabellifer* Pilg.; *A. purpureus* Stapf; *A. stolzii* Stapf; *A. thomasi* C. E. Hubb.; *A. platybasis* J. G. Anderson; *Sorghum mannii* (Hook. f.) Kuntze; *Leptopogon stolzii* (Stapf) Roberty

Perennial densely tufted herb; culms 10–60 cm tall, unbranched, often reddish; basal leaf sheaths papery to ± horny, compressed, keeled; blades 2–25 cm long, 2–8 mm wide, stiff, flat, loosely long-pilose, apex a long fine point; inflorescence of 1–5 terminal *subdigitate racemes* each 2–7 cm long, slender, flexuous, long-exserted from spatheoles, pedicels filiform; sessile spikelet 4–8 mm long, *glabrous*, awn 6–16 mm long; pedicellate spikelet male, 5–8 mm long, glabrous.

Among rocks in *Erica arborea* scrub; common in pastures; in shallow soil over rocks; grassy gully on doleritic escarpments; stream banks; rocky granitic pans in grassland; 640–3400–4000 m alt.

Bioko/Fernando Poo; S. Africa, Swaziland. – In Uganda very rare, and possibly extinct; the only collection known was made in 1942 (Lye & al. in Lidia 4: 157, 158, 2000).

A variable species with different local forms (described as species) on each of the disjunct upland areas (Fl. Trop. E. Afr., Gramin. 3: 774, 1982).

A. perligulatus Stapf; Fl. Zambes. 10/4: 73, 2002; Lisowski, Fl. Rép. Guinée 1: 449–450, 2009; Schmidt & al. in Phytotaxa 304: 32, 2017; César & Chatelain, Fl. ill. Tchad: 257, 2019. – Icon.: Poilecot in Boissiera 50: 567, 1995; Ibrahim & al., Grasses Mali: 31, 2018.

syn.: *A. centralis* Pilg.; *A. tumidulus* Stapf; *Cymbachne ciliata* var. *perligulata* (Stapf) Roberty and var. *tumidula* (Stapf) Roberty

Perennial tufted herb; culms erect, 0.5–1.5 m tall; leaf sheaths with *well developed auricles*, and *ligules*, 3–12 mm long; blades narrow, 8–40 cm × 1–5 mm, keel conspicuous, shortly and densely pilose; inflorescence of pairs racemes loosely gathered into a false panicle; racemes 1.5–8 cm long, peduncles much longer

ANDROPOGON PERLIGULATUS

than racemes; spikelets dark red, sessile one 4–6 mm long, awn 1–2 cm long; pedicellate one male or sterile, 4–6 mm long.

Swamp margins; humid places; locally abundant on flooded soils; with *Vetiveria nigritana*, *V. fulvibarbis*, *Andropogon africanus*, *Panicum fluviicola*, *Paspalum scrobiculatum*, etc...; in humus rich and very humid soils on rocky outcrops; wet acid soils; 300–2000 m alt.

In Uganda last collection 1946 (Lye & al. in Lidia 4: 158, 2000).

Very similar to *A. canaliculatus*, and perhaps only a variant of it: ecology and distribution are close.

A. pinguipes Stapf; van der Zon, Gramin. Cameroun 2: 440, 442, 1992; Schmidt & al. in Phytotaxa 304: 32, 2017. – Icon.: Velayos & al., Fl. Guinea Ecuat. 12: 158, 2015.

syn.: *Cymbachne ciliata* var. *pinguipes* (Stapf) Roberty

Annual herb 0,3–2(–3) m tall; culms sparingly branched from upper nodes; leaves linear, 15–25 cm × 3–5 mm, flat, base contracted into a false petiole, tip tapering to a seateous point, turning reddish; inflorescence a false panicle to 50 cm long, very narrow, of up to 4 distant paired racemes, sometimes reduced to a few simple 1-noded branches; racemes 5–7 cm long, one subsessile, the other short-pedicellate; sessile spikelet linear, 5–8 mm long, awn 2–3,5 cm long; pedicellate spikelet oblong, 6–7 mm long, male.

Dry savanna on gravelly soils; ferruginous pan; rocks; often a pioneer plant; 0–25–? m alt.

A. pseudapricus Stapf; Renier, Fl. Kwango 1: 27, 1948; van der Zon, Gramin. Cameroun 2: 434–435, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 180, 1994; Fl. Eth. & Eritrea 2/1: 461, 2000; idem 1: 271, 2009; Fl. Zambes. 10/4: 69–70, 2002; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Schmidt & al. in Phytotaxa 304: 33, 2017. – Icon.: Chevalier in Rev. Bot. Appl. Agric. Trop. 13/148: 865, 1933; Robyns, Fl. agrost. Congo Belge 1: 133, 1929; Poilecot in Boissiera 50: 559, 1995; idem, ibid. 56: 590, 1999; Lisowski, Fl. Rép. Guinée 2: fig. 530, 2009; Malaisse, Guide floristique Parc Natl. Cantanhez, pl. 801, 2010; Vande weghe & al., Pl. à fleurs Gabon: 174, 2016; Ibrahim & al., Grasses Mali: 31, 2018; César & Chatelain, Fl. ill. Tchad: 257, 2019.

syn.: *A. apricus* var. *africanus* Hack.; *Cymbachne angustata* var. *africana* (Hack.) Roberty

Annual tufted herb 0,5–1,5 m high, ascending, branched above; leaf blades 8–40 cm long, 1–5 mm wide, glabrous; inflorescence a copious leafy false panicle of paired racemes, the pairs embraced below by linear spatheoles c. 5 cm long; racemes 2–4 cm long, internodes and pedicels ciliate, hairs 2 mm long; sessile spikelet 4–6 mm long, awn 3–5 cm long; pedicellate spikelet 4–6 mm long.

Shallow or sandy soils; dry fallow land; in savannas of erg with *A. gayanus*, *Loudetia hordeiformis*, *Dicheteropogon hagerupii*, *Eragrostis tremula*, *Aristida sieberiana*; wooded savannas with *Hyparrhenia involucreata*; terraces with ferrallitic, red soils with *Andropogon gayanus*, *Dicheteropogon amplexens*, *Aristida kerstingii*, *Brachiaria xantholeuca*, *Setaria pumila*; in formations with *Hyparrhenia dissoluta* in savannas of coastal lagoons with sandy or sandy-clayey soils; common in irrigation bunds and river banks (N Senegal); often forming pure stands in loamy soils of temporary pools; sandy and disturbed ground; *Lannea* dominated woodland on rocky slopes (Ethiopia); – 300–c. 2850 m alt.

Mexico, Brazil (probably introduced).

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A. pteropholis Clayton, incl. var. *togoensis* H. Scholz; Schmidt & al. in Phytotaxa 304: 33, 2017. – Icon.: Hook. Ic. Pl. 37: 3644, 1967.

Perennial tufted herb; culms to 2 m tall; leaf blades 15–25 cm long, 2–8 mm wide, puberulous, base narrowed into a *pseudopetiole* 2–10 cm long, apex filiform; inflorescence a loose false panicle 30–40 cm long of 9–14 pairs of racemes each 4–6 cm long; sessile spikelet 9–11 mm long with *prominently winged keels to the glumes* (whence the epithet), awn 3–4 cm long; pedicellate spikelet 8–10 mm long.

Road sides; stony soils; in shallow sand pockets and crevices among boulders; outcrops on rocky hillsides.

A. pungens Cope; Thulin, Fl. Somalia 4: 261, 1995. – Icon.: Kew Bull. 50: 110, 1995 (spikelet).

Perennial tufted herb to 1,25 m tall; leaf blades flat, 6,5–20 cm long, 1–6 mm wide; inflorescence a scanty false panicle of paired racemes each 4,5–7 cm long, axes ciliate; sessile spikelet 5–8 mm long, with a very *pungent callus* 2–4 mm long, awn 2–4 cm long; pedicellate spikelet 5–7 mm long.

Grassy plains, often near the coast; 30–310 m alt.

A. pusillus Hook. f.; Onana & Cheek, Red Data Book flow. pl. Cameroon: 376, 2011; Onana, Fl. Cameroun 40: 241, 2013. – Icon.: van der Zon, Gramin. Cameroun 2: 428, 1992.

syn.: *Sorghum pusillum* (Hook. f.) Kuntze; *Hyparrhenia pusilla* (Hook. f.) Stapf

Annual creeping and ascending herb, sometimes forming mats, to 15–20 m tall; leaf blades 1–3 cm long, 1–3 mm wide; inflorescence of 1–3 pairs of racemes, peduncle enveloped by a green spathe 5–7 cm long; racemes lax, 1–2,5 cm long; sessile spikelet 5–6 mm long, lower glume with 2 *circular glands* on each side of the main nerve, awn 5 cm long; pedicellate spikelet 6 mm long, glands reduced.

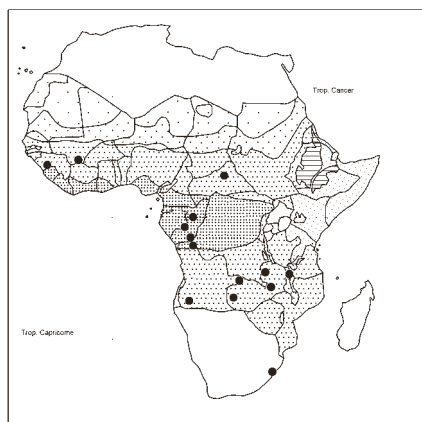
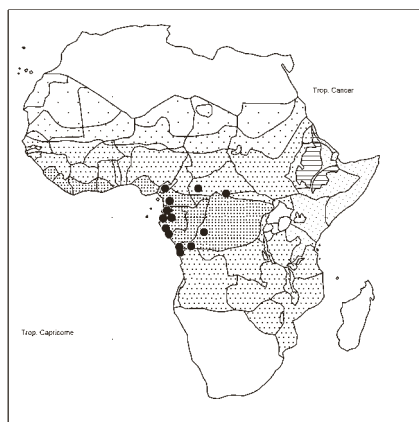
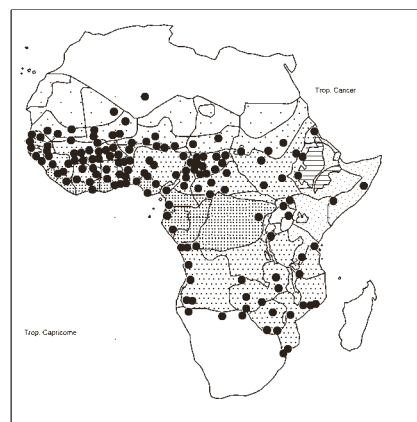
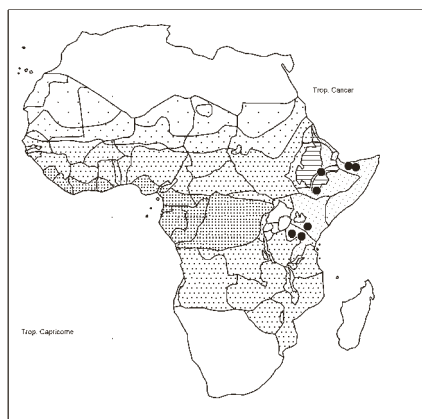
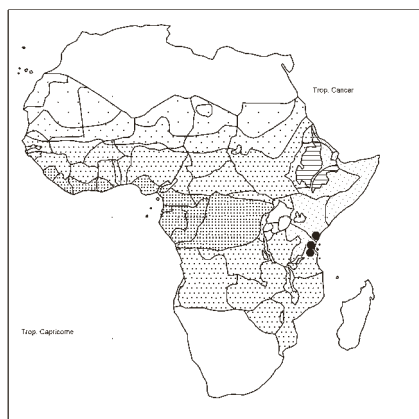
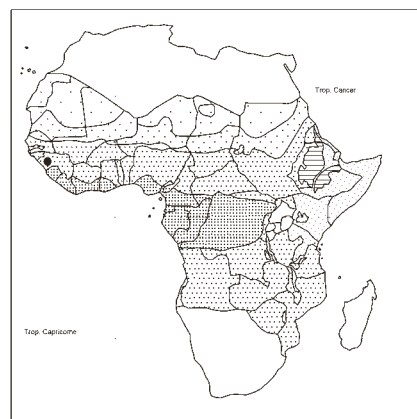
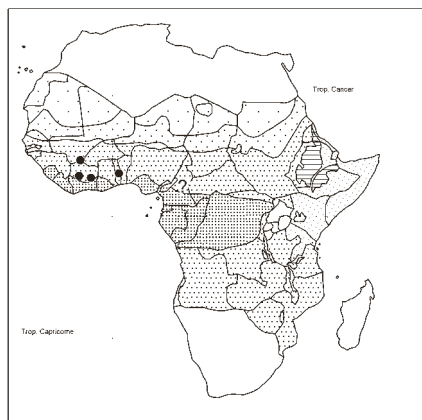
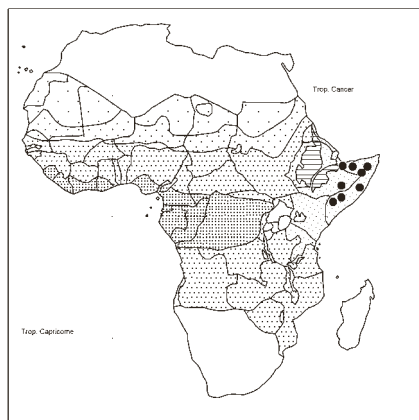
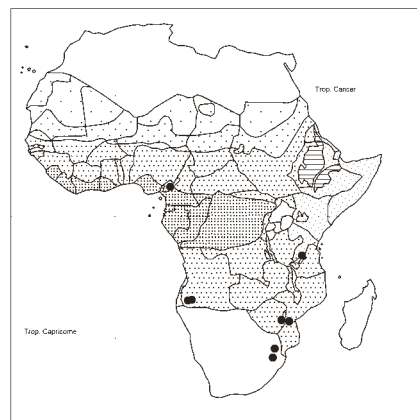
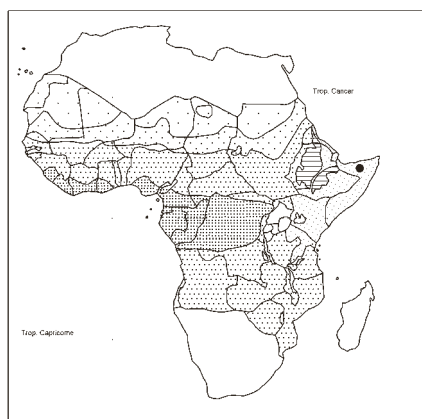
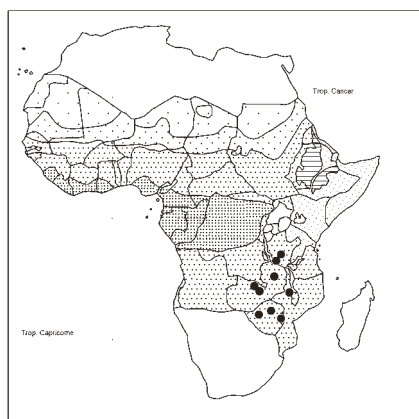
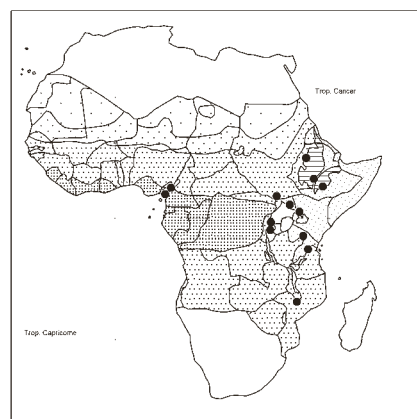
On wet rocks in grassland; often near forest edge; forest grassland transition; 200–2400 m alt.

Extremely rare and vulnerable and endangered since only 4 locations are known (Onana & Cheek, l.c.).

A. schirensis Hochst. ex A. Rich., incl. var. *angustifolius* Stapf and var. *natalensis* Hack.; Renier, Fl. Kwango 1: 27, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 180, 1994; van der Zon, Gramin. Cameroun 2: 437, 439 (map), 1992; Sosef & al., Check-list pl. vascul. Gabon: 181, 2006; Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015; Schmidt & al. in Phytotaxa 304: 33, 2017. – Icon.: Robyns, Fl. agrost. Congo belge 1: 135, 1929; Fl. Gabon 5: 177, 1962; Fl. W. Trop. Afr., ed. 2, 3/2: 487, 1972; Fl. Trop. E. Afr., Gramin. 3: 781, 1982; Poilecot in Boissiera 50: 563, 1995; idem, ibid. 56: 592, 1999; Fl. Zambes. 10/4: 72, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 339, 2005; Lisowski, Fl. Rép. Guinée 2: fig. 531, 2009; van Oudtshoorn, Guide grasses south. Afr.: 237, 2012; Vande weghe & al., Pl. à fleurs Gabon: 175, 2016; Malaisse & al., Copper-cobalt flora Upper Katanga...: 380, 2016; César & Chatelain, Fl. ill. Tchad: 258, 2019.

syn.: *A. cognatus* Steud.; *A. congoensis* Franch.; *A. golae* Chiov.; *A. dummeri* Stapf, incl. var. *calvus* Stapf; *A. ravus* J. G. Anderson; *Sorghum schirense* (Hochst. ex A. Rich.) Kuntze; *Cymbachne amplexens* subvar. *schirensis* (Hochst. ex A. Rich.) Roberty, and var. *calva* (Stapf) Roberty; *C. guineensis* subvar. *dummeri* (Stapf) Roberty; *Schizachyrium iringense* Pilg.

Perennial, densely tufted herb; culms 0,4–2,5 m tall, erect, branched, tinged purple or dark red, sometimes coated as base

*Andropogon festuciformis**Andropogon gabonensis**Andropogon gayanus**Andropogon greenwayi**Andropogon heterantherus**Andropogon incomptus**Andropogon ivorensis**Andropogon kelleri**Andropogon lacunosus**Andropogon leprodes**Andropogon ligulatus**Andropogon lima*

ANDROPOGON SCHIRENSIS

with fibrous remains of old leaf sheaths; blade flat, 9–70 cm long, 0.2–1.2 cm wide, apex sometimes tapering abruptly to a fine point; inflorescence of terminal pairs of racemes (rarely in threes), but sometimes with 1–2 axillary pairs; racemes 5–25 cm long, dark red, *pedicellate spikelets clearly imbricate on one side*, peduncles very long; sessile spikelet 4–10 mm long, compressed, awn 2–4 cm long; pedicellate spikelet 6–11 mm long.

Deciduous bushland; *Loudetia arundinacea* grassland with scattered trees; usually on well drained soils (gravelly soils; sandy or sandy-clayey soils) with *A. canaliculatus*, *A. chinensis*, *Hyparrhenia subplumosa*, *H. smithiana*, *Elymandra androphylla*, *Panicum phragmitoides*, *Loudetia simplex*, *Schizachyrium sanguineum*, etc.; invading swamp margins; ferruginous, gravelly plateau with *Ctenium newtonii* (dominant), *Schizachyrium sanguineum*; clayey lateritic terrace with *A. fastigiatus*, *Pennisetum pedicellatum*, *Brachiaria villosa*, *Schizachyrium exile*, *Digitaria gayana*, *Loudetia togoensis*; shallow soils; also dry soils; rather damp meadows; forming thickets around termitaria (termites collect the grain?); deciduous bushland; Kalahari and copper steppe savanna; often a dominant perennial grass in miombo woodland; rock outcrops (Permentier & al. in Belg. J. Bot. 139: 74, 2006); cultivated fields; 5–3500 m alt.

Variable in size and size of spikelets, leaf width, hairiness of racemes.

Namibia (map in Klaassen & Craven, Checklist grasses Namibia: 9, 2003), S. Africa, Botswana, Lesotho, Swaziland.

Provides grazing for stock, zebra, reed buck, etc.

Closely related to and easily confused with *A. chinensis*, and *Diheteropogon amplexans* (with very similar sessile spikelets).

(**A. simplex** Schumach.); Fl. Trop. Afr. 9: 205–206, 1919; Fl. W. Trop. Afr., ed. 2, 3/2: 481, 1972.

Herb with filiform culms to > 30 cm tall; leaf blades linear-lanceolate; flowering branches distant; racemes subsessile, as long as spathe; sessile spikelet laterally hairy lanceolate, awn < 2.5 cm long, kneed; pedicellate spikelet muticous.

Described from “Gold Coast” (Ghana), on a Thonning specimen. Type lost, “and the description cannot confidently be equated to any of the present species” (Fl. W. Trop. Afr., l.c.). “Apparently a species of *Schizachyrium*.”

A. tectorum Schumach. & Thonn., incl. var. *acutatus* Reznik and var. *falsopetiolatus* Reznik.; Okoli, New Phytol. 93: 591, 1983; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 180–181, 1994; Parmentier & al. in Belg. J. Bot. 139: 74, 2006; Lisowski, Fl. Rép. Guinée 1: 450, 2009; Schmidt & al. in Phytotaxa 304: 33, 2017; César & Chatelain, Fl. ill. Tchad: 256, 2019. – Icon.: Chevalier in Rev. Bot. Appl. Agric. Trop. 13/148: 869, 1933; van der Zon, Gramin. Cameroun 2: 436, 1992; Poilecot in Boissiera 50: 553, 1995; idem, ibid. 56: 588, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 159, 2015; Ibrahim & al., Grasses Mali: 32, 2018.

syn.: *A. spectabilis* K. Schum.; *A. tenuiculmis* Reznik; *Cymbachne guineensis* subvar. *tectorum* (Schumach. & Thonn.) Roberty and subvar. *tenuiculmis* (Reznik) Roberty

Perennial tufted herb; culms erect, 0.5–3.6(–4) m tall, cane-like, often with stilt-roots below, much branched above; leaf blades to 1 m long, 5–6 cm wide, base narrowed in a well developed false petiole, often pinkish; inflorescence a false panicle of several paired racemes each 3–4 cm long; sessile spikelet fertile, 4–5 mm long, awn 1.5–2 cm long; pedicellate spikelet male or sterile, 4–5 mm long.

Open forest and wooded savanna on thin lateritic soils; sandy and sandy-clayey soils with *Hyparrhenia subplumosa*, *H. smithiana*,

ANDROPOGON TECTORUM

Andropogon schirensis, *Elymandra androphila*, *Cymbopogon giganteus*, *Panicum phragmitoides*, *Schizachyrium sanguineum*; under shade with *Pennisetum unisetum*; with *Hyparrhenia welwitschii* on degraded soils; pre-lagoon savannas with *Andropogon gayanus* var. *bisquamulatus*; sandstone; forest gallery; roadsides; post-cultivation vegetation; – 400–1490 m alt.

Bioko / Fernando Poo. – Mauritania ?

Important pasture grass.

Close affinity to *A. gayanus*.

A. tenuiberbis Hack.; Renier, Fl. Kwango 1: 27, 1948; van der Zon, Gramin. Cameroun 2: 432–433, 1992; Lisowski, Fl. Rép. Guinée 1: 450, 2009; Vorontsova & al. in Kew Bull. 68: 195, 2013 (in table); Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: Poilecot in Boissiera 50: 549, 1995; César & Chatelain, Fl. ill. Tchad: 255, 2019.

syn.: *A. calvescens* Stapf; *A. kasaiensis* Vanderyst, nom. nud.; *A. isostachyus* Peter; *A. schliebenii* Pilg.; *Leptopogon tenuiberbis* (Hack.) Roberty; *Schizachyrium tenuiberbe* Munro ex Hack., pro syn.; *Sorghum tenuiberbe* (Hack) Kuntze

Perennial herb forming large clumps; basal sheaths flabellate; culms 1–2.5(–5) m tall, branched; leaf blades linear, stiff, erect, 30–60 cm × 3–6 mm; inflorescence of subdigitate racemes, 5–40, gathered into a false open panicle (in a zigzag shape when dry); pedicels filiform, ciliate; racemes 3–12 cm long; sessile spikelet 4–6 mm long, awn 5–12 mm long; pedicellate spikelet 3–6 mm long, awnless.

Swamp soils; also by water; waterlogged sandy soils of hollows with *Loudetia phragmitoides*, *Leersia hexandra*, *Andropogon canaliculatus*, *Eragrostis gangetica*, *Paspalum scrobiculatum*, *Loudetiopsis ambiens*; 1800–2300 m alt.

Species with some regional variation and between the extremes there is a full range of intermediates. *A. tenuiberbis* also intergrades with *A. brazzae* and *A. appendiculatus* which are themselves heterogeneous; *A. brazzae* has almost glabrous, often awnless racemes; *A. appendiculatus* is a smaller plant with broader spikelets and somewhat clavate internodes hollowed at tip (fide Fl. Trop. E. Afr., Gramin. 3: 776–777, 1982).

A. textilis Rendle; Fl. Zambes. 10/4: 75, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 341, 2005.

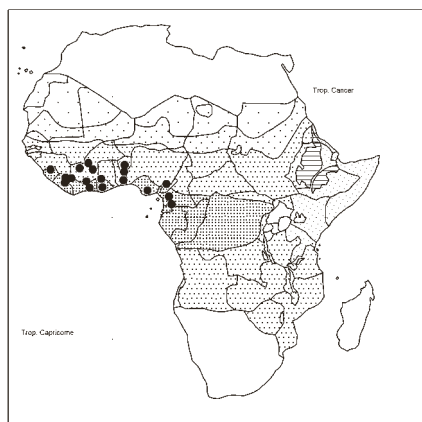
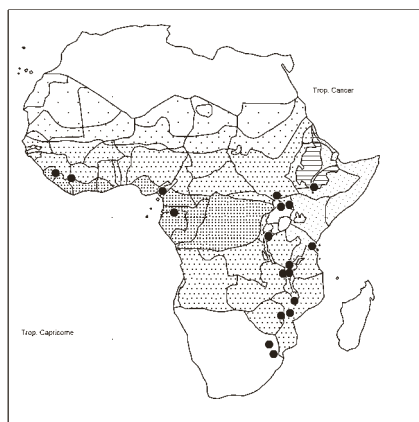
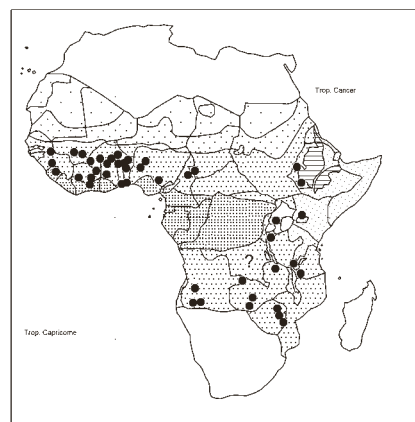
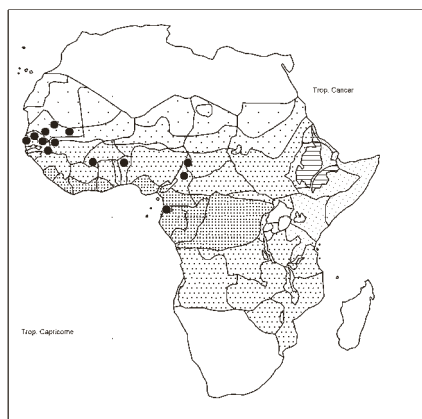
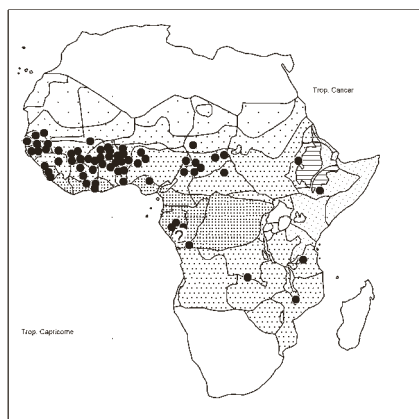
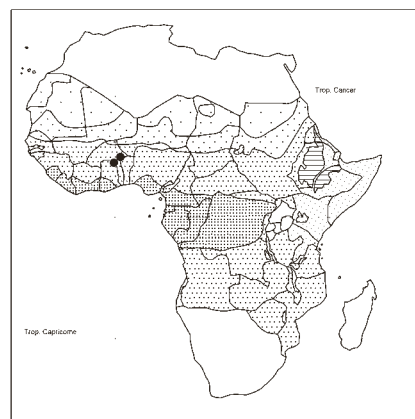
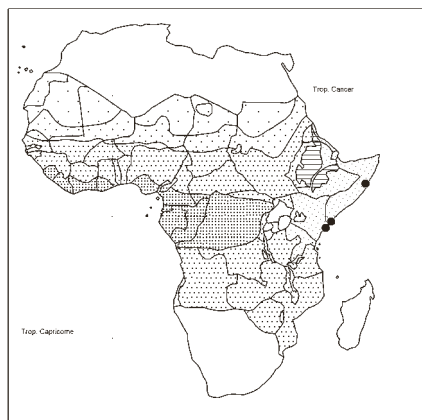
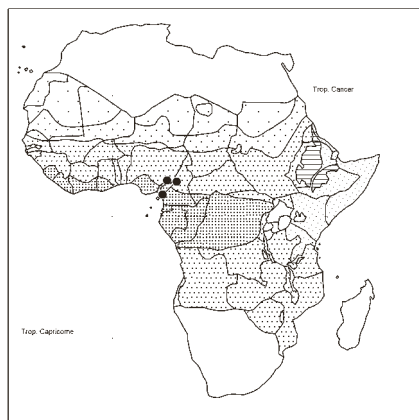
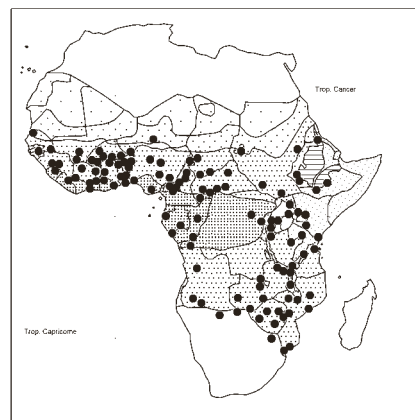
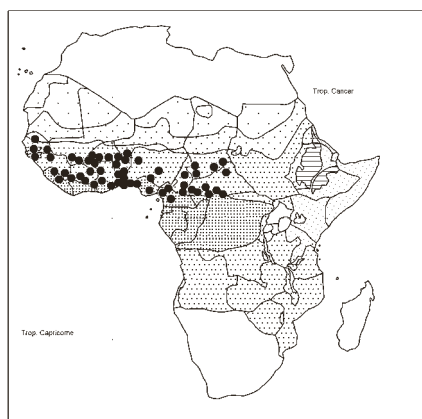
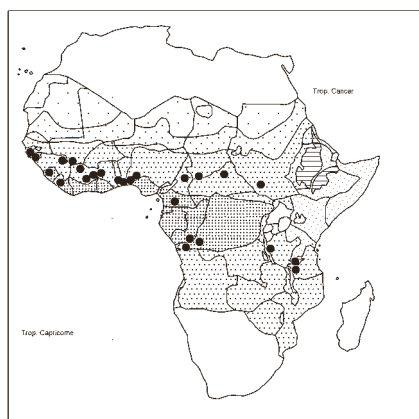
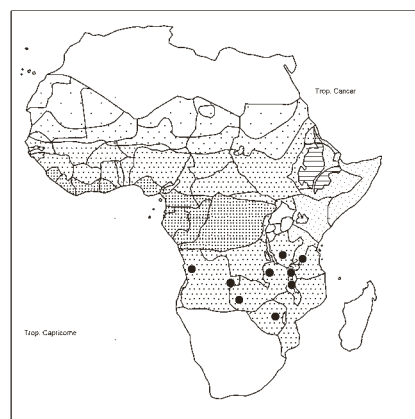
syn.: *A. schizachyrioides* J. Duvern.; *A. roseus* Napper; *Sehima textilis* (Rendle) Keng; *Cymbachne textilis* (Rendle) Roberty

Perennial tufted herb; culms 0.5–1.65 m tall, erect, branched above, tinged dark red; leaf blades filiform, 15–63 cm × 1–6 mm, apex a fine point; inflorescence of single silvery hairy racemes gathered into a loose false panicle; racemes 3–5 cm long; sessile spikelet 6–8 mm long, awn 7–15 mm long; pedicellate spikelet 6–8 mm long.

Grassland; *Brachystegia (boehmii)* woodland; open places; damp meadows; fertile sandy soils; 1250–2500 m alt.

SYNONYMS selected:

Andropogon achtenii Robyns = **Anadelphia hamata acicularis** Willd. 1806 = **Chrysopogon aciculatus acicularis** Roem. & Schult. 1817 = **C. aciculatus aciculatus** Retz. = **C. aciculatus acutispathaceus** De Wild. = **Hyparrhenia variabilis aethiopicus** Rupr. ex Steud. pro syn.
= **Andropogon gayanus** var. **bisquamulatus** afor J. F. Gmel. = **Ischaemum afrum**

*Andropogon macrophyllus**Andropogon mannii**Andropogon perligulatus**Andropogon pinguipes**Andropogon pseudapricus**Andropogon pteropholis**Andropogon pungens**Andropogon pusillus**Andropogon schirensis**Andropogon tectorum**Andropogon tenuiberbis**Andropogon textilis*

ANDROPOGON

afzelianus Rendle = **Anadelphia afzeliana**
altissimus Hochst. ex A. Braun, non (Poir.) Raspail
 = **Hyparrhenia rufa** var. **rufa**
amethystinus Steud. var. *breviaristatus* Hack. and var. *lima*
 Hack = **Andropogon lima**
amplectens Nees = **Diheteropogon amplexens**
amplectens var. *catangensis* Chiov., var. *diversifolius*
 (Rendle) Stapf, and var. *hirsutus* Pilg. = **D. amplexens**
 var. **catangensis**
amplectens var. *natalensis* Hack. = **D. amplexens** var.
amplectens
andongensis (Rendle) K. Schum.
 = **Hyparrhenia andongensis**
androphilus Stapf = **Elymandra androphila**
annulatus Forssk. = **Dichanthium annulatum**
annulatus var. *decalvatus* Hack. = **D. annulatum** var.
annulatum
annulatus var. *papillosus* (Hochst. ex A. Rich.) Hook. f.
 = **D. annulatum** var. **papillosum**
annuus Hack. = **Parahyparrhenia annua**
anthesterioides Rupr. ex M. Martens & Galeotti
 = **Hyperthelia dissoluta**
anthistirioides Hochst. ex A. Rich.
 = **Hyparrhenia anthistirioides**
anthistirioides var. *procerus* Chiov. = **H. coleotricha**
appendiculatus Nees var. *polycladus* Hack.
 = **Andropogon gayanus** var. **polycladus**
apricus var. *africanus* Hack. = **A. pseudapricus**
apricus var. *chinensis* (Nees) Hack. and var. *indicus* Hack.
 = **A. chinensis**
argenteopilosus De Wild. = **A. eucomus** subsp. **huillensis**
argenteus Vanderyst = **Schizachyrium thollonii**
aristatus (Poir.) C. E. Hubb. = **Dichanthium aristatum**
aristidoides Steud. = **Chrysopogon plumulosus**
aromaticus Roxb. ex Schult. = **C. zizanioides**
arrectus Stapf = **Anadelphia afzeliana**
arrenobasis Hochst. ex Steud.
 = **Hyparrhenia arrhenobasis**
arthropogon Pilg. = **Schizachyrium jeffreysii**
arundinaceus Willd. = **Sorghum arundinaceum**
ascinodis C. B. Clarke = **Andropogon chinensis**
aucheri Boiss. = **Chrysopogon aucheri**
aucheri var. *quinqueplumis* (A. Rich.) Hack.
 = **C. plumulosus**
aucheri var. *subpungens* Hack. = **C. aucheri**
aureus Bory = **Eulalia aurea**
baddadae Chiov. = **Elymandra grallata**
bagirmicus (Stapf) A. Chev. = **Hyparrhenia bagirmica**
barbatus L. 1771, non 1759 = **Chloris barbata**
barteri Hack. = **Hyperthelia barteri**
bavicchii De Wild. = **Schizachyrium thollonii**
bequaertii De Wild. = **Hyparrhenia gossweileri**
bicolor (L.) Roxb., non Nees = **Sorghum bicolor**
bicornis Forssk. 1775, non L. 1753
 = **Cymbopogon caesius**
bisquamulatus Hochst., incl. var. *argyrophoeus* Stapf
 = **Andropogon gayanus** var. **bisquamulatus**
bisulcatus Chiov. = **Hyparrhenia newtonii** var. **newtonii**
bladhii Retz. = **Bothriochloa bladhii**
bonangensis Franch. = **Hyparrhenia rufa** var. **rufa**
bovonei Chiov. = **Elymandra lithophila**
brachyatherus Hochst. = **Ischaemum afrum**
brachypodus Stapf = **Hyparrhenia bagirmica**
bracteatus Hamb. & Bonpl. ex Willd. = **H. bracteata**
brevifolius Sw., incl. var. *flaccidus* (A. Rich.) Hack. and
 var. *minor* Vanderyst = **Schizachyrium brevifolium**

ANDROPOGON

brieyi De Wild. = **Andropogon gabonensis**
buchananii Stapf = **Hyparrhenia poecilotricha**
buchneri Hack. = **Diheteropogon filifolius**
caesius Hook. & Arn. = **Cymbopogon caesius**
caespitosus A. Rich. = **Elionurus muticus**
calvescens Stapf = **Andropogon tenuiberbis**
caricosus L. 1763 = **Dichanthium caricosum** (L. 1763)
 A. Camus (Taxon 65: 885–886, 2016; ibid. 66:
 507–508, 2017)
centralis Pilg. = **A. perligulatus**
chrysopus (Hack.) Trab. = **Chrysopogon aucheri**
ciliaris (Kunth) Trin. = **Elionurus ciliaris**
circinnatus Hochst. & Steud.
 = **Cymbopogon schoenanthus** subsp. **schoenanthus**
citratus DC. = **C. citratus**
citriodorus Desf. 1815, nom. nud. = **C. citratus**
claudopus Chiov. = **Schizachyrium claudopus**
cognatus Steud. = **Andropogon schirensis**
coleotrichus Steud. = **Hyparrhenia coleotricha**
commutatus Steud., incl. var. *flavicundus* Chiov. and var.
violaceus Chiov. = **Cymbopogon commutatus**
comosus Hochst. ex A. Rich. = **Hyparrhenia coleotricha**
comosus Link = **Dichanthium annulatum** var. **annulatum**
compressus Stapf, incl. var. *pleiocladus* Stapf
 = **Schizachyrium rupestre**
condylotrichus Hochst. ex Steud., incl. var. *palmeri*
 Chiov. and var. *piptatherus* (Hack.) Chiov.
 = **Euclasta condylotricha**
confinis Hochst. ex A. Rich. = **Hyparrhenia confinis**
confinis var. *macrarrhenus* Hack. = **H. niariensis** var.
macrarrhena
confinis var. *nudiglumis* Hack. = **H. confinis** var.
nudiglumis
confinis var. *pellitus* Hack. = **H. confinis** var. **pellita**
congoensis Franch. = **Andropogon schirensis**
connatus Hochst. ex A. Rich. = **Cymbopogon caesius**
contortus L., incl. var. *glaber* (Hack.) Hack., var.
macroglumis Pilg., subvar. *roxburghii* (Arn.
 ex Nees) Hack., and subvar. *secundus* Hack.
 = **Heteropogon contortus**
cordofanus Hochst. = **Andropogon gayanus** var.
bisquamulatus
cornucopiae Hack. = **Hyperthelia cornucopiae**
cuspidatus Hochst. ex A. Rich. = **Arthraxon cuspidatus**
cyanescens (Stapf) A. Chev. = **Hyparrhenia cyanescens**
cyrtocladus Stapf = **Andropogon kelleri**
densiflorus Steud. = **Cymbopogon densiflorus**
dewevrei De Wild. = **Andropogon gayanus** var.
polycladus
diatherus Steud. = **Diectomis fastigiata**
diversifolius Rendle = **Diheteropogon amplexens** var.
catangensis
doloensis Vanderyst = **Euclasta condylotricha**
donianus Benth. = **Elionurus platypus**
dubius Kunth = **Elionurus muticus**
dulcis Burm. f. = **Eleocharis dulcis (Burm. f.) Trin.
 (Cyperaceae)
dummeri Stapf, incl. var. *calvus* Stapf
 = **Andropogon schirensis**
elegantissimus Steud., incl. var. *abyssinicus* Steud. and var.
arabicus Steud. = **Elionurus royleanus**
elionuroides Vanderyst = **Andropogon eucomus** subsp.
huillensis
emarginatus De Wild. = **Diheteropogon filifolius**
ericolesus K. Schum. 1897 = **Anadelphia afzeliana****

ANDROPOGON

eriphorus Willd. = **Cymbopogon schoenanthus** subsp. **schoenanthus**
eucnemis Trin. = **Andropogon canaliculatus**
excavatus Hochst. = **Cymbopogon caesi**
exilis Hochst., incl. var. *glabrescens* Rendle, var. *petitianus* (A. Rich.) Hack., and var. *plurispicatus* Pilg. = **Schizachyrium exile**
exothecus Hack. = **Elionurus abyssinica**
fasciculatus L. = **Microstegium fasciculatum**
fasciculatus (Brog.) Steud., non L. nec Raspail = **Ischaemum polystachyum**
felicitis Reznik = **Andropogon chevalieri**
ferracidulus Stapf 1916 = **Bothriochloa radicans**
ferrugineus Hochst. ex Steud. = **Andropogon chrysostachyus**
filifolius (Nees) Steud. = **Diheteropogon filifolius**
flabellifer Pilg. = **Andropogon mannii**
floccosus Schweinf. = **Cymbopogon commutatus**
formosus Hack. = **Hyparrhenia formosa**
formosus André = **H. schimper**
foveolatus Delile, incl. var. *plumosus* A. Terracc. = **Dichanthium foveolatum**
fragalissimus Hochst. ex Hack. = **Schizachyrium exile**
fragillimus Hochst. ex Steud. = **S. exile**
fulvibarbis Trin. = **Chrysopogon fulvibarbis**
fulvicornis Hochst., incl. var. *approximatus* Hochst. = **Hyparrhenia rufa** var. *rufa*
fundaensis Vanderyst = **Trachypogon spicatus**
gambiensis A. Chev. – See above under **Andropogon**; ? perhaps a **Schizachyrium**
gayanus Kunth var. *argyrophoeus* (Stapf) Stapf and var. *cordofanus* (Hochst.) Hack. = **Andropogon gayanus** var. *bisquamulatus*
gayanus var. *squamulatus* (Hochst.) Stapf = **A. gayanus** var. *polycladus*
gazensis (Rendle) Eyles = **Hyparrhenia gazensis**
giganteus Fenzl ex Steud. 1854 = **Cymbopogon schoenanthus** subsp. *proximus*
giganteus Hochst., non C. Cordem. nec Fenzl ex Steud. nec Ten. = **Cymbopogon giganteus**
glaber Roxb. = **Bothriochloa bladhii**
glabrescens Hochst. ex Steud. = **Andropogon abyssinicus**
glabriusculus Hochst. ex Steud. = **Andropogon glabriuscula**
glaucopurpureus Stapf = **Anadelphia afzeliana**
golae Chiov. = **Andropogon schirensis**
grandiflorus Hack. = **Diheteropogon filifolius**
grisebachii (J. A. Schmidt) Steud. = **Elionurus royleanus**
guineensis Schumach. 1827 = **Andropogon gayanus** var. *gayanus*
guineensis Steud. 1854 = **A. auriculatus**
guineensis P. Beauv. ex Hochr. 1898 = **Schizachyrium pulchellum**
haenkei J. Presl = **Bothriochloa bladhii**
helophilus K. Schum. = **Andropogon gayanus** var. *polycladus*
hirtiflorus (Nees) Kunth, incl. var. *brevipedicellatus* Beal, var. *genuinus* Hack., var. *gracilis* Rendle, var. *oligostachyus* (Chapm.) Hack., var. *semibertis* (Nees) Stapf, and var. *pubiflorus* (E. Fourn.) Hack. = **Schizachyrium sanguineum**
hirtus L., incl. var. *podotrichus* (Hochst. ex Steud.) Hack. = **Hyparrhenia hirta**
hispidissimus Steud. = **Heteropogon contortus**
hochstetteri Steud. = **Dictomis fastigiata**
homblei De Wild. = **Diheteropogon filifolius**

ANDROPOGON

homogamus Stapf = **Andropogon amethystinus**
huillensis Rendle, incl. var. *africanus* Rendle and var. *minor* Rendle = **A. eucomus** subsp. *huillensis*
humilis Hochst. ex A. Rich. = **A. amethystinus**
hylophilus Engl. 1894, nom. nud. = **A. gayanus** var. *polycladus*
incanellus Clayton = **A. africana**
incompletus J. Presl = **Sorghastrum incompletum**
infrasulcatus Reznik = **Andropogon gayanus** var. *gayanus*
inscalptus (Hochst.) Schweinf. = **Sehima ischaemoides**
insculptus Hochst. ex A. Rich. = **Bothriochloa insculpta**
intermedius R. Br., incl. subvar. *glaber* (Roxb.) Hack., and var. *acidula* Stapf = **B. bladhii**
ischaemum L. var. *americanus* Hack., var. *radicans* (Lehm.) Hack. and var. *somalensis* Stapf = **B. radicans**
isostachyus Peter = **Andropogon tenuiberbis**
jeffreysii Hack. = **Schizachyrium jeffreysii**
jwarancusa Jones subsp. *laniger* (Desf.) Hook. f. = **Cymbopogon schoenanthus** subsp. *schoenanthus*
jwarancusa Jones var. *proximus* (Hochst. ex A. Rich.) Hack., and var. *sennarensis* (Hochst.) Hack. = **Cymbopogon schoenanthus** subsp. *proximus*
kalinaensis Vanderyst 1920, nom. provis. = **Andropogon africanus**
kasaiensis Vanderyst, nom. nud. = **A. tenuiberbis**
kilimandscharicus Pilg. = **A. amethystinus**
kindunduensis Vanderyst = **Diheteropogon filifolius**
lanceolatus Roxb. = **Arthraxon lanceolatus**
lancifolius Trin. = **A. lancifolius**
laniger Munro 1882, nom. nud., non Desf. 1799 = **Cymbopogon schoenanthus** subsp. *schoenanthus*
laxatus Stapf = **Andropogon eucomus** subsp. *huillensis*
laxatus var. *kigulatus* Stapf and var. *ligulatus* Stapf = **A. ligulatus**
lecomtei Franch. = **Hyparrhenia newtonii** var. *newtonii*
lepidus Nees var. *tamba* (Hochst. ex Steud.) Hack. = **Hyparrhenia tamba**
lepidus subvar. *umbrosus* (Hochst.) Hack. = **H. umbrosa**
leptocomus Trin. = **Anadelphia leptocoma**
leptostachyus Benth. = **Schizachyrium sanguineum**
lindensis Pilg., incl. var. *hirsutissimus* Pilg. = **Andropogon chinensis**
linearis Stapf = **A. africanus**
lithophilus Trin. = **Elymandra lithophila**
lomba Vanderyst, nom. provis. = **Andropogon gabonensis**
longipes Hack. = **A. amethystinus**
lopollensis Rendle = **Schizachyrium lopollense**
lumeneensis Vanderyst = **S. sanguineum**
luteolus Vanderyst = **Hyperthelia dissoluta**
macleodiae Stapf = **Andropogon canaliculatus**
macrolepis Hack. = **Hyperthelia dissoluta**
macrostachyus (Hochst. ex A. Rich.) Schweinf. = **Sehima nervosum**
mascatensis Gand. = **Cymbopogon schoenanthus** subsp. *schoenanthus*
matteodanus Chiov. = **Ischaemum afrum**
melanocarpus Elliott = **Heteropogon melanocarpus**
mobukensis Chiov. = **Hyparrhenia mobukensis**
modicus De Wild. = **H. hirta**
monatherus A. Rich. = **Exotheca abyssinica**
mukuluensis Vanderyst = **Schizachyrium mukuluense**
multicaulis Steud. = **Anthraxon lancifolius**
multinervis Hochst. ex Steud. = **Andropogon abyssinicus**
multiplex (Hochst. ex A. Rich.) Hack. = **Hyparrhenia multiplex**

ANDROPOGON

nardoides Nees = **Cymbopogon schoenanthus** subsp. **schoenanthus**
nardoides Nees var. *minor* Nees = **Cymbopogon caesius**
nardus L., non Blanco = **C. nardus**
nardus var. *stenanthus* Hack. & var. *stracheyi* Hook. f. = **C. pospischilii**
nardus var. *validus* Stapf = **C. nardus**
nervatus Hochst. = **C. nervatus**
nervosus Rottler = **Sehima nervosum**
newtonii Hack. = **Hyparrhenia newtonii**
niariensis Franch. = **H. niariensis**
niger (Ard.) Kunth = **Sorghum bicolor**
nigritanus Benth. = **Chrysopogon nigritanus**
nlemfuensis Vanderyst = **Hyparrhenia bracteata**
nlemfuensis var. *villosus* Vanderyst = **H. newtonii** var. **newtonii**
nodulosus Hack. = **Schizachyrium nodulosum**
nodulosus var. *glabrescens* Pilg. = **S. urceolatum**
nsoki Vanderyst, incl. var. *van-houttei* Vanderyst and var. *violascens* Vanderyst = **Hyparrhenia niariensis** var. **niariensis**
nutans L. var. *africanus* Franch. and var. *incompletus* (J. Presl) Hack. = **Sorghastrum incompletum**
nyassae Rendle = **Hyparrhenia nyassae**
obtusius Nees ex Hook. & Arn. = **Dichanthium annulatum** var. **annulatum**
papillipes Hochst. ex A. Rich. = **Hyparrhenia papillipes**
papillipes var. *major* Hochst. ex Steud. = **H. arrhenobasis**
papillosus Hochst. ex A. Rich. = **Dichanthium papillosum** var. **papillosum**
pappi Gand. = **Sorghum purpureosericeum**
patris Robyns = **Andropogon chinensis**
pendulus Peter = **Hyparrhenia rufa** var. **rufa**
perrieri A. Camus = **Andropogon eucomus** subsp. **huillensis**
pertusus (L.) Willd. var. *capensis* Hack., subvar. *hirtus* Chiov., var. *insculptus* (Hochst. ex A. Rich.) Hack., var. *maroccanus* Maire, and subvar. *trifoveolatus* Hack. = **Bothriochloa insculpta**
pertusus var. *vegetior* Hack. = **B. bladhii**
petitianus A. Rich. = **Schizachyrium exile**
pilosellus Stapf = **Andropogon amethystinus**
pilosovaginat De Wild. = **Hyparrhenia bracteata**
piptatherus Hack., incl. var. *erectus* Hack. and var. *palmeri* Hack. = **Euclasta condylotracha**
platybasis J. G. Anderson = **Andropogon mannii**
platypus Trin. = **Elionurus platypus**
pleiarthron Stapf = **Hyparrhenia poecilotracha**
plumosus Humb. & Bonpl. ex Willd. = **Trachypogon spicatus**
plurinodis Stapf = **Cymbopogon pospischilii**
podotrichus Hochst. ex Steud. = **Hyparrhenia hirta**
poecilotrachus Hack. = **H. poecilotracha**
polyatherus Hochst. ex A. Rich., incl. subvar. *apterus* Hack., var. *genuinus* subvar. *glabrescens* (Hochst. ex Steud.) Hack., subvar., *multinervis* (Hochst. ex Steud.) Hack., and subvar. *scabriglumis* Hack., var. *plagiopus* (Hochst. ex Steud.) Hack. and subvar. *intermedius* Chiov. = **Andropogon abyssinicus**
polystictus Hochst. ex Steud. = **Heteropogon melanocarpus**
pospischilii K. Schum. = **Cymbopogon pospischilii**
pratensis Hochst. ex Hack., incl. subvar. *pilosus* Hack. and var. *pseudoabyssinicus* Chiov. = **Andropogon amethystinus**
princeps A. Rich. = **Thelepogon elegans**

ANDROPOGON

prionodes Steud. = **Arthraxon prionodes**
prolixus Stapf = **Andropogon africanus**
proximus Hochst. ex A. Rich. = **Cymbopogon schoenanthus** subsp. **proximus**
pseudauriculatus Mimeur = **Andropogon chevalieri**
pseudoschinzii Stapf = **A. chinensis**
pulchellus D. Don ex Benth. = **Schizachyrium pulchellum**
purpureosericeus Hochst. ex A. Rich., incl. var. *calomelas* Hack. and var. *pallidior* Hack. = **Sorghum purpureosericeum**
purpureus Stapf = **Andropogon mannii**
quinqueplumis (A. Rich.) Steud. = **Chrysopogon plumulosus**
radicans Lehm. = **Bothriochloa radicans**
ravennae L. = **Saccharum ravenne**
ravus J. G. Anderson = **Andropogon schirensis**
reconditus Steud. = **A. gayanus** var. **gayanus**
rhynchophorus Stapf = **Sehima ischaemoides**
ringoetii De Wild. = **Andropogon gayanus** var. **polycladus**
roseus Napper = **A. textilis**
rufus (Nees) Kunth, incl. subvar. *approximatus* (Hochst.) Chiov., var. *fulvicornis* (Hochst.) Hack., var. *glabrescens* Chiov., and var. *ruficornis* Peter = **Hyparrhenia rufa**
rufus var. *auricomus* Pilg. = **H. nyassae**
rupestris K. Schum. = **Schizachyrium rupestre**
sanguinari Schreb. = **Andropogon distachyos**
scabrimarginatus De Wild. = **Hyparrhenia collina**
scaettae Robyns = **H. mobukensis**
scandens Roxb. = **Dichanthium annulatum** var. **annulatum**
schangulensis Rupr. ex Steud. = **Sehima ischaemoides**
schimper Hochst. ex A. Rich., incl. var. *longiscus* Hochst. ex A. Rich. = **Hyparrhenia schimper
schinzii Hack. = **Andropogon chinensis**
schizachyrioides J. DuRoi. = **A. textilis**
schlechteri Hack. = **A. festuciformis**
schliebenii Pilg. = **A. tenuiberbis**
schoenanthus L. = **Cymbopogon schoenanthus**
schoenanthus var. *caesius* (Hook. & Arn.) Hack. = **C. caesius**
schoenanthus var. *densiflorus* (Steud.) Hack. and subsp. *densiflorus* (Steud.) Hack. = **C. densiflorus**
schoenanthus subsp. *nervatus* (Hochst.) Hack. = **C. nervatus**
schoenanthus var. *proximus* (Hochst. ex A. Rich.) A. Chev. & subsp. *Proximus* (Hochst. ex A. Rich.) Maire = **C. schoenanthus** subsp. **proximus**
schoenanthus var. *versicolor* (Nees ex Steud.) Hack. = **C. schoenanthus** subsp. **schoenanthus**
schweinfurthii Hack. = **Schizachyrium schweinfurthii**
scintillans (Stapf) Pilg. = **S. scintillans**
seemianus Pilg. = **Andropogon amethystinus**
sennarensis Hochst. = **Cymbopogon schoenanthus** subsp. **proximus**
sericeus R. Br. = **Dichanthium sericeum**
serratus Retz. var. *versicolor* (Andersson) Hack. = **Sorghum versicolor**
serrulatus Link 1821 = **Arthraxon lanceolatus**
serrulatus A. Rich. 1850 = **A. prionodes**
setifer Pilg. = **Hyparrhenia bracteata**
simplex Schumacher. – See above under **Andropogon** – Apparently a species of **Schizachyrium**
smithianus Hook. f. = **Hyparrhenia smithiana**
sorghum (L.) Brot. = **Sorghum bicolor****

ANDROPOGON

sorghum subsp. *abyssinicus* Piper, and var. *aethiopicus* Hack., and var. *effusus* Hack., and subsp. *effusus* (Hack.) Hitchc., and subsp. *vogelianus* Piper
= **S. arundinaceum**
sorghum var. *abyssinicus* Hack. and var. *aegyptiacus* Körn.
= **S. bicolor**
sorghum var. *virgatus* Hack. = **S. virgatum**
spanianthus Pilg. = **Andropogon chinensis**
spectabilis K. Schum. = **A. tectorum**
spicatus (L. f.) Steud. = **Trachypogon spicatus**
squamulatus Hochst. = **Andropogon gayanus** var.
polycladus
squarrosus var. *nigritans* (Benth.) Hack.
= **Chrysopogon nigritanus**
stagninus Vanderyst = **Schizachyrium kwiluense**
stipoides Kunth, non (J. Presl) Kunth
= **Sorghastrum stipoides**
stolzii Stapf = **Andropogon mannii**
stypticus Welw. 1862 = **Cymbopogon densiflorus**
subamplectens Berhaut = **Diheteropogon amplexens** var.
catangensis
subcordatifolius De Wild. = **D. amplexens** var.
catangensis
sylvaticus C. E. Hubb. = **Andropogon chinensis**
tacazensis Steud. = **Sehima nervosum**
tamba Hochst. ex Steud. = **Hyparrhenia tamba**
tenuiculmis Reznik = **Andropogon tectorum**
tenuiflorus Stapf = **Anadelphia leptocoma**
ternatus var. *africanus* Rendle = **Andropogon eucomus**
subsp. **huillensis**
thollonii Franch. = **Schizachyrium thollonii**
thomasi C. E. Hubb. = **Andropogon mannii**
tomentellus Steud. = **A. gayanus** var. **tridentatus**
transvaalensis Stapf = **Hyparrhenia hirta**
tremulus Hack. = **Chrysopogon serrulatus**
trepidarius Stapf = **Anadelphia trepidaria**
trichopus Stapf = **Sorghastrum stipoides**
tridentatus Hochst. 1844 = **Andropogon gayanus** var.
tridentatus
trinii Steud., incl. var. *increscens* (Steud.) Hack. and var.
simplicior Hack. = **Chrysopogon serrulatus**
truncatus (Nees) Steud. = **Trachypogon spicatus**
tumidulus Stapf = **Andropogon perligulatus**
umbrosus Hochst. = **Hyparrhenia umbrosa**
urceolatus Hack. = **Schizachyrium urceolatum**
ursulus (Stapf) Pilg. = **S. jeffreysii**
vanderystii De Wild. = **Hyparrhenia nyassae**
versicolor Nees ex Steud. = **Cymbopogon schoenanthus**
subsp. **schoenanthus**
verticillatus Schumach. 1827 = **Chrysopogon fulvibarbis**
verticilliflorus Steud. = **Sorghum arundinaceum**
viancinii Franch. = **Hyparrhenia niariensis** var. **niariensis**
villosus Thunb., non Lam. = **Eulalia villosa**
vulgaris Vanderyst, incl. var. *glaucus* Vanderyst and var.
major Vanderyst = **Hyparrhenia diplandra**
vulgaris Raspail = **Sorghum bicolor**
welwitschii (Rendle) K. Schum.
= **Hyparrhenia welwitschii**
wombaliensis Vanderyst ex Robyns, incl. var. *ciliatus*
Robyns = **H. wombaliensis**
xanthoblepharis Trin. = **H. rufa** var. **rufa**
yinduensis Vanderyst = **H. rufa** var. **rufa**
yunguensis Vanderyst, nom. provis.
= **Andropogon festuciformis**
zizanioides (L.) Urb. var. *nigritanus* (Benth.) A. Chev.
= **Chrysopogon nigritanus**

ANDROPTERUM / 1

Andropterum stolzii (Pilg.) C. E. Hubb.; Brenan & al. in Mem. New York Bot. Gard. 9: 112, 1954; Gereau & al., Lake Nyasa florist. checklist: 86, 2012. – Icon.: Hook. Icon. Pl. 31: pl. 3077, 1922 (as *A. variegatum*); Fl. Trop. E. Afr., Gramin. 3: 753, 1985; Fl. Zambes. 10/4: 59, 2002.

bas.: *Ischaemum stolzii* Pilg.

syn.: *Andropterum variegatum* Stapf; *Sehima variegatum* (Stapf) Roberty

Perennial rambling herb rooting at nodes; culms to c. 60 cm long; leaf blades flat, linear, 5–20 × 0.3–1.5 cm, tip fine, pungent; racemes solitary, 4–11 cm long, long exserted; sessile spikelet 5–8 mm long, awn inconspicuous 8–15 mm long; pedicellate spikelet 6–10 mm long, purplish, *glumes* prominently *winged*.

Dambos; streamsides, pond margins; edges of riverine forest; damp places; forming tangled stands on wet ground in woodland gullies; 900–2400 m alt.

(ANEMAGROSTIS)

Anemagrostis spica-venti (L.) Trin. = **Apera spica-venti**
tenella Steud. = **Arundinella pumila**

(ANISANTHA)

Anisantha diandra (Roth) Tutin ex Tzvelev

= **Bromus diandrus**

fasciculata (C. Presl) Nevski, incl. subsp. *delilei* (Boiss.)

H. Scholz & Valdés = **B. fasciculatus**

flabellata (Hack. ex Boiss.) Holub = **B. fasciculatus**

madritensis (L.) Nevski, incl. subsp. *haussknechtii* (Boiss.)

H. Scholz = **B. madritensis**

madritensis subsp. *delilei* (Boiss.) Bracchi, Banfi &

Galasso = **B. fasciculatus**

rubens (L.) Nevski = **B. rubens** subsp. **rubens**

rubens subsp. *kunkelii* (H. Scholz) H. Scholz = **B. rubens**

subsp. **kunkelii**

(ANOMALOTIS)

Anomalotis quinqueseta Steud. = **Agrostis quinqueseta**

(ANTHENANTIA)

Anthenantia asiatica Hand.-Mazz. = **Digitaria setifolia**

ANTHEPHORA / 9

Genus of 11 species in Africa, Arabia to Iran, and tropical America from Florida (introduced), Mexico to Ecuador – Venezuela.

The inflorescence is a cylindrical false spike with primary branches modified to form stiff clusters of spikelets and involucre bracts (Kellogg in K. Kubitzki, ed., Fam. & gen. vascul. pl. 13: 327, 2015).

Our compilation below follows the concept of the World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew, consulted in February 2020.

Antheophora ampullacea Stapf & C. E. Hubb; Fl. Trop. Afr., 9: 939–940, 1930; Fl. W. Trop. Afr., ed. 2, 3/2: 457, 1972; Lisowski, Fl. Rép. Guinée 1: 450, 2009.

Perennial tussocky herb; culms 0,75–1 m tall, erect, slender, *branched*, glabrous; lower leaf sheaths ± compressed, keeled, the basal villous at base, hairs greyish, the upper sheaths densely hirsute; blades linear, to 18 × 0,4 cm, finely acute; inflorescence a false spike, dense, cylindric, 8–17 cm long; branches reduced to minute stamps; each cluster composed of up to 9 spikelets; these acute to shortly acuminate, 4–6 mm long; involucre 5–6 mm long, *awnless*.

Savannas; sandy places; wasteland.

Intergrades with *A. elongata*, “and is doubtfully distinct at species level” (Fl. Zambes. 10/3: 192, 1989).

A. cristata (Döll) Hack. ex De Wild. & T. Durand 1900 nom. nud., 1901; Renier, Fl. Kwango 1: 49, 1948; Sosef & al., Checklist pl. vascul. Gabon: 181, 2006; Sosef & al. in Pl. Ecol. Evol. 152: 554–555 (2019; publication place & date; lectotypification of *A. elegans* var. *africana*). – Icon.: Robyns, Fl. agrostol. Congo Belge 2: 323, 1934; Fl. Gabon 5: 91, 1962; van der Zon, Gramin. Cameroun 2: 348, 1992; Poilecot in Boissiera 50: 451, 1995; Lisowski, Fl. Rép. Guinée 2: fig. 532, 2009; Velayos & al., Fl. Guinea Ecuat. 12: 160, 2015; Vande weghe & al., Pl. à fleurs Gabon: 175, 2016.

bas.: *A. elegans* Schreb. var. *cristata* Döll

syn.: *A. elegans* var. *africana* Pilg.; *A. appendiculata* A. Braun ex Pilg.

Annual herb 0,5–1 m tall; culms geniculate and rooting at base; leaf blades linear, 5–20 cm × 3–9 mm, glabrous or with long hairs at base; inflorescence spiciform, 3–11 cm long, c. 5 mm Ø, rigid, dense, composed of subsessile conical clusters 4–6 mm long, each of 3–8 glabrous spikelets; lower glumes of outer spikelets *united* for 1/3 of their length *to form a disc-like rimmed base* 3–4 mm Ø.

High sandy part of beach with *Sporobolus virginicus*, *Schizachyrium pulchellum*; hollows at edges of mangroves or lagoons with *Paspalum vaginatum*, *Panicum repens*, *Eleusine indica*; degraded sandy soil and fallow: with *Sporobolus pyramidalis*, *Melinis repens*, *Brachiaria distachyoides*; sometimes in small stands; sandy river banks; very common in poor sandy pastures and also among plantations of manioc, etc.; “almost everywhere along the whole Angola coast” (circa 1855 fide Welwitsch); 0–100 m alt.

Annobón.

Has been confused with *A. hermaphrodita* (L.) Kuntze, an annual plant common in tropical America from Mexico to Brazil, Peru. It is a weedy species native to maritime beaches, lowland pastures and disturbed areas (Barkworth & al., Manual of grasses N. America: 305, 2007). This plant differs from *A. cristata* in having the lower glumes almost free to the base and without the horizontal rim (Fl. Trop. Afr. 9: 936, 1930).

A. elongata De Wild., incl. var. *undulata* Chiov. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 663, 1982; Fl. Zambes. 10/3: 191, 1989; Malaisse & al., Copper-cobalt flora Upper Katanga...: 381, 2016.

syn.: *A. burtii* Stapf & C. E. Hubb.; *A. hochstetteri* Nees var. *glabra* Pilg.; *A. elegans* Rupr. ex Steud. var. *acuminata* Rendle; *A. acuminata* (Rendle) Robyns ex Stapf & C. E. Hubb.; *A. cenchroides* K. Schum. var. *glabra* (Pilg.) Peter

Perennial tufted herb; culms 0,5–1 m tall; leaf blades flat, linear, 10–40 cm × 2–10 mm; inflorescence spike-like, 8–20 cm long, its wavy rachis bearing deciduous subsessile clusters of 3–11 spikelets; these 0,6–1 cm long incl. awn (to 4 mm long).

ANTHEPHORA ELONGATA

Wooded grassland, commonly with *Brachystegia*; stony thickets; copper steppe savanna; 1000–2000 m alt.

A. ampullacea from W. Africa is “doubtfully distinct at species level” (awnless involucre), and in Fl. W. Trop. Afr., ed. 2, 3/2: 457, 1972, they are considered conspecific.

A. laevis (Schweinf.) Stapf & C. E. Hubb.; Darbyshire & al., Pl. Sudan & S. Sudan: 118, 2015. – Icon.: Fl. Eth. & Eritrea 7: 282, 1995 (details).

bas.: *A. elegans* Rupr. ex Steud. var. *laevis* Schweinf.

syn.: *A. hochstetteri* Nees var. *tellinii* Chiov.

Perennial tufted herb; culms slender, ascending 0,45–1,5 m long; leaf blades linear, 2,5–5 mm wide, glabrous or puberulous; inflorescence narrowly cylindrical, 7–12 cm long, with tightly erect clusters of spikelets, often purplish or blackish; spikelets 6–7 per cluster, ± elliptic, 4–5,5 mm long; involucre scales *glabrous*, *smooth*, *shiny*.

Dry stony ground; coastal lowlands (Sudan); ?–138 m alt.

From near the Red Sea, N-wards to the Dead Sea (S Israel, Jordan).

A few specimens with hairier, more sharply acute scales may be introgressions with *A. nigritana*.

A. nigritana Stapf & C. E. Hubb.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 182, 1994; Thulin, Fl. Somalia 4: 247, 1995; César & Chatelain, Fl. ill. Tchad: 241, 2019. – Icon.: Fl. Eth. & Eritrea: 282, 1995; Poilecot in Boissiera 56: 472, 1999; Cope, Fl. Arab. Penins...: 254, 2007 (details).

syn.: *A. lynesii* Stapf & C. E. Hubb.; *A. hochstetteri* sensu Wickens, non Nees; *A. sp. aff. nigritana* Stapf & C. E. Hubb

Perennial tufted herb; culms 0,5–1,5 m tall; leaf blades linear, 10–40 cm × 3–8 mm; inflorescence spike-like, *obscurely hairy*, 10–24 cm long, with clusters of c. 7 spikelets with *pubescent* peduncles; spikelets narrow, acute, 4–6 mm long.

Dry sandy, clayey or gravelly soils on ravine sides; *Acacia* woodland on rocky hillsides; rocky bushland; weed of arable land, fallows and shifting cultivations; c. 1160–1700 m alt.

Saudi Arabia, Yemen.

The plant has been under trial for fodder at agricultural stations. The grain is collected as a famine food.

A. pubescens Nees; Fl. Trop. E. Afr., Gramin. 3: 664, 1982; Fl. Zambes. 10/3: 192, 1989; Darbyshire & al., Pl. Sudan & S. Sudan: 118–119, 2015; César & Chatelain, Fl. ill. Tchad: 241, 2019. – Icon.: Thulin, Fl. Somalia 4: 248, 1995; Fl. Eth. & Eritrea: 7, 282, 1995; Cope, Fl. Arab. Penins...5/1: 254, 2007; Müller, Grasses Namibia: 21, 307, 2007; van Oudtshoorn: Guide grasses south. Africa: 78, 2012; Ibrahim Grasses Mali: 32, 2018.

syn.: *A. hochstetteri* Nees; *A. cenchroides* K. Schum., nom. superfl.; *A. kotschyi* Hochst.; *A. abyssinica* A. Rich.; *A. ramosa* Gooss.; *A. persica* Boiss.; *A. elegans* Rupr. ex Steud., pro syn.; *Cenchrus pubescens* Steud.; *Hypudaeurus cenchroides* Hochst. ex A. Baum, pro syn.; *Tripsacum pubescens* Licht. ex Nees, pro syn.

Perennial herb forming (dense) tufts up to c. 1 m Ø from a short, strong rhizome; culms 0,3–1,2 m tall, sometimes repeatedly branched; leaf blades flat, 3–40 cm long, 2–7 mm wide, glaucous; inflorescence spike-like, 5–25 cm long, 4–10 mm Ø, *silky-hairy*, with spikelet clusters densely packed; spikelets 6–7 per cluster, vase-shaped, *broadest below middle*, 6–11 mm long.

ANTHEPHORA PUBESCENS

Rocky slopes on sandy soils and in deciduous bushland; savanna woodland; dry riverbeds; 600–2300 m alt. (frequent above 900 m in Central Ennedi, Chad).

Algeria, Tunisia; Namibia, S. Africa, Botswana; ? Saudi Arabia, ? Yemen; Iran.

“Wool grass” is a highly palatable grass well utilized by livestock and game.

Tends to integrate with *A. nigritana*.

A. pungens Clayton; Fl. Zambes. 10/3: 190, 1989.

Annual herb; culms 30–40 cm tall; leaf blades linear, 2–6 cm × 2–6 mm, pubescent; inflorescence spike-like, 2–6 cm long; fascicles c. 6 mm long, *base of involucre* prolonged into a *pungent stipe 4 mm long*, bracts pubescent with cartilaginous margins connate for up to 1/2 their length, each tipped with an awn 6–15 mm long; spikelets 4–6 per cluster, c. 6 mm long.

Sand and dunes; 800–1100 m alt.

A. schinzii Hack. – Icon.: Müller, Grasses Namibia: 23, 2007.

syn.: *A. undulatifolia* Hack.

Annual loosely tufted herb; culms geniculately ascending, 10–40 cm long; leaf blades soft, flat, 17 × c. 1 cm, mostly hairless, margin thickened, wavy; inflorescence a false panicle 4–10 cm long, c. 1 cm Ø, covered with long hairs; involucre 0.4–2 cm long, base pilose, bracts tapering to a *caudate-acuminate apex*, or the shortest merely acute, commonly reflexed above the middle leaving spikelets exposed; spikelets 5 per cluster, vase-shaped, constricted in middle, hairy, to c. 1 cm long.

Low sandy hills; pioneer grass widespread especially in disturbed areas; river banks; water-logged soils; sometimes forming dense stands.

Namibia, Botswana, S. Africa.

A. truncata Robyns; Fl. Trop. E. Afr., Gramin. 3: 662, 1982; Fl. Zambes. 10/3: 190, 1989.

syn.: *A. gracilis* Stapf & C. E. Hubb.

Annual herb; culms 0.25–1 m long, erect or geniculately ascending, branched, rooting at nodes; leaf blades filiform, 5–15 cm × 2–5 mm; inflorescence a false spike 3–10 cm long, of clusters c. 5 mm long, each with c. 4 spikelets, glumes with awn 1–25 mm long.

Poor soils; disturbed places in wooded grassland and Itigi thicket; savanna; common in old cultivations; red sandy soils; 840–1600 m alt.

SYNONYMS:

Anthephora abyssinica A. Rich. = **Anthephora pubescens**

acuminata (Rendle) Robyns ex Stapf & C. E. Hubb.

= **A. acuminata**

appendiculata A. Braun ex Pilg. = **A. cristata**

burtii Stapf & C. E. Hubb. = **A. elongata**

cenchroides K. Schum. = **A. pubescens**

cenchroides var. *glabra* (Pilg.) Peter = **A. elongata**

elegans Rupr. ex Steud., pro syn. = **A. pubescens**

elegans var. *acuminata* Rendle = **A. elongata**

elegans var. *africana* Pilg., and var. *cristata* Döll

= **A. cristata**

elegans var. *laevis* Schweinf. = **A. laevis**

gracilis Stapf & C. E. Hubb. = **A. truncata**

hochstetteri Nees = **A. pubescens**

hochstetteri var. *glabra* Pilg. = **A. elongata**

hochstetteri var. *tellinii* Chiov. = **A. laevis**

ANTHEPHORA

hochstetteri sensu Wickens, non Nees = **A. nigritana**

kotschy Hochst. = **A. pubescens**

lynesei Stapf & C. E. Hubb. = **A. nigritana**

sp. aff. *nigritana* Stapf & C. E. Hubb. = **A. nigritana**

persica Boiss. = **A. pubescens**

ramosa Gooss. = **A. pubescens**

undulatifolia Hack. = **A. schinzii**

(ANTHISTIRIA)

Anthistiria abyssinica Hochst. ex A. Rich.

= **Exotheca abyssinica**

australis R. Br. = **Themeda triandea**

barteri Munro ex Oliv. = **Hyparrhenia involucrata** var.

involucrata

ciliata var. *hispida* Nees = **Tristachya leucothrix**

cymbaria (L.) Roxb. = **Hyparrhenia cymbaria**

dissoluta Nees ex Steud. = **Hyperthelia dissoluta**

forskali Kunth = **Themeda triandra**

glauca Desf. = **T. triandra**

hispida Thunb. = **Tristachya leucothrix**

imberbis Retz., incl. many vars. = **Themeda triandra**

latifolia Andersson = **Hyparrhenia cymbaria**

multiplex Hochst. ex A. Rich. = **H. multiplex**

paleacea (Poir.) Ball = **Themeda triandra**

pseudocymbaria Steud. = **Hyparrhenia anthistirioides**

punctata Hochst. ex A. Rich. = **Themeda triandra**

quinqueplex Steud. = **Hyparrhenia anthistirioides**

(ANTHOSACHNE)

Anthosachne elymoides (Hochst. ex A. Rich. Nevsky)

= **Elymus africanus**

ANTHOXANTHUM / 3

Genus of c. 22 species (excl. *Hierochloe*; Chumová & al. in Ann. Bot. 120: 285–286, 2017) or 18 (Christenhusz & al., Plants of the World: 208, 2017), in temperate Asia and Africa, and tropical mountains. The plants produce coumarin which makes them sweetly scented.

“The distinctive of *Anthoxanthum* L. and *Hierochloe* R. Br. has repeatedly been questioned due to the occurrence of seemingly intermediate species in Africa and SE Asia... using AFLPs, chloroplast and nuclear DNA sequences suggests that the intermediate taxa originated by ancient hybridization between the two genera. The question as to whether *Anthoxanthum* and *Hierochloe* should be kept separate or amalgamated in a single genus thus remains unanswered” (Kadereit & al. in Willdenowia 46: 46, 2016). However, Lema-Suárez & al. (2018: 389, 2018) state that the floral structure is key to the taxonomy of these genera. *Anthoxanthum* is characterised by 3-flowered spikelets which are shed as a unit at maturity. The lower 2 florets are sterile; the upper is bisexual and protogynous (Chumová & al., 2017: 285). The long protruding stigmas are a feature of the panicle.

However, a revised classification of the *Anthoxanthinae* is proposed by Tkach & al. (2020): 258 who include *Hierochloe* in *Anthoxanthum* “in view of the intermediate floral characters of *A. sect. Ataxia* (R. Br.) Stapf” (with new combinations for subspecies of *Hierochloe odorata* (p. 264). Cf. also C. Brochmann & al. in Alpine Bot. 132: 78, 80, 2022, on migration of *Anthoxanthum* in sub-Saharan Africa.

ANTHOXANTHUM

- AUQUIER, P. (1976). Un caractère phylogénique intéressant: la présence de fleurs fertiles aristées chez *Anthoxanthum nivale* K. Schum. (Poaceae). *Bull. Jard. Bot. Natl. Belg.* 46: 409–414.
- CHUMOVÁ, Z. al. (2017). The Mediterranean: the cradle of *Anthoxanthum* (Poaceae) diploid diversity. *Ann. Bot.* 120: 285–302.
- GIZAW, A. & al. (2017). Sweet vernal grasses (*Anthoxanthum*) colonized African mountains along two fronts in the Late Pliocene, followed by secondary contact, polyploidization and local extinction of the Pleistocene. *In*: MUSILI, P. M. & G. MWACHALA, *XXI Aetfat Congress 2017*: 218–219.
- LEMA-SUÁREZ, I. & al. (2018). A taxonomic and evolutionary review of the South American *Hierochloë* section *Monoecia* (Poaceae: Anthoxanthinae). *Bot. J. Linn. Soc.* 186: 389–413.
- MASHAU, A. C. (2016). A synopsis of *Anthoxanthum* (Poaceae: Pooideae: Poaeae) in southern Africa and description of a new subspecies. *Kew Bull.* 71/2: § 18: 1–5.
- PIMENTEL, M. & E. SAHUQUILLO (2007). Relationships among some populations of *Anthoxanthum alpinum* and *A. odoratum* (Poaceae, Pooideae): A morphological/anatomical approach. *Aliso* 23: 472–484.
- PIMENTEL, M. & E. SAHUQUILLO (2008). Relationships between the close congeners *Anthoxanthum odoratum* and *A. alpinum* (Poaceae, Pooideae) assessed by morphological and molecular methods. *Bot. J. Linn. Soc.* 156: 237–252.
- PIMENTEL, M. & al. (2010). Evolution and biogeography of a temperate grass genus: the sweet vernal grasses (*Anthoxanthum* s.l., Poaceae-Pooideae). *Scripta Bot. Belg.* 46 (AETFAT XIX): 355.
- TKACH, N. & al. (2020). Phylogenetic lineages and the role of hybridization as driving force of evolution in grass supertribe Pooideae. *Taxon* 69: 234–277 [see pp. 258, 264].

Anthoxanthum aethiopicum I. Hedberg – Icon.: *Bot. Not.* 129: 88–89, 1976; *Fl. Eth. & Eritrea* 7: 41, 1995.

Perennial tufted herb arising from thin wiry rhizomes; culms slender, erect or ascending to straggling, 20–50 cm long; leaf blades flat, 9–17 cm long, 2–4 mm wide, glabrous, acute; inflorescence an open or loosely contracted slender panicle 3.5–7 cm long; spikelets narrowly oblong, 7–c. 8 mm long, awns inconspicuous. Moist situations, often in light shade; 2700–4500 m alt.

Replaced on the E. African mountains by *A. nivale*.

A. ecklonii (Nees ex Trin.) Stapf, incl. subsp. *natalense* Mashau, *Kew Bull.* 71/2: § 18: 3, 2016 (icon. *ibid.*); Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 145, 2006. – Icon.: *Fl. Zambes.* 10/1: 73, 1971; Moffett, Grasses Eastern Free State: 49, 1997.

bas.: *Ataxia ecklonii* Nees ex Trin.

syn.: *Hierochloae ecklonii* (Nees ex Trin.) Nees; *Anthoxanthum brevifolium* Stapf

Perennial tufted rhizomatous herb to 80 cm tall; culms erect or ascending from a decumbent base, 12–75 cm long, simple or rarely branched below, base usually bulbous; leaf blades 1–25 cm long, 0.4–1 cm wide, tapering to a very fine acute point; inflorescence spike-like, 2–13 cm long, ± linear, compact but sometimes interrupted in lower part, shiny, pale green; spikelets 6–8 mm long.

Wet places in grassland; rocky terrain; often by pathsides; 1965–c. 2200 m alt.

S. Africa, Lesotho.

Subsp. ***natalense*** Mashau described from SE S. Africa, Drakensberg foothills, with smaller spikelets (map in *Kew Bull.* 71: 1.c., 2016).

A. nivale K. Schum.; Robyns & Tournay, *Fl. spermat. Parc Natl. Albert* 3: 178, 1955; Mbuni & al. in *PhytoKeys* 120: 25, 2019. – Icon.: *Fl. Trop. E. Afr., Gramin.* 1: 78, 1970; Auquier in *Bull. Jard. Bot. Natl. Belg.* 46: 411–412, 1976; Troupin, *Fl. Rwanda* 4: 185, 1988.

syn.: *A. scaposum* Peter

ANTHOXANTHUM NIVALE

Perennial tufted herb with slender rhizomes; culms 25–90 cm tall, clad below in papery sheaths which form a soft spongy white covering; leaf blades usually 8–25 cm long, 0.4–1 cm wide, tip abruptly narrowed or obtuse, usually hairy; inflorescence an untidily cylindrical false panicle 5–15 cm long, 1–1.5 cm Ø, straw coloured tinged with purple; spikelets lanceolate, to c. 1 cm long.

Moist ground in grassland; moorland often along streams; sometimes in small stands; on rocky and mossy slopes; grassland with *Alchemilla*; 2400–4800 m alt.

Resembling *A. aethiopicum*.

SYNONYMS:

Anthoxanthum brevifolium Stapf = ***Anthoxanthum ecklonii indicum*** L. = ***Perotis indica pulchellum*** D. Dietr. = ***Centotheca lappacea scaposum*** Peter = ***Anthoxanthum nivale spiculiforme*** Steud. = ***Perotis indica***

(ANTOSCHMIDTIA)

Antoschmidtia bulbosa (Stapf) Peter
= ***Schmidtia pappophoroides kalahariensis*** (Stent) Bremek. & Oberm.
= ***S. kalahariensis quinqueseta*** (Benth. ex Ficalho & Hiern) Boiss.
= ***S. pappophoroides***

(APERA)

(***Apera spica-venti*** (L.) P. Beauv.)

syn.: *Anemagrostis spica-venti* (L.) Trin.

Indicated from Mauritania in World Checklist of Selected Plant Families, Poaceae, 2015. However, Dobignard & Chatelain (*Index synonymique flore Afrique N.* 1: 228, 2010) only cite the species from Morocco and Algeria (in N Africa).

Apera spica-venti occurs in Europe E-wards to Siberia, in Macaronesia, in the Mediterranean region E-wards to NW Iran.

(APOCHAETE)

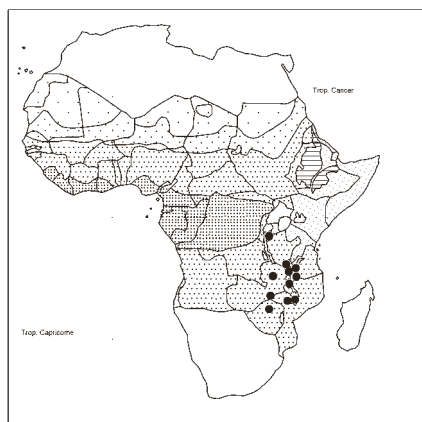
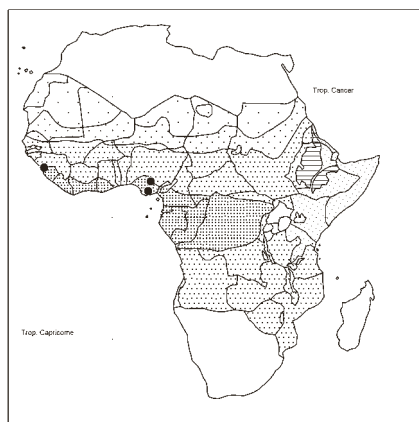
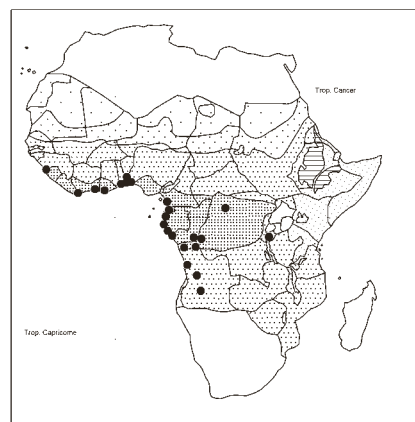
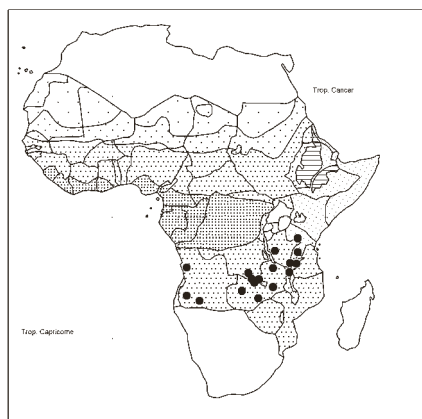
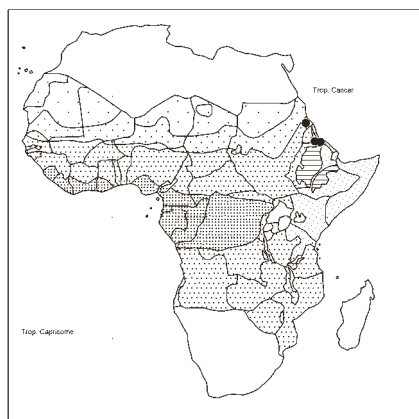
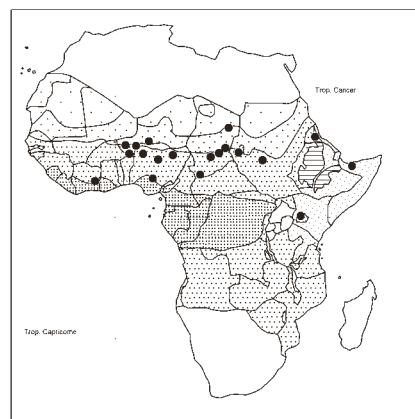
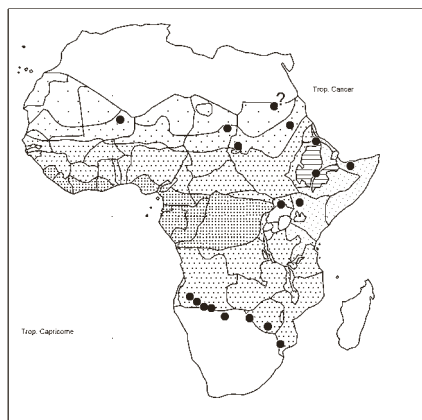
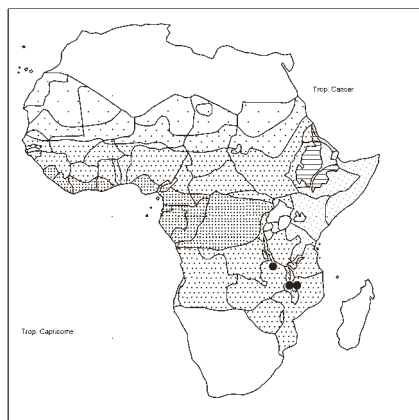
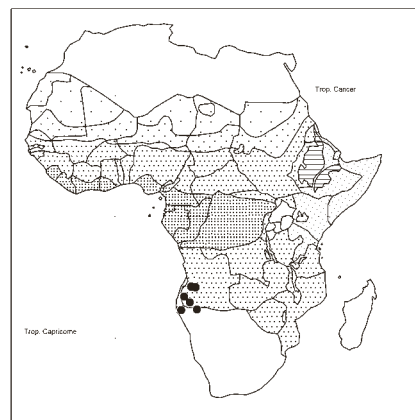
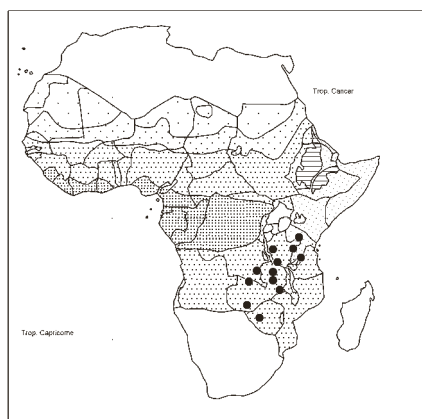
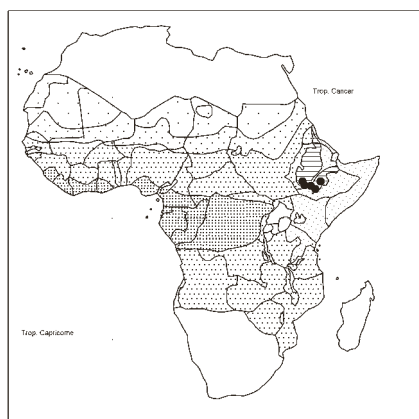
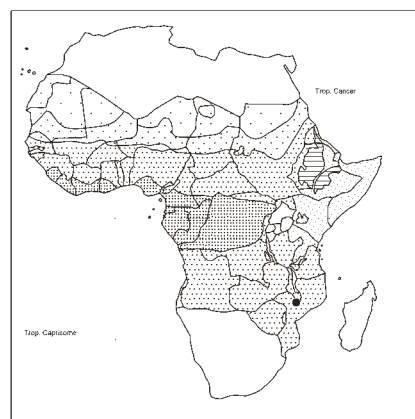
Apochaete auronitens (J. Duvern.) J. B. Phipps
= ***Tristachya auronitens hispida*** (Nees) J. B. Phipps = ***T. leucothrix thollonii*** (Franch.) J. B. Phipps = ***T. thollonii***

APOCHITON / I

Apochiton burttii C. E. Hubb. – Icon.: Hooker's Icon. Pl. 34: pl. 3319, 1936; *Fl. Trop. E. Afr., Gramin.* 2: 187, 1974.

Annual loosely tufted herb; culms 20–90 cm long, erect or geniculately ascending, rooting at lower nodes; leaf blades linear, to 30 cm × 4 mm; inflorescence a panicle, oblong-ovate, loose, 3–20 cm long, branches branched, the spikelets on filiform short pedicels; spikelets oblong, 6–8 mm long, 3–5-flowered; lemma silky hairy, awned; *palea* c. 3 mm long 2-awned, awn 2–3.5 mm long.

Deciduous bushland, in grey, sandy, seasonally wet soils; farm fallows; 1100–1600 m alt.

*Andropterum stolzii**Anthephora ampullacea**Anthephora cristata**Anthephora elongata**Anthephora laevis**Anthephora nigritana**Anthephora pubescens**Anthephora pungens**Anthephora schinzii**Anthephora truncata**Anthoxanthum aethiopicum**Anthoxanthum ecklonii*

(ARCANGELINA)

Arcangelina africana (Coss. & Durieu) Kuntze
= **Tripogon africanus**

(ARGOPOGON)

Argopogon vuilletii Mimeur = **Ischaemum polystachyum**

(ARISTELLA)

Aristella keniensis (Pilg.) Röser & Hamasha = **Stipa keniensis**

ARISTIDA / 52

A large genus worldwide of poor soils and low rainfall areas (Burkill, Useful plants W. Trop. Afr., ed. 2, 2: 182, 1994); distribution throughout the tropics and subtropics, especially along the Tropics of Cancer and Capricorn. Christenhusz & al. (Plants of the World: 208, 2017) give 297 species, and Kellogg (in Kubitzki, ed., Families & genera of vascular plants 13: 268, 2015) c. 304 species. The genus has 4 centres of diversity, viz., N. America, C. & S. America, Australia, and Africa (Simon in Austral. Syst. Bot. Soc. Newsl. 136: 43, 2008).

The genus *Stipa* occurs in similar habitats. The two genera are “ordinarily simple to distinguish by the characteristic three awns in *Aristida* and a single awn in *Stipa* ... The three awns of *Aristida* are remarkably morphologically plastic in their lengths, relative lengths, orientation, fusion, twisting and disarticulation.” An example: a study of *Aristida* in Madagascar showed that the endemic *Stipa perrieri* A. Camus is in fact a 1-awned variant of *Aristida tenuissima* A. Camus (Voronstsova in Phytotaxa 92: 55, 2013). However, the similarity sometimes given between *Aristida* and *Stipa* is superficial and does not reflect common origin. *Aristida* differs from *Stipa* by its C₄ photosynthetic system.

Members of *Aristida* are characterised by a paniculate inflorescence, one-flowered spikelets, and relatively large glumes, usually larger than the floret (Strahan & Allred in J. Bot. Res. Inst. Texas 2: 309, 2008).

BASAULA, N. & T. RICHEL (1984). La tribu des Aristideae (Poaceae) au Zaïre. *Bull. Soc. Roy. Bot. Belg.* 117: 312–320.

CERROS-TLATILPA, R. & al. (2011). Phylogenetic relationships of *Aristida* and relatives (Poaceae, Aristidoideae) based on noncoding chloroplast (trnL-F, rpl 16) and nuclear (ITS) DNA sequences. *Amer. J. Bot.* 98: 1868–1886 [p. 1880: “Core African clade”].

HENRARD, J. T. (1926–1933). A critical revision of the genus *Aristida* being a preliminary study and an introduction to the monograph. *Meded. Rijks Herb.* 54: 1–220 (Vol. 1, 1926); 54A: 221–464 (Vol. 2, 1927); 54B: 465–701 (Vol. 3, 1928); 54C: 703–747 (Supplement, 1933).

HENRARD, J. T. (1929–1933). A monograph of the genus *Aristida*. *Meded. Rijks Herb.* 58: 1–153, pl. I–LX (Vol. 1, 1929); 58A: 157–325, pl. LXI–CLIX. (Vol. 2, 1932); Index (I–XII, 1933).

VORONTSOVA, M. S. (2013). Variable morphology of the Madagascar endemic *Aristida tenuissima* (Poaceae: Aristidoideae) and the absence of *Stipa* (Poaceae: Pooideae, Stipeae) from Madagascar. *Phytotaxa* 92: 55–58.

Among the 52 species recorded from our area, only 3 has no ecology recorded, and 1 species is known only from the type (*A. humidicola*). Some other species are known from very few collections.

Aristida abnormis Chiov.; Cope in Kew Bull. 47: 279, 1992 (in key); Thulin, Fl. Somalia 4: 161, 1995; Fl. Eth. & Eritrea 7: 77, 1995. – Icon.: Audru & al., Pl. vascul. Djibouti, flore ill. 2: 838, 1994;

ARISTIDA ABNORMIS

Cope, Fl. Arab. Penins. 5/1: 102, 2007 (spikelet); Ghasemkhani & al. in Willdenowia 38: 138 (spikelet), 139 (map), 2008.

syn.: *A. redacta* auct. non Stapf

Annual herb; culms short but up to 40 cm long, erect or spreading, branching; leaf blades to 10 cm long, convolute, sharply acute; panicle loose, open, sometimes contracted but not spike-like, ± ovate, 6–10 cm long; spikelets purple-tinged; glumes subequal, 5–7.5 mm long; *lemma differentiated into fertile and sterile portions*; central awn 0.7–2.3 cm long, lateral awns to 1.3 cm long but sometimes absent.

Dry sandy stony soils; sparsely vegetated limestone hillsides; 100–350 m alt.

Arabian Peninsula; S Iran, Pakistan.

The differentiated lemma is a unique character shared with *A. redacta* Stapf from India. Also differentiated by its abbreviated lateral awns. Also very similar to *A. fredschoizii* H. Scholz & Kürschner (icon.: Willdenowia 30: 275, 2000) from Oman; “it carries to the ultimate the reduction of the awns...: the central to a short bristle, the laterals to barely detectable lateral points” (Ghazanfar, l.c., map p. 208). Possibly a sympatric off type of *A. abnormis*.

A. adoensis Hochst. ex A. Rich.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 135–136, 1955; Bull. Soc. Roy. Bot. Belg. 117: 313–314, 319 (map), 1984; Rwaburindore in Lidia 5/5: 127, 2001; Agnew, Upl. Kenya wild flow., ed. 3: 415, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 119, 2015. – Icon.: Henrard, Monograph *Aristida* 2, Meded. Rijks Herb. 58a: pl. 135, 1932; Troupin, Fl. Rwanda 4: 187, 1988; Fl. Eth. & Eritrea 7: 79, 1995; Agnew, Field key upl. Kenya grasses: pl. 2/5, 2006 (details).

syn.: *A. coerulescens* Hochst. ex Steud. 1854, pro syn., non Desf. 1798 (= *A. adscensionis*); *A. furfurosa* Henrard

Perennial tussocky herb 0.25–1.2 m tall; leaf blades filiform, 5–25–40 cm × 3 mm; inflorescence *spike-like*, linear, 5–20 cm long, 1 cm Ø, sometimes interrupted below; *branches usually hairy in their axils*; spikelets densely crowded, enclosed by subequal, narrow, *pointed* glumes c. 1 cm long, *exceeding lemma*.

Deciduous bushland on dry, shallow, eroded or overgrazed soils; well drained grassland; dry grassy clearings in woodland and along roadsides; gravelly hills along river; savanna on hard soils; 930–2700 m alt.

A. adscensionis L., incl. numerous vars. and some subsp., i.a. subsp. *coerulescens* (Desf.) Bourreil & Trouin ex Auquier & J. Duvern., subsp. *guineensis* (Trin. & Rupr.) Henrard, and subsp. *heymanii* (Regel) Tzvelev 1971, nom. inval., var. *aethiopica* (Trin. & Rupr.) T. Durand & Schinz, var. *festuoides* (Poir.) Henrard, var. *coerulescens* (Desf.) Hack., var. *ehrenbergii* (Trin. & Rupr.) Henrard, var. *guineensis* (Trin. & Rupr.) Henrard, var. *senegalensis* (Trin. & Rupr.) T. Durand & Schinz., etc. – Renier, Fl. Kwango 1: 55, 1948; Bull. Soc. Roy. Bot. Belg. 117: 316–317, 319 (map), 1984; Cope in Kew Bull. 47: 279, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 182–183, 1994; Thulin, Fl. Somalia 4: 162, 1995; Fl. Eth. & Eritrea 7: 79, 1995; Klaasen & Craven, Checklist grasses Namibia: 10, 2003 (map); Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 228–229, 2010 (incl. *A. coerulescens*); Darbyshire & al., Pl. Sudan & S. Sudan: 119, 2015; Daget in Ecol. Mediterr. 40: 60, 2015 (Mauretania); Schmidt & al. in Phytotaxa 304: 35, 2017 (map); César & Chatelain, Fl. ill. Tchad: 191, 2019. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 380, 1972; van der Zon, Gramin. Cameroun 2: 95, 97 (map), 1992; Poilecot in Boissiera 50: 99, 1995; idem, ibid. 56: 167, 1999; Boulos, Fl. Egypt 4: 239, 2005 (details); Peruzzi & Passalacqua in Taxon 53:

ARISTIDA ADSCENSIONIS

543–544, 2004 (lectotypification subsp. *coerulescens*); Agnew, Field key Upl. Kenya grasses: pl. 2/6, 2006 (details); Cope, Fl. Arab. Penins. 5/1: 102, 2007 (idem); van Oudtshoorn, Guide grasses south. Afr.: 108, 2012; Velayos & al., Fl. Guinea Ecuat. 12: 161, 2015; Ibrahim & al., Grasses Mali: 33, 2018. – Pl. 9.

syn.: *A. coerulescens* Desf. 1798, non Hochst. ex Steud. 1854, with several vars.; *A. canariensis* Willd.; *A. festucoides* Poir.; *A. bromoides* Kunth; *A. abyssinica* Trin. & Rupr.; *A. aethiopica* Trin. & Rupr.; *A. submucronata* Schumacher & Thonn.; *A. pumila* Decne.; *A. curvata* (Nees) Nees ex A. Rich.; *A. ehrenbergii* Trin. & Rupr.; *A. guineensis* Trin. & Rupr.; *A. vulgaris* var. *abyssinica* Trin. & Rupr.; *A. curvata* var. *abyssinica* A. Rich.; *A. mauritiana* Hochst. ex A. Rich. 1850, nom. illeg., non Kunth 1829 but also of Kunth 1829; *A. heymanii* Regel; *A. teneriffae* Steud.; *A. coerulescens* var. *breviaristata* Schweinf. and var. *exilis* Schweinf. ex Blatt.; *A. cardosoi* Cout.; *Chaetaria coerulescens* (Desf.) P. Beauv.; *C. canariensis* (Willd.) P. Beauv.; *C. festucoides* (Poir.) P. Beauv.; *C. interrupta* (Cav.) P. Beauv.; *C. curvata* Nees; for further synonyms, See World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard. Kew.

Annual or short-lived perennial (*A. coerulescens*) herb forming erect or sprawling tufts 0.1–1 m tall; leaf blades linear, 1–20–35 cm × 1–3 mm; inflorescence a panicle to 30 cm long, occasionally lax, usually ± contracted about the main branches, sometimes narrow and dense; spikelets 1–4 cm long; glumes unequal, upper one 5–10 mm long, awn-less; column twisted (like a corkscrew); gyrate awns (spirally contorted at base) observed by Kers from near Moçamedes, Angola, and considered by him as a local variant of this variable species [Bot. Not. 124: 20, 19 (fig.), 1971].

Sand, serpentine, basalt, paragneiss, dolorite, dark and sandy clay, loam, red-clayey soils in Mopane veld, sandveld, open grassland, savanna, open coastal scrub; scrub-woodland, stony hills, termite mounds, alluvial ground along river banks, dry lake-bed flats; cultivated fields; disturbed ground; pioneer plant of dry soils and waste places; heliophilous; heavy ground; banded vegetation on sandstone with *Elionurus elegans*, *Andropogon pseudapricus*, *Loudetia togoensis*, *Tripogon minimus*; fallows with *Pennisetum pedicellatum*, *Eragrostis ciliaris*, *E. aspera*, *E. tremula*, *Hackelochloa granularis*, *Aristida kerstingii*; degraded sandy soils near the littoral, along roads with *Eleusine indica*, *Sporobolus pyramidalis*, *Heteropogon contortus*, *Perotis indica*; flood plains; granitic or quartzite roccailles; inselbergs with

Aristidetosum adscensionis subassociation (Müller in Candollea 63: 60–63, 2008; Porembski & Brown in Candollea 50: 357, 1995; Tindani & al. in Bois Fôrets Trop. 325/3: 25, 2015); in ephemeral vegetation at shorelines of Sahelian seasonal lakes (Müller in Syst. Geogr. Pl. 75: 245, 2005); 0–2500 m alt.

Very variable, without apparent discontinuities; the more important variants are the annuals (*A. adscensionis* s. str.) and the short-lived perennials (*A. coerulescens*). Structural and functional modifications studied by Fatima & al. in Flora 249: 172–182, 2018; and lifeforms as criterion for species delimitation by Thiv & al. in Phytotaxa 393: 67–74, 2019.

N Africa, Madeira, Canary isl. (Willdenowia 39: 331, 2009); Cape Verde isl. (Garcia de Orta, Sér. Bot. 6: 23, 2002, as *A. cardosoi*; Gardère & al. in Adansonia, Sér. 3, 41: 161, 172–173, 2019); Annobón; Namibia, S. Africa, Botswana, Lesotho, Swaziland; Ascension Isl.; Madagascar, Mauritius, Réunion; S. Europe (Mediterranean region); Arabian Peninsula, Middle East, C Asia, N India (Willdenowia 35: 149, 2005, map), E-wards to SE Asia – New Guinea; not in Australia (Veldkamp in Reinwardtia 12:

ARISTIDA ADSCENSIONIS

137, 2004); N., C. & S. America. – A cosmopolitan pioneer of dry soils and waste places; widespread through the warm temperate, subtropical and tropical regions of the Old and New World.

A. aemulans Melderis; Basaula & Richel in Bull. Soc. Roy. Bot. Belg. 117: 316, 1984. – Icon.: Bol. Soc. Brot. Sér. 2, 44: pl. III & IV/C (after p. 288), 1970; Fl. Zambes. 10/1: 103, 1971.

Perennial tufted herb 40–70 cm tall; culms erect, branched at base, 2–3-noded, glabrous; blades of lower leaves to 40 cm long, c. 2 mm wide, flat, spirally curved, often with scattered long hairs above; inflorescence a panicle 13–20 cm long, long-exserted, contracted, ± interrupted below; branches usually single, much-branched, the lowermost 3–5 cm long; spikelets purplish green or brownish; glumes very unequal, the lower c. 4 mm long, the upper 6–7 mm; central awn 12–15 mm long, laterals 8–10 mm.

Edges of streams and dambos; open forest; open forest on deep ochre soil of dolomitic origin; 1300–1380 m alt.

Near *A. leucophaea* but differs from that by its glabrous smooth culms and the lower glume ± half the size of the upper and the shortly beaked lemma.

A. aequiglumis Hack.; Fl. Zambes. 10/1: 107–108, 1971. – Icon.: Henrard, Monogr. Aristida 2 (= Meded. Rijks Herb. 58a): pl. 111 (*A. huillensis*), 112 (*A. aequiglumis*), 1932; Bothalia 8: 262 (map S. Afr.), figs. 34–35, 159/11 (leaf blade cross sections), 1965.

syn.: *A. huillensis* Rendle

Perennial densely tufted “barley-like” herb to c. 40 cm tall; culms erect, slender, 3–4-noded, simple but rarely branched, nodes glabrous; leaf blades setaceous, to 15 cm × 1 mm, glabrous; inflorescence a panicle 6–15 cm long, linear-oblong, often lax, open, sometimes contracted; branches to 4 cm long, solitary or 2-nate, filiform, with 1–3 spikelets not clustered on the branches; glumes subequal, keeled, c. 5–9 mm long.

Sandy ground in open situations; seasonally flooded areas; paddocks; rock crevices and stony precipices of cataract; hill slopes; 1250–1460 m alt.

E S. Africa.

Related to *A. junciformis*.

A. anisochaeta Clayton; Cope in Kew Bull. 47: 279, 1992 (in key); Fl. Eth. & Eritrea 7: 81, 1995; Thulin, Fl. Somalia 4: 162–163, 1995.

Short-lived tufted perennial herb; culms wiry, much-branched, to 60 cm tall; inflorescence an open delicate panicle with spikelets loosely gathered towards tips of slender capillary branches; glumes very unequal, the lower 5–7 mm long, the upper 10–12 mm long; awns ± equal.

Acacia-Commiphora bushland on red sandy soils often over limestone; locally common in sandy plains of Ogaden (Ethiopia); 150–700 m alt.

A. barbicollis Trin. & Rupr., incl. var. *conglomerata* Henrard; Bull. Soc. Roy. Bot. Belg. 117: 318–319, 1984; Fl. Eth. & Eritrea 7: 84, 1995; Lye & al. in Lidia 4: 158, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 416, 2013. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 100, 1969; Fl. Trop. E. Afr., Gramin. 1: 158, 1970; Fl. Zambes. 10/1: 130, 1971; César & Chatelain, Fl. ill. Tchad: 190, 2019.

syn.: *A. congesta* subsp. *barbicollis* (Trin. & Rupr.) De Winter; *A. lommellii* Mez

Perennial densely tufted herb; culms 20–90 cm tall; leaf blades linear, 3–20 cm long; sheaths compressed, the lower strongly

ARISTIDA BARBICOLLIS

keeled; inflorescence an ovate *open panicle*, 7–20 cm long; spikelets grey/purple, crowded in *dense bushy spikes at end of main branches*; upper glume c. 10 mm long; awns > 15 mm long, spreading.

Deciduous bushland; open places; *Acacia* scrubland; red sandy soils and sandy-clay, paragneiss, serpentine soils; low granite kopjes projecting through black soils; sandveld; open bushland; *Brachystegia* and *Mopane* woodland; grassy hillsides; along roadsides; heavily overgrazed old fallows; paddocks; edge of sugar-cane lands; disturbed areas; river banks; 0–1800 m alt.

S. Africa, Botswana, Swaziland; Madagascar.

Closely related to the annual *A. mutabilis* and the two species are sometimes difficult to distinguish in E. Africa (overlapping distributions; cf. Fl. Eth. & Eritrea 7: l.c.). On the other hand, the spikelets of *A. barbicollis* cannot be distinguished from those of *A. congesta*, and the inflorescence-types tend to intergrade. However, the majority of the plants can be separated well enough by their inflorescence shape (Fl. Trop. E. Afr., Gramin. 1: 157, 1970).

A. bipartita (Nees) Trin. & Rupr.; Fl. Zambes. 10/1: 114, 1971. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 89, 1932; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 176, 2012.

bas.: *Chaetaria bipartita* Nees

Perennial or subperennial herb, densely tufted, with a short or erect or oblique rhizome; culms 20–65 cm tall, simple, 1–3 noded; leaf blades 16–20 cm × c. 2 mm, hard, dry, curled; inflorescence a *panicle* 10–30 cm long, *effuse*, with an angular scabrid axis; *branches* 1(–2), flexuous, spreading, 2–10 cm long, with *clusters of 1–4 spikelets at their ends*, with glandular pubescent patches in the axils; the inflorescence breaks off at maturity and then dispersed by the wind (“Rolling grass”); spikelets c. 2 cm long, delicate; glumes unequal.

Open grassland; damp places; clay soil.

Sometimes confused with *A. scabrivalvis*, an *annual* with shorter panicle branches and scabrid-hirtellous glumes.

S. Africa, Lesotho, Swaziland, ? Botswana.

A. brainii Melderis; Fl. Zambes. 10/1: 111–112, 1971. – Icon.: Bol. Soc. Brot., Sér. 2, 44: pl. I, IV/A (p. 288–289), 1970.

syn.: *A. serrulata* sensu Stent & Rattray 1933, non Chiov. 1924. Annual delicate herb to 50 cm tall; culms erect, ascending, glabrous, usually branched from lower nodes, 3–4-noded; leaf blades linear, to 16 × < 0.2 cm, densely ribbed; inflorescence an effuse panicle to 20 cm long, with 1–2 branches at nodes, each bearing 1–3 spikelets, with dark glandular patches in the axils; spikelets delicate, the lateral ones divaricate, on short pedicels (c. 1 mm); glumes unequal, 6–8 mm long.

Ecology in Zimbabwe unknown; c. 900 m alt.

Confused with *A. serrulata* Chiov. (Eritrea) but *A. brainii* has glabrous culms and panicle branches. Closely related to *A. scabrivalvis*.

A. congesta Roem. & Schult., incl. var. *megalostachya* Henrard and var. *pilifera* Chiov. and var. *tunetana* (Coss.) Bourreil; but excl. subsp. *barbicollis* (Trin. & Rupr.) De Winter (= *A. barbicollis*); Fl. Zambes. 10/1: 127–128, 1971; Fl. Trop. E. Afr., Gramin. 1: 156–157, 1970; Moffett, Grasses E. Free States: 53, 1997; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 229, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 119, 2015. – Icon.: Maire, Fl. Afr. N. 2: 54, 1953 (as *A. tunetana*); Bosser, Gramin. pâtur. cult. Madagascar: 98, 1969; Fl. Eth. & Eritrea 7: 85, 1995;

ARISTIDA CONGESTA

Agnew, Field key upl. Kenya grasses: pl. 2/8, 2006; Müller, Grasses Namibia: 111, 2007 (with map); Pickering & Roe, Wild flow. Victoria Falls area: 94, 2009; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 95, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013; César & Chatelain, Fl. ill. Tchad: 190, 2019 (details).

syn.: *A. congesta* var. *genuina* Chiov.; *A. alopecuroides* Hack.; *A. longicauda* Hack.; *A. tunetana* Coss., incl. var. *intermedia* Maire; *A. rangei* Pilg.; *A. elyptrophoroides* Chiov.; *Chaetaria congesta* (Roem. & Schult.) Nees

Perennial (short-lived), sometimes annual, densely tufted herb; culms 10–90 cm tall, erect or geniculate, simple or branched, 3–4-noded, with long white hairs at leaf nodes; leaf blades linear, 2–28 cm × 3–5 mm; inflorescence variable, *congested*, *dense*, spiciform, *to open*, bushy, 9–25 cm long, occasionally with 1–2 subspicate branches at base, “resembling an angry cat’s tail” (Müller, l.c.); spikelets densely fascicled, 2.5–3 cm long, awns with a twisted column; glumes unequal.

Deciduous bushland, often on stony slopes or open eroded places; dry sandy soils in open scrubland; sandy, basalt, black clayey soils, granite outcrops, Kalahari and overlying Karoo basalt, sandstones; in open grassland, vlei, mopane woodland, paddocks; near hot springs; fallow fields; old tobacco lands; waste places; overgrazed veld; 1500–2800 m alt.

Very variable species; in drier areas with a tendency to become annual; inflorescence variable (See above).

N. Africa from Morocco to Tunisia; Namibia, S. Africa, Botswana, Lesotho, Swaziland; Madagascar; Arabian Peninsula (Cope, Fl. Arab. Peninsula 5/1: 107–108, 2007).

Closely related to *A. barbicollis*, with some integration between them.

A. cumingiana Trin. & Rupr., excl. var. *diminuta* (Mez.) Jacq.-Fél., var. *reducta* Pilg., and var. *uniseta* Stent & J. M. Rattray (all = *A. diminuta*); Fl. Trop. E. Afr., Gramin. 1: 146, 1970; Bull. Soc. Roy. Bot. Belg. 117: 316, 319 (map), 1984; Fl. Eth. & Eritrea 7: 80, 1995; Veldkamp in Reinwardtia 12: 137, 2004; Lisowski, Fl. Rép. Guinée 1: 450, 2009; Darbyshire & al., Pl. Sudan & S. Sudan: 119, 2015. – Icon.: Bosser, Gramin. pâtur. cult. Madagascar: 104, 1969; Fl. Zambes. 10/1: frontisp., 1971; van der Zon, Gramin. Cameroun 2: 96, 97 (map), 1992 p.p. (= var. *cumingiana*); César & Chatelain, Fl. ill. Tchad: 191, 2019. – Pl. 11a & b.

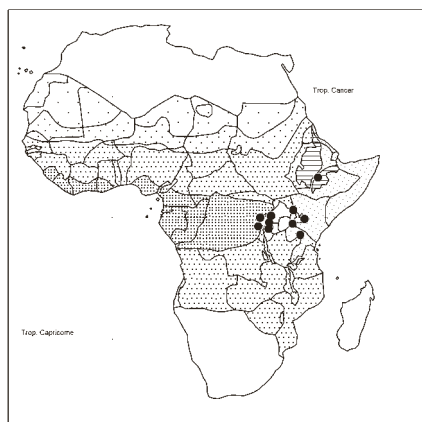
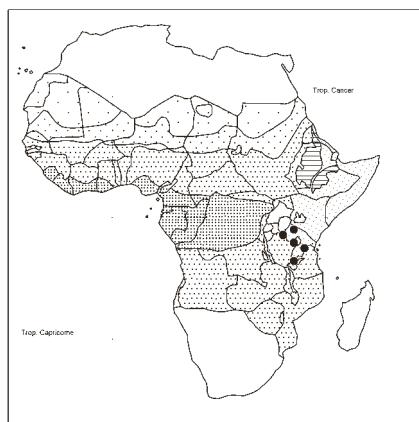
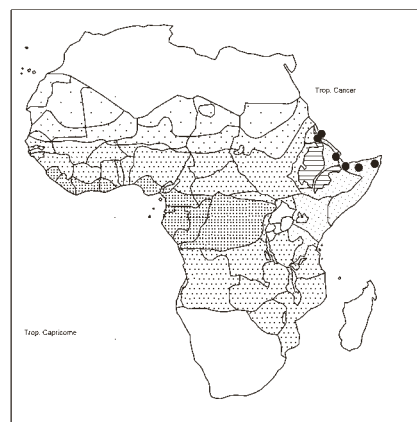
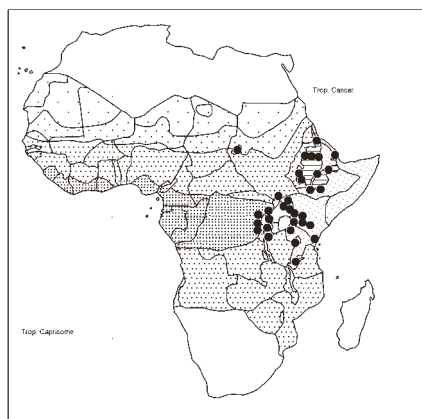
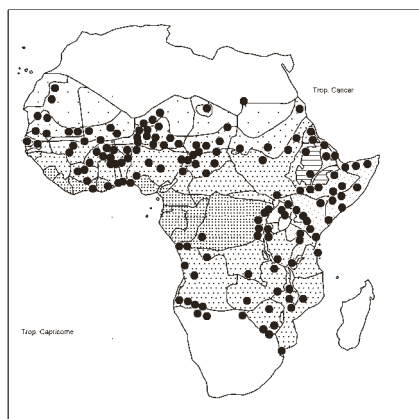
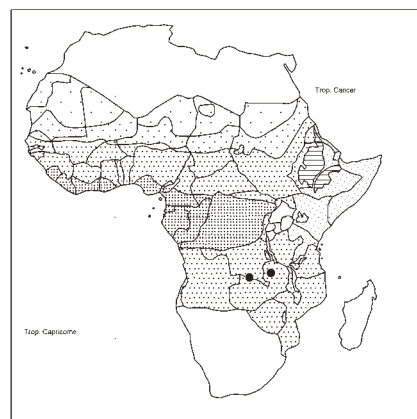
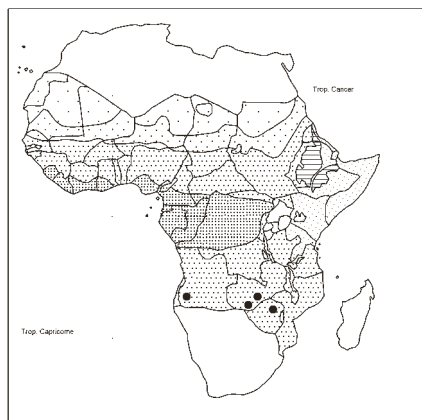
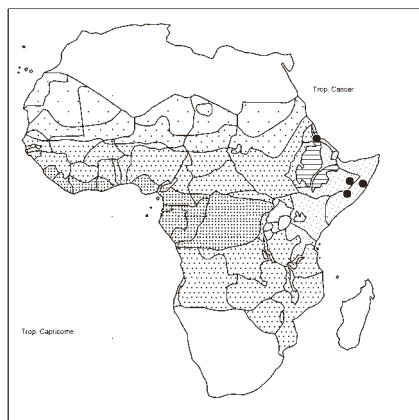
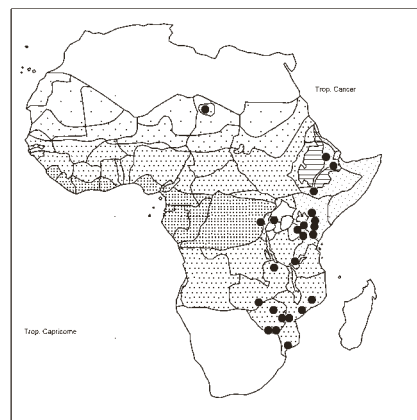
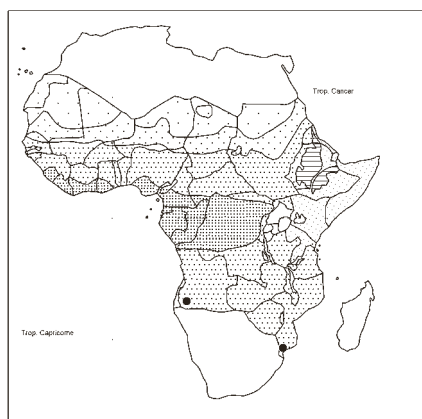
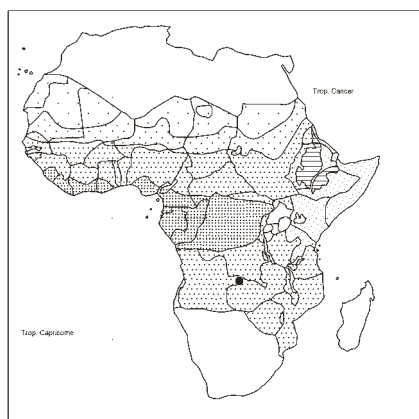
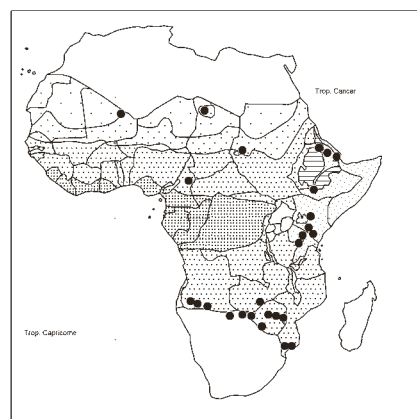
syn.: *A. delicatula* Hochst. ex A. Rich.; *A. capillacea* Cav. 1799, nom. illeg.; *A. capillaris* Kunth 1833, nom. inval.; *A. tenella* Kurz ex Hook. f. 1896, pro syn.; *A. trichodes* Walp. 1853, nom. superfl.; *Chaetaria trichodes* Nees 1850, nom. superfl.

Annual, *delicate* herb, sometimes tufted, 5–30 cm tall; culms erect, often much branched below, 1–2-noded; leaf blades narrow, cauline, 2–7 cm × 1 mm; inflorescence open, *delicate*, 3–8 cm long, lax, branches capillary; spikelets 2–2.5 mm long; glumes unequal, dark, purplish; *lemma* c. 2 mm long with 3 *unequal awns*, the central 4.5–6 mm long, *without column*.

Damp situations (unusual within the genus); on yellow-sandy or vlei (serpentine or norite) soils, mainly in open situations; hill-sides; clearings; semi-dambos in woodland; roadsides in moist dambos; ?–2000 m alt.

Madagascar; tropical & subtropical Asia from India E-wards to the Philippines, New Guinea; Australia (Queensland).

Uncommon or overlooked. Ecology very unusual in the genus. Near *A. diminuta*, but lemma with 3 awns.

*Anthoxanthum nivale**Apochiton burtii**Aristida abnormis**Aristida adoensis**Aristida adscensionis**Aristida aemulans**Aristida aequiglumis**Aristida anisochaeta**Aristida barbicollis**Aristida bipartita**Aristida brainii**Aristida congesta*

ARISTIDA

A. denudata Pilg.; Fl. Zambes. 10/1: 100–101, 1971. – Icon.: Henrard, Monogr. Aristida 2, Meded Rijks Herb. 58a: pl. 75, 1932.

Perennial *tufted* herb c. 50 cm tall; rhizomes well-developed; *bearing fascicles of culms*; these erect, slender, simple, 1–2-noded, glabrous, with a very long uppermost internode; leaf blades setaceous, 10 cm × 1–2 mm; inflorescence a *lax* panicle 5–12 cm long; branches 2-nate, the lower 4 cm long, *few-flowered*, the upper with 1–2 spikelets on long filiform pedicels; glumes unequal, the lower 8 mm long, the upper 10–11 mm, *lemma* c. 7 mm long with sometimes 1–2 *additional awn-like appendages*; awns subequal, *deflexed*, the central the longest, 3–3.5 cm long.

Shallow depressions; seasonally inundated swamps; fairly moist meadow.

A. dewinteri Giess; Klaassen & Craven, Checklist grasses Namibia: 10, 2003.

Annual herb to 1 m tall forming erect tufts; culms simple, somewhat geniculate, nodes and lower internodes usually purple; inflorescence an open spreading *bright yellow* panicle 30 × 15 cm; spikelets pallid, glabrous; *glumes* with a *black spot* at apex; glumes very unequal, the lower c. 4 mm long, the upper 10–11 mm.

In Namibia: rocky mountains; sandy plains below mountain slopes; in pure stands.

Namibia.

Near *A. stipoides* but lower glume shorter (c. 4 mm, not 5–7 mm), and glumes with a black spot.

A. diffusa Trin., incl. var. *brevistipitata* (Trin. & Rupr.) Henrard, var. *burkei* (Stapf) Schweick., subsp. *burkei* (Stapf) Melderis, var. *densa* (Trin. & Rupr.) Henrard, var. *eckloniana* (Trin. & Rupr.) Henrard, var. *pseudohystrix* (Trin. & Rupr.) Henrard, and var. *schraderiana* (Trin. & Rupr.) Henrard; Fl. Zambes. 10/1: 118–119, 1971. – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 28, 1929; Bothalia 8: figs. 53–55, 158/18, 1965; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 174, 2012.

syn.: *A. vestita* Thunb. var. *diffusa* (Trin.) Trin. & Rupr., var. *brevistipitata* Trin. & Rupr., var. *densa* Trin. & Rupr., var. *eckloniana* Trin. & Rupr., var. *pseudohystrix* Trin. & Rupr., var. *schraderiana* Trin. & Rupr., and subsp. *burkei* (Stapf) Melderis; *A. burkei* Stapf

Perennial, densely to laxly tufted herb; culms erect, 30–80 cm tall, rarely branched; leaf blades hard, narrow, rolled, to 30 cm long, 3 mm wide; sheaths, the lower sometimes woolly; inflorescence a lax open panicle to 30 cm long, often equal in width; branches c. 15 cm long, 2- or 3-nate, spreading, filiform; spikelets yellowish to purple, 2.5–4 cm long; glumes unequal, lower 4–9 mm long, upper 10–17 mm.

Serpentine or rubbly soils in hilly grasslands; 1460 m alt.

S. Africa, Botswana, Lesotho.

Two subspecies have been recognised, viz. subsp. **diffusa** in south. Cape Province, and subsp. **burkei** (Stapf) Melderis reaching Zimbabwe, with yellowish spikelets and longer glumes (to 17 mm).

A. diminuta (Mez) C. E. Hubb.; Fl. Zambes. 10/1: 108–109, 1971; Fl. Trop. E. Afr., Gramin. 1: 146–147, 1970; Bull. Soc. Roy. Bot. Belg. 117: 313, 319 (map), 1984; César & Chatelain, Fl. ill. Tchad: 191, 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 96, 1992 (as *A. cumingiana* var. *diminuta*); Ibrahim & al., Grasses Mali: 34, 2018. – Pl. 12.

bas.: *Stipa diminuta* Mez

ARISTIDA DIMINUTA

syn.: *Aristida cumingiana* var. *diminuta* (Mez) Jacq.-Fél., var. *reducta* Pilg., and var. *uniseta* Stent & J. M. Rattr.

Annual tufted slender herb 10–30 cm tall; culms erect, simple or *branched* at base; leaf blades cauline, narrow, 2–10 cm × 1 mm, with long scattered hairs above; inflorescence a loose panicle 4–10 cm long; branches capillary, lower ones 2–3-nate; spikelets c. 3 mm long, *dark purple* or *greenish tinged purple*; glumes unequal; lemma with 1 *awn*, 7–10 mm long.

Damp waste ground; flushes on granite slopes; sandveld; along drainage courses; vleis or dambo margins; forming colonies on seasonally waterlogged soils; 250–1370 m alt.

Closely resembling *A. cumingiana* (but that 3-awned!).

A. ferrilateris S. M. Phillips; Fl. Eth. & Eritrea 7: 80–81, 1995; Phillips in Symb. Bot. Upsal. 35/2: 136, 2011. – Icon.: Cope, Fl. Arab. Penins. 5/1: 102, 2007 (details).

syn.: *A. adoensis* auct. non Hochst.

Perennial densely tufted herb 25–70 cm tall; culms erect, smooth; leaf blades linear, pale green, to 30 cm × 2 mm, tip filiform; inflorescence *few-spiculate*, 9–23 cm long, primary branches linear, *subracemose*, erect, forming a sparse narrow panicle, or lower branches often *widely spreading*; spikelets with ± equal glumes, 7–12 mm long; lemma 7–8 mm long; central awn 1.3–2 cm long, laterals 1–1.5 cm.

Rocky slopes on limestone with evergreen bushland; 1800–2000 m alt.

Saudia Arabia, Yemen.

Closely related to *A. adoensis* but in *A. ferrilateris* the panicle is much sparser, open, and awns unequal.

A. funiculata Trin. & Rupr., incl. var. *brevis* Maire, var. *mallica* (Edgew.) Henrard, var. *paradoxa* (J. A. Schmidt) Henrard, and var. *royleana* (Trin. & Rupr.) Hook. f.; Adansonia, Sér. 2, 11: 126, 1971; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 183–184, 1995; Fl. Eth. & Eritrea 7: 81, 1995; Darbyshire & al., Pl. Sudan & S. Sudan: 119, 2015; Daget, Florule de l'Adrar... in Ecol. Mediterr. 40: 60, 2015; Schmidt & al. in Phytotaxa 304: 35, 2017; César & Chatelain, Fl. ill. Tchad: 189, 2019. – Icon.: Maire, Fl. Afr. N. 2: 49, 1953; Naegelé, Les gramin. pâtur. Mauritanie: 69, 1977; Poilecot in Boissiera 56: 169, 1999; Boulos, Fl. Egypt 4: 239, 2005; Cope, Fl. Arab. Penins. 5/1: 106, 2007; Ibrahim & al., Grasses Mali: 35, 2018. – Pl. 13.

syn.: *A. funicularis* Trin. ex Steud. 1840, nom. nud.; *A. macrathetara* A. Rich.; *A. royleana* Trin. & Rupr.; *A. paradoxa* J. A. Schmidt; *A. mallica* Edgew.; *A. herbacea* Steud. ex T. Durand & Schinz; *Acratherum kotschyi* Hochst. ex Trin., pro syn.; further synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual densely tufted herb; culms wiry, 15–50 cm long; leaf blades linear, 4–10 cm × 1–2 mm; inflorescence a linear panicle 6–20 cm long, loosely contracted with erect branches and overlapping spikelets, scarcely exerted from the uppermost leaf sheath; glumes unequal, the lower one 1.5–3 cm long, *clearly exceeding the upper* 1.3–2.4 cm long, (subequal glumes exist in certain specimens); awns subequal, 4.5–9 cm long.

Dry sandy or stony soils in *Acacia-Commiphora* deciduous bushland; wadis and flooded zones with *Aristida mutabilis*, *Panicum turgidum*, *Eragrostis pilosa*, *Enteropogon prieurii*, *Stipagrostis uniplumis*, etc.; dry sandy places; sandy-gravelly slopes, sometimes regs; flooded area with clayey patches often with *Schoenefeldia gracilis*, also on ferruginous crusts; in



Plate 9. *Aristida adscensionis* L., see p. 68

a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: spikelet ($\times 7$); e–f: glumes lower and upper ($\times 7$); g: floret ($\times 7$); h: lemma ($\times 7$); i: palea ($\times 25$); j: caryopsis ($\times 7$).

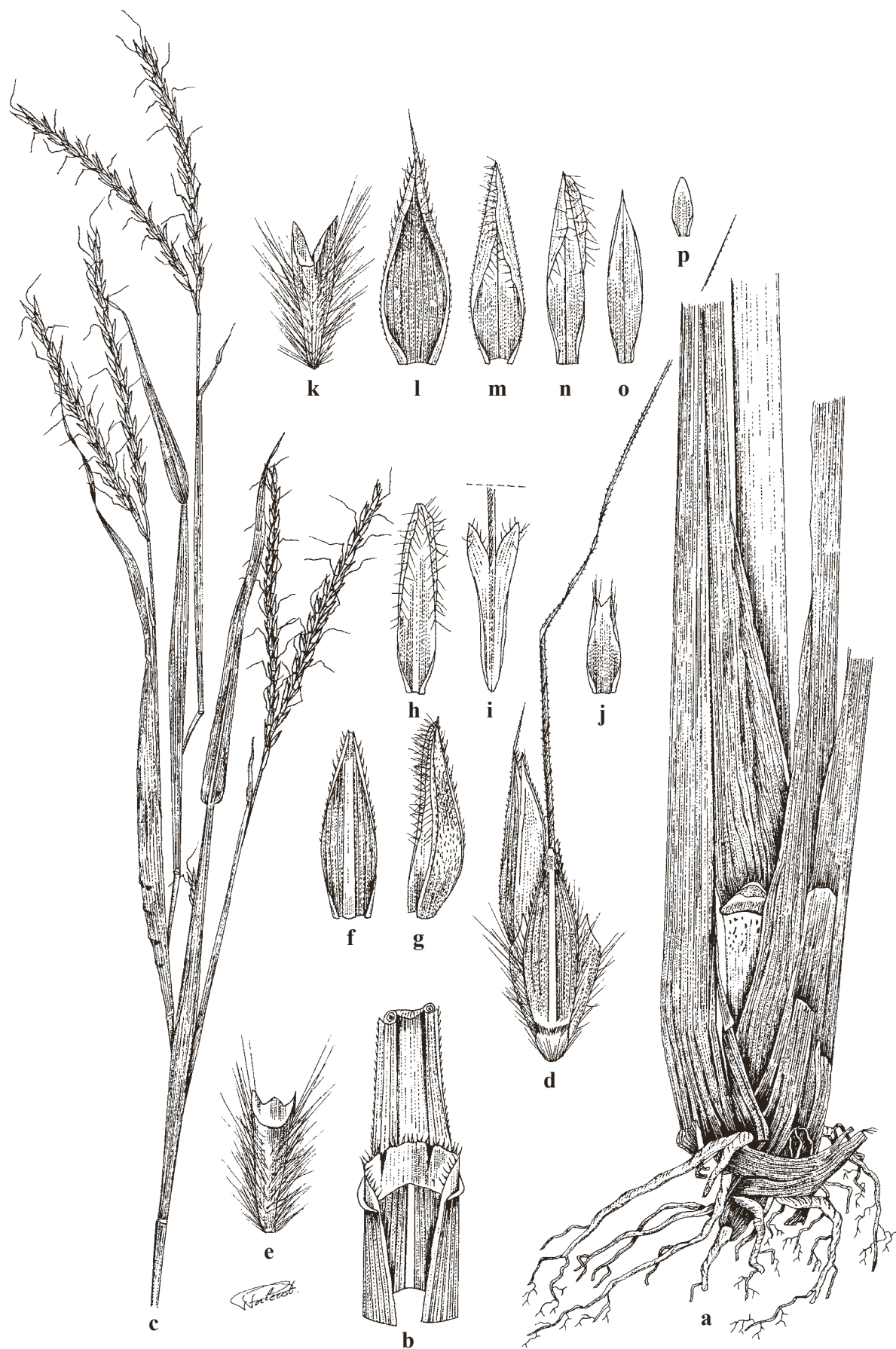


Plate 10. *Andropogon macrophyllus* Stapf, see p. 55
a: habit; b: ligule; c: inflorescence; d: spikelet; e: rachis; f-g: glumes of lower floret;
h-i: lemma; j: palea; k: pedicel; l-m: glumes; n-o: lemma; p: palea.



Plate 11a. *Aristida cumingiana* Trin. & Rupr.
See Plate 9 p. 73 for details.



Plate 11b. *Aristida cumingiana* Trin. & Rupr., details, see plate 11a p. 75 and text p. 70
a: ligule; b: spikelet ($\times 28$); c–d: glumes lower and upper; e: floret; f: lemma; g: caryopsis.



Plate 12a. *Aristida diminuta* (Mez) C. E. Hubb., details, see plate 12b p. 78 and text p. 72
 a: ligule; b: spikelet ($\times 20$); c-d: glumes lower and upper; e: floret; f: callus; g-h: lemma and palea.



Plate 12b. *Aristida diminuta* (Mez) C. E. Hubb., see p. 72
a: habit ; b: ligule ; c: spikelet ; d-e: glumes ; f-g: lemma; h: palea; i: caryopsis.



Plate 13. *Aristida funiculata* Trin. & Rupr., see p. 72
 a: habit($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: spikelet ($\times 4$); e-f: glumes lower and upper ($\times 4$);
 g: floret ventral and lateral view ($\times 7$); h-i: lemma and palea ($\times 7$).



Plate 14. *Aristida hordeacea* Kunth, see p. 81
a: habit($\times 1$); b: node($\times 2$); c: ligule; d: inflorescence($\times 1$); e: spikelet($\times 10$);
f-g: glumes lower and upper($\times 7$); h: floret($\times 10$); i-j: lemma and palea($\times 10$).

ARISTIDA FUNICULATA

Mauritania forming extensive areas on clay substrate between dunes; inselbergs (Tindano & al., Bois Forêts Trop. 325: 25, 2015); 165–1500 m alt.

Cape Verde Isl.; Libya, Egypt; Socotra; Arabian Peninsula through Afghanistan, Iraq, Iran to Pakistan and India, Burma (introduced).

A. hispidula Henrard; Fl. Zambes. 10/1: 99–100, 1971. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 89, 1932. Perennial caespitose herb to 70 cm tall; culms simple, 2–3-noded; leaf blades to 8 cm long with prominent white midrib and marginal nerves; inflorescence a panicle 10–15 cm long, long-exserted; *branches* very distant, solitary or 2-nate, 1–6 cm long, *spreading, naked in lower half*, with shortly pubescent glandular patches in the axils; *spikelets densely congested*, imbricate, forming small spike-like panicles *at end of branches*; glumes unequal, the lower c. 10 mm long, the upper 6–9 mm long; awns 8–11 mm long.

Chrome-rich grassland, chrome vlei, black-land paddocks.

Closely related to *A. bipartita*.

A. hordeacea Kunth, incl. var. *longiaristata* Henrard; Bull. Soc. Roy. Bot. Belg. 117: 317, 319 (map), 1984; Klaassen & Craven, Checklist grasses Namibia: 11, 2003 (map); Burrows & Willis, Pl. Nyika Plateau, Malawi: 366, 2005; Agnew, Field key upl. Kenya grasses: 27, 2006; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Schmidt & al. in Phytotaxa 304: 36, 2017. – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 54, 1929; Fl. Trop. E. Afr., Gramin. 1: 151, 1970; Fl. Zambes. 10/1: 117, 1971; van der Zon, Gramin. Cameroun 2: 95, 100 (map), 1992; Poilecot, Boissiera 56: 168, 1999; Müller, Grasses Namibia: 114–115, 2007; Ibrahim & al. Grasses Mali: 35, 2018; César & Chatelain, Fl. ill. Tchad: 190, 2019. – Pl. 14.

syn.: *A. steudeliana* Trin. & Rupr.; *A. densispica* Steud.; *A. pseudohordeacea* Stent & J. M. Rattray

Annual herb 10–90 cm tall forming small tufts; culms ascending or erect, simple or branched, pubescent; leaf blades linear, 5–30 × 0,5–1 cm, abruptly narrowed at apex; inflorescence spike-like, dense, bushy, looking like Barley, 5–15 cm long, 1–3 cm Ø, exserted, axes pubescent; spikelets 1,5–4,5 cm long, linear-lanceolate; glumes ± equal, lower one 5–8 mm long, upper 6–9 mm; awns 1,5–3,5 cm long (cf. below under *A. kunthiana*).

Ephemeral heliophilous plant of dry open grasslands and woodlands on sandy, clayey and black basaltic soils; shallow depressions, forming mats with *Echinochloa colona*, *Brachiaria lata*, *Sorghum arundinaceum*; stream banks; mopane veld; dry valley; often associated with *Aristida funiculata*, *A. mutabilis*, *Panicum turgidum*, *Cymbopogon schoenanthus*, *Cenchrus ciliaris*, *Pennisetum violaceum*; old cultivations, waste places; indicating degrading soils, but also pioneer grass in low-lying and damp areas; occasionally on swamp edges; inselbergs (Tindano & al. in Bois Forêts Trop. 325: 25, 2015); 400 (or less)–1600 m alt.

NW Namibia, Botswana.

Resembling certain forms of *A. congesta* with which it may be confused. Cf. also under *A. kunthiana* below.

A. humbertii Bourreil – Icon.: idem in Adansonia, Sér. 2, 9: 422, 1969 (details).

Perennial herb forming enormous tufts 1,5–1,8 m tall; panicle spike-like, 3–7 cm long. *Distinct from all other Aristida* in having a lemma in which *each of the 3 awns is reduced to a mucro* (*A. diminuta* has only 1 awn).

ARISTIDA HUMBERTII

Siliceous sand in marshy valley with *Isachne angolensis*; 1850 m alt.

Namibia.

A. humidicola S. M. Phillips – Icon.: Kew Bull. 55: 204, 2000. Delicate annual herb; culms solitary, very slender, 11–18 cm tall; leaves few, mainly basal; sheaths loose, flushed red; blades 2–3,5 cm long, 1 mm wide, subacute; panicle narrow, loosely contracted, 7–12 cm long; spikelets on long capillary branches; glumes unequal, the lower longer, c. 9 mm; awn column c. 1,4 cm long, branches c. 2 mm.

Wet sand with *Xyris* in a large area of moist grassland, with seepage areas and small pools; 1600 m alt.

Only known from the type collected in 1997. Fully mature material needed.

Near *A. cumingiana* but: lower glume longer (not 1,5–2 mm), awn with column 1,3–1,4 cm long (not absent).

A. junciformis Trin. & Rupr., incl. subsp. *galpinii* (Stapf) De Winter, subsp. *macilenta* (Henrard) Melderis, and subsp. *welwitschii* (Rendle) Melderis; Fl. Zambes. 10/1: 105–108, 1971 (incl. *A. textilis*); Bull. Soc. Roy. Bot. Belg. 117: 315, 319 (map), 1984; Klaassen & Craven, Checklist grasses Namibia: 11, 2003 (map); Agnew, Field key upl. Kenya grasses: 27, 2006. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 69 (*A. textilis*), pl. 76 (*A. macilenta*), pl. 107 (*A. welwitschii*), pl. 140 (*A. junciformis*), 1932; Burrows & Willis, Pl. Nyika Plateau, Malawi: 339, 2005 (as subsp. *welwitschii*); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 107, 2012; Malaisse & al., Copper-cobalt flora Upper Katanga...: 381, 2016 (panicle).

syn.: *A. angustata* Stapf; *A. welwitschii* Rendle, incl. var. *minor* Rendle and var. *subtomentosa* Henrard; *A. galpinii* Stapf; *A. textilis* Mez; *A. dewildemanii* Henrard; *A. macilenta* Henrard; *A. contractinodis* Stent & J. M. Rattray; *A. pardyi* Stent & J. M. Rattray; *A. schliebenii* Henrard

Perennial densely tufted herb 0,2–1,4 m tall with thick spongy roots and a tendency to form *short rhizomes*; culms erect, wiry, glabrous, with old dark leaf sheaths at base; leaf blades to 30 cm long, c. 1 mm wide, mostly strictly erect; panicle narrow, contracted or ± lax, erect or slightly nodding, 5–20 × 1–8 cm, ± interrupted, branches to 5 cm long, 2-nate, erect, capillary, often naked below, with spikelets congested towards ends; glumes *unequal*, 3–7 mm long, often purplish; awns unequal, fine, 1,5–2 cm long.

Poor stony soils on hilltops; sandy, black clayey and serpentine soils, often in damp situations; grassland and burnt dambo; wet sandveld; vlei; edges of dry vleis; usually in wet areas in grassland, around marshes, edges of dambos; shady crevices of rocky hills; also on copper steppe savannas; near streams between rocks; sandy black clayey soils; *Acacia*, *Mopane* veld; termite mounds; 400–2100 m alt.

Very variable species: height of culms, length of awns.

N-most Namibia, N Botswana, E & S S. Africa, Lesotho, Swaziland; Madagascar.

Used for making hand brooms (Sabonet News 7/3: 195, 2002).

An extremely tough invasive grass with little value for grazing. However, it plays an important role in stabilising soil and capturing water in catchment and overgrazed areas (van Oudtshoorn, l.c.).

Closely allied to *A. transvaalensis* Henrard (S. Africa) but with simple or slightly branched culms, beaked column of the lemma. Also near *A. aequiglumis* but that plant has spikelets not clustered on the branches, subequal glumes and setaceous leaves.

ARISTIDA

A. kelleri Hack.; Cope in Kew Bull. 47: 279, 1992 (in key). – Icon.: Fl. Trop. E. Afr., Gramin. 1: 154, 1970; Fl. Eth. & Eritrea 7: 83, 1995; Thulin, Fl. Somalia 4: 164, 1995.

Perennial densely tufted herb from a branching rootstock; culms 20–45 cm tall, wiry, hard; leaf blades convolute-setaceous, 4–20 cm long; panicle ovate-oblong, 3–10 cm long, *spike-like*, with densely crowded subsessile spikelets, subtended by the inflated uppermost leaf sheath; glumes unequal, 5–12 mm long; awn with 1–2 cm long column, branches 2–6 cm long.

Open *Acacia-Commiphora* bushland on orange sand over limestone; sandy soils on open plains in deciduous *Commiphora-Acacia mellifera* bushland; sometimes dominant; 200–1200 m alt.

Often confused with *A. triticoides* but distinguished from that species by the shorter lemma with smooth narrowed tip, panicle not fully exerted from uppermost leaf sheath, and shorter, less tightly twisted column.

A. kenyensis Henrard; Lye & al. in Lidia 4: 158, 2000. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 149, 1970; Fl. Eth. & Eritrea 7: 79, 1995; Agnew, Field key upl. Kenya grasses: pl. 2/7, 2006 (details); idem, Upl. Kenya wild flow., ed. 3: pl. 185, 2013.

Annual loosely tufted herb; culms erect or geniculate ascending, 5–60–90 cm long; leaf blades linear, to 15 cm × 2 mm; panicle open, spreading, 15–25 cm long; *primary branches naked in lower half*, with short *spike-like clusters of purple spikelets at branch ends*; glumes subequal, 5–8 mm long, *pointed*; awns 0,6–2 cm long.

Dry open situations on stony or eroded soils; limestone; overgrazed grassland; cleared forest; dry disturbed bushland and grassland; 1350–2200 m alt.

Intergrades with *A. adscensionis* but recognisable by the characters printed in *italics* above.

A. kerstingii Pilg.; Bourreil & al. in Bull. Mus. Natl. Hist. Nat., Sér. 4, Sect. B, Adansonia 10/4: 421–433, 1988; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 184, 1994; Lisowski, Fl. Rép. Guinée 1: 450, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Schmidt & al. in Phytotaxa 304: 36, 2017. – Icon.: van der Zon, Gramin. Cameroun 2: 99–100, 1992; Poilecot in Boissiera 50: 101, 1995; idem, *ibid.* 56: 170, 1999; César & Chatelain, Fl. ill. Tchad: 189, 2019 (details). – Pl. 15.

syn.: *A. plicapolonica* Mez

Annual or short-lived perennial herb 0,3–1 m tall; culms erect, often branched, glabrous; leaf blades linear, to 25–28 cm × 2 mm; panicle dense, linear, 15–25 cm long, *spike-like*, bright green to golden yellow; spikelets 1-flowered, subsessile, to 3,5 cm long; glumes unequal, 2–3,5 cm long; awns with column 5–7 cm long, branches 6–8 cm.

Flooded plains, sometimes locally abundant with *Brachiaria stigmatistata*, *Sporobolus pyramidalis*, *Andropogon fastigiatus*, *Monocymbium ceresiiforme*, *Vetiveria fulvibarbis*, *Ctenium newtonii*, *Digitaria delicatula*; lateritic pans with *Diheteropogon hagerupii*, *Loudetia simplex*, *Parahyparrhenia annua*, etc.; sandy poor grounds; roadsides.

Good fodder.

A true soudanian species like *Acacia dudgeonii* (Mimosaceae).

A. kunthiana Trin. & Rupr. – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 54, 1929; Ibrahim & al. Grasses Mali: 36, 2018. – Pl. 16a & b.

Annual herb to 45 cm tall resembling *A. hordeacea* but internodes of culms and leaf sheaths glabrous (not densely but shortly

ARISTIDA KUNTHIANA

pubescent); leaf blades narrow, ± convolute (not glaucous, flat, to 10 mm wide); panicle loose, with slender branches to 10 cm long, naked in lower part, and densely clothed with spikelets towards the tip (panicle not dense, continuous, spike-like, 4–12 cm long with branches always very short and spikelets fascicled); glumes with awns 1–2 mm long (not 2–5 mm long).

Ecology not recorded.

Closely resembling *A. mutabilis* but lemma not produced into a column, the body of lemma immediately passing into the 3 awns.

(**A. lembaensis** Vanderyst, Bull. Agric. Congo Belge 9: 239, 1918, nom. nud.). Zaire.

A. leptura Cope; Thulin, Fl. Somalia 4: 162, 1995.

Annual herb to 55 cm tall; panicle sparse, loosely contracted, fully exerted from uppermost leaf sheath; *glumes* subequal, linear, gradually tapering to a long fine awn, c. 3,5 cm long *incl. awn*; lemma c. 1 cm long, awns subequal, with column c. 3 cm long, awns c. 6 cm long.

Disturbed sandy soil at edge of marsh; c. 175 m alt. in Tanzania.

Closest relative seems to be *A. funiculata*.

A. leucophaea Henrard; Fl. Trop. E. Afr., Gramin. 1: 143, 1970; Fl. Zambes. 10/1: 101–102, 1971. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 66, 1932 (incl. *A. eriophora*).

syn.: *A. eriophora* Henrard

Perennial densely tufted herb 30–90 cm tall; culms woolly for some distance below nodes; leaf sheaths glabrous to villous; blades flat, linear, to 20 cm × 3 mm, strongly curled when old; panicle long-exserted, 5–15 cm long, narrow, ± *interrupted*; branches single or 2-nate, appressed, much branched, 5–6 cm long (lowermost); spikelets clustered about the short primary branches and enclosed by subequal narrow glumes, these 4–8 mm long; lemma c. 6 mm long, awns c. 1–2 cm long.

Open places in wooded grassland; open woodland; grassy hills; edges of vleis; sandy soils or schists in grassland; 1070–1600 m alt.

Resembling *A. vestita*, *A. mollissima*; intergrades with *A. junciformis*.

A. lisowskii Richel; Bull. Soc. Roy. Bot. Belg. 117: 317, 319 (map), 1984.

Annual herb 10–20 cm tall; culms erect, simple, 2-noded; leaf blades linear, to 5 cm long, glabrous; panicle simple, loose, to 10 cm long; pedicels of spikelets dentate, 3–5 cm long; glumes violaceous, *subequal*, 0,8–1,2 cm long; column of lemma c. 1,5 cm long, branches 1,5–2,5 cm long.

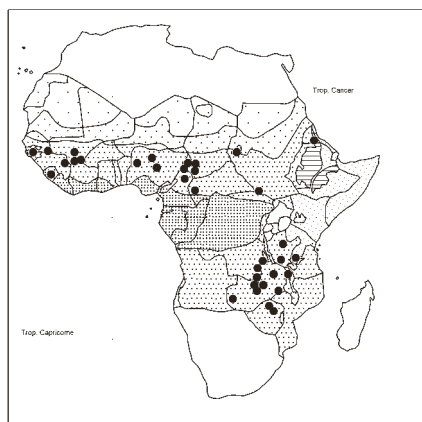
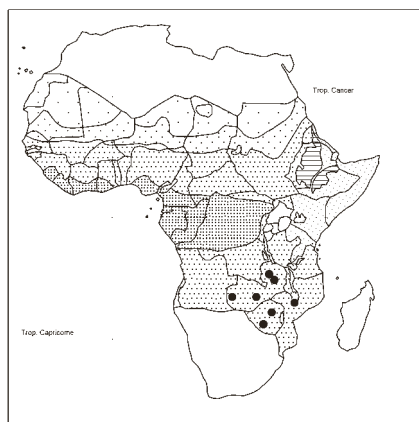
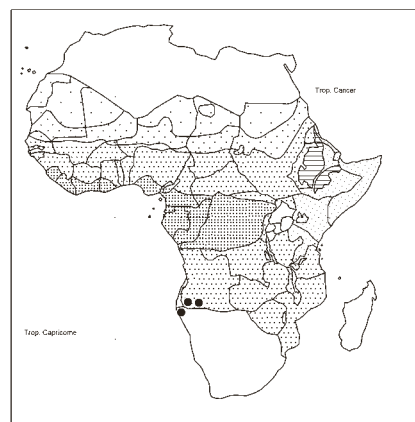
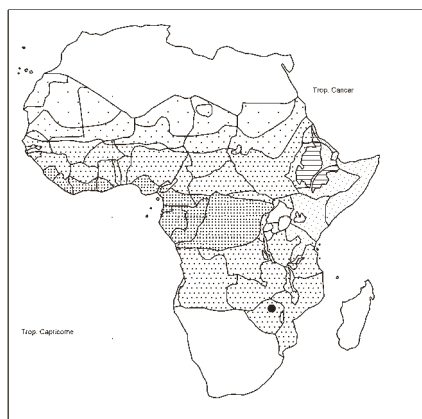
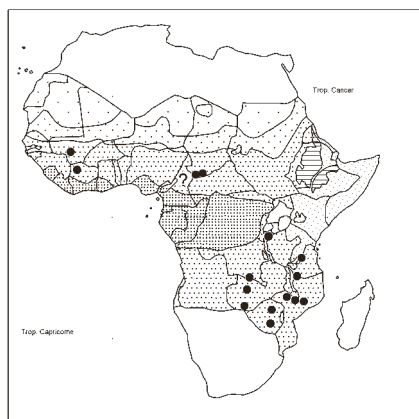
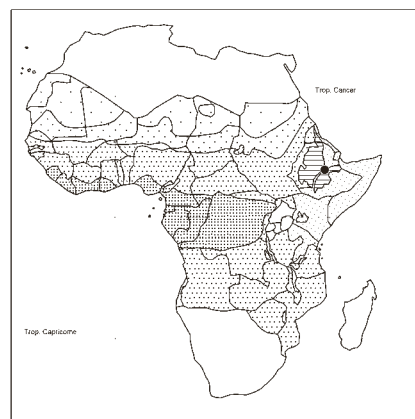
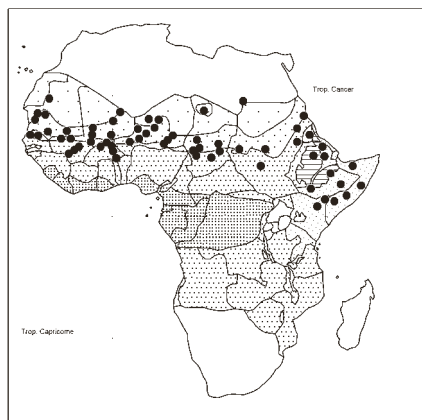
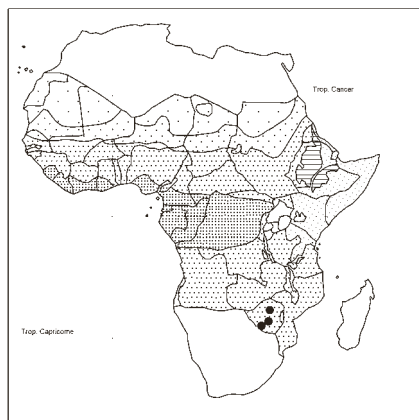
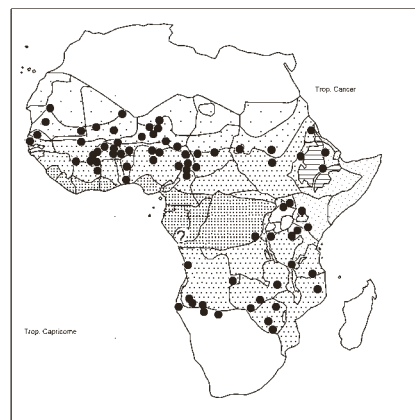
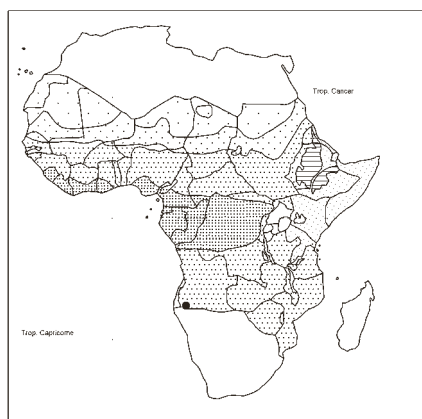
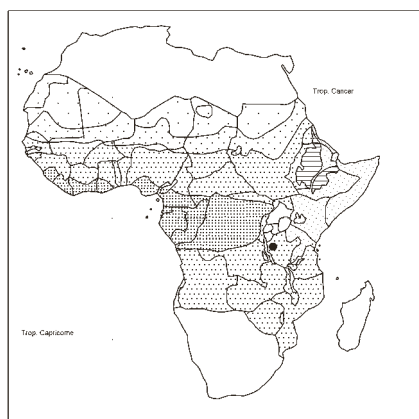
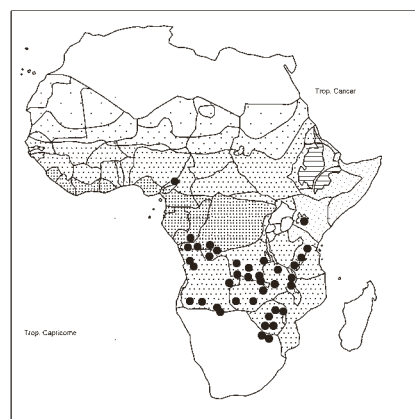
Sources, edges of ponds; 1600–1790 m alt.

Near *A. diffusa* Trin., *A. engleri* Mez.

A. meridionalis Henrard; Bull. Soc. Roy. Bot. Belg. 117: 318–319 (map), 1984; Klaassen & Craven, Checklist grasses Namibia: 12, 2003 (map). – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 27, 1929; Fl. Zambes. 10/1: 121, 1971; Gibbs Russell & al., Grasses south. Afr.: 51, 1990; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 173, 2012.

syn.: *A. stipoides* Lam. var. *meridionalis* Stapf

Perennial densely tufted herb; culms 1–2 m tall, mostly simple, 2–3-noded, shiny; *mouth of leaf sheaths* with a *tuft of woolly hairs*; blades narrow, to 50–65 × 0,5 cm, often rolled; panicle *large, effuse, very lax*, often nodding, to 30–80 cm long, > 20 cm Ø, many-flowered; axes smooth, branches 2–3-nate, branchlets filiform; spikelets 3–5 cm long, incl. awns; glumes unequal (lower

*Aristida cumingiana**Aristida denudata**Aristida dewinteri**Aristida diffusa**Aristida diminuta**Aristida ferrilateris**Aristida funiculata**Aristida hispidula**Aristida hordeacea**Aristida humbertii**Aristida humidicola**Aristida junciformis*

ARISTIDA MERIDIONALIS

5–7 mm, upper 10–15 mm); lemma 7–9 mm long, with 2-fid callus, column 0.5–2 cm, awns subequal, to 5 cm long.

Scrub, vlei; edges of water-logged depressions; sand dunes; sandy soils in open situations; wooded grassland in bare places; 910–1445 m alt.

Namibia, Botswana, S. Africa.

Near *A. stipoides* (annual, column 1.5–3 cm long).

A. migiurtina Chiov.; Cope in Kew Bull. 47: 279, 1992; Thulin, Fl. Somal. 4: 163, 1995; Ghazanfar, Fl. Oman 4: 63, 2018. – Icon.: Chiovenda, Fl. Somal. 1: pl. XXXIX, 1929; Wood, Handbook Yemen flora: 355, 1997; Cope, Fl. Arab. Penins. ... 5/1: 106, 2007 (details).

Perennial tufted herb 10–25 cm tall (incl. awns); culms decumbent or erect, *much branched at base*; leaf blades stiff, curved to involute, to 5 cm long; panicle obconical, loosely contracted, subcapitate, c. 2 cm long (excl. awns), comprising most of the height of the plant; glumes very unequal (lower 0.8–1.4 cm long, upper 1.4–2.3 cm, minutely bifid); lemma body c. 5 mm long, with column 1.5–2 cm long; awns unequal, 5–8 cm long.

Open sandy or stony soils, sometimes where seasonally flooded; 190–1520 m alt.

Oman, Saudi Arabia, Yemen.

A. mollissima Pilg.; Fl. Trop. E. Afr., Gramin. 1: 155, 1970; Fl. Zambes. 10/1: 122–123, 1971; Gibbs Russell & al., Grasses south. Africa: 51–52, 1990 (maps); Klaassen & Craven, Checklist grasses Namibia: 12, 2003 (map, subsp. **mollissima**). – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 30, 1929 (glumes); De Winter in Bothalia 8: figs. 66–69, 159/24–25, 1965 (incl. *A. argentea*); Ibrahim & Kabuye, Ill. manual Kenya grasses: pl. 30 p. 313, 1988.

Perennial, erect-geniculate, or erect densely tufted (subsp. **argentea**) herb; culms 60–90 cm tall, internodes *pubescent to woolly tomentose*; leaf *sheaths woolly to glabrescent*, with a tuft of woolly hairs on auricles; blades $\pm$ filiform, to 30 cm $\times$ 3 mm; panicle narrow, lax (subsp. **argentea**) or contracted, spicate, very dense (subsp. **mollissima**), to 20–30 cm long; axis densely lanate; branches numerous, very short, appressed; spikelets $\pm$ sessile; glumes very unequal (lower 7–10 mm, upper 12–22 mm); lemma 7–10 mm long, with column 1.5–2.7 cm, awns 3–6 cm long.

Sandy stony soils in dry grassland or savanna bushland or open bush savanna; mountain slopes; red sandy soil in *Commiphora*, *Acacia* deciduous bushland; 300–490 m alt.

Namibia, Botswana, S. Africa.

Comprises 2 subsp.: – subsp. **mollissima** (syn.: *A. elymoides* Mez), closely allied to *A. stipitata* subsp. *stipitata*, but differs mainly in having densely lanate culms; with a more western distribution range, and in Kenya; – subsp. **argentea** (Schweick.) Melderis (bas.: *A. argentea* Schweick.).

A. mutabilis Trin. & Rupr., incl. var. *aequilonga* Trin. & Rupr., var. *glabricollaris* Bourreil, var. *hoggariensis* (Batt. & Trab.) Henrard, var. *laeviglumis* Henrard ex Henrard, var. *longiflora* Trin. & Rupr., var. *meccana* (Hochst. ex Trin. & Rupr.) Fenzl in sched., var. *nigritiana* (Hack.) Bourreil, subsp. *nigritiana* (Hack.) Bourreil, var. *senegalensis* Trin. & Rupr., and var. *tangensis* Henrard and fa. *brachyathera* Maire; Bourreil in Taxon 18: 501–526, 1969; Adansonia, Sér. 2, 11: 126–128, 1971; Bourreil & al. in Boissiera 24a: 173, 1975; Cope in Kew Bull. 47: 279, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 184–185, 1994; Thulin, Fl. Somalia 4: 165–166, 1995; Lye in Lidia 4: 158, 2000; Schmidt & al. in

ARISTIDA MUTABILIS

Phytotaxa 304: 36, 2017. – Icon.: Maire, Fl. Afr. N. 2: 56, 1953 (var. *hoggariensis*); van der Zon, Gramin. Cameroun 2: 102, 104 (map), 1992; Fl. Eth. & Eritrea 7: 85, 1995; Poilecot in Boissiera 56: 173, 1999; Boulos, Fl. Egypt 4: 239, 2005 (details); Cope, Fl. Arab. Penins. 5/1: 106, 2007 (details); Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013; Ibrahim & al., Grasses Mali: 36, 2018; César & Chatelain, Fl. ill. Tchad: 190, 2019. – Pl. 17.

syn.: *A. meccana* Hochst. ex Trin. & Rupr., incl. var. *lauriolii* (Maire) Maire, var. *schweinfurthii* (Boiss.) Maire & Weiller, var. *cassanellii* (A. Terracc.) Bourreil, and var. *genuina* Sauvage; *A. nigritiana* Hack.; *A. schweinfurthii* Boiss., incl. var. *boissieri* Schweinf.; *A. lauriolii* Maire; *A. astroclada* Chiov., *A. hoggariensis* Batt. & Trab.; *A. cassanellii* A. Terracc.; *A. tenuiflora* Steud.; *A. tenuis* Hochst. 1845, nom. illeg.; *A. longiradiata* Steud.; *A. articulata* Edgew.; *A. spicata* Rottler ex Hook. f., pro syn.

Annual loosely tufted herb, rather variable; culms 10–70 cm tall, smooth; leaf blades linear, 6–14 cm long, sheaths glabrous; panicle open or contracted or spreading, narrowly ovate, 12–20 cm long; branches pendent, 6–8 cm long; *spikelets* 1 cm long, *congested in narrow spikes at tips of main branches*; glumes unequal (lower 3–6 mm, upper 5–7 mm long), 2-toothed; lemma 5–8 mm; awns $\pm$ equal, 1–3 cm long.

Acacia, *Commiphora* deciduous bushland; open semi-desert bushland; deep, poor sandy soils of dunes and between dunes; mud; seasonally flooded areas drying up; with *Aristida funiculata*, *A. adscensionis*, *Panicum turgidum*, *Stipagrostis uniplumis*, *Cenchrus biflorus*, *Eragrostis tremula*, *Schoenefeldia gracilis*, etc.; desert torrent beds; open waste places; deciduous bush savanna; sandy soils overlying limestone, gypsum or volcanic rocks; occasional adventive in paddy fields; 30–1500 m alt.

Morocco, S. Algeria, Libya, Egypt, Arabian Peninsula; Pakistan, India, W. Himalaya.

Browsed by all stock when young and tender. Used to make mats, basket sieves, for stuffing saddles, thatching.

Not always easy to separate from *A. barbicollis* but the latter is perennial, distributed in Chad, Zaire, Ethiopia S-wards to S. Africa, Madagascar.

A. nemorivaga Henrard – In current floras and flora lists cited as **A. canescens** Henrard – Gibbs Russell & al., Grasses south. Africa: 48; 1990 (maps). – Icon.: Henrard, Critical rev. Aristida 2, Meded. Rijks Herb. 54a: 376, 1927; and Monogr. Aristida 2, ibid. 58a: pl. 95 (*A. canescens*), pl. 141, 1932; De Winter in Bothalia 8: figs. 31–33, 159/10, 1965; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 122, 2012.

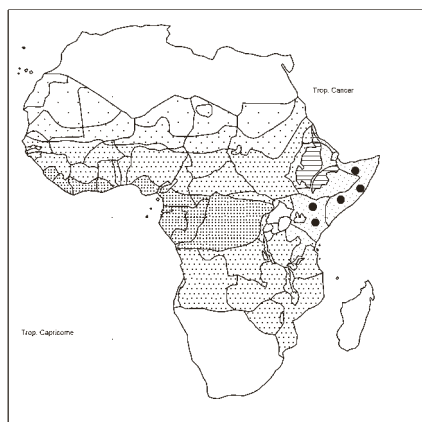
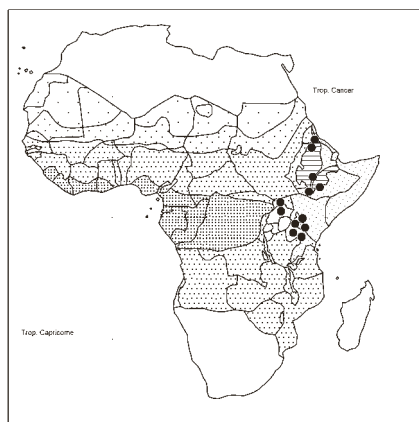
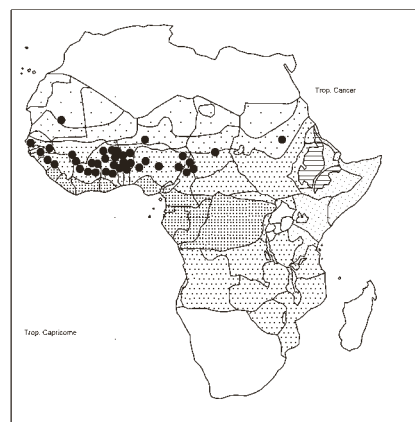
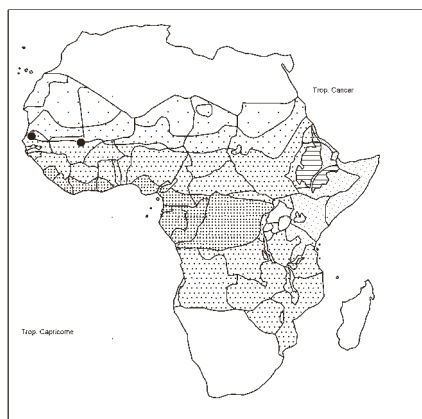
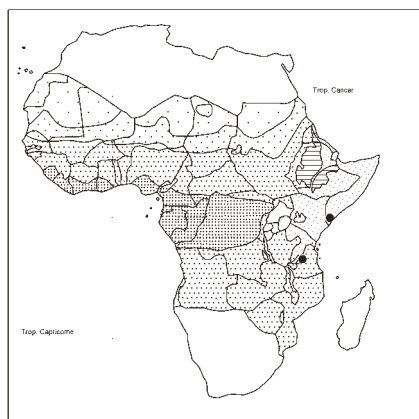
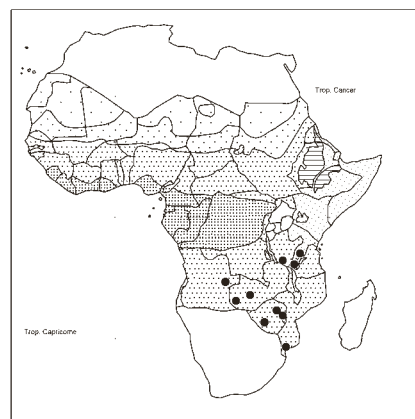
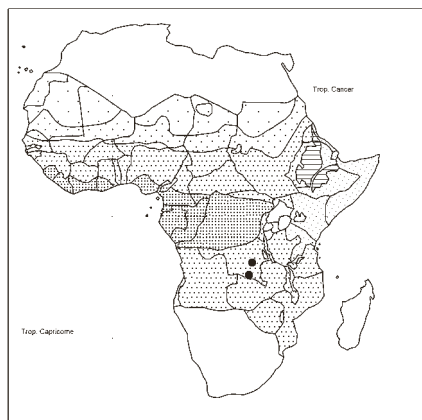
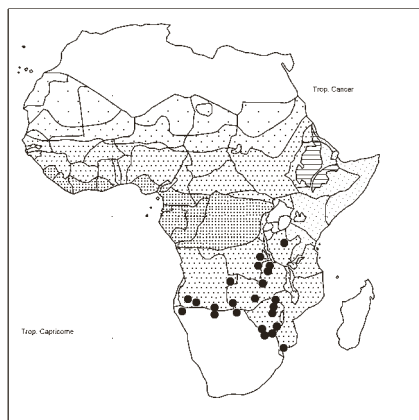
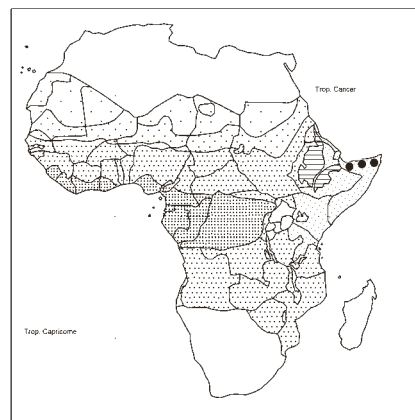
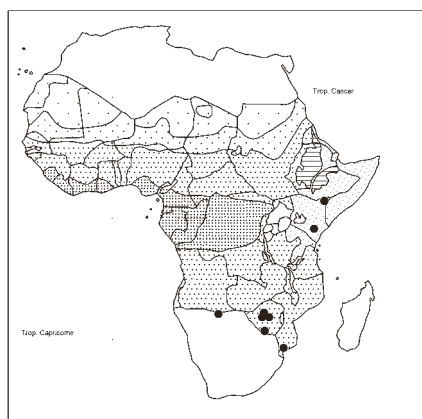
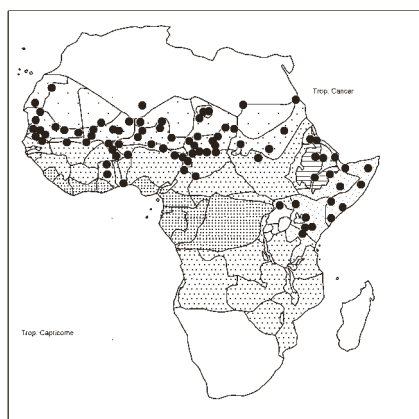
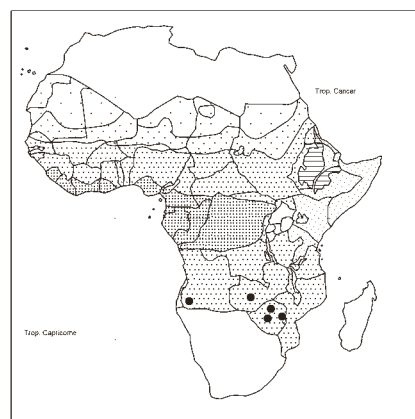
syn.: *A. chrysochlaena* Henrard; *A. canescens* Henrard, incl. subsp. *ramosa* De Winter

Perennial densely tufted herb; culms erect, simple or branched, terete, 40–120 cm tall; leaves mostly borne at base of tuft; leaf blades linear, to 20–30 cm $\times$ 1–2 mm, *marginal nerves prominent*; panicle 7–20 cm long, erect, lax or contracted but much interrupted, axis angular or triquetrous; branches remote, naked at base; spikelets to 2 cm long, densely congested towards ends of branchlets; glumes unequal (5–8 mm, 8–11 mm); lemma c. 10 mm long; awns subequal, 7–15 mm long.

Sandy gravelly soils in open grassland, woodland and sandveld; 1020–1370 m alt.

Botswana, E. S. Africa.

Resembling *A. junciformis* but culms terete, and leaf blades with prominent raised marginal nerves, spikelets coarser, and lemma without beak or column.

*Aristida kelleri**Aristida kenysensis**Aristida kerstingii**Aristida kunthiana**Aristida leptura**Aristida leucophaea**Aristida lisowskii**Aristida meridionalis**Aristida migiurtina**Aristida mollissima**Aristida mutabilis**Aristida nemorivaga*

ARISTIDA

(*A. nutans* Ehrenb. & Hemprich ex Trin. & Rupr., Sp. gram. stipac.: 135, 1842), unplaced name. Not cited in Fl. Eth. & Eritrea 7, 1995.

A. paoliana (Chiov.) Henrard; Fl. Trop. E. Afr., Gramin. 1: 155–156, 1970 (as a synonym under *A. sieberiana*, and as *A. hemmingii*, respectively); Thulin, Fl. Somalia 4: 164–165, 1995. – Icon.: Fl. Eth. & Eritrea 7: 83, 1995 (spikelet).

bas.: *A. stipiformis* var. *paoliana* Chiov.

syn.: *A. hemmingii* Clayton

Profusely branched perennial plant to 90 cm tall, forming a sprawling tuft, base knotted; *culms woody*, 30–40–75 cm tall, freely branched from all nodes; leaf blades linear, 5–20 cm × 1–2 mm; panicle 8–20 cm long, loose, open, sometimes contracted; spikelets glabrous; glumes unequal (4–6 mm, 10–13 mm), *mucronate*; lemma 3–6 mm long, markedly *narrowed above middle*, with a column 1–1.5 cm long; awns (branches) 3.5–5 cm long, purplish.

Acacia, *Commiphora* bushland on orange sand overlying limestone; red sand in *Commiphora* bushland or woodland; 100–420 m alt.

Near *A. sieberiana*, *A. stenophylla*, *A. schebehlensis*.

A. pennei Chiov.; Fl. Eth. & Eritrea 7: 80, 1995. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 146, 1932; Cope, Fl. Arab. Penins. ... 5/1: 102, 2007 (spikelet).

syn.: *A. jemensis* Henrard

Perennial densely tufted herb; culms 10–25 cm tall, *1-noded*, rising above leaves; these all basal, *compact*, blades 1–6 cm long, convolute, stiff, glaucous; panicle very dense, oblong-cuneate, 5–9 cm long; spikelets purplish; glumes unequal, mucronate (6–8 mm, 9–11 mm); lemma linear c. 8 mm long, without column; awns 2–3 cm long.

Dry stony, sandy soils; 2600 m alt.

Saudi Arabia, Yemen.

A. pilgeri Henrard; Fl. Zambes. 10/1: 126–127, 1971; Gibbs Russell & al., Grasses south. Afr.: 52, 1990 (map); Klaassen & Craven, Checklist grasses Namibia: 12, 2003 (map). – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 45, 1929; De Winter in Bothalia 8: figs. 71–73, 159/27, 1965.

Perennial densely tufted herb to *1.5 m tall*; culms erect, glaucous, glabrous, 3–6-noded; leaf blades linear, to 35 cm × 1–2 mm, prominently ribbed beneath; panicle dense, ± *contracted*, *much branched*, 40 cm long, 1–5 cm Ø; branches solitary, 5–11 cm long, erect or ± appressed, branchlets appressed; spikelets congested, ± sessile; glumes ± equal, awned (6–7 mm, c. 10 mm long), 2-dentate; lemma 6–7 mm long ± without column; awns 1–2 cm long.

Water-logged granite-sand; Kalahari sand; red sandy loams in sandveld grassland and open woodland; grassy depressions at edges of lakes; river banks; sand dunes; 910–1070 m alt.

N Namibia, Caprivi Strip, Botswana, S. Africa.

Near *A. congesta*, *A. barbicollis*.

A. protensa Henrard; Cope in Kew Bull. 47: 279, 1992; Thulin, Fl. Somalia 4: 163, 1995. – Icon.: Henrard, Critical rev. Aristida 3, Meded. Rijks Herb. 54b: 467, 1928.

Perennial densely tufted herb to 40 cm tall; *panicle short, dense*, spike-like, *cuneate below*, *not fully exerted* from uppermost leaf sheath; glumes very unequal (12–14 mm, upper to 25 mm with expanded base), *2-toothed at tip*, linear, with awn 5–10 mm long; lemma c. 5 mm long; column 6–9 mm long, *dilated at tip*.

ARISTIDA PROTENSA

Ecology not recorded.

Known from only 3 collections.

Superficially similar to *A. pychnostachya* but that species is taller (to 90 cm), more tussocky; the panicle elongate, fully exerted and without cuneate base; the upper glume is entire, not 2-toothed, the column not dilated at tip.

(*A. pseudobromus* Chiov., Pl. Nov. Aethiop.: 28, 1928). Described from Somalia, but not figuring in Thulin, Fl. Somalia 4, 1995. Taxonomic status uncertain.

A. pychnostachya Cope, Kew Bull. 47: 277–278, 1992; Thulin, Fl. Somalia 4: 163, 1995.

Perennial densely tufted herb to 90 cm tall; base thick, woody; panicle dense, spike-like, *tapered below* (not cuneate), *fully exerted* from uppermost leaf sheath; glumes unequal (2–2.7 cm, 2.5–3.8 cm), aristate; lemma c. 7 mm long, with *column c. 1.7 cm long*, *not dilated* at distal end; awns subequal, 7–8.5 cm long.

Sandy soils in *Acacia-Dichrostachys* bushland; weed of manioc; to c. 200 m alt.

Rather similar to *A. protensa* (See above).

A. recta Franch.; Bull. Soc. Roy. Bot. Belg. 117: 314–315, 1984 (map); van der Zon, Gramin. Cameroun 2: 97, 1992; Fl. Gabon 5b: 16, 1999; Lye & al. in Lidia 4: 158, 2000; Lisowski, Fl. Rép. Guinée 1: 451, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 125, 1932; Fl. Gabon 5: 257, 1962; De Winter in Bothalia 8: figs. 46–48, 159/15, 1965; Poilecot in Boissiera 50: 97, 1995; Ibrahim & al., Grasses Mali: 37, 2018. – Pl. 18.

syn.: *A. atrovioleacea* Hack.; *A. gossweileri* Pilg.; *A. hockii* De Wild.; *A. moandaensis* Vanderyst, nom. provis.; *A. elliotii* A. Chev.

Perennial densely tufted herb; culms erect, 10–50 cm tall, 1(–2)-noded, with persistent basal leaf sheaths *breaking up into fibres* and *forming a dense tuft* at base; leaf blades setaceous, 5–20 cm long; panicle lax, ovate-lanceolate, 3–8 × 4 cm, long-exserted, branches capillary; *spikelets* (deep) *purple*; glumes unequal, lower 2–6 mm long, shortly awned, upper 5–8 mm; lemma c. 5 mm long, prolonged into a short beak with awns 6–8 mm long.

Moist soils in hollows; sometimes on exposed ridges; seepage areas in acid grassland; ricefeld fallows; lateritic pans with rather thick soil; locally abundant on isolated mounds; with *Loudetiopsis ambiens*, *Loudetia phragmitoides*, *Eragrostis atrovirens*, *Schizachyrium schweinfurthii*, *Anadelphia leptocoma*, *A. afzeliana*, *Panicum tenellum*, etc.; hollow in grassy savanna; small peat-bog in hollow on conglomerate; recently burnt savanna on slopes above swamp (plant flowering after fire); 100–2130 m alt.

S. Africa, Swaziland. – Not in Mali as stated: confusion with Balandougou in Guinea.

Resembling *A. junciformis*, a more robust plant lacking a fibrous tuft at culm base and with a tendency to develop short rhizomes. The habitat is also different.

A. rhiniochloa Hochst.; J. Agric. Trop. Bot. Appl. 12: 108, 1965; idem 16: 22, 1969; Adansonia, Sér. 2, 10: 409, 1970; idem 11: 685, 1971; Bourreil & Gillet in Mitt. Bot. Staatssamml. München 10: 309, 1971; Bothalia 10: 555, 1971; Ghiglione & al. in Boissiera 24a: 151, 1975; Klaassen & Craven, Checklist grasses Namibia: 13, 2003 (map); Schmidt & al. in Phytotaxa 304: 36, 2017; César & Chatelain, Fl. ill. Tchad: 191, 2019. – Icon.: Henrard, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 115, 1932; De Winter in

ARISTIDA RHINIOCHLOA

Bothalia 8: figs. 18–20, 159/4, 1965; Poilecot in Boissiera 56: 156 (map), 166, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 131, 2012; Ibrahim & al., Grasses Mali: 37, 2018. – Pl. 19. syn.: *A. rhiniochloa* fa. *rigidiseta* sensu Stent & Rattray 1933, nom. nud.; *A. rigidiseta* Pilg.; *A. serrulata* Chiov.; *A. andoniensis* Henrard

Annual, *coarse, very scabrid*, tufted herb 20–75–90 cm tall; culms geniculately ascending, branched, *retroscely scabrid*; leaf sheaths rough with long white hairs above; blades hard, 10–20 cm long, 2–4 mm wide; panicle open to ± contracted, much interrupted, 15–30 cm long, exserted, branches solitary or 2-nate; spikelets coarse, 3.5–5 cm long, incl. awns; *glumes broad*, papery, *reddish*, ± equal, awned, 0.5–1.7 cm long; lemma 0.7–1.3 cm long; awns sharp, *stiff*, 1.5–3 cm long, column absent.

Pioneer grass. Eroded slopes in deciduous bushland; clayey-sandy soils between sandstone boulders often with *Tetrapogon cenchroides*, *Aristida funiculata*; dry sandy basalt soils, stony ground; disturbed areas, roadsides, overgrazed veld; gravelly flats; under trees in valleys; scrub; edges of shallow depressions; banded vegetation on fine gravel; dunes; ?–900–1100 m alt.

Disjunct distribution. Namibia, Caprivi Strip, Botswana, NE S. Africa.

A. scabrivalvis Hack., incl. subsp. *borumensis* (Henrard) Melderis, var. *contracta* De Winter, and subsp. *contracta* (De Winter) Melderis; Fl. Zambes. 10/1: 112–114, 1971; Klaassen & Craven, Checklist grasses Namibia: 13, 2003. – Icon.: Henrard, Crit. Rev. Aristida, Meded. Rijks Herb. 54b: 534, 1928 (details); idem, Monogr. Aristida 2, Meded. Rijks Herb. 58a: pl. 91, 1932 (details, *A. scabrivalvis*, *A. borumensis*; De Winter in Bothalia 8: figs. 27–29, 159/8, 1965; van Oudtshoorn, Guide Grasses south. Afr., ed. 3: 177, 2012.

syn.: *A. borumensis* Henrard; *A. filiformis* Henrard

Annual erect tufted herb 15–85 cm tall; culms erect or ascending, much branched, usually glabrous; leaf blades rough, 3–30 cm long, 1–3 mm wide; inflorescence a *large*, open, widely branched panicle, 15–30–40 cm long, taking up more than half of the entire plant, or narrow spiciform with spiciform secondary panicles, conspicuously awned; spikelets spreading over the entire inflorescence or in dense clusters at ends of branches (subsp. *contracta*), branches filiform; spikelets linear, purplish, 1–2.5 cm long; *glumes scaberulous or hirtellous*, 3–6.5 mm long, upper glume longest, awned; lemma 5–7 mm long, column absent, awns scabrid, 1–1.5 cm long.

Heavy and sandy soils, red basalt loam, serpentine and red dolorite, in sandy pockets over loose limestone cobbles, grassy hills; open flat grassland; grassy valley bottoms; bush savanna; river banks; waste land; disturbed ground; old fields; roadsides; bare sandy places; pioneer of sandy places; 900–2000 m alt.

Namibia, Botswana, S. Africa, Swaziland.

Resembling *A. bipartita* but: annual, with distinctly awned glumes, upper glume longer than the lower.

A. schebehlensis Henrard; Cope in Kew Bull. 47: 280, 1992 (in key); Thulin, Fl. Somalia 4: 165, 1995. – Icon.: Henrard, Critic. revision Aristida 3, Meded. Rijks Herb. 54b: 538, 1928; idem, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 34, 1929 (details).

Perennial tussocky herb; culms branching, wiry, to 50 cm tall; leaf blades linear, to 30 cm × 1.5–2 mm; panicle loosely contracted, 6–7 cm long, branches 2-nate, with few spikelets; *glumes very unequal*, the lower 12–13 mm long with awn 8–9 mm long, the upper 18–20 mm with awn 13–14 mm; lemma 10–11 mm long, with column 1–3 cm long.

ARISTIDA SCHEBEHLIENSIS

Ecology not recorded.

In habit and vegetative characters somewhat resembling *A. stenophylla*, which has, however, much shorter obtuse glumes; also resembling *A. tenuiseta* which has, however, much finer lemma awns.

A. sieberiana Trin., incl. var. *nubica* Trin. & Rupr.; Cope in Kew Bull. 47: 279, 1992 (in key); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 185, 1994; Thulin, Fl. Somalia 4: 165, 1995; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Schmidt & al. in Phytotaxa 304: 36, 2017. – Icon.: van der Zon, Gramin. Cameroun 2: 102, 104 (map), 1992; Poilecot in Boissiera 50: 103, 1995 (excl. *A. schebehlensis*); idem, ibid. 56: 172, 1999 (excl. *A. schebehlensis*); Cope, Fl. Arab. Penins. 5/1: 106, 2007 (details); Ibrahim & al., Grasses Mali: 38, 2018. – Pl. 20.

syn.: *A. longiflora* Schumacher & Thonn., incl. var. *brevisubulata* Maire and var. *nubica* Trin. & Rupr.; *A. brevisubulata* (Maire) Maire; *A. coerulescens* Sieber ex Trin. 1830 pro syn., non Desf. 1798 nec. Hochst. ex Steud. 1854; *A. leiocalycina* Trin. & Rupr.; *A. pallida* Steud., incl. var. *chudeaui* (Batt. & Trab.) Maire & Weiller and var. *glabriglumis* Maire; *A. aristidis* Coss., incl. var. *chudeaui* Batt. & Trab.; *A. stipiformis* Hochst. ex Steud. pro syn., non Lam. nec Poir.; *A. kordofana* Mez; *Chaetaria sieberiana* (Trin.) Schult. & Schult. f.

Perennial loosely tufted suffrutescent, or mat-forming plant, with a strong root system; culms woody, 0.3–1 m tall, to 4 mm Ø, branched from upper nodes; leaf blades filiform, 5–30 cm × 2 mm, glaucous; panicle linear to lanceolate, loosely contracted, 8–25 cm long, much shorter than supporting culm; spikelets to 2 cm long, linear; glumes unequal, lower 0.8–1.6 cm long, bifid, with an awn 1–6 mm long, upper 1.5–2 cm long, bifid, with an awn 3–10 mm long, awns in the sinus, lemma 0.7–1.2 cm long, *smooth*, column 1.2–3 cm long, awns 4.5–8.5 cm long.

Dry sandy soils in inland deciduous bushland; coastal sands; fixed dunes, also on moving, very dry sands on top of dunes; coarse deep sand of dunes (roots to 2 m deep); with many other psammophilous *Poaceae*; in rice-growing areas (N Senegal) adventive on paddy-field bands fixing the soil; near sea-level–300 m alt. and certainly more in N & NE Chad.

S Algeria, Tunisia; Palestine (Israel), Yemen. E-African records represent *A. paoliana* according to Clayton (Fl. Trop. E. Afr., Gramin. 1: 155–156, 1970).

Not palatable. Used for thatching.

Has been confused with *A. paoliana* and *A. schebehlensis* (cf., e.g., Clayton in Kew Bull. 23: 210, 1969 and in F.T.E.A. cited above; also Poilecot 1995 and 1999 cited above).

Perhaps introgression with *A. stenophylla*.

A. somalensis Stapf; Fl. Eth. & Eritrea 7: 77, 1995; Thulin, Fl. Somalia 4: 162, 1995; Cope in Kew Bull. 47: 279, 1992 (in key). – Icon.: Henrard, Critic. rev. Aristida 3, Meded. Rijks Herb. 54b: 572, 1928; idem, Monogr. Aristida 2, ibid. 58a: pl. 84, 1932.

Perennial tufted herb; culms 10–40–80 cm tall, glabrous; leaf blades setaceous, 8–25 cm × 2.5 mm, rigid, scabrid, tip filiform; panicle ovate, effuse, 10–30 cm long, branches spiculate only in distal half; glumes unequal, acuminate, lower 8–12 mm long, upper 11–18 mm; lemma 6–9 mm long, *passing directly into a twisted column* 6–8 mm long, awns 2.4–4 cm long.

Dry bushland; granitic slopes; deciduous and semi-desert bushland; c. 900–1580 m alt.

Closely resembling *A. sieberiana*.

ARISTIDA

A. stenophylla Henrard; Kew Bull. 23: 210, 1965; Cope in Kew Bull. 47: 280, 1992 (in key); Thulin, Fl. Somalia 4: 165, 1995. – Icon.: Henrard, Critical revision Aristida 3, Meded. Rijks Herb. 54b: 588, 1928 (details); idem, Monograph Aristida 1, Meded. Rijks Herb. 58: pl. 38, 1929 (details).

Perennial tussocky herb; culms wiry, branching, 40–45 cm long; leaf blades convolute-setaceous, c. 10 cm × 1 mm; panicle linear-oblong, loosely contracted, 10–12 cm long, branches erect, few-flowered; spikelets glabrous, shortly pedicelled; glumes very unequal, ± linear, *blunt*, obtuse, the lower 6–9 mm long, abruptly mucronate, upper 13–20 mm long, *awnless* (or sometimes awn to 4 mm long); lemma linear, 4–5 mm long, with column 1–2 cm, awn branches c. 4–5,5 cm long.

Dry sandy and stony soils in open bushland; perennial grassland in orange sand over limestone; 30–1100 m alt.

Closely allied to *A. sieberiana*, a more robust plant.

A. stenostachya Clayton; Fl. Trop. E. Afr., Gramin. 1: 143–144, 1970; Fl. Zambes 10/1: 104, 1971; Cope in Kew Bull. 47: 279, 1992 (in key); Thulin, Fl. Somalia 4: 162, 1995.

Perennial, densely tufted herb 0,6–1,3 m tall; culms erect, simple, many-noded; leaf blades 20–60 cm long, 2–5 mm wide, densely ribbed; panicle contracted or *spike-like*, 25–40 cm long, 1–2 cm Ø, sometimes *interrupted below*; spikelets enclosed by the glumes; these large, subequal, 1–2 cm long, enclosing lemma; lemma 1–1,5 cm long, tapering into a short beak to 4 mm long, *without column and articulation*; awns subequal, 2–3 cm long.

Clearings in bushland on sandy soil; flood plains; waste places in deciduous thicket and bushland; open woodland; clearings; old cultivated land; 0–1400 m alt.

Closely resembling *A. adoensis* with which it has been confused, but lemma longer.

A. stipitata Hack.; Clayton in Kew Bull. 23: 209–210, 1969; Fl. Zambes. 10/1: 123–126, 1971; Henrard, Crit. revision Aristida, Suppl., Meded. Rijks Herb. 54c: 745, 1933 (*A. vinosa*); idem, Monogr. Aristida 1, ibid. 58: 106 (*A. stipitata*), 113 (*A. graciliflora*), 115 (*A. ramifera*), 1929; Siebert & al. in Sabonet News 7/3: 213, 2002; Klaassen & Craven, Checklist grasses Namibia: 13–14, 2003. – Icon.: Henrard, Crit. revision Aristida 1, Meded. Rijks-Herb. 54: 212, 1926 (*A. graciliflora*); idem, Crit. revision Aristida 3, ibid. 54b: 493 (*A. ramifera*), 591 (*A. stipitata*), 1928; idem, Monograph Aristida, ibid. 58: pl. 35 (*A. stipitata*), pl. 40 (*A. ramifera*), 1929; De Winter in Bothalia 8: figs. 70, 159/26, 1965 (*A. stipitata* var. *spicata*); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 132, 260, 2012.

Perennial, very polymorphic, variable herb, laxly or densely tufted; culms 0,2–1,5 m tall, erect, usually simple or sparingly branched from upper nodes, *glabrous*, sometimes the lower nodes with *long scattered hairs*; leaf blades to 30 cm long, to 4 mm wide, often much shorter, usually glaucous; inflorescence rigid, erect, stiff, compact, spike-like, 14–25 cm long, shortly exserted; spikelets 5–10 cm long; glumes unequal, lower to 1,3 cm long, shortly awned, upper to 2,2 cm, awn to 5 mm; lemma 8–9 mm long with column 2–4 cm long, awns 2,5–6 cm, very fine.

Deep white sandy soils in open savanna-woodland; grass-plain; dunes covered with grasses or bush; edges of grassy vleis; deep white and red Kalahari sand; *Terminalia sericea* scrub; heavy sandveld; amongst rocks on old quartzite hills, disturbed ground; sandy ground in thickets; dry Mopane bushland; seepage zones; ?–480–1460 m alt.

Namibia, Botswana, S. Africa, Swaziland.

ARISTIDA STIPITATA

The 5 subspecies recognised are rather difficult to distinguish. The extreme, well-marked populations are distinct but are connected by intergrading forms. A key to the subspecies is given in Flora Zambesiaca 10/1: 124, 1971, and a good short description of them figures in van Oudtshoorn, l.c. The recognised subspecies are: – subsp. **graciliflora** (Pilg.) Melderis [bas.: *A. graciliflora* Pilg.; syn.: *A. stipitata* var. *graciflora* (Pilg.) De Winter; *A. vinosa* Henrard], the most common, 30–60 cm tall, with less contracted, often drooping inflorescence; – subsp. **ramifera** (Pilg.) Melderis [bas.: *A. ramifera* Pilg.] with narrower leaves and erect ± dense inflorescence, and short column of the awns (c. 1 cm); – subsp. **robusta** (Stent & J. M. Rattray) Melderis [bas.: *A. graciliflora* var. *robusta* Stent & J. M. Rattray]; syn.: *A. stipitata* var. *robusta* (Stent & J. M. Rattray) De Winter; *A. wachterii* Henrard], a robust plant 0,7–1,2 m tall, with much branched culms and spreading panicle; – subsp. **spicata** (De Winter) Melderis [bas.: *A. stipitata* var. *spicata* De Winter], a slender plant to 0,6 m tall, with dense narrow inflorescence; – subsp. **stipitata**, a robust plant 0,7–1,5 m tall with a dense spike-like inflorescence, and column of awns 2–3,5 cm long.

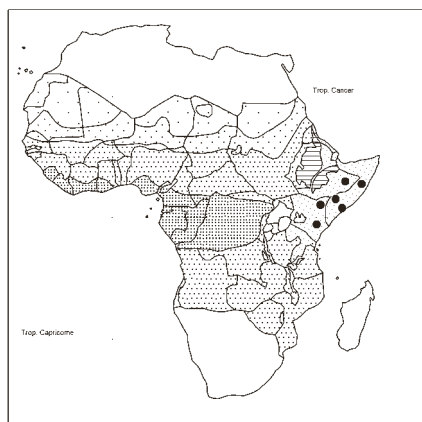
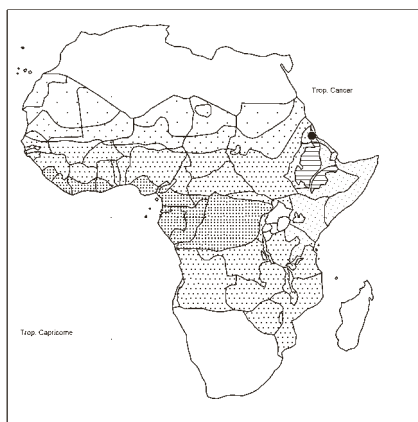
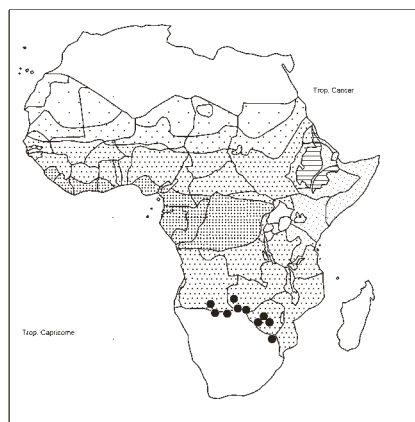
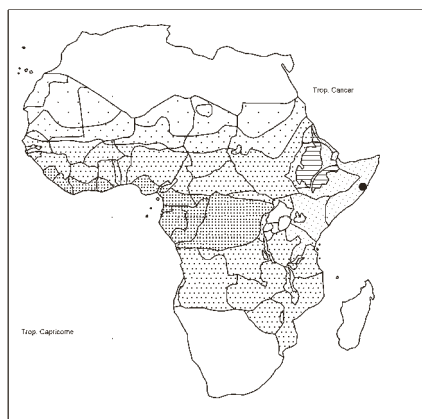
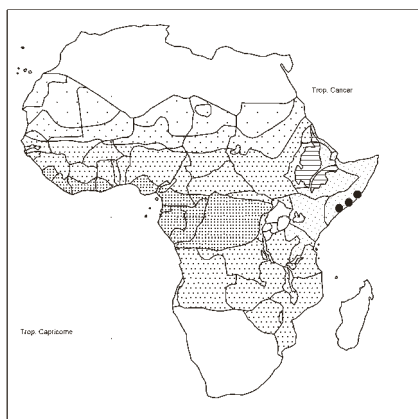
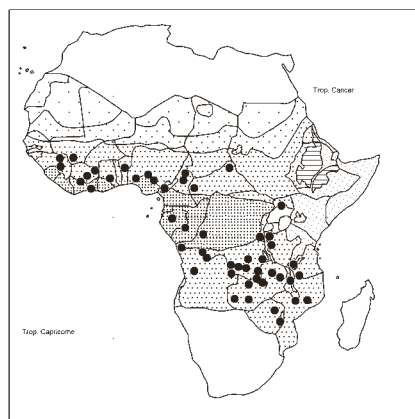
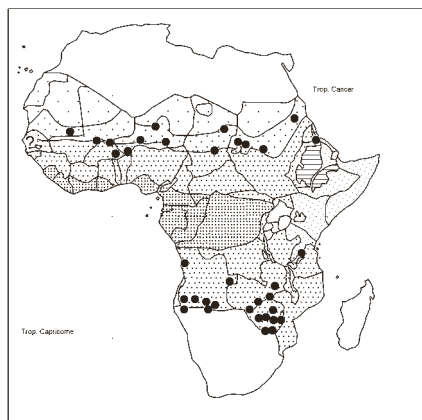
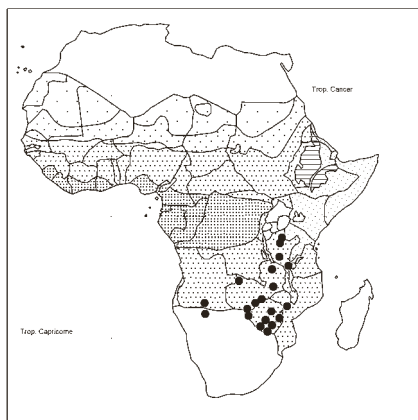
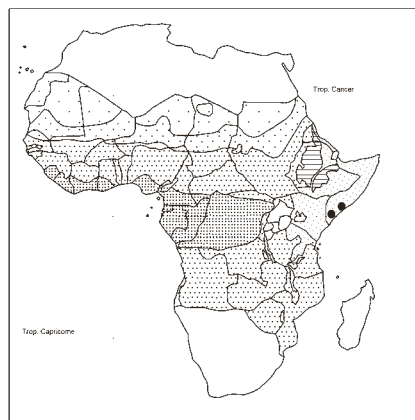
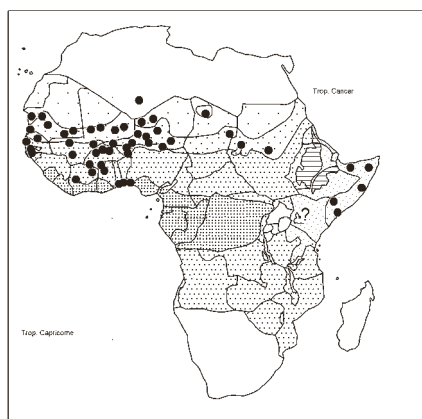
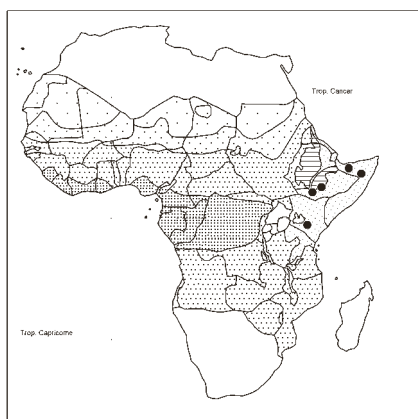
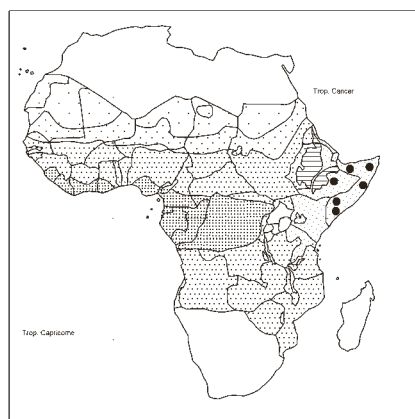
A. stipitata much resembles *A. mollissima* but lacks the pubescence on the culms. In habit also resembling *A. sieberiana*.

A. stipoides Lam. 1783, non R. Br. 1810, excl. var. *meridionalis* Stapf (= *A. meridionalis*); Henrard, Crit. revision Aristida 1, Meded. Rijks Herb. 54: 212, 1926 (*A. gracillima*); idem, ibid. 2, Meded. Rijks Herb. 54a: 282, 1927 (*A. lamarckii*); Fl. Trop. E. Afr., Gramin. 1: 153, 1970; Fl. Zambes. 10/1: 122, 1971; Klaassen & Craven, Checklist grasses Namibia: 14, 2003 (map); Lisowski, Fl. Rép. Guinée 1: 451, 2009; Schmidt & al. in Phytotaxa 304: 36, 2017; César & Chatelain, Fl. ill. Tchad: 189, 2019. – Icon.: Henrard, Crit. revision Aristida 1, Meded. Rijks Herb. 54: 25, 1926 (*A. amplissima*); idem, Crit. revision... 3, ibid. 54b: fig. p. 593, 1928; idem, Monogr. Aristida 1: pl. 26, 1929; Icon. Pl. Afric. (Inst. Fond. Afrique Noire) 2: n° 43, 1953; De Winter in Bothalia 8: figs. 21, 64–65, 159/23, 1965; Naegelé, Gramin. pâturages Mauritanie (FAO): 71, 1977; van der Zon, Gramin. Cameroun 2: 99, 100 (map), 1992; Poilecot, Boissiera 56: 171, 1999; Ibrahim & al., Grasses Mali: 38, 2018. – Pl. 21.

syn.: *A. stipiformis* Lam. 1791, non Hochst. ex Steud.; *A. stipiformis* Poir. in Lam. 1810, nom. superfl.; *A. lamarckii* Steud. 1821, nom. superfl.; *A. amplissima* Trin. & Rupr. 1842, nom. superfl.; *A. gracillima* Oliv.; *A. fontismagni* Schweick.; *Chaetaria stipiformis* P. Beauv. 1812, nom. superfl.; *C. lamarckii* Roem. & Schult. 1817, nom. superfl.; *Arthratherum comosum* J. Gay ex Kunth 1833, pro syn.

Annual loosely tufted herb; culms 0,8–1,5 m tall, erect, simple or slightly branched from upper nodes, *glabrous*; leaf blades to 30 cm long, 3–5 mm wide when expanded; inflorescence an effuse, very lax panicle 30–50 cm long, often nodding and few-flowered, branches with filiform branchlets to 20 cm long; spikelets 12–20 mm long; glumes very unequal, lower 4–7 mm long, upper 14–20 mm; lemma 7–9 mm long, column 1,5–3 cm, awns 3,5–6 cm.

Sandy and basaltic soils in grassland and scrub; peaty dambos; a ruderal of old cultivations and roadsides; sometimes in dense stands; top of rounded dunes with *Aristida mutabilis*, *A. funiculata*, *A. sieberiana*, *Eragrostis tremula*, *Cenchrus biflorus*, *Panicum turgidum*, *Stipagrostis uniplumis*; wooded savannas in valley with *Panicum nigerense*, *Loudetia hordeiformis*, *Ctenium elegans*, *Diheteropogon hagerupii* (Niger); sand on sandstone; ?–910 m alt. N Namibia, Botswana. Not in “Ethiopia” = Somalia (*A. paoliana*).

*Aristida paoliana**Aristida pennei**Aristida pilgeri**Aristida protensa**Aristida pycnostachya**Aristida recta**Aristida rhiniochloa**Aristida scabrivalvis**Aristida schebehliensis**Aristida sieberiana**Aristida somalensis**Aristida stenophylla*

ARISTIDA STIPOIDES

Often galled producing hard lumps in the basal joint of a branch, c. 1,5 cm long, 1 cm Ø (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 186, 1994).

Resembling *A. meridionalis* but annual and with a longer column of the awns (1,5–3 cm, not 0,5–2 cm), and with a northerly distribution.

A. tenuiseta Cope, Kew Bull. 47: 278, 280, 1992; Thulin, Fl. Somalia 4: 165, 1995.

Perennial densely tufted herb to 30 cm tall; panicle loosely contracted; glumes very unequal, awned in sinus of tip, lower 8–9,5 mm long, upper 21–23 mm with awn 7–10 mm; lemma c. 6 mm long, with column 1,2–2,5 cm long, awns very slender 9,5–10,5 cm long.

Sandy coastal plains and dunes; 0–30 m alt.

Rather similar to *A. schebehlensis* but awns of lemma much longer (not 5–8 cm) and much finer.

A. triticoides Henrard; Cope in Kew Bull. 47: 279, 1992 (in key); Thulin, Fl. Somalia 4: 163, 1995. – Icon.: Henrard, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 30, 1929 (spikelet); idem, Critical revision Aristida, Suppl., Meded. Rijks Herb. 54c: 744, 1933 (spikelet); Fl. Eth. & Eritrea 7: 83, 1995 (glumes); Cope, Fl. Arab. Penins. 5/1: 106, 2007.

Perennial (short-lived) densely tufted herb from a branching rhizome; culms erect, 45–65 cm tall; basal leaf sheaths persistent, becoming coriaceous, golden-brown; blades setaceous, 9–11 cm × 1 mm; panicle 15–20 cm long, dense, spike-like, branches erect; glumes very unequal, awn-pointed, lower 5,5–8 mm long, upper 12–16 mm; lemma broad, papillose, 3–5 mm long, with column 1,5–2,7 cm, awns unequal, 3–6 cm long.

Stony or gravelly soils in open situations in dry scrubland; open *Acacia*, *Commiphora* bushland on red sand over limestone or gypsum; sometimes in rocky gullies; 60–1100 m alt.

Yemen, Oman (Ghazanfar, Fl. Sultanate Oman 4: 63, 2018); Pakistan. Not confirmed in Saudi Arabia.

Closely related to *A. kelleri* but more robust, with taller culms (45–65 cm, not 20–45 cm), longer panicle (15–20 cm, not 8–10 cm), longer lemma (3–5 mm, not c. 2,5 mm), longer column (1,5–2,7 cm, not 1–2 cm).

A. vestita Thunb., incl. fa. *amplior* Hack., but excl. var. *brevistipitata* Trin. & Rupr., var. *densa* Trin. & Rupr., var. *diffusa* (Trin.) Trin. & Rupr., var. *eckloniana* Trin. & Rupr., var. *parviflora* Trin. & Rupr., var. *pseudohystrix* Trin. & Rupr., and var. *schraderiana* Trin. & Rupr.; Fl. Zambes. 10/1: 119–120, 1971; Klaassen & Craven, Checklist grasses Namibia: 14, 2003. – Icon.: Henrard, Critical rev. Aristida 1, Meded. Rijks Herb. 54: 181, 1926 (*A. flocciculmis*); idem, Critical rev. ... 3, Meded. Rijks Herb. 54b: 663, 1928; idem, Monogr. Aristida 1, Meded. Rijks Herb. 58: pl. 27, 1929; idem, Monogr. ... 2, Meded. Rijks Herb. 58a: pl. 94: 1932 (*A. hystrix*); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 265, 2012 (panicle).

syn.: *A. hystrix* Thunb. 1794, nom. illeg., non L. f. 1782; *A. lanuginosa* Burch. 1824, non (Trab.) Trab.; *A. flocciculmis* Mez; *Chaetaria vestita* (Thunb.) P. Beauv.; *Arthratherum vestitum* (Thunb.) Nees; *Arth. lanuginosum* Burch.

Perennial densely tufted herb; culms rigid, 0,4–1,2 m tall, mostly simple, internodes pubescent to woolly at least in lower part; lower leaf sheaths broad, papery, woolly (or glabrescent) on back and margins; blades linear, to 24–40 cm × 4 mm; panicle pyramidal, effuse, 20–30 × 12 cm, open or laxly contracted; glumes unequal, lower 4–7 mm long, upper 9–13 mm; lemma 7–11 mm

ARISTIDA VESTITA

long, column 2–7 mm, awns unequal, central 2–3,5 cm long, laterals shorter.

Deciduous bushland and thicket on dry soils; limestone; black clayey and veld soils; plentiful in grassy thickets among *Acanthaceae* (Angola); 910–1500 m alt.

N Namibia, S. Africa.

Resembling *A. mollissima* which has also woolly culms, but *A. vestita* has shorter glumes (lower 9–13 mm, vs. 7–10 mm; upper 9–13 mm, vs. 12–22 mm), the cullus is bifid, and the column of the awns shorter (2–7 mm, not 15–27 mm).

(**A. wildii** Melderis 1970) is known only from Botswana.

SYNONYMS:

Aristida abyssinica Trin. & Rupr. = **Aristida adscensionis acutiflora** Trin. & Rupr., incl. var. *algeriensis* (Henrard) Maire & Weiller and subsp. *zittelii* (Asch.) Maire & Weiller = **Stipagrostis acutiflora** acutiflora subsp. *brachyathera* (Coss. & Balansa) Trab. = **S. brachyathera** adoensis auct. non Hochst. ex A. Rich. = **Aristida ferrilateris** adscensionis L., incl. vars. and subspp. plur. = **A. adscensionis** aethiopica Trin. & Rupr. = **A. adscensionis alopecuroides** Hack. = **A. congesta** amplissima Trin. & Rupr. 1842, nom. superfl. = **A. stipoides** andoniensis Henrard = **A. rhiniochloa angolensis** C. E. Hubb. = **Sartidia angolensis angustata** Stapf = **Aristida junciformis** argentea Schweick. = **A. mollissima** subsp. *argentea* aristidis Coss., incl. var. *chudeaui* Batt. & Trab. = **A. sieberiana** articulata Edgew. = **A. mutabilis** arundinacea L. = **Neyraudia arundinacea astroclada** Chiov. = **Aristida mutabilis atroviolacea** Hack. = **A. recta** bifida Karl = **Stipagrostis obtusa** borumensis Henrard = **Aristida scabrivalvis brachyathera** Coss. & Balansa = **Stipagrostis brachyathera brachypoda** Tausch = **S. plumosa brevisubulata** (Maire) Maire = **Aristida sieberiana bromoides** Kunth = **A. adscensionis burkei** Stapf = **A. diffusa** calophila (Jaub. & Spach) Boiss. = **Stipagrostis paradisea canariensis** Willd. = **Aristida adscensionis canescens** Henrard, incl. subsp. *ramosa* De Winter = **A. nemorivaga** capensis Thunb., non Savi = **Stipagrostis obtusa capillacea** Cav. 1799, nom. illeg. = **Aristida cumingiana capillaris** Kunth 1833, nom. inval. = **A. cumingiana cardosoi** Cout. = **A. adscensionis cassanellii** A. Terracc. = **A. mutabilis chrysolaena** Henrard = **A. nemorivaga chrysopila** Steud. = **Chrysopogon plumulosus ciliata** Desf. = **Stipagrostis ciliata ciliata** Steud. & Hochst. = **S. hirtigluma** var. *hirtigluma coerulescens* Desf. 1798, incl. vars. plur. = **Aristida adscensionis coerulescens** Hochst. ex Steud. 1854 = **A. adoensis coerulescens** Sieber ex Trin. 1830 = **A. sieberiana coerulescens** var. *breviaristata* Schweinf., and var. *exilis* Schweinf. ex Blatt. = **A. adscensionis**



Plate 15. *Aristida kerstingii* Pilg., see p. 82

a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: spikelet ($\times 4$); e-f: glumes lower and upper ($\times 4$); g: floret without awn ($\times 10$); h-i: lemma and palea ($\times 10$); j: caryopsis ($\times 10$); k: upper column and three-forked awn ($\times 15$).



Plate 16a. *Aristida kunthiana* Trin. & Rupr., see text p. 82 and plate 16b p. 93 for captions.

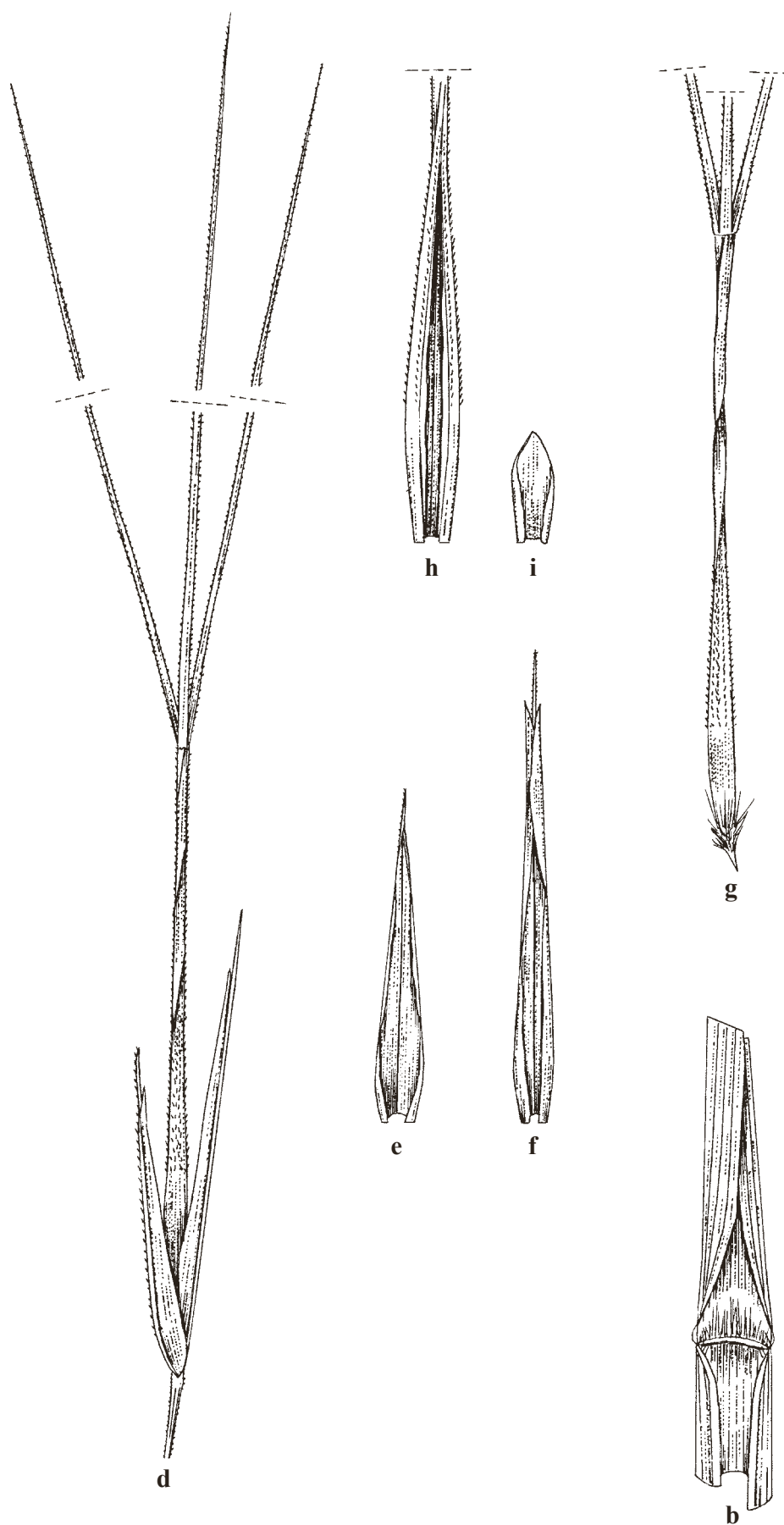


Plate 16b. *Aristida kunthiana* Trin. & Rupr., see text p. 82 and plate 16a p. 92

a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: spikelet ($\times 8$); e-f: glumes lower and upper; g: floret and callus; h-i: lemma and palea.



Plate 17. *Aristida mutabilis* Trin. & Rupr., see p. 84
a: habit ($\times 1$); b: ligule; c: spikelet ($\times 13$); d–e: glumes lower and upper ($\times 13$); f: floret ($\times 13$);
g: palea ($\times 13$); h: lemma; i: caryopsis; j: column fragment ($\times 40$).

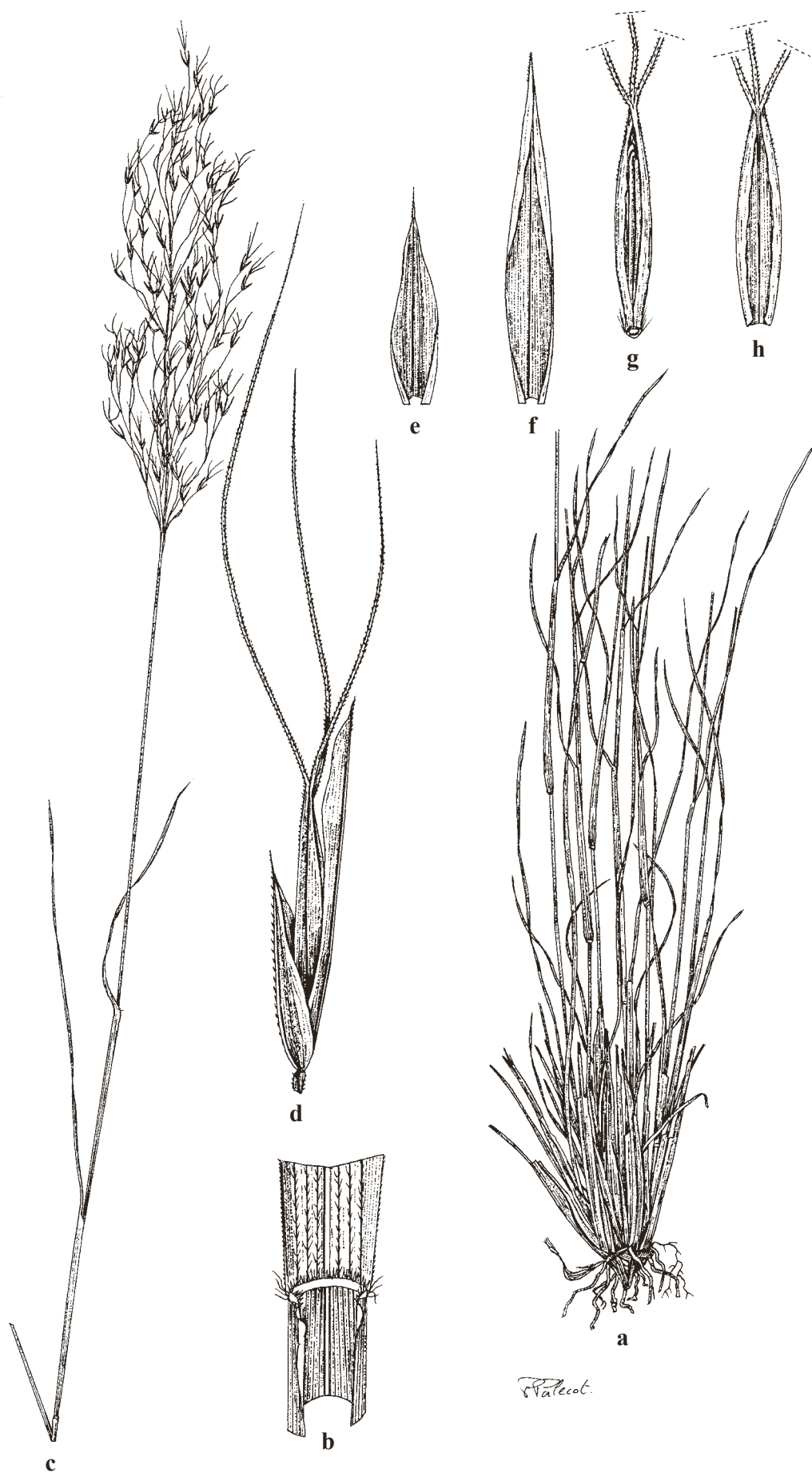


Plate 18. *Aristida recta* Franch., see p. 86

a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 16$); d: spikelet ($\times 10$); e-f: glumes lower and upper; g: floret and stamen; h: lemma.



Plate 19. *Aristida rhiniochloa* Hochst., see p. 86
a: habit ($\times 1$); b: node ($\times 3$); c: ligule; d: inflorescence ($\times 1$); e: spikelet ($\times 6$); f-g: glumes lower and upper ($\times 6$);
h: floret ($\times 7$); i-j: lemma and palea ($\times 7$); k: caryopsis ($\times 7$).



Plate 20. *Aristida sieberiana* Trin., see p. 87
 a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: spikelet ($\times 4$); e-f: glumes lower and upper ($\times 5$);
 g: floret ($\times 5$); h: callus ($\times 10$); i: lemma ($\times 6$); j: palea ($\times 30$).



Plate 21. *Aristida stipoides* Lam., see p. 88

a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: spikelet ($\times 6$); e-f: glumes lower and upper; g: floret; h-i: lemma and palea.

ARISTIDA

coma-ardeae Mez = **Stipagrostis dinteri**
congesta subsp. *barbicollis* (Trin. & Rupr.) De Winter
 = **Aristida barbicollis**
congesta var. *genuina* Chiov. = **A. congesta**
congesta var. *megalostachya* Henrard and var. *pilifera*
 Chiov. = **A. congesta**
contractinodis Stent & J. M. Rattray = **A. junciformis**
corradii Chiov. = **Stipagrostis foexiana**
cumingiana Trin. & Rupr. var. *diminuta* (Mez) Jacq.-Fél.,
 var. *reducta* Pilg., and var. *uniseta* Stent & J. M. Rattray
 = **Aristida diminuta**
curvata (Nees) Nees ex A. Rich., incl. var. *abyssinica*
 A. Rich. and var. *nana* (Nees) Henrard
 = **A. adscensionis**
decorata Steud. = **Stipagrostis raddiana**
delicatula Hochst. ex A. Rich. = **Aristida cumingiana**
densispica Steud. = **A. hordeacea**
dewildemania Henrard = **A. junciformis**
diffusa Trin., incl. subsp. and vars. plur. = **A. diffusa**
dinteri Hack. = **Stipagrostis dinteri**
ehrenbergii Trin. & Rupr. = **Aristida adscensionis**
elliotii A. Chev. = **A. recta**
elymoides Mez = **A. mollissima** subsp. *mollissima*
elytrophoroides Chiov. = **A. congesta**
eriphora Henrard = **A. leucophaea**
festucoides Poir. = **A. adscensionis**
filiformis Henrard = **A. scabrivalvis**
flocciculmis Mez = **A. vestita**
floccosa Coss. & Durieu = **Stipagrostis plumosa**
foexiana Maire & Wilczek = **S. foexiana**
fontismagni Schweick. = **Aristida stipoides**
funicularis Trin. ex Steud. 1840, nom. nud. = **A. funiculata**
funiculata Trin. & Rupr., incl. var. *brevis* Maire, var.
mallica (Edgew.) Henrard, and var. *paradoxa*
 (J. A. Schmidt) Henrard = **A. funiculata**
furfurosa Henrard = **A. adoensis**
galpinii Stapf = **A. junciformis**
gossweileri Pilg. = **A. recta**
graciliflora Pilg. = **A. stipitata** subsp. *graciliflora*
graciliflora var. *robusta* Stent & J. M. Rattray
 = **A. stipitata** subsp. *robusta*
gracilior Pilg. = **Stipagrostis hirtigluma** var. *patula*
gracilior var. *pearsonii* Henrard = **S. hirtigluma** var.
pearsonii
gracillima Oliv. = **Aristida stipoides**
guineensis Trin. & Rupr. = **A. adscensionis**
hemmingii Clayton = **A. paoliana**
herbacea Steud. ex T. Durand & Schinz = **A. funiculata**
heymanii Regel = **A. adscensionis**
hirtigluma Steud. ex Trin. & Rupr.
 = **Stipagrostis hirtigluma**
hirtigluma var. *patula* Hack. = **S. hirtigluma** var. *patula*
hochstetteriana Beck ex Hack. = **S. hochstetteriana**
hockii De Wild. = **Aristida recta**
hoggariensis Batt. & Trab. = **A. mutabilis**
huillensis Rendle = **A. aequilumis**
hystrix Thunb. 1794, non L. f. 1782 = **A. vestita**
jemensis Henrard = **A. pennei**
junciformis Trin. & Rupr., incl. subsp. *galpinii* (Stapf)
 De Winter, subsp. *macilenta* (Henrard) Melderis, and
 subsp. *welwitschii* (Rendle) Melderis = **A. junciformis**
kordofana Mez = **A. sieberiana**
lamarckii Steud. 1821, nom. superfl. = **A. stipoides**
lanuginosa Burch. 1824 = **A. vestita**
lanuginosa (Trab.) Trab. = **Stipagrostis plumosa**
lauriolii Maire = **Aristida mutabilis**

ARISTIDA

leiocalycina Trin. & Rupr. = **A. sieberiana**
libyca H. Scholz = **Stipagrostis libyca**
lommeli Mez = **Aristida barbicollis**
longicauda Hack. = **A. congesta**
longiflora Schumach. & Thonn., incl. var. *brevisubulata*
 Maire, and var. *nubica* Trin. & Rupr. = **A. sieberiana**
longiradiata Steud. = **A. mutabilis**
macilenta Henrard = **A. junciformis**
macrathera A. Rich. = **A. funiculata**
mallica Edgew. = **A. funiculata**
mauritiana Kunth 1829 = **A. adscensionis**
mauritiana Hochst. ex A. Rich. 1850 = **A. adscensionis**
meccana Hochst. ex Trin. & Rupr., incl. var. *cassanellii*
 (A. Terracc.) Bourreil, var. *genuina* Sauvage, var.
lauriolii (Maire) Maire, and var. *schweinfurthii* (Boiss.)
 Maire & Weiller = **A. mutabilis**
moandaensis Vanderyst = **A. recta**
mutabilis Trin. & Rupr., with many vars., and var. *meccana*
 (Hochst. ex Trin. & Rupr.) Fenzl in sched., and subsp.
nigritiana (Hack.) Bourreil = **A. mutabilis**
nigritiana Hack. = **A. mutabilis**
obtus Delile = **Stipagrostis obtusa**
oranensis Henrard = **S. plumosa**
pallida Steud., incl. var. *chudeau* (Batt. & Trab.)
 Maire & Weiller and var. *glabriculumis* Maire
 = **Aristida sieberiana**
paradisea Edgew. = **Stipagrostis paradisea**
paradoxa J. A. Schmidt = **Aristida funiculata**
pardyi Stent & J. M. Rattray = **A. junciformis**
piligena Burch. = **Stipagrostis ciliata** var. *ciliata*
piliger Burch. ex Schult. & Schult. f. = **S. ciliata** var.
ciliata
plicapolonica Mez = **Aristida kerstingii**
plumosa L., incl. var. *aethiopica* Trin. & Rupr., var.
alexandrina Trin. & Rupr., var. *australis* Maire, var.
berberica Trin. & Rupr., var. *brachypoda* (Tausch) Trin.
 & Rupr., var. *eichwaldiana* Trin. & Rupr., var. *floccosa*
 (Coss. & Durieu) T. Durand & Schinz, var. *lanuginosa*
 Trab., subsp. *lanuginosa* (Trab.) Maire, var. *oranensis*
 (Henrard) Maire, var. *seminuda* Trin. & Rupr., and var.
syrtica Maire & Weiller = **Stipagrostis plumosa**
plumosa var. *barbulata* A. Terracc. = **S. hirtigluma** var.
hirtigluma
plumosa var. *sahelica* (Trab.) Trab. = **S. sahelica**
plumosa var. *superciliata* Henrard = **S. rigidifolia** (or
S. plumosa?)
prodigiosa Welw., incl. var. *calva* Henrard = **S. prodigiosa**
pseudohordeacea Stent & J. M. Rattray
 = **Aristida hordeacea**
pumila Decne. = **A. adscensionis**
pungens Desf., incl. var. *pubescens* Henrard and var.
transiens Maire = **Stipagrostis pungens**
pungens Steud. = **S. scoparia**
raddiana Savi = **S. raddiana**
ramifera Pilg. = **Aristida stipitata** subsp. *ramifera*
rangei Pilg. = **A. congesta**
redacta auct. non Stapf = **A. abnormis**
rhiniochloa Hochst. fa. *rigidiseta* sensu Stent &
 J. M. Rattray, 1933, nom. nud. = **A. rhiniochloa**
rigidiseta Pilg. = **A. rhiniochloa**
royleana Trin. & Rupr. = **A. funiculata**
sahelica Trab. = **Stipagrostis sahelica**
scabrivalvis Hack., incl. subsp. *borumensis*
 (Henrard) Melderis, var. *contracta* De Winter,
 and subsp. *contracta* (De Winter) Melderis
 = **Aristida scabrivalvis**

ARISTIDA

- schimperii* Hochst. ex Steud. = **Stipagrostis ciliata** var. **ciliata**
schliebenii Henrard = **Aristida junciformis**
schweinfurthii Boiss., incl. var. *boissieri* Schweinf. = **A. mutabilis**
scoparia Trin. & Rupr. = **Stipagrostis scoparia**
secalina Henrard = **S. hochstetteriana** var. **secalina**
sericea Ehrenb. ex Boiss. = **S. paradisea**
serrulata Chiov. 1924 = **Aristida rhiniochloa**
serrulata sensu Stent & J. M. Rattray 1933, non Chiov. = **A. brainii**
shawii H. Scholz = **Stipagrostis shawii**
spicata Rottler ex Hook. f. = **Aristida mutabilis**
steudeliana Trin. & Rupr. = **A. hordeacea**
stipiformis Hochst. ex Steud. = **A. sieberiana**
stipiformis Lam. 1791 = **A. stipoides**
stipiformis Poir. in Lam. 1810, nom. superfl. = **A. stipoides**
stipiformis var. *paoliana* Chiov. = **A. paoliana**
stipitata Hack. var. *graciliflora* (Pilg.) De Winter = **A. stipitata** subsp. **graciliflora**
stipitata var. *robusta* (Stent & J. M. Rattray) De Winter = **A. stipitata** subsp. **robusta**
stipitata var. *spicata* De Winter = **A. stipitata** subsp. **spicata**
stipoides Lam. var. *meridionalis* Stapf = **A. meridionalis**
subacaulis (Nees) Steud. = **Stipagrostis subacaulis**
submucronata Schumach. & Thonn., incl. var. *scabra* Henrard = **Aristida adscensionis**
tenella Kurz ex Hook. f. = **Aristida cumingiana**
teneriffae Steud. = **A. adscensionis**
tenuiflora Steud. = **A. mutabilis**
tenuis Hochst. 1845, nom. illeg. = **A. mutabilis**
textilis Mez = **A. junciformis**
trichodes Walp. 1853, nom. superfl. = **A. cumingiana**
tunetana Coss., incl. var. *intermedia* Maire = **A. congesta**
vanderystii De Wild. = **Sartidia vanderystii**
vestita Thunb. fa. *amplior* Hack. = **Aristida vestita**
vestita var. *brevistipitata* Trin. & Rupr., subsp. *burkei* (Stapf) Melderis, var. *densa* Trin. & Rupr., var. *diffusa* (Trin.) Trin. & Rupr., var. *eckloniana* Trin. & Rupr., var. *pseudohystrix* Trin. & Rupr., and var. *schraderiana* Trin. & Rupr. = **A. diffusa**
vinosa Henrard = **A. stipitata** subsp. **graciliflora**
vulgaris Trin. & Rupr., incl. var. *abyssinica* Trin. & Rupr., and var. *aethiopica* Trin. & Rupr., etc. = **A. adscensionis**
wachterii Henrard = **A. stipitata** subsp. **robusta**
welwitschii Rendle, incl. var. *minor* Rendle and var. *subtomentosa* Henrard = **A. junciformis**
zittelii Asch., incl. var. *algeriensis* Henrard = **Stipagrostis acutiflora**

(ARRHENATHERUM)

- Arrhenatherum elongatum* (Hochst. ex A. Rich.) Potztal = **Helictotrichon elongatum**
friesiorum (Pilg.) Potztal = **H. umbrosum**
lachnanthum (Hochst. ex A. Rich.) Potztal = **H. lachnanthum**
mannii (Pilg.) Potztal = **H. mannii**
milanjianum (Rendle) Potztal = **H. milanjanum**
newtonii (Stapf) Potztal = **H. newtonii**
phaneroneuron (C. E. Hubb.) Potztal = **H. elongatum**
rigidulum (Pilg.) Potztal = **H. elongatum**
umbrosum (Hochst. ex Steud.) Potztal = **H. umbrosum**

(ARTHATHERUM)

- Arthratherum brachyatherum* (Coss. & Balansa) Coss. & Durieu = **Stipagrostis brachyathera**
brachyatherum subsp. *acutiflorum* (Trin. & Rupr.) Coss. & Durieu = **S. acutiflora**
caloptilum Jaub. & Spach = **S. paradisea**
capense (Thunb.) Nees = **S. obtusa**
ciliatum (Desf.) Nees = **S. ciliata**
ciliatum sensu Nees 1841, excl. syn. = **S. hirtigluma**
comosum J. Gay ex Kunth 1833 = **Aristida stipoides**
elatum Boiss. & Buhse = **Stipagrostis uniplumis** var. **uniplumis**
hirtiglume (Steud. ex Trin. & Rupr.) Jaub. & Spach = **S. hirtigluma**
lanuginosum Burch. = **Aristida vestita**
obtusum (Delile) Nees = **Stipagrostis lutescens**
plumosum (L.) Nees, incl. var. *floccosum* Coss. & Durieu = **S. plumosa**
pogonoptilum Jaub. & Spach = **S. uniplumis** var. **uniplumis**
pungens (Desf.) P. Beauv. = **S. pungens**
schimperii Nees = **S. ciliata** var. **ciliata**
subacaulis Nees = **S. subacaulis**
uniplume (Licht.) Nees = **S. uniplumis**
vestitum (Thunb.) Nees = **Aristida vestita**

ARTHAXON / 4

Genus of some 24 species in the Old World tropics mostly in India; introduced in the New World (some species are weedy occurring in other warm regions of the world). Christenhusz & al. (Plants of the World: 208, 2017) cite 22; since then two species of *Thelepogon* were transferred to *Arthraxon* by Thompson (Austrobaileya 10: 480–505, 2019), but *Thelepogon* with 2 species was maintained by Christenhusz et al., o.c.: 209.

An isolated genus with no obvious close relatives in the tribe (Andropogoneae; Cope, Flora Arabian Peninsula 5/1: 301, 2007). Recognised by its broadly lanceolate leaves with cordate base; inflorescence composed of slender subdigitate racemes, terminal and axillary; spikelets paired, pedicellate (staminate, sterile, reduced to a pedicel or lacking), and sessile with 2 flowers; upper lemma awned, awn abaxial, attached well below the midpoint of the lemma (Kellogg in Kubitzki, ed., Families & genera vascul. pl. 13: 291, 2015).

Arthraxon cuspidatus (Hochst. ex A. Rich.) Hochst. ex Hack. – Icon.: Fl. Eth. & Eritrea 7: 311, 1995 (glume); Cope, Fl. Arab. Penins. 5/1: 303, 2007 (raceme).

bas.: *Andropogon cuspidatus* Hochst. ex A. Rich.

syn.: *Batratherum cuspidatum* Hochst.; *Arthraxon satarensis* Almeida

Annual slender herb; culms loosely ascending, to 60 cm long; leaf blades lanceolate, 4–7 × 0.8–1.3 cm, thinly hispid, margins pectinate-setose around the amplexicaule base, tip sharply acuminate; inflorescence of 5–9 *silky-pilose*, flexuous racemes each 4–5 cm long, hairs to 3 mm long; pedicellate spikelet reduced (a stump); sessile spikelet 5–7 mm long, lower glume *muricate*. Wet rocky banks; 1200–1700 m alt.

Oman; ? India.

Has been included in *A. hispidus*, which has glabrous internodes, smaller spikelets.

ARTHRAOXON

A. hispidus (Thunb.) Makino, incl. many subsp., vars., and forms, i.a. fa. *quartinianus* (A. Rich.) Backer, var. *quartinianus* (A. Rich.) Backer – In many (or most) floras and flora lists figuring as *A. micans* or *A. quartinianus*. – Lidia 5/5: 127, 2001; Fl. Zambes. 10/4: 89, 91, 2002; Cheek & al., Pl. Kupe...: 442, 2004; Harvey & al., Pl. Bali Ngemba...: 138, 2004; Agnew, Upl. Kenya wild flow., ed. 3: 444, 2013. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 49, 1955; Van Welzen in Blumea 27: 273, 1981; Fl. Trop. E. Afr., Gramin. 3: 743, 1982; van der Zon, Gramin. Cameroun 2: 464, 463 (map), 1992; Fl. Eth. & Eritrea 7: 311, 1995; Burrows & Willis, Pl. Nyika Plateau, Malawi: 340, 2005; Velayos & al., Fl. Guinea Ecuat. 12: 162, 2015; Malaisse & al., Copper-cobalt flora Upper Katanga...: 382, 2016.

bas.: *Phalaris hispida* Thunb.

syn.: *Digitaria hispida* (Thunb.) Spreng.; *Arthraxon ciliaris* P. Beauv.; *A. coloratus* Hochst.; *A. quartinianus* (A. Rich.) Nash; *A. micans* (Nees) Hochst.; *Batratherum micans* Nees; *Alectoridia quartiniana* A. Rich.; *Pleuroplitis quartiniana* (A. Rich.) Regel, incl. var. *caespitosa* Regel and var. *tenella* Regel; further synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual straggling herb; culms slender, wiry, ascending, much-branched, 10–60–100 cm long; leaf blades lanceolate-ovate, 1–8×0,3–2 cm, almost glabrous, base amplexicaule; sheaths swollen, pubescent; inflorescence of 2–30 fasciculate racemes, each 2–6 cm long, digitate; rachis filiform, internodes often *sparsely ciliate*, *hairs seldom > 0,5 mm long*; *pedicellate spikelets absent* or extremely reduced.

Rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*; open *Brachystegia* woodland; lava plains; recent lava, fresh and shady crevices in lava; old lava; between rocks; humid places; pteridietum; gallery forest; shady glades, pathsides in wooded grassland and evergreen forest; old farmland; clearings; river banks; meadows; copper steppe savanna; copper polluted sites, e.g., places of old copper furnaces and tailings; weed of cultivations; 400–2600 m alt.

Bioko/Fernando Poo; Socotra; W. Indian Ocean islands; Yemen, Oman; Iran, India, Sri Lanka, (tropical) Asia to Japan, New Guinea, E Australia (Thompson in Austrobaileya 10: 483, 2019: “The widest worldwide distribution in terms of both latitude and longitude of all... *Arthraxon*”); introduced in Hawaii, USA, C. America, Caribbean.

Van Welzen (1981) considered *A. micans* and *A. hispidus* as conspecific as they intermingle in India.

(A. lanceolatus (Roxb.) Hochst.)

bas.: *Andropogon lanceolatus* Roxb.

syn.: *And. serrulatus* Link 1821, non A. Rich. 1850 (= *Arthraxon prionodes*); *Batratherum lanceolatum* (Roxb.) Nees

According to World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew, this species is known from E Africa, i.e. from Eritrea, Ethiopia, Sudan, Kenya, Tanzania, S. Africa; and further in Asia from Yemen, E-wards through to Malaya. Van Welzen in his revision (Blumea 27: 255–300, 1981) also recorded the plant from Mozambique on a distribution map (p. 282), but no gathering was cited (Fl. Zambes. 10/4: 91, 2002).

Van Welzen reduced *A. prionodes* to a synonym under *A. lanceolatus* var. *lanceolatus*, a species “confined to southern India, which has the lower glume of the sessile spikelet almost flat on the back and strongly nerved.” This treatment by Van Welzen “seems a little extreme.” (Cope, Fl. Arab. Penins. ... 5/1: 302, 2007).

Citing Fl. China 22: 618, 2006, *S. lanceolatus* is a plant from S India.

ARTHRAOXON LANCEOLATUS

The occurrence of the true *A. lanceolatus* in Africa needs investigation. Cf. also Quattrocchi, CRC World dictionary of Grasses, 1, A–D: 203–204, 2006.

A. lancifolius (Trin.) Hochst.; van der Zon, Gramin. Cameroun 2: 463, 465, 468 (map), 1992; Burrows & Willis, Pl. Nyika Plateau, Malawi: 341, 2005. – Icon.: Fl. Eth. & Eritrea 7: 311, 1995 (raceme); Fl. Zambes. 10/4: 90, 2002; Ming-Jer Jung & al. in Taiwan 51: 311, 2006 (alien in Taiwan); Cope, Fl. Arab. Penins. ... 5/1: 303, 2007; Ibrahim & al., Grasses Mali: 39; 2018.

bas.: *Andropogon lancifolius* Trin.

syn.: *Andr. multicaulis* Steud.; *Arthraxon schimperi* (Steud.) Hochst. 1856; *Arth. microphyllus* var. *lancifolius* (Trin.) Hack., and fa. *lancifolius* (Trin.) Backer; *Arth. figarii* (De Not.) Asch. & Schweinf.; *Batratherum lancifolium* (Trin.) W. Wats.; *B. schimperi* (A. Rich.) Nees ex Hochst.; *Pleuroplitis lancifolius* (Trin.) Regel; *P. schimperi* (A. Rich.) Regel; *Psilopogon schimperi* A. Rich.; *Ps. figarii* De Not.; *Lucaea schimperi* Steud.; further synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual delicate loosely tufted herb; culms slender, 5–30 cm long, usually trailing; leaf blades lanceolate-oblong, 1–4×0,3–1 cm, delicate, base rounded; inflorescence of 2–9 racemes, each 0,5–2 cm long, rachis internodes filiform, ciliate, *hairs 1–3 mm long* towards tip; *pedicellate spikelets* nearly always well developed, at least towards tip of racemes, c. 2 mm long; sessile spikelets 2–3 mm long, upper glume flat, with mucro; awn of upper lemma 7–10 mm long.

Humid rocks with liverworts; humid crevices of doloritic cliffs, with *Cheilanthes farinosa*, liverworts, mosses; granitic slabs, in stands; among rocks and boulders, steep rocky banks; often shady situations; clearings in xerophytic forest; at foot of shady rocks in savanna; 300–2100 m alt.

Cape Verde Isl.; Comoros, Madagascar; Socotra; Arabian Peninsula, S Asia E-wards to S China, Indonesia, New Guinea. Tropical and subtropical Old World.

A more delicate plant than *A. hispidus*, leaf blades thinner, smaller, spikelets more closely overlapping.

A. prionodes (Steud.) Dandy; Lye & al. in Lidia 4: 158, 2000. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 743, 1982 (glume); Fl. Eth. & Eritrea 7: 311, 1995 (idem); Thulin, Fl. Somalia 4: 264, 1995; Cope, Fl. Arab. Penins. 5/1: 303, 2007; Agnew, Field key upl. Kenya grasses: pl. 8/22: 2006 (details); idem, Upl. Kenya wild flow., ed. 3: pl. 191, 2013.

bas.: *Andropogon prionodes* Steud.

syn.: *Andr. serrulatus* A. Rich. 1850, nom. illeg., non Link 1821; *Arthraxon serrulatus* Hochst. 1856, nom. superfl.; *Art. lanceolatus* (Roxb.) Hochst. var. *serrulatus* (Hochst.) T. Durand & Schinz; *Art. lanceolatus* var. *genuinus* subvar. *serrulatus* (A. Rich.) Hack.; *Art. lanceolatus* var. *glabratus* S. L. Chen & Y. X. Jin; *Art. pilophorus* B. S. Sun; *Batratherum serrulatum* Steud. 1854, pro syn.; *Arthraxon lanceolatus* auct., non (Roxb.) Hochst.

Perennial loosely tufted, wiry herb arising from a knotty base with silky-villous scales; culms stiff, hard, brittle, often straggling, to 80 cm long; leaf blades ± ovate, 2–7×0,4–2 cm, base cordate, margins tuberculate-ciliate, tip setaceous acuminate; inflorescence of 2–8(–11) racemes, each 4–8 cm long, internodes ciliate-pilose; *sessile spikelet* 5–7 mm long; lower glume keeled, *pectinate-spinose*, obscurely nerved, and awn of upper lemma

ARTHRAOXON PRIONODES

8–15 mm long; *pedicellate spikelet 4–5 mm long*, half as long as internode.

Rocky slopes; scrubby hillsides; damp rock crevices; stream banks in light shade; occasionally arable weed; 1000–2100 m alt.

Arabian Peninsula; Afghanistan E-wards to India, China, Thailand. Similar to *A. lanceolatus* from S India, but that plant has the sessile spikelet ± flat on the back and strongly nerved (cf. above under **A. lanceolatus**).

SYNONYMS:

Arthraxon ciliaris P. Beauv. = **Arthraxon hispidus**
coloratus Hochst. = **A. hispidus**
figarii (De Not.) Asch. & Schweinf. = **A. lancifolius**
lanceolatus var. *glabratus* S. L. Chen & Y. X. Jin and
 var. *serrulatus* (Hack.) T. Durand & Schinz, and var.
genuinus subvar. *serrulatus* Hack. = **A. prionodes**
lanceolatus auct., non (Roxb.) Hochst. = **A. prionodes**
micans (Nees) Hochst. = **A. hispidus**
microphyllus (Trin.) Hochst. var. *lancifolius* (Trin.) Hack.,
 and fa. *lancifolius* (Trin.) Backer = **A. lancifolius**
pilophorus B. S. Sun = **A. prionodes**
quartinianus (A. Rich.) Nash = **A. hispidus**
satarensis Almeida = **A. cuspidatus**
schimperii (Steud.) Hochst. 1856 = **A. lancifolius**
serrulatus Hochst. 1856, nom. superfl. = **A. prionodes**

(ARTHROLOPHIS)

Arthrolaphis fazoglensis Chiov. = **Ischaemum afrum**

(ARUNDINARIA)

Arundinaria Michaux

TRIPLETT, J. K. & L. G. CLARK (2010). Phylogeny of the temperate bamboos (Poaceae: Bambusoideae: Bambuseae) with an emphasis on Arundinaria and allies. *Syst. Bot.* 35: 102–120.

SYNONYMS:

Arundinaria alpina K. Schum. = **Oldeania alpina**
fischeri K. Schum. = **O. alpina**
tolange K. Schum. = **O. alpina**

ARUNDINELLA / 2

Genus of 47 (–60) species worldwide throughout the tropics, and subtropics, to temperate Asia north to Japan, most species in Asia. Christenhusz & al., *Plants of the World*: 208, 2017, give 47 spp.; Veldkamp in *Blumea* 59: 167, 2015, c. 50 spp.; Sunil & Naveen Kumar in *Webbia* 69: 249, 2014, 55 spp.; and Kellogg in Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 290, 2015, 57 spp.

VELDKAMP, J. F. (2015). *Arundinella* (Gramineae) in Malesia with notes on other taxa and on aluminium accumulation. *Blumea* 59: 167–179.

Arundinella nepalensis Trin.; Lisowski, *Fl. Rép. Guinée* 1: 451, 2009. – Icon.: *Fl. Trop. E. Afr.*, *Gramin.* 2: 408, 1974; *Fl. Zambes.* 10/3: 200, 1989; van der Zon, *Gramin. Cameroun* 2: 360, 359 (map), 1992; Agnew, *Field key upl. Kenya grasses*: pl. 8/8, 2006 (details); Cope, *Fl. Arab. Penins.* 5/1: 257, 2007 (inflor.); van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 203, 2012; Agnew, *Upl. Kenya wild flow.*, ed. 3: pl. 191, 2013; Ibrahim & al., *Grasses Mali*: 39, 2018.

ARUNDINELLA NEPALENSIS

syn.: *A. ecklonii* Nees, incl. var. *major* C. E. Hubb.; *A. rigida* Nees; *A. miliacea* (Link) Nees; *Acratherum miliaceum* Link; further synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted plant with short scaly rhizomes; culms 0.6–3.5 m tall, erect; leaf blades linear, stiff, 8–50 × 0.3–1.8 cm, margins scaberulous; panicle oblong, 10–40–60 cm long, 5–13 cm Ø, open or contracted, branches subsecond, densely spiculate, central axis much thicker than secondary branches; *spikelets* lanceolate, 4–6 mm long, glabrous.

Margins of marshes and streams; seasonally inundated sites; moist grassland; *Eucalyptus* woodland; ?–1000–2000 m alt.

Very variable.

S. Africa, Lesotho, Swaziland; Madagascar; Oman, N Pakistan–Bhutan–Nepal E-wards to India (widespread) and China; W Australia. Because of all the misapplications (to *A. filiformis* Janowski, *A. furva* Chase, *A. goeringii* Steud.) the distribution in not quite certain (Veldkamp, o.c.: 173).

Closely allied to *A. hispida* (Kunth ex Willd.) Kuntze of tropical America, which has smaller spikelets (3–4 mm long).

A. pumila (Hochst. ex A. Rich.) Steud.; Chapman & Chapman, *Forests Taraba & Adamawa States, Nigeria*: c52–c53, 2001; Ravi & Mohanan, *Common tropical & subtropical sedges & grasses*: 105, 2002; Cheek & al., *Pl. Kupe...*: 442, 2004; Veldkamp in *Blumea* 59: 170, 174, 2015. – Icon.: van der Zon, *Gramin. Cameroun* 2: 360, 363 (map), 1992; *Fl. Eth. & Eritrea* 7: 285, 1995; Cope, *Fl. Arab. Penins.* 5/1: 257, 2007 (inflorescence).

bas.: *Acratherum pumilum* Hochst. ex A. Rich.

syn.: *Arundinella tenella* Steud. 1840, nom. nud.; *A. effusa* C. E. Hubb.; *Anemagrostis tenella* Steud. pro syn.

Annual slender yellowish-green herb; culms erect or ascending, ± solitary, branching, 8–50 cm tall; leaf blades linear-lanceolate, 3–15–20 × 0.5–2 cm, thin, glabrous, acuminate; panicle *loose*, obovate, 5–25 × 8–10 cm, with *base inside the sheath of the flag leaf*; branches divaricate to horizontal, flexible, 10 cm long; *spikelets* numerous, solitary, each 1.5–2 mm, on long capillary pedicels, whitish with obvious green nerves.

Wet mossy rocks and banks in shade; moist rocks below waterfall; stony hill slopes; grassland; 970–1970 m alt.

Distribution disjunct. Oman, tropical Asia from India, Sri Lanka E-wards to Malesia, Java, Lesser Sunda Isl.

SYNONYMS:

Arundinella ecklonii Nees, incl. var. *major* C. E. Hubb.

= **Arundinella nepalensis**

chevalieri (A. Camus & C. E. Hubb.) Roberty

= **Danthoniopsis chevalieri**

effusa C. E. Hubb. = **A. pumila**

flammida Trin. = **Loudetia flammida**

hildebrandtii Mez = **L. simplex**

hordeiformis (Stapf) Roberty = **L. hordeiformis**

miliacea (Link) Nees = **Arundinella nepalensis**

rigida Nees = **A. nepalensis**

simplex (Nees) Roberty = **Loudetia simplex**

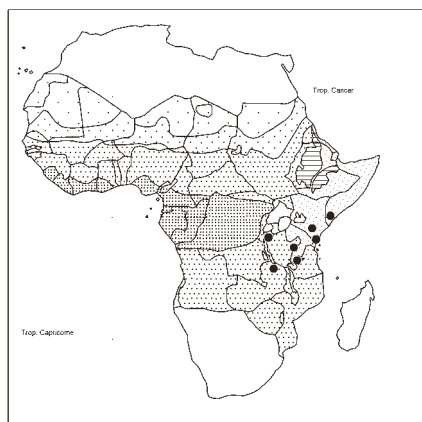
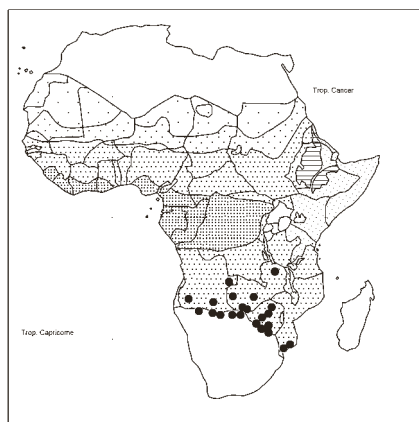
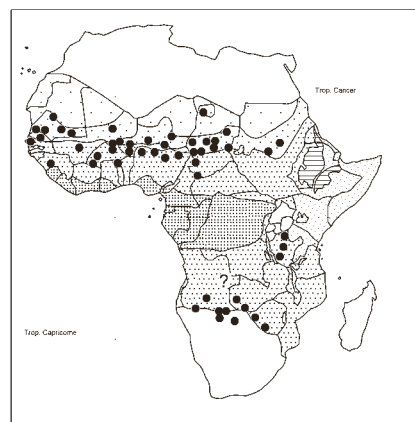
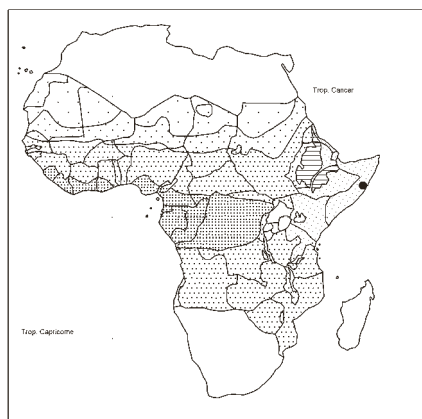
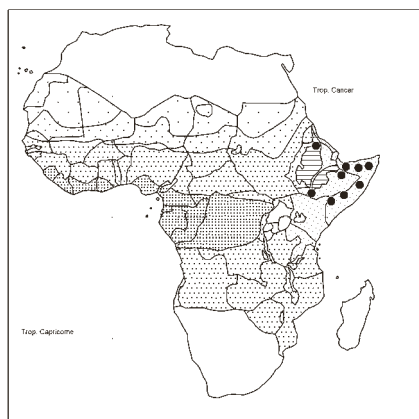
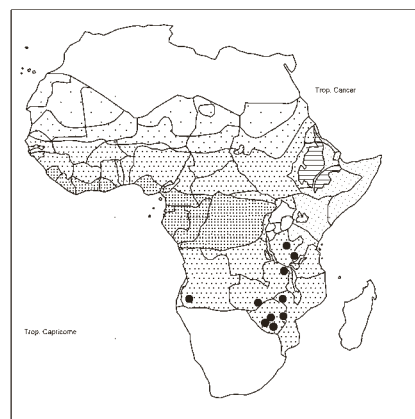
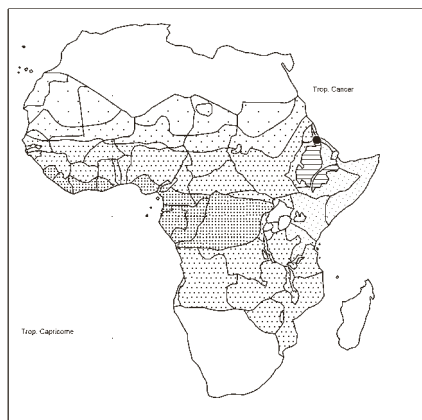
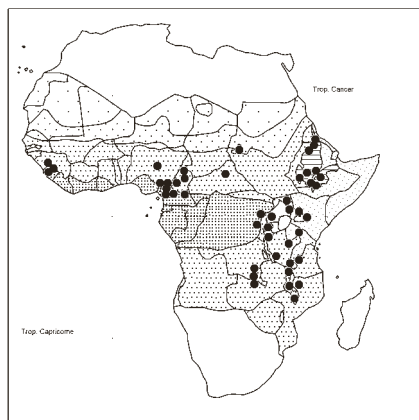
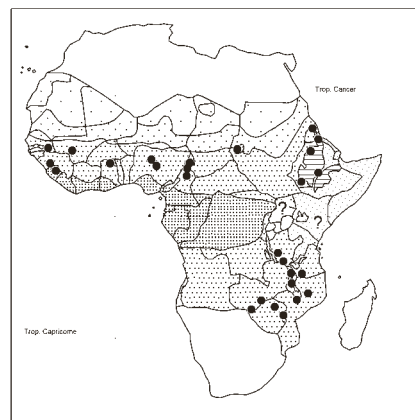
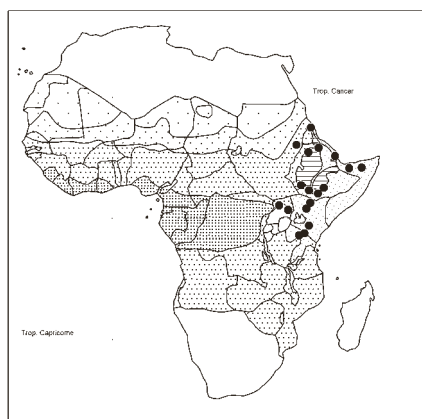
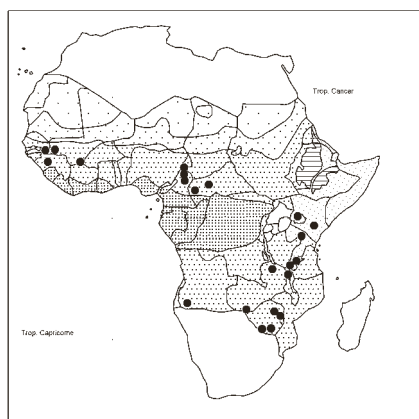
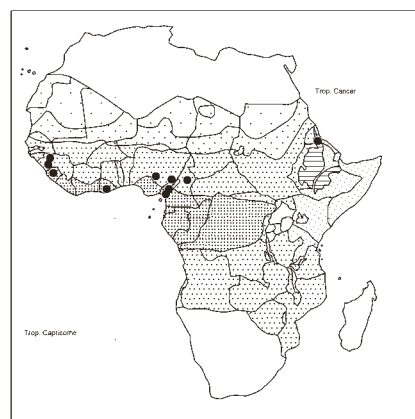
stipoides Hack. = **L. simplex**

tenella Steud. 1840, nom. nud. = **Arundinella pumila**

togoensis (Pilg.) Roberty = **Loudetia togoensis**

tristachyoides (Trin.) Roberty

= **Dilophotriche tristachyoides**

*Aristida stenostachya**Aristida stipitata**Aristida stipoides**Aristida tenuisetia**Aristida triticoides**Aristida vestita**Arthraxon cuspidatus**Arthraxon hispidus**Arthraxon lancifolius**Arthraxon prionodes**Arundinella nepalensis**Arundinella pumila*

[ARUNDO]

Across > 250 years 284 species and 58 infraspecific taxa of *Arundo* were described. The majority of these have since been reassigned to other genera, e.g. *Calamagrostis*, *Phragmites*, *Bambusa*, and the remaining taxa were placed in synonymy under just 3 accepted *Arundo* species, due to the morphological homogeneity of herbarium specimens. However, molecular finger printing and morphometric data used in a recent taxonomic revision of the Mediterranean *Arundo plinii* Turra, showed that the simplification of taxonomy of *Arundo* has been contrary to the evolutionary history of the group (quotation from Hardion & al. in Bot. J. Linn. Soc. 183: 236–237, 2017).

Hardion & al. (Plant Syst. Evol. 303: 1332, 2017) concluded that there are 5 species of *Arundo*, occurring in Tropical Eurasia. However, Christenhusz & al. (Plants of the World: 208, 2017) recognise only 4, whereas Kellogg in Kubitzki, ed., Families & genera of vascular plants 13: 404, 2015, indicates only 3 species.

Mascia & al. (Pl. Biosystems 147: 717, 2013) gave another figure. Among the 6 species recognised 4 taxa are native to the Mediterranean basin, viz. *A. collina* Ten., *A. plinii* Turra, *A. micrantha* Lam., and the invasive *A. donax* L., a native of freshwaters of E Asia, but cultivated throughout Asia, S Europe, N Africa, and the Middle East for thousands of years. The latter is also widely introduced around the world as an ornamental, and for its fibres. Subsequently, it has been naturalised in many countries of the Mediterranean basin, and in tropical, subtropical, and warm-temperate regions worldwide.

The systematics of *Arundo* remains poorly resolved because of the overlap of morphological characters classically used for the genus and insufficient variation of DNA sequences. Hardion & al. (Taxon 61: 1217–1226, 2012) show a correlation between genetic diversity, caryopsis production and ploidy level. However, the lack of genetic diversity for *A. micrantha* Lam. and *A. donax* L. in the Mediterranean area remains enigmatic.

Arundo and *Phragmites* are similar large reeds, and floras usually use floral characters to distinguish one from the other. But determination of sterile material may be more difficult. Examination of the ligule of the leaves may be helpful. Both genera have a similar structure, i.e. the ligule is a membrane topped by a line of hairs (cilia). Gardner (in Auckland Bot. Soc. J. 66: 143, 2011) gives the clue (based on Flora of New Zealand 5, 2010). The *Arundo donax* ligule is c. ¾ membrane and ¼ cilia, whereas in *Phragmites* (*karka*, often considered as a mere form of *P. australis*) the ligule is c. ½ membrane of ¾ cilia, which gives the impression of the membrane ± as long as the cilia. Morphological and chemical characterisation of phytoliths from aerial and underground parts of the two species has also been undertaken (Shakoor & al. in Flora 224: 130–153, 2016). The difference between these species is presented by the authors cited. Rhizome features distinguishing these plants are also given by Jiménez-Ruiz & al. (2021): 133.

Arundinaria is also a genus of very large grasses. It is distinguished from *Arundo* by, among other characters, the presence in the latter of long-pilose lemmas, absent in *Arundinaria* (Ward in Castanea 74: 189, 2009).

DANIN, A. (2004). *Arundo* (Gramineae) in the Mediterranean reconsidered. *Willdenowia* 34: 361–369 [with key].

HARDION, L. (2013). *Evolution et systématique du genre Arundo L. (Poaceae), et conservation d'une endémique ligule: interactions Homme-Biodiversité en Méditerranée/Systematics and evolution of the genus Arundo L. (Poaceae), and conservation of a ligurian endemic species: Human-Biodiversity interactions in the Mediterranean*. Thèse, Université d'Aix-Marseille, faculté des sciences de Saint-Charles, soutenue le 26 novembre 2013. 264 pp. – See *Ecol. Mediterr.* 39: 114–115, 2014.

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HARDION, L. & al. (2012a). *Arundo micrantha* Lam. (Poaceae), the correct name for *Arundo mauritanica* Desf. and *Arundo mediterranea* Danin. *Candollea* 67: 131–135.

HARDION, L. & al. (2012b). Revised systematics of Mediterranean *Arundo* (Poaceae) based on AFLP fingerprints and morphology. *Taxon* 61: 1217–1226 [with key and map of distribution p. 1222–1223].

HARDION, L. & al. (2017a). Does infraspecific taxonomy match species evolutionary history? A phylogeographic study of *Arundo formosana* (Poaceae). *Bot. J. Linn. Soc.* 183: 236–249.

HARDION, L. & al. (2017b). Cleaning up the grasses dustbin: systematics of the Arundinoideae subfamily (Poaceae). *Plant Syst. Evol.* 303: 1331–1339.

MASCIA, F. & al. (2013). *Arundo micrantha*, a new reed species for Italy, threatened in the freshwater habitat by the cogeneric invasive *A. donax*. *Plant Biosystems* 147: 717–729.

SHAKOOR, S. A. & al. (2016). Taxonomic demarcation of *Arundo donax* L. and *Phragmites karka* (Retz.) Trin. ex Steud. (Arundinoideae, Poaceae) from phytolith signatures. *Flora* 224: 130–153.

[*Arundo donax* L. 1753, non Forssk. 1775 (= *Phragmites australis*)]. – Giant or bamboo reed. – Thulin, Fl. Somalia 4: 158, 1995; Fl. Eth. & Eritrea 7: 66, 1995; Fl. Zambes. 10/2: 1, 1999. – Icon.: Townsend, Fl. Iraq, Gramin.: 371, 1968; Cook, Aquat. pl. book: 143, 1990; Danin (2004): 369 (rhizome); Cope, Fl. Arab. Peninsula 5/1: 87, 2007 (details); Hardion & al. (2012b): 1222 (lemma); Jiménez-Ruiz & al. (2021): 134 (florete).

syn.: *A. latifolia* Salisb. 1796, nom. superfl.; *A. versicolor* Mill.; *A. donax* var. *versicolor* (Mill.) Stokes; *Donax versicolor* (Mill.) P. Beauv.; *D. arundinaceus* P. Beauv.; further synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew; and in Hardion & al. (2012b): 1223.

Robust reed with extensive horizontal rhizomes, tuberous with internodes < 1 cm long; culms very stout, to 6–10(–14) m tall, erect, 3–5 cm Ø; leaf blades cauline, conspicuously distichous, nodding, stiff, 30–60 cm long, 2–5 cm wide, base cordate or rounded, *ligule* c. 1 mm long, membranous with a ciliate margin, tip filiform; panicle 30–65 cm long, compact, feathery, silky hairy; spikelets pedicellate, solitary, 1–1.8 cm long, 3–4-flowered; *lemma pilose*, c. 1 cm long, *rhachilla glabrous*.

Wet soils by rivers, along ditches, moist disturbed places, roadsides; forming clumps and dense stands.

Native from the Mediterranean basin E-wards to SE Asia. Has become a serious pest in tropical and temperate parts of the world, and is now on the list of the 100 World's Worst Pests or Alien species (Boland 2007: 303).

Difficult to control: it produces large amounts of biomass rapidly both above and below ground; it propagates very rapidly vegetatively by regrowth from rhizome and stem pieces which are easily dispersed by river currents, and a large proportion of its biomass is underground in the rhizomes, removal of whole clumps is difficult.

Also a useful plant for erosion control; stems used for light construction work, for making windbreaks, walking sticks, fishing rods, pipe instruments; also a source of paper pulp.

The variety *A. donax* var. *versicolor* with white-striped leaves is grown as an ornamental.

Arundo is pictured on old monuments in Egypt, although often misinterpreted for *Phragmites* (Boulous in Kew Bull. 62: 507–511, 2007). Also found in church forests of NW Ethiopia (Teferi Teklu Woldemedhin & Demel Teketay in Symb. Bot. Upsal. 38: 57–73, 2016).

BOLAND, J. M. (2007). The importance of layering in the rapid spread of *Arundo donax* (Giant reed). *Madroño* 53: 303–312 [2006].

ARUNDO DONAX

- DeSTEFANO, R. & al. (2018). Screening of giant reed (*Arundo donax* L.) ecotypes for biomass production under salt stress. *Plant Biosystems* 152: 911–917.
- EID, E. M. & al. (2016). Population characteristics of giant reed (*Arundo donax* L.) in cultivated and naturalized habitats. *Aquat. Bot.* 129: 1–8.
- HAWORTH, M. & al. (2019). The effect of summer drought on the yield of *Arundo donax* is reduced by the retention of photosynthetic capacity and leaf growth later in the growing season. *Ann. Bot.* 124: 567–579.
- JIMÉNEZ-RUIZ, J. & al. (2021). Monographs on invasive plants in Europe n° 4: *Arundo donax* L. *Bot. Letters* 168: 131–151.
- MASCIÀ, F. & al. (2013). *Arundo micrantha*, a new reed species for Italy, threatened in the freshwater habitat by the congeneric invasive *A. donax*. *Plant Biosystems* 147: 717–729.
- THORNBY, D. & al. (2007). L-DONAX, a growth model of the invasive weed species, *Arundo donax* L. *Aquat. Bot.* 87: 275–284.

Not mapped by us.

SYNONYMS:

- Arundo altissima* Benth. = **Phragmites australis** subsp. **isiacus** (Arcang.) ined.
australis Cav. = **P. australis**
boivinii Steud. = **Neyraudia arundinacea**
calamagrostis L. 1753 = **Calamagrostis canescens**
canescens Weber = **C. canescens**
dioeca Spreng. = **Cortaderia selloana**
donax Forssk. 1775, non L. 1753 = **Phragmites australis** subsp. **australis**
epigejos L. = **Calamagrostis epigejos**
isiaca Delile = **Phragmites australis** subsp. **isiacus**
karka Retz. = **P. karka**
latifolia Salisb. 1796 = **Arundo donax**
madagascariensis Kunth = **Neyraudia arundinacea**
maxima Forssk. 1792, nom. dub., non Lour.
 = ? **Phragmites australis** subsp. **isiacus**
phragmites L. = **P. australis** subsp. **australis**
phragmites var. *isiaca* Griseb. = **P. australis** subsp. **isiacus**
selloana Schult. & Schult. f. = **Cortaderia selloana**
thouarsii T. Durand & Schinz = **Neyraudia arundinacea**
vulgaris Lam. = **Phragmites australis** subsp. **australis**

(ASPRELLA)

- Asprella hexandra* (Sw.) P. Beauv. or ? (Sw.) Roem. & Schult. in L. 1817 = **Leersia hexandra**

(ASTHENATHERUM)

- Asthenatherum* Nevski 1934, nom. superfl. pro **Centropodia** Rchb. 1828.
Asthenatherum forsskalii (Vahl) Nevski
 = **Centropodia forsskalii**
forsskalii var. *arundinaceum* (Delile) Täckh.
 = **C. forsskalii** subsp. **forsskalii**
fragile (Guinet & Sauvage) Monod = **C. fragilis**
mossamedense (Rendle) Conert = **C. mossamedensis**

(ATAXIA)

- Ataxia ecklonii* Nees ex Trin. = **Anthoxanthum ecklonii**

(ATRACTOCARPA)

- Atractocarpa congolensis* T. Durand & Schinz
 = **Puelia olyrifformis**
olyrifformis Franch. = **P. olyrifformis**

[AVENA]

Genus of 20–30 species [21 according to Christenhusz & al., *Plants of the World*: 208, 2017], centered on the Mediterranean and extending E-wards to Iran and Nepal (world distribution map in Baum 1977: 131). Several species are widely distributed in temperate regions as weedy adventives. “The species of *Avena* form a complex series of polyploids; although there is one phylogeny of these ..., many questions remain” (Kellogg in K. Kubitzski, ed., *Families & genera of Vascular Plants* 13: 231, 2015). Ongoing research on meiotic incongruities and the combination of genomics and molecular cytogenetic technologies might provide new evidence for cytogenetic problems (Nikoloudakis & Katsiotis in *Cytologia* 68: 84–91, 2015; Heslop-Harrison in *J. Trop. & Subtrop. Bot.* 25: 409–418, 2017).

Avena species are *annual* plants with flat leaves and an open (rarely contracted) panicle with large pendulous spikelets that are 2–6-flowered; the lemmas have a geniculate awn on the back (or awnless in some cultivated races).

There are 3 modes of “disarticulation” of the mature spikelet as summarized by Cope (*Fl. Arab. Penins.* 5/1: 38, 2007): – florets falling separately with a neat callus scar at base of each (*A. barbata*, *A. fatua*); – florets falling as a unit with a neat callus scar at base of lowermost only, the rhachilla continuous between the remainder (*A. ventricosa*, *A. sterilis*); – florets persistent, the rhachilla fracturing unevenly only when forced (all cultivated races). Immature specimens are therefore hard to assign to a group.

BAUM, B. R. (1977). *Oats: wild and cultivated. A monograph of the genus Avena L. (Poaceae)*. (Biosystematics Research Institute, Canada Department of Agriculture, Research Branch, Ottawa N° 14). Minister of Supply and Services Canada, Ottawa. XVI + 463 pp. [with distribution maps].

BRINK, M. & G. BELAY (2006). *Plant Resources of Tropical Africa 1. Cereals and pulses*. PROTA Foundation, Wageningen/Backhuys Publishers, Leiden, Netherlands/CTA, Wageningen. 298 pp. [*Avena* p. 28–32].

LIN, L. & Q. LIU (2015). Geographical distribution of *Avena* L. (Poaceae). *J. Trop. Subtrop. Bot.* 23: 111–122 [with maps].

[*Avena abyssinica* Hochst.], incl. var. *baldratiana* Cufod., var. *chiovendae* Mordv., var. *neoschimperi* Cufod., and fa. *glaberrima* Chiov., but excl. var. *granulata* Chiov. (= *A. sterilis* subsp. *ludoviciana*); *Fl. Trop. E. Afr.*, Gramin. 1: 82, 1970; *Fl. Eth. & Eritrea* 7: 35–36, 1995; Cope, *Fl. Arab. Penins.* 5/1: 39, 2007; Lin & Liu (2015): 116 (map). – Icon.: Baum (1977): 249, 254, 251 (map).

syn.: *A. sativa* L. var. *abyssinica* (Hochst.) Körn., *A. strigosa* Schreb. var. *abyssinica* (Hochst.) Hausskn., var. *glaberrima* (Chiov.) Thell., and subsp. *abyssinica* (Hochst.) Thell.; *A. alba* Vahl subsp. *abyssinica* (Hochst.) Á. Löve & D. Löve; for complete synonymy, See Baum (1977): 248, and World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Culms simple, erect, 0.5–1.1 m tall; panicle loose, open, 20–35 cm long; spikelets 2–3-flowered, 2–2.5 cm long, non-disarticulating, florets remaining within the glumes at maturity, or tardily deciduous with the rhachilla (tough) fracturing irregularly; lemmas ± glabrous; awns 2.5–3.2 cm long, sometimes reduced.

Cultivated for grain (N Ethiopia); weed or arable land, in particular barley fields; 1700–2800 m alt.

Fully interfertile with *A. vaviloviana*, and “they represent two different facies of a single species complex. The main difference between them lies in the non-shattering nature of the spikelets of *A. abyssinica*, which are also more frequently glabrous” (*Fl. Eth. & Eritrea* 7: l.c.).

The hybrid *A. abyssinica* Hochst. × *A. vaviloviana* (Malzev) Mordv. occurs where both species grow together; best recognised

AVENA ABYSSINICA

by the presence of an imperfect disarticulation scar and $\pm$ glabrous lemmas (Fl. Eth. & Eritrea 7: l.c.).

[**A. fatua** L.]; Fl. Eth. & Eritrea 7: 37, 1995; Chapano & al., Checklist Zimbabwe grasses: 3, 2002; Agnew, Upl. Kenya wild flow., ed. 3: 412, 2013; Lin & Liu (2015): 118 (map). – Icon.: Fl. Trop. E. Afr., Gramin. 1: 83, 1970; Fl. Zambes. 10/1: 75, 1971; Baum (1977): 283, 284 (map), 288; Boulos, Fl. Egypt. 4: 159, 2005; Cope, Fl. Arab. Penins. 5/1: 40, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 180, 2012.

syn.: *A. fatua* fa. *deserticola* Hausskn.; See also World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Culms solitary or in small tufts, 0.3–1.5 m tall, base geniculate; leaf blades linear, 10–50 $\times$ 0.3–1.6 cm, tapering to a fine point; panicle nodding, loose, pyramidal, 10–45 cm long, to 20 cm $\varnothing$, branches clustered, spreading, filiform; spikelets 1.8–3 cm long, not breaking at maturity, rhachilla disarticulating at base of each floret, florets falling separately with a neat callus scar; lemmas 1.4–2 cm long, *densely bearded* at base, all awned; awns < 4 cm long.

Arable weed, especially in barley fields; weed of cereals, waste places, gardens, along roads, rarely in forest clearings; 1600–3200 m alt. – *A. sativa* may be found in the same places.

Native to the Mediterranean, W & C Asia. Weed all over the world: Throughout the temperate Old World; S. Africa; Canada, USA, Argentina.

[**A. sativa** L.]; Cultivated oat, cultigen said to be derived from *A. sterilis*. According to Nikoloudakis & Katsiotis it is a natural hexaploid species ($2n = 6 \times = 42$) believed to have emerged from interspecific hybridization involving three diploids, none of which has been indisputably identified. – Fl. Trop. E. Afr., Gramin. 1: 82, 1970; Fl. Zambes. 10/1: 74, 1971; Fl. & Eritrea 7: 37, 1995; Lin & Liu (2015): 118 (map). – Icon.: Baum (1977): 316, 317 (map), 321 (lectotype); Boulos, Fl. Egypt 4: 159, 2005; Brink & Belay (2006): 30; Cope, Fl. Arab. Peninsula 5/1: 40, 2007; Ibrahim & al., Grasses Mali: 40, 2018.

syn.: World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Culms 0.4–1.8 m tall; panicle patent or contracted, to 25(–40) cm long; spikelets 1.7–3 cm long, not hairy; rhachilla fracturing obliquely at base of lowermost lemma; glumes 1.5–2.5 cm long; lemmas 1.2–2.5 cm long, glabrous, central awn (1.5–4 cm long) rudimentary or often quite absent.

Cultivated cereal, sometimes also found as an escape; 2700–3000 m alt. (Ethiopia). Cultivated in most temperate countries of the Old & New World.

[**A. sterilis** L. 1762, non Delile ex Boiss. 1884 (= *A. fatua*), nom. conserv. (Sáez. & al., Taxon 66: 203–204, 2017; ibid. 68: 850, 2019)]; Fl. Trop. E. Afr., Gramin. 1: 84, 1970; Fl. Eth. & Eritrea 7: 37, 1995; Chapano, Checklist Zimbabwean grasses: 18 (map), 2002; Agnew, Field key upl. Kenya grasses: 22, 2006; Lin & Liu (2015): 118 (map). – Icon.: Baum (1977): 338, 345, 339 (map); Boulos, Fl. Egypt 4: 159, 2005; Cope, Fl. Arab. Penins. 5/1: 40, 2007.

syn.: *A. fatua* var. *sterilis* (L.) Fiori & Paol.; *A. sativa* var. *sterilis* (L.) Fiori; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Culms 0.3–1.2 m tall from a geniculate or prostrate base; leaf blades to 45 $\times$ 0.4–1.8 cm, glabrous; panicle pyramidal, to 30 cm long, 20 cm $\varnothing$, loose with coarsely scaberulous branches; spikelets 2.5–5 cm long, 2–5-flowered, breaking up at maturity; glumes

AVENA STERILIS

2.5–5 cm long; lemmas 2–4 cm long, densely bearded with hairs to 7 mm long; awns 3–9 cm long.

Noxious weed of arable land, especially in fields of cereals, roadsides, edges of cultivations; 2100–2600 m (Ethiopia, Kenya).

Native to S. Europe, N Africa, (E Africa?), SW Asia to C Asia. Introduced into C & N Europe, Australasia, N. & S. America.

Comprises 2 subspp.: – subsp. **ludoviciana** (Durieu) Gillet & Magne [bas.: *A. ludoviciana* Durieu; syn.: *A. sterilis* var. *ludoviciana* (Durieu) Husn.; *A. fatua* var. *ludoviciana* (Durieu) Fiori; *A. sativa* var. *ludoviciana* (Durieu) Fiori; *A. abyssinica* var. *granulata* Chiov.] with spikelets 2.5–3 cm long, awns 3–6 cm long, slender; – subsp. **sterilis** with spikelets 3–5 cm long, awns 6–9 cm long, stout.

[**A. vaviloviana** (Malzev) Mordv. incl. var. *glabra* (Hausskn.) C. E. Hubb., var. *intercedens* (Thell.) C. E. Hubb., and var. *pilosiuscula* (Thell.) C. E. Hubb.]; Fl. Trop. E. Afr., Gramin. 1: 82, 1970; Lin & Liu (2015): 116 (map). – Icon.: Baum (1977): 256, 260, 258 (map); Fl. Eth. & Eritrea 7: 36, 1995.

bas.: *A. strigosa* Schreb. subsp. *vaviloviana* Malzev

syn.: *A. strigosa* subsp. *abyssinica* var. *pilosiuscula* Thell. and var. *intercedens* Thell., and subsp. *pilosiuscula* (Thell.) Malzev; *A. barbata* Pott ex Link subsp. *vaviloviana* (Malzev) Tab. Morais, incl. var. *pilosiuscula* (Thell.) Tab. Morais; *A. wiestii* Steud. var. *glabra* Hausskn.

Culms erect, 0.4–1.1 m tall; panicle 20–30 cm long, loose, open, branches scaberulous; spikelets 2–2.5 cm long, disarticulating above the glumes and between the florets; glumes 2–2.5 cm long; lemmas 1.5–2 cm long, golden brown, densely hispid with spreading brown hairs below; awns 2.5–3.2 cm.

Serious weed of arable land, particularly in fields of barley, wheat, tef; 1650–2800 m alt. (nearly the whole of W Ethiopia).

Very similar to the Mediterranean-Asiatic *A. barbata* Pott ex Link.

A. abyssinica is a derivative of *A. vaviloviana*. The hybrid between them (among synonyms given in Fl. Eth. & Eritrea, l.c.: *A. wiestii* Steud. var. *glabra* Hausskn.) occurs where both parents grow together.

SYNONYMS:

Avena abyssinica Hochst. var. *granulata* Chiov.

= **Avena sterilis** subsp. **ludoviciana**

alba Vahl subsp. *abyssinica* (Host.) Á. Löve & D. Löve

= **A. abyssinica**

arundinacea Delile = **Centropodia forsskalii**

barbata Pott ex Link subsp. *vaviloviana* (Malzev) Tab.

Morais, incl. var. *pilosiuscula* (Thell.) Tab. Morais

= **Avena vaviloviana**

fatua L. fa. *deserticola* Hausskn. = **A. fatua**

fatua var. *ludoviciana* (Durieu) Fiori = **A. sterilis** subsp.

ludoviciana

fatua var. *sterilis* (L.) Fiori & Paol. = **A. sterilis**

festuciformis Hochst. = **Helictotrichon elongatum**

flexuosa (L.) Mert. & W. D. J. Koch

= **Deschampsia flexuosa**

forsskalii Vahl = **Centropodia forsskalii**

lachnantha (Hochst. ex A. Rich.) Hook. f.

= **Helictotrichon lachnanthum**

ludoviciana Durieu = **Avena sterilis** subsp. **ludoviciana**

muriculata Stapf = **Helictotrichon elongatum**

neesii (Hochst. ex Steud.) Hook. f. = **H. elongatum**

newtonii Stapf = **H. newtonii**

pensylvanica Forssk. 1775, non L. 1753

= **Centropodia forsskalii**

AVENA

pumila Desf. = **Rostraria pumila** cl. *Leptochloa pumila rothii* Stapf = **Helictotrichon lachnanthum**
sativa L. var. *abyssinica* (Hochst.) Körn.
 = **Avena abyssinica**
sativa var. *ludoviciana* (Durieu) Fiori = **A. sterilis** subsp. **ludoviciana**
sativa var. *sterilis* (L.) Fiori = **A. sterilis**
sterilis L. var. *ludoviciana* (Durieu) Husn. = **A. sterilis** subsp. **ludoviciana**
strigosa Schreb. var. *abyssinica* (Hochst.) Hausskn. and subsp. *abyssinica* (Hochst.) Thell. = **A. abyssinica**
strigosa subsp. *abyssinica* var. *intercedens* Thell. and var. *pilosiuscula* (Thell.) Malzev = **A. vaviloviana**
strigosa var. *glaberrima* (Chiov.) Thell. = **A. abyssinica**
strigosa subsp. *pilosiuscula* (Thell.) Malzev = **A. vaviloviana**
strigosa subsp. *vaviloviana* Malzev = **A. vaviloviana**
tibetica Miré & Quézel = **Helictotrichon elongatum**
wiestii Steud. var. *glabra* Hausskn. = **Avena vaviloviana**

(AVENASTRUM)

Avenastrum elongatum (Hochst. ex A. Rich.) Pilg.
 = **Helictotrichon elongatum**
elongatum var. *friesiorum* Pilg. = **H. umbrosum**
elongatum var. *preussii* Pilg. = **H. elongatum**
flabellatum Peter = **Bewsia biflora**
humbertii A. Camus = **Helictotrichon elongatum**
lachnanthum (Hochst. ex A. Rich.) Vierh.
 = **H. lachnanthum**
majus Pilg. = **H. milanjanum**
mannii Pilg. = **H. mannii**
mannii var. *angustius* Pilg. = **H. milanjanum**
quinquenerve Stent & J. M. Rattray = **H. elongatum**
rigidulum Pilg. = **H. elongatum**
umbrosum (Hochst. ex Steud.) Pilg. = **H. umbrosum**

(AVENELLA)

Avenella Bluff ex Drejer

VELDKAMP, J.-F. (2016). An attempt to unravel the synonymy of *Avenella flexuosa* (L.) Drejer (Gramineae). *Plant Divers. Evol.* 131: 239–262 [2015].

According to Kellogg in Kubitzki, ed., *Families & genera vascul. pl.* 13: 241, 2015, a genus with one species, *A. flexuosa* (L.) Drejer, widespread in temperate and cold regions worldwide, incl. Antarctic islands. Clayton & Renvoize (*Genera graminum*, 1986) synonymize this genus with *Deschampsia*, whereas Chiapella (*Taxon* 56: 55–64, 2007) distinguishes the two genera, and proposes a close relationship of *Avenella* with *Aira*. However, we maintain the above-mentioned species in *Deschampsia*. Thus:

Avenella flexuosa (L.) Drejer subsp. *afromontana* (C. E. Hubb.) Veldk.

= **Deschampsia flexuosa** (L.) Trin. var. **afromontana** C. E. Hubb

AXONOPUS / I

A largely Neotropical genus with 72 species (Giraldo-Cañas 2008, 2014, and 2017; or 71 species according to Christenhusz & al., *Plants of the World*: 208, 2017; or 110 species according to Cialdella & al. 2006: 592; the most recent figure is nearly 90 species fide Delfini & al. 2020: 459), distributed from southern U.S.A. to N & C Argentina and Uruguay, with some species introduced to the Old World. Three species are currently known in Africa, one of which, viz. *A. flexuosus*, endemic to Tropical Africa. The inflorescence has spikelets in 2 rows on one side of the rachis branch.

CIALDELLA, A. M. & al. (2006). Revisión de las especies de *Axonopus* (Poaceae, Panicoideae, Paniceae), series Suffulti. *Ann. Missouri Bot. Gard.* 93: 592–633.

DELFINI, C. & al. (2020). Molecular phylogeny of *Axonopus* (Poaceae, Panicoideae, Paspaleae): monophyly, synapomorphies, and taxonomic implications for infrageneric classification and species complexes. *Ann. Missouri Bot. Gard.* 105: 459–480.

GIRALDO-CAÑAS, D. (2008). Revisión del género *Axonopus* (Poaceae: Paniceae): primer registro del género en Europa y novedades taxonómicas/Revision of the genus *Axonopus* (Poaceae: Paniceae): First record of the genus for Europe and taxonomic novelties. *Caldasia* 30: 301–314.

GIRALDO-CAÑAS, D. (2014). Les especies del género *Axonopus* (Poaceae: Panicoideae: Paspaleae) en Venezuela/The species of the genus *Axonopus* (Poaceae: Panicoideae: Paspaleae) in Venezuela. *Pittieria* 37: 53–114 (2013).

GIRALDO-CAÑAS, D. (2017). Morphology, anatomy, biogeography, and systematics of the African species of *Axonopus* (Poaceae: Panicoideae). In: MUSILI, P. M. & G. MWACHALA, eds., *XXI AETFAT Congress 2017*: 286.

LÓPEZ, A. & O. MORRONE (2012). Phylogenetic studies in *Axonopus* (Poaceae, Panicoideae, Paniceae) and related genera: morphology and molecular (nuclear and plastid) combined analyses. *Syst. Bot.* 37: 671–676.

Axonopus compressus (Sw.) P. Beauv., incl. i.a., subsp. *brevipedunculatus* Gledhill; Renier, Fl. Kwango 1: 38, 1948; Fl. W. Trop. Afr., ed. 2, 3/2: 448, 1972; Fl. Trop. E. Afr., Gramin. 3: 613, 1982; Fl. Zambes. 10/3: 91, 94, 1989; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 187–188, 1994; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011; Giraldo-Cañas (2014): 70–71, 74; Poilecot, Guide to Liberian grasses: 23, 77, 81, 167, 2015; Sosef in Pl. Ecol. Evol. 149: 357–358, 2016. – Icon.: van der Zon, Gramin. Cameroun 2: 286 (map), 288, 1992; Poilecot in Boissiera 50: 415, 1995; Giraldo-Cañas (2008): 306; Lisowski, Fl. Rép. Guinée 2: fig. 533, 2009; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 268, 2012 (details); Velayos & al., Fl. Guinea Ecuat. 12: 163, 2015; Adodo, Medicin. pl. Nigeria: 138, 2018; Fl. Mascaraignes 203, Gramin.: 164, 2018. – Pl. 22.

bas.: *Milium compressum* Sw.

syn: *Echinochloa compressa* (Sw.) Roberty; *Paspalum compressum* (Sw.) Raspail 1825, nom. illeg.; *P. platycaulon* Poir.; *P. kisantuense* Vanderyst 1918, nom. provis.; *Axonopus kisantuensis* Vanderyst 1925; *A. brevipedunculatus* (Gledhill) Gledhill; further synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial, tufted, strongly stoloniferous herb; culms 15–60 cm tall, *nodes pubescent*; leaves basal and cauline, blades 4–15 cm long, 5–12 mm wide, apex obtuse to bluntly acute; inflorescence of 2–5 racemes, each 3–12 cm long, the upper paired; spikelets lanceolate, c. 2 mm long; upper *lemma* with a *tuft of hairs* at apex.

Damp shady places, often used as a lawn grass; pathsides and lawns in forest zone; cultivations; 0–1300 m alt. (E Africa).

In tropical Africa from Guinea E-wards to Cameroon-Gabon-Zaire; in E Africa from Uganda-Tanzania, and Zimbabwe. Native

AXONOPUS COMPRESSUS

of tropical America [large distribution in latitude and altitude (0–3000 m)], where it occurs from U.S.A. S-wards to Argentina, Uruguay; the Caribbean. Now also in Madagascar, Mauritius, Seychelles; Asia; Australia; Pacific islands.

Important plant as cattle food; used as a ground cover carpet grass.

(**A. fissifolius** (Raddi) Kuhl., incl. var. *coronatus* G. A. Black; in floras usually cited as *A. affinis* Chase); Fl. W. Trop. Afr., ed. 2, 3/2: 446, 1972; Fl. Zambes. 10/3: 94, 1989; Giraldo-Cañas (2014): 65, 74. – Icon.: Gibbs-Russell & al., Grasses south. Africa: 60, 1990; Giraldo-Cañas (2008): 303; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 268, 2012 (details).

bas.: *Paspalum fissifolium* Raddi

syn.: *P. filifolium* Kunth, orth. var.; *Axonopus affinis* Chase; *A. compressus* (Sw.) P. Beauv. var. *affinis* (Chase) Hend.; futher synonyms in World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial stoloniferous creeping herb; culms 20–70 cm long, with few *glabrous* nodes; leaves basal and cauline; blades linear, to 20 cm long, 1,5–7 mm wide, tip rounded; inflorescence of 3–6 racemes, each 3–10 cm long; *spikelets* 2-flowered, ellipsoid, 2 × 1 mm, upper lemma as long as spikelet, obscurely hairy at tip.

Damp shady places; disturbed soils; lawns; 2000 m alt. (Zimbabwe).

Introduced in Africa: Liberia, Sierra Leone; Zimbabwe; E S. Africa, Swaziland; used for lawns. Also in Portugal, Spain; Mauritius; SE Asia, Philippines, New Guinea, Pacific islands. Native of tropical and subtropical America, from USA S-wards to Argentina-Uruguay, also in the Caribbean (0–2200 m alt.).

Similar to *A. compressus* but nodes glabrous, leaf blades narrower, spikelets shorter, upper lemma almost filling spikelet; also prefers a cooler climate.

May be confused with *Digitaria* species, but the tip of the leaf blade rounded.

A. flexuosus (Peter) C. E. Hubb. ex Troupin; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 188, 1994; Fl. Gabon 5b: 16, 1999; Cheek & al., Pl. Kupe...: 442, 2004; Lisowski, Fl. Rép. Guinée 1: 451, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 246, 2011. – Icon.: Fl. Gabon 5: 33, 1962; Fl. Trop. E. Afr., Gramin. 3: 614, 1982; Troupin, Fl. Rwanda 4: 193, 1988; van der Zon, Gramin. Cameroun 2: 288, 1992; Poilecot in Boissiera 50: 417, 1995; Velayos & al., Fl. Guinea Ecuat. 12: 164, 2015.

bas.: *Digitaria flexuosa* Peter

syn.: *Paspalum wombaliense* Vanderyst, nom. nud.; *Axonopus compressus* subsp. *congoensis* Henrard, and var. *congoensis* (Henrard) G. A. Black; *A. arenosus* Gledhill

Perennial stoloniferous herb; culms 0,25–1,25 m tall, rooting at nodes, nodes *glabrous*; leaf sheaths large, folded, 25–30 cm long, 1 cm wide; blades lanceolate, 3–30 × 0,5–2,2 cm, obtuse; inflorescence of 2–5–8 racemes, each 4–15 cm long; spikelets lanceolate, 2,7–4 mm long, glabrous to pubescent.

Damp or swampy sites, usually in shade; flooded banks, grassland, temporary pond; coastal under coconut palms or *Hevea*; with *Rhytachne rottboellioides*, *Anadelphia afzeliana*, *Panicum parvifolium*, *Paspalum scrobiculatum*; sometimes in pure stands under *Harungana madagascariensis*; 0–2000 m alt.

Bioko/Fernando Poo.

A favourite browsing for hippopotamus (Uganda).

AXONOPUS

SYNONYMS:

Axonopus affinis Chase = **Axonopus fissifolius**
arenosus Gledhill = **A. flexuosus**
brevipedunculatus (Gledhill) Gledhill = **A. compressus**
cimicinus (L.) P. Beauv. = **Alloteropsis cimicina**
compressus var. *affinis* (Chase) Hend.
 = **Axonopus fissifolius**
compressus subsp. *congoensis* Henrard, and var.
congoensis (Henrard) G. A. Black = **A. flexuosus**
ecklonianus Chiov. = **Panicum ecklonii**
kisantuensis Vanderyst 1925 = **Axonopus compressus**
latifolius Peter = **Alloteropsis cimicina**
paniculata (Benth.) A. Chev. = **All. paniculata**
semialatus (R. Br.) Hook. f. = **All. semialata**
semialatus var. *ecklonianus* (Nees) Peter, and var. *ecklonii*
 Stapf = **All. semialata** subsp. **eckloniana**

(BAMBOS)

Bambos stricta Roxb. = **Dendrocalamus strictus**

(BAMBUSA)

Genus of 153 species (Vorontsova & al., World checklist of bamboos and rattans: 16, 2016; 148 species according to Christenhusz & al., Plants of the World: 208, 2017; 139 species according to Ohrnberger, The bamboos of the World: 250, 1999, with map of distribution p. 251), in tropical and subtropical Asia; pantropical in cultivation (Europe, Africa, Madagascar, Australia, N. & C. & S. America). Many species are arboreous and of extensive usefulness and high economic value (Yang & al. 2010: 1102).

The classification of *Bambusa* and its allies based on morphological and anatomical characters, is long in dispute and still unresolved (Yang & al., l.c.).

YANG, J.-B. & al. (2010). Phylogeny of *Bambusa* and its allies (Poaceae, Bambusoideae) inferred from nuclear GBSSI gene and plastid psbA-trnH, rpl32-trnL and rps16 intron DNA sequences. *Taxon* 59: 1102–1110.

(**Bambusa balcooa** Roxb.); Gibbs Russell & al., Grasses south. Africa: 61, 1990.

syn.: *B. capensis* Rupr.; *B. vulgaris* Nees 1841, nom. illegit., non Schrad. 1808; *Dendrocalamus balcooa* Voigt

Rhizomatous sympodial plant 15–21 m tall; leaf blades to 1,5 × 0,4 m; spikelets 7–16 mm long. Growing in dense clumps, the culms arching at top. Flowering rare and sporadic. Distinguished by its great height.

Naturalized in E S. Africa, and occasionally escaped from cultivation; on streambanks and forest margins.

Native in the area from the Indian subcontinent to Indo-China.

Not figuring in Flora Zambesiaca, but cited from Zimbabwe by Chapano & al. (Sabonet Rep. 16: 3, 2002).

(**B. vulgaris** Schrad. ex J. C. Wendland 1808, nom. conserv. prop. (Taxon 64: 171–173, 2015), non Nees 1841); Renier, Fl. Kwango 1: 63, 1948; Fl. W. Trop. Afr., ed. 2, 3/2: 360, 1972; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 188–189, 1994; Cheek & al., Pl. Kupe...: 442, 2004; Lisowski, Fl. Rép. Guinée 1: 451–452, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 246, 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 36–37, 1992; Poilecot in Boissiera 50: 62–63, 1995; Hawthorne & Jongkind,

BAMBUSA VULGARIS

Woody pl. W. African forests: 865, 2006; Latham, Plants visited by bees ... Umalila, south. Tanzania, ed. 3: 25, 2007; Latham & Konda, Pl. utiles Bas-Congo, ed. 2: 50, 2007; Fl. China 22, Ill.: 13, 2007; Meredith, Bamboos: 49–50, 2009 (details); Velayos & al., Fl. Guinea Ecuat. 12: 165, 2015; Greuter & Rankin Rodríguez in Taxon 64: 172, 2015 (type); Vorontsova & al., World checklist bamboos and rattans: IV, 2016; Ibrahim & al., Grasses Mali: 40, 2018.

syn.: *B. striata* Lodd. ex Lindl.; *Arundo bambos* L. 1753; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Woody sympodial bamboo growing in open clumps 3–5 m Ø at base; culms 12–15–25 m tall, 10 cm Ø, hollow, quick-growing; leaf sheaths coriaceous, pubescent (short urticant bristles); blades lanceolate, 2 sizes on the same stem, 10–15 or 25–30 cm × 1–4,5 cm; inflorescence a spreading panicle 2–3 m, with several spikelets at nodes; spikelets 1–2 cm long, in clusters; flowers infrequently.

Planted around villages in dense humid forest and by watercourses, roads in forest (900 m alt., Cameroon), and has run wild in parts of W Africa. Present in tropical Africa from Sierra Leone E-wards to S Nigeria, Cameroon-Congo Brazzaville (Acta Bot. Gall., Bot. Letters 161: 63–79, 2014), Zaïre; Bioko/Fernando Poo, Annobón.

Native in SE Asia, Yunnan (China) to Indo-China. Introduced in cultivation in Europe, Africa, Madagascar, Australia, N., C. & S. America; as ornamental or used for fibre and constructional work, tool-handles, etc. Has become an invasive “pest” in many countries, e.g. Cuba.

Several varieties have been described, but in, e.g., Fl. China 22, Texts: 25, 2006, they are considered as cultivars.

SYNONYMS:

Bambusa abyssinica A. Rich. = *Oxytenanthera abyssinica*
schimperiana Steud. = *O. abyssinica*
stricta (Roxb.) Roxb. = *Dendrocalamus strictus*

BAPTORHACHIS / 1

Baptorhachis Clayton & Renvoize, treated as a synonym under *Axonopus* by Kellogg in Kubitzki, ed., Families & genera vascul. pl. 13: 320, 2015. But maintained as a separate genus by Christenhusz & al., Plants of the World: 208, 2017, and by Darbyshire & al., Endemic plants of Mozambique in Phytotaxa 136: 78, 2019.

Baptorhachis foliacea (Clayton) Clayton – Icon.: Fl. Zambes. 10/3: 131, 1989.

bas.: *Stereochlaena foliacea* Clayton

Annual herb; culms 30–60 cm tall; leaves linear-lanceolate, cauline; inflorescence a solitary raceme 2–4,5 cm long; rachis membranously winged, 3–4 mm wide, purple; spikelets elliptic, 2,5–3 mm long, paired; glume and lemma with tufts of white hairs.

Stony places, open habitats, slopes.

Known only from the type collected in 1962.

(BATRATHERUM)

Batratherum cuspidatum Hochst. = *Arthraxon cuspidatus lanceolatum* (Roxb.) Nees = *A. lanceolatus*
lancifolium (Trin.) W. Watson = *A. lancifolius*
micans Nees = *A. hispidus*
schimperii (A. Rich.) Nees ex Hochst. = *A. lancifolius*
serrulatum Steud. 1854, pro syn. = *A. prionodes*

(BECKERA)

Beckera dioica Nees = ***Pennisetum unisetum***
glabrescens Steud. = ***P. unisetum***
gracilis Hochst. = ***Snowdenia mutica***
mutica Hochst. = ***S. mutica***
nubica (Hochst.) Hochst. = ***Pennisetum nubicum***
petiolaris (Hochst.) Hochst. = ***P. petiolare***
petitiana A. Rich. = ***Snowdenia petitiana***
polystachya Fresen., incl. var. *schimperii* (Hochst.)
T. Durand & Schinz = ***S. polystachya***
scabra Pilg. = ***S. petitiana***
schimperii Hochst. = ***S. polystachya***
unisetata (Nees) Nees ex Hochst. = ***Pennisetum unisetum***
valida Gay ex Fresen. = ***Snowdenia polystachya***

(BECKEROPSIS)

Beckeropsis laxior Clayton = ***Pennisetum laxius***
nubica Fig. & De Not. = ***P. nubicum***
petiolaris (Hochst.) Fig. & De Not. = ***P. petiolare***
pirottiae (Chiov.) Stapf & C. E. Hubb. = ***P. pirottiae***
procera Stapf = ***P. procerum***
unisetata (Nees) K. Schum. ex Stapf & C. E. Hubb.
= ***P. unisetum***

BEWSIA / 1

Monotypic genus in W & SE-S tropical to South Africa.

Bewsia biflora (Hack.) Gooss.; Klaassen & Craven, Checklist grasses Namibia: 15, 2003; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 247, 2011. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 285, 1974; van der Zon, Gramin. Cameroun 2: 109, 114 (map), 1992; Poilecot, Boissiera 50: 153, 1995; Fl. Zambes. 10/2: 37, 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 340, 2005; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 211, 2012.

bas.: *Diplachne biflora* Hack.

syn.: *D. biflora* var. *buchananii* Stapf; *Avenastrum flabellatum* Peter

Perennial tufted herb arising from a short rhizome; culms 30–90–100 cm tall, erect; leaves mostly borne at base; blades linear, 10–40 cm × 1–5 mm, firm, scabrid, tip filiform; inflorescence 7–20 cm long, with 6–15 racemes distributed along main axis, each 3–9 cm long, pink to purple; spikelets 5–9 mm long, 2–4 flowered with additional reduced flowers distally; awn 1–8 mm long.

Short or wooded grassland or bush; *Brachystegia* woodland; wooded savanna on poor sand; on sandy soils and Kalahari sand; hillsides; 300–2000 m alt.

Namibia, S. Africa, Botswana, Swaziland.

Can be confused with *Eragrostis* species.

(BLUFFIA)

Bluffia eckloniana Nees = ***Alloteropsis semialata*** subsp. ***eckloniana***

(BLUMENBACHIA)

Blumenbachia halepensis (L.) Koeler = ***Sorghum halepense***

BOTHRIOCHLOA / 3

Genus of 36–37 species, occurring mostly in tropical and subtropical regions of Africa, Asia, Australia and America. They are perennials, sometimes with aromatic leaves; inflorescence with digitate primary branches or the branches borne on an elongated axis, each branch with 8 or more pairs of spikelets, these pedicellate (staminate or sterile) and sessile.

“Much of the taxonomic difficulty in this genus arises from the promiscuous habits of *B. bladhii*, whose rapacious introgression has vastly increased its awn variability...” (Fl. Trop. E. Afr., Gramin. 3: 720, 1982). In fact, this species “hybridizes easily and frequently with some other members of the genus *Bothriochloa* and also with *Capillipedium parviflorum* and *Dichanthium annulatum*, blurring the boundaries between these genera, which are consequently sometimes all united under... *Dichanthium*” (Fl. Eth. & Eritrea 7: 306, 1995).

VEGA, A. S. & A. C. VEGETTI (2001). Growth form and inflorescence typology in *Bothriochloa* (Poaceae: Panicoideae: Andropogoneae). *Beitr. Biol. Pflanzen* 71: 377–391 [2000].

Bothriochloa bladhii (Retz.) S. T. Blake, incl. subsp. *glabra* (Roxb.) B. K. Simon, and var. *punctata* (Roxb.) R. R. Stewart; Renier, Fl. Kwango 1: 25, 1948 (as *Amphilophis glabra*); Fl. Trop. E. Afr., Gramin. 3: 719–720, 1982; Setshogo in Kirkia 17: 144, 2001; Klaassen & Craven, Checklist grasses Namibia: 15, 2003; Agnew, Upl. Kenya wild flow., ed. 3: 443, 2013; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 247, 2011; Schmidt & al. in Phytotaxa 304: 44, 2017; César & Chatelain, Fl. ill. Tchad: 250, 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 413–414, 1992; Poilecot, Boissiera 50: 493, 1995; Fl. Zambes. 10/4: 46, 2002; Cope, Fl. Arab. Penins.: 283, 2007; Fl. China 22, Ill.: 850, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 166, 2012; Sylvester in Edinb. J. Bot. 74: 2017 (raceme); Fl. Mascareignes 203, Gramin.: 228, 2018.

bas.: *Andropogon bladhii* Retz.

syn.: *A. intermedius* R. Br., incl. subvar. *glaber* (Roxb.) Hack., and var. *acidula* Stapf; *A. glaber* Roxb.; *A. pertusus* (L.) Willd. var. *vegetior* Hack.; *A. haenkei* J. Presl; *Amphilophis intermedia* (R. Br.) Stapf, incl. var. *acidula* (Stapf) Stapf; *Am. glabra* (Roxb.) Stapf, incl. var. *haenkei* (J. Presl) E. G. Camus & A. Camus; *Am. insculpta* (A. Rich.) Stapf var. *vegetior* (Hack.) Stapf; *Am. haenkei* (J. Presl) Haines; *Am. odorata* (Lisboa) A. Camus; *Bothriochloa glabra* (Roxb.) A. Camus, incl. var. *epunctata* G. Jackson, nom. nud. and subsp. *haenkei* (J. Presl) Henrard; *B. intermedia* (R. Br.) A. Camus, incl. var. *acidula* (Stapf) C. E. Hubb.; *B. insculpta* (A. Rich.) A. Camus var. *vegetior* (Hack.) C. E. Hubb.; *Dichanthium intermedium* (R. Br.) de Wet & Harlan, nom. inval. (no basionym cited); *D. bladhii* (Retz.) Clayton; *Anatherum glabrum* (Roxb.) Schult.; *A. montanum* (Roxb.) Schult.; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial tufted herb; culms robust, 0.5–1.5(–1.8) m tall, erect, from a shortly rhizomatous base, but without stolons; leaf blades 10–55 cm long, 2–12 mm wide; inflorescence a purple panicle with a central axis 4–20 cm long, variable in shape; racemes numerous (20 and more), borne loosely or densely in irregular whorls on simple or branched peduncles; racemes 2–5 cm long, pubescent; sessile spikelet 3–4 mm long, with or without a pit; pedicellate spikelet with 0–3 pits; awn > 1 cm long. Leaves and inflorescences strongly aromatic when crushed.

Stream banks, swamp margins; seasonally wet clay; cracking clay; swampy meadows; clayey impermeable heavy soils; sandy

BOTHRIOCHLOA BLADHII

soil bordering rivers; steppe with *Acacia*; grassy savanna; with *Cymbopogon afronardus*; 0–1550–1660 m alt. – Regenerates rapidly after burning.

Tropical and subtropical Old World. Cape Verde Isl.; NE Namibia, Botswana, S. Africa, Swaziland; Madagascar, Mascarene islands; Oman; SE Asia from Bhutan, India, Pakistan, Ewards to China, Indonesia, Japan, Malaysia, New Guinea, Australia. Introduced in the Pacific islands, N., C. & S. America, West Indies.

Hybridises easily with other *Bothriochloa* species and some species of related genera, blurring the boundaries between these genera and leading to a host of intermediates. New apomictic races have arisen from these introgressions, causing much taxonomic difficulty. The name *B. glabra* has been applied to such a hybrid. – *B. bladhii* is most practicably treated in a broad sense to include all forms with an elongate inflorescence axis. Also, the habit is usually not stoloniferous (Fl. China 22, Texts: 608, 2006).

Sometimes confused with *Capillipedium* because of the paniculate inflorescence and the somewhat capillaceous inflorescence branches.

B. insculpta (Hochst. ex A. Rich.) A. Camus, incl. var. *hirta* (Chiov.) Cufod.; Fl. Trop. E. Afr., Gramin. 3: 720–721, 1982; Setshogo in Kirkia 17: 145, 2001; Fl. Zambes 10/4: 47–48, 2002; Klaassen & Craven, Checklist grasses Namibia: 15, 2003. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 51, 1955; Thulin, Fl. Somalia 4: 256, 1995; Fl. Eth. & Eritrea 7: 307, 1995 (details); Machado Marchi & Longhi-Wagner, Fl. ill. Rio Grande do Sul 24, in Bol. Inst. Biociênc. 57: 87, 1998; Agnew, Field key upl. Kenya grasses: 8/15, 2006 (raceme); Cope, Fl. Arab. Penins. 5/1: 283, 2007; Singh Purohit & Sharma in J. Bombay Nat. Hist. Soc. 105: 11, 2008; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 217, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pls. 191, 194/B, 2013. bas.: *Andropogon insculptus* Hochst. ex A. Rich.

syn.: *A. pertusus* (L.) Willd. var. *maroccanus* Maire, var. *capensis* Hack., var. *insculptus* (Hochst. ex A. Rich.) Hack. incl. subvar. *trifoveolatus* Hack. and subvar. *hirtus* Chiov.; *Amphilophis insculpta* (Hochst. ex A. Rich.) Stapf; *Bothriochloa pertusa* (L.) A. Camus var. *maroccana* (Maire) Maire; *Dichanthium insculptum* (Hochst. ex A. Rich.) Clayton

Tufted perennial grass; culms 0.25–2 m tall, often becoming decumbent, rambling, or developing into stout woody stolons, nodes with a ring of conspicuous white hairs; leaf blades 4–30 cm long, 2–8 mm wide; inflorescence subdigitate or with a central axis seldom over 3 cm long, bearing 3–20 shortly pedunculate racemes, these 2–8 cm long, pilose; sessile spikelet 3–4.5 mm long; lower glume with a deep circular pit; awn 1.5–2.5 cm long.

Overgrazed grassland; weedy places; grassy plains; open woodland; cultivated ground; degraded *Acacia* woodland; scrubland; on various soils (from black clays to sand, gravel, often on rocky slopes); 70–2400 m alt.

Canary Isl.; Cape Verde Isl.; Sicily, S Greece; Morocco, Tunisia, (Le Floch & al., Cat. synonym. fl. Tunisie: 383, 2010, as *B. pertusa*), W. Sahara; N Namibia, Botswana, S. Africa, Swaziland; Madagascar; Oman, Yemen, Saudi Arabia, Socotra; India, W Himalaya; introduced in New Guinea, Australia, S. America (Venezuela, Brazil).

Leaves, stems and seed heads are aromatic, and the aroma persists in stored hay.

A variable apomictic species unreliably separated from the Asiatic *B. pertusa* (L.) A. Camus. The two species apparently do not interbreed, but much more work is needed to establish the morphological differences which at present, are vague (Cope, o.c.: 285).

BOTHRIOCHLOA

B. radicans (Lehm.) A. Camus; Fl. Trop. E. Afr., Gramin. 3: 721, 1982; Fl. Eth. & Eritrea 7: 307, 1995; Thulin, Fl. Somalia 4: 257, 1995; Setshogo in Kirkia 17: 143, 2001; Fl. Zambes. 10/4: 44–45, 2002; Klaassen & Craven, Checklist grasses Namibia: 15, 2003; Cope, Fl. Arab. Penins. 5/1: 285, 2007; Mbuni & al. in PhytoKeys 120: 25, 2019. – Icon.: Chippindall in Meredith, Grasses & pastures S. Africa 1: 483, 1955; Agnew, Field key upl. Kenya grasses: pl. 8/16: 2006; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 216, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 191, 2013.

bas.: *Andropogon radicans* Lehm.

syn.: *A. ischaemum* L. var. *radicans* (Lehm.) Hack., and var. *americanus* Hack., and var. *somalensis* Stapf; *A. feracidulus* Stapf 1916; *Amphilophis radicans* (Lehm.) Stapf; *Am. feracidula* Stapf 1916; *Dichanthium radicans* (Lehm.) Clayton

Perennial grass forming loose tussocks, much branched and densely leafy above ground level, with a shrub-like growth form (not erect); culms slender, many-noded, ascending, 0.25–1 m long, nodes ± bearded; leaf blades linear, 6–20 cm × 2–6 mm; inflorescence a cluster of 3–16 sessile or shortly pedunculate, silvery-grey, silky-hairy racemes, each 3–7 cm long; sessile spikelet 3–4 mm long, lower glume not pitted; awn 1–2.5 cm long.

Dry open deciduous bushland; *Acacia seyal* woodland; open *Acacia-Commiphora* bushland on limestone hillsides; stony slopes; near wetlands; around termite mounds; 0–2000 m alt. – If dominating in veld, it indicates over-grazing and/or drought.

Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland; Saudi Arabia, Oman, Yemen?, Socotra; Mascarenes (Fl. Mascareignes 203, Gramin.: 231, 2019); introduced in tropical America.

Fresh leaves and inflorescences aromatic when crushed (unpalatable).

Closely related to and easily confused with *B. insculpta*. Somewhat resembling *Cenchrus ciliaris*.

SYNONYMS:

Bothriochloa glabra (Roxb.) A. Camus, incl. var. *epunctata* Jackson, nom. nud. and subsp. *haenkei* (J. Presl) Henrard = **Bothriochloa bladhii**
insculpta (A. Rich.) A. Camus var. *vegetior* (Hack.) C. E. Hubb = **B. bladhii**
intermedia (R. Br.) A. Camus, incl. var. *acidula* (Stapf) C. E. Hubb. = **B. bladhii**
pertusa (L.) A. Camus var. *maroccana* (Maire) Maire = **B. insculpta**

BRACHIARIA / 52

Brachiaria (Trin.) Griseb. 1853. Syn.: *Leucophrys* Rendle 1899; *Pseudobrachiaria* Launert 1970; *Moorochloa* Veldkamp 2004.

Genus of some 100 species (c. 119 species according to Christenhusz & al., Plants of the World: 208, 2017) in warm (Mediterranean), subtropical and tropical areas worldwide, mainly in the Old World, especially Africa.

Brachiaria is treated as synonym under *Urochloa* P. Beauv. by Kellogg in K. Kubitzki, ed., Families and genera of vascular plants 13: 339, 2015: most species of *Brachiaria* were transferred into *Urochloa* by Webster 1987, and this transfer has largely been supported by subsequent molecular studies (cf. also Veldkamp in Reinwardia 12, 138, 2004).

BRACHIARIA

Veldkamp (Taxon 45: 319–320, 1996) proposed to conserve the name *Brachiaria* with a conserved type. However, this proposal was not recommended (See Taxon 47: 869, 1998).

Some authors have kept, and still keep, *Brachiaria* separate from *Urochloa*, which is the case here. Boulos (Flora of Egypt 4: 292, 2005) did so, with the following explanation: “The genus *Brachiaria* presents a distinctive facies when compared with *Urochloa* but the differences are sometimes considered to be slight. *Brachiaria* has adaxial, plump spikelets and usually muticous upper lemma, whereas in *Urochloa* the spikelets are abaxial, plano-convex and have a cuspidate tip to accommodate the distinctly mucronate upper lemma. There are, however, some intermediates that are difficult to place and there is a growing tendency to regard all species of *Brachiaria*, except *B. eruciformis*, as congeneric with *Urochloa*... Again, there are intermediates that obscure even this distinction as well as problems over typification of *Brachiaria* itself.”

KÖHLER, C. (1995). Über die Gattung *Brachiaria* auf den Kapverdischen Inseln (Phanerogamae: Poaceae, Panicoideae, Paniceae). *Cour. Forsch.-Inst. Senckenberg* 186: 115–127.

MILES, J. W. & al., eds., *Brachiaria biología, agronomía y mejoramiento*. Centro Internacional de Agricultura Tropical, Cali, Colombia & Centro Nacional de Pesquisa de Gado de Corte/Empresa Brasileira de Pesquisa Agropecuária, Campo Grande, Brasil (Publ. CIAT N° 295). XIII ± 312 pp.

SOSEF, M. S. M. (2016). Taxonomic novelties in Central African grasses (Poaceae), Paniceae 1. *Pl. Ecol. Evol.* 149: 356–365 [*Urochloa* p. 358–362].

In our area no ecology is recorded for 1 species (*B. wittei*), and 3 species are known only from the type gathering.

Brachiaria ambigens Chiov.; Fl. Trop. E. Afr., Gramin. 3: 589, 1982; Fl. Eth. & Eritrea 7: 224, 1995; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 136, 2008. – Icon.: Chiovenda in Webbia 8: 63, 1951.

Perennial densely tufted herb; culms 25–50 cm long, often fasciculately branched above the short woody base; leaf blades linear, 3–14 × 0.2–1 cm; inflorescence of 4–15 racemes closely set on axis 1–8 cm long; racemes 1–4 cm long with spikelets borne singly in 2 rows on a triquetrous glabrous axis; spikelets c. 3 mm long, pubescent.

Deciduous bushland, dry or semi-desert grassland; 800–1600 m alt.

B. arida (Mez) Stapf; Thulin, Fl. Somalia 4: 227, 1995. Kilian & al. in Willdenowia 34: 178, 166 (map) 2004; Cope, Fl. Arab. Penins. 5/1: 209, 2007.

Perennial, tufted, shortly rhizomatous herb, erect or sprawling, to 50 cm high; leaf blades linear; inflorescence of 4–5 racemes widely spaced on an axis 8–14 cm long; racemes 2.5–4 cm long, with paired spikelets loosely contiguous on a triquetrous rachis; spikelets c. 4 mm long, glabrous.

Mountains; 1300 m alt. – Only the syntype is so far known from Somalia (Ahl Mts, c. 11°N × 48°15'E).

Yemen (south. coastal mountains, 450–1200 m alt., on rocky slopes favoured by mist precipitation), Socotra (granitic caves, 200 m alt.).

A little-known species, similar to *B. chusqueoides*, which has larger leaves.

B. arrecta (Hack. ex T. Durand & Schinz) Stent, incl. var. *madecassa* A. Camus; Fl. Trop. E. Afr., Gramin. 3: 585, 1982; Fl. Zambes. 10/3: 68–69, 1989; Fl. Eth. & Eritrea 7: 222, 1995; Klaassen & Craven, Checklist grasses Namibia: 15, 2003; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 140, 2008 (as *Urochloa arrecta*); Agnew, Upl. Kenya wild flow., ed. 3: 433,

BRACHIARIA ARRECTA

2013; Sosef (2016): 358 (under *Urochloa*). – Icon.: Bosser, Gramin. patur. cult. Madagascar: 418, 1969; Troupin, Fl. Rwanda 4: 201, 1988; Cook, Aquat. & wetland pl. south. Afr.: 199, 2004.

bas.: *Panicum arrectum* Hochst. ex T. Durand & Schinz

syn.: *P. multifolium* Peter; *Brachiaria latifolia* Stapf; *B. radicans* Napper; *Urochloa arrecta* (Hack. ex T. Durand & Schinz) Morrone & Zuloaga

Perennial straggling stoloniferous herb; stolons to 1,5 m long; culms prostrate to ascending, rooting at lower nodes, to 0,5–1,3 m long, *nodes glabrous to pubescent*; leaf blades lanceolate, 5–25 × 0,5–1,5 cm, glabrous; inflorescence a panicle of 4–10–15 spike-like racemes spaced singly on an axis 5–25 cm long; racemes *unbranched*, 1–10 cm long, directed upwards; *spikelets borne singly in 2 neat rows on a flattened ribbon-like winged rachis* 1–1,5 mm wide; spikelets glabrous, 3–4 mm long.

(Seasonal) swamps, wetlands, by water, river banks, in shallow water; 500–1800 m alt.

Namibia, S. Africa, Botswana; Madagascar. Introduced in S USA, C. & S. America, West Indies.

Has been cultivated for pasture and forage, called Tanner Grass.

Closely related to *B. mutica* (which has densely bearded culm nodes), and “some botanists consider *B. arrecta* to be no more than a race of the species, a widely planted tropical grass, called Para Grass” (Cook, l. c.).

B. bovonei (Chiov.) Robyns; Fl. Trop. E. Afr., Gramin. 3: 582, 1982; Fl. Zambes. 10/3: 66, 1989; Fl. Eth. & Eritrea 7: 221, 1997; Lye & al. in Lidia 4: 159, 2000; Burrows & Willis, Pl. Nyika Plateau, Malawi: 341, 2005; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 140, 2008 (as *Urochloa bovonei*); Agnew, Upl. Kenya wild flow., ed. 3: 433–434, 2013. – Icon.: Troupin, Fl. Rwanda 4: 203, 1988.

bas.: *Panicum bovonei* Chiov.

syn.: *Urochloa bovonei* (Chiov.) A. M. Torres & C. M. Morton; *Brachiaria hians* Stapf; *B. viridula* Stapf

Perennial densely tufted herb; culms 0,2–1 m tall; leaf *blades flat*, 3–30 cm long, 2–6 mm wide, stiffly pilose to conspicuously villous; inflorescence of 2–5 racemes on an axis 3–10 cm long; racemes 1–5 cm long, with spikelets single on a triquetrous rachis its margins sparsely ciliate with white or yellow hairs 1–2 mm long; spikelets 3–4 mm long, pubescent.

Wet grassland, damp places in deciduous bushland; swamp and swamp margins; by water; grassland on shallow soil; 1000–2500 m alt.

S. Africa, Swaziland.

B. breviglumis Clayton; Fl. Trop. E. Afr., Gramin. 3: 591, 1982; Thulin, Fl. Somalia 4: 228, 1995; Fl. Eth. & Eritrea 7: 225, 1995.

Annual loosely tufted herb; culms 15–25 cm long, ascending; leaf blades narrowly lanceolate, 1–6 cm × 2–4 mm; inflorescence of 3–5 erect racemes appressed to an axis 1–6 cm long; racemes 0,5–1,5 cm long bearing *spikelets borne singly in 2 rows on a triquetrous rachis*; spikelets 2 mm long, *silvery-villous*, the hairs extending beyond spikelet tip.

Deciduous bushland; *Acacia-Commiphora* shrubland on silty soils; 100–1800 m alt.

B. brevispicata (Rendle) Stapf; Fl. Zambes. 10/3: 65, 1989; Sosef in Pl. Ecol. Evol. 149: 358–359, 2016.

bas.: *Panicum brevispicatum* Rendle

syn.: *Urochloa brevispicata* (Rendle) Sosef

BRACHIARIA BREVISPICATA

Annual herb forming a tuft of numerous decumbent shoots rooting at lower nodes; culms 15–45 cm long, densely leafy below; leaf blades linear, 3,5–6 cm × 6–8 mm; inflorescence of 1–4 racemes, these 1–3 cm long, bearing 8–10 spikelets on a narrow rachis in a dense single row; spikelets 3–4 mm long, glumes pubescent.

Most soil overlying ironstone; damp meadows; common in sandy low-lying wooded meadows; 1500 m alt.

Intergrades with the West African *B. stigmatisata*, which has glabrous spikelets and short glumes (not lower glume as long as spikelet).

Confusion possible with *Eriochloa rovimensis* which has spikelets with a swollen basal callus.

B. brizantha (Hochst. ex A. Rich.) Stapf, incl. var. *angustifolia* Stent & J. M. Rattray and var. *ciliata* Basappa & Muniy.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 86, 88, 1955; Thulin, Fl. Somalia 4: 226, 1995; Fl. Zambes. 10/3: 70, 1989; Klaassen & Craven, Checklist grasses Namibia: 16, 2003; Cope, Fl. Arab. Penins. 5/1: 209, 2007; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 140, 2008 (under *Urochloa*); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Poilecot, Guide Liber. grasses: 23, 2015; Sosef in Pl. Ecol. Evol. 149: 359, 2016 (under *Urochloa*); César & Chatelain, Fl. ill. Tchad: 231, 2019. – Icon.: Robyns, Fl. agrost. Congo-Belge 2: 105, 1934; Engler & Prantl, Natürl. Pflanzenfam., ed. 2, 14e: 27, 1940; Fl. W. Trop. Afr., ed. 2, 3/2: 441, 1972; Fl. Gabon 5: 33, 1962 (in vol. 5b: 64, 1999, under *Urochloa*); van der Zon, Gramin. Cameroun 2: 265–268 (map), 1992; Poilecot, Boissiera 50: 393, 1995; Fl. Eth. & Eritrea 7: 223, 1995; Burrows & Willis, Pl. Nyika Plateau, Malawi: 340, 2005; Agnew, Field key upl. Kenya grasses: pl. 6/13, 2006 (spikelet); Lisowski, Fl. Rép. Guinée 2: fig. 534, 2009; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 245, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013. – Pl. 23.

bas.: *Panicum brizanthum* Hochst. ex A. Rich.

syn.: *P. brizanthum* var. *latifolium* Oliv., var. *polystachyum* De Wild. & T. Durand, var. *lasiochloa* Chiov., and var. *pan-danifolium* Peter; *Brachiaria gangangalaensis* Vanderyst 1919, nom. provis. inval., and 1925 (valid.); *B. manzonzoensis* Vanderyst 1919, nom. provis.; *Urochloa brizantha* (Hochst. ex A. Rich.) R. D. Webster, incl. var. *ciliata* (Basappa & Muniy.) S. K. Jain

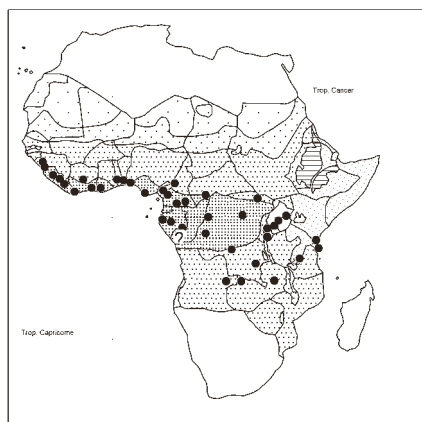
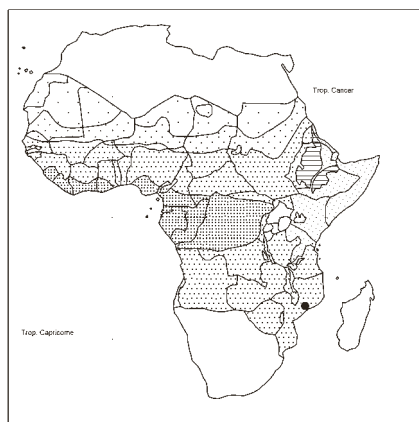
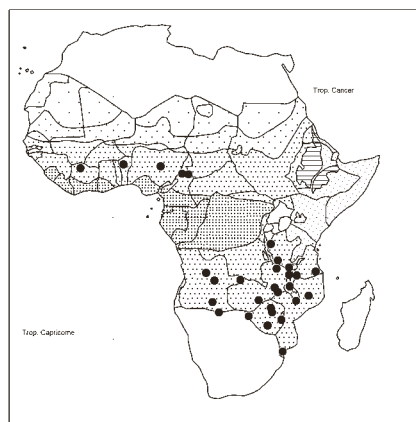
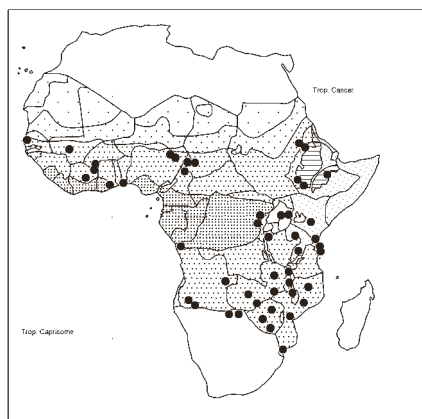
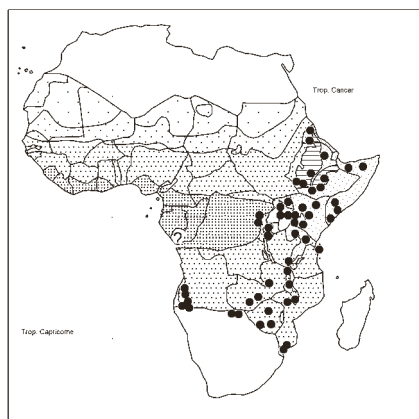
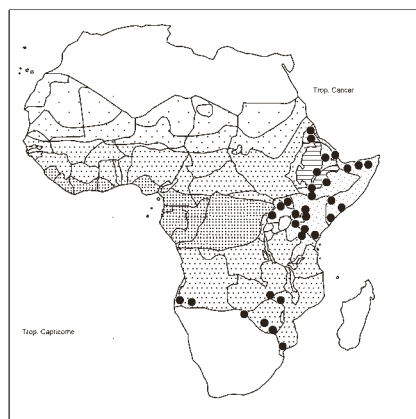
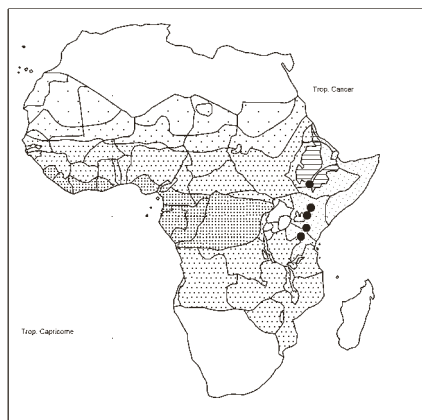
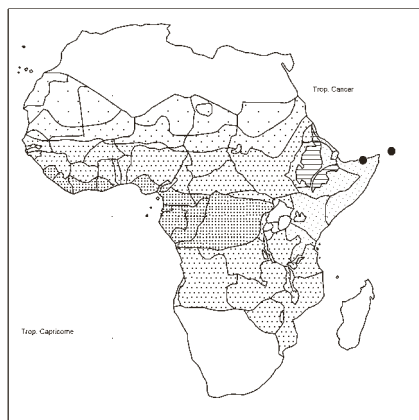
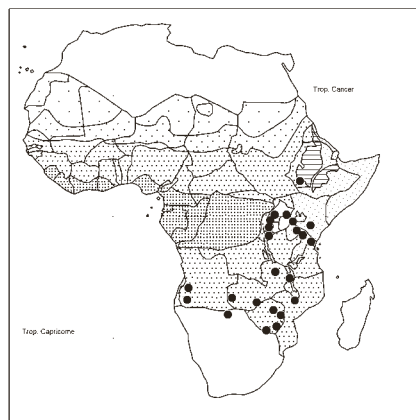
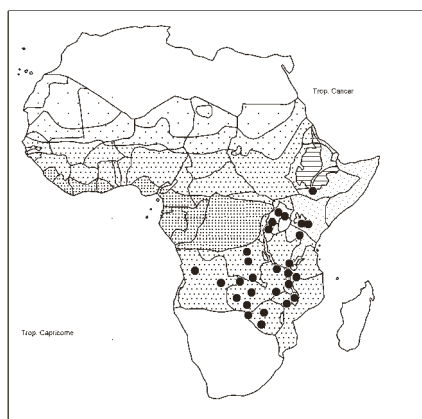
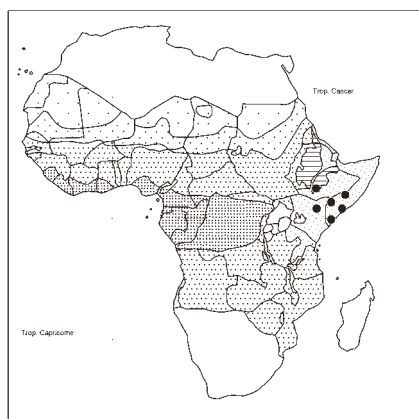
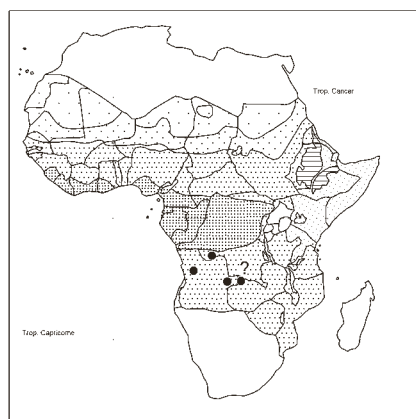
Perennial tufted grass; culms 0,3–2 m tall, erect or sometimes geniculately ascending; leaves bright green, blades linear, 10–40–100 × 0,3–2 cm, with rough thickened margins; inflorescence of 1–16 racemes on an axis 3–20 cm long, racemes 4–20 cm long with the *spikelets singly in a single row*; rachis crescentic in section c. 1 mm wide, with narrow inrolled wings, margins ciliate; *spikelets round*, shiny, 4–6 mm long, *glabrous*.

Deciduous woodland; on deep soils in forest; on rich deep, wet (clayey, clayey-sandy) soils, also sandy soils; edges of gallery forest; shady undergrowth in savannas; open grassy slopes; woodland; clearings; *Piliostigma thonningii* grassland; neglected *Cedrela* plantation with regenerating mixed woodland of *Combretum collinum*, *Stereospermum kunthianum*, *Acacia hockii*, *Albizia grandibracteata* on ground with rocky outcrops; other plantations; 300–2500 m alt. – Sometimes cultivated for fodder.

NE & C Namibia, S. Africa, Botswana, Swaziland; Madagascar, Seychelles; Yemen. Introduced in SE Asia, New Guinea, Australia, Pacific islands, S N. America, C. & S. America.

A variable grass with diploid (rare), tetraploid and hexaploid forms.

MENDES-BONATO, A. B. (2002). Chromosome numbers and microsporogenesis in *Brachiaria brizantha* (Gramineae). *Euphytica* 125: 419–425.

*Axonopus flexuosus**Baptorhachis foliacea**Bewisia biflora**Bothriochloa bladhii**Bothriochloa insculpta**Bothriochloa radicans**Brachiaria ambigens**Brachiaria arida**Brachiaria arrecta**Brachiaria bovonei**Brachiaria breviglumis**Brachiaria brevispicata*

BRACHIARIA BRIZANTHA

VIEIRA MENDES, D. & al. (2006). Cytological evidence of natural hybridization in *Brachiaria brizantha* Stapf (Gramineae). *Bot. J. Linn. Soc.* 150: 441–446.

B. brizantha is closely related to and intergrades with *B. decumbens*, which is distinguished by its membranous hairy spikelets on a flat rachis 1–1,7 mm wide. Some intermediate forms, selected and widely distributed in the tropics as pasture plants have the habit of *B. decumbens* coupled with the inflorescence characters of *B. brizantha* (Fl. Eth. & Eritrea 7: 222, 1995).

B. chusqueoides (Hack.) Clayton; Fl. Zambes. 10/3: 75–76, 1989; Thulin, Fl. Somalia 4: 227, 1995; Fl. Eth. & Eritrea 7: 224, 1995; Lye & al. in Lidia 4: 159, 2000; Siebert & al. in Bothalia 34: 70, 2004; Cope, Fl. Arab. Penins. 5/1: 209–210, 2007; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 136, 2008. – Icon.: Chippindall in Meredith, Grasses & pastures S. Africa: 326, 1955.

bas.: *Panicum chusqueoides* Hack.

syn.: *P. obumbratum* Stapf; *P. schlechteri* Mez 1904, nom. illeg. Perennial, scandent or creeping herb from a knotty base; culms slender, wiry, much-branched, 30–75 cm long; leaf blades lanceolate, 3–12 × 0,3–1,2 cm, *base cordate*; inflorescence of 2–7 racemes that are widely spaced on a pubescent axis 2–13 cm long; racemes 1,5–7 cm long, bearing single or paired loosely contiguous spikelets, rachis triquetrous, spikelets 3–5 mm long. Coastal bushland; often on sand dunes; rarely inland; forest in shade; wet ground; 0–1000 m alt.

S. Africa; Yemen (Hall & al. in Edinb. J. Bot. 65: 132, 2008).

Near *B. deflexa* (which has leaves with “stalks”). *B. arida* is very similar but leaf blades linear.

(*B. ciliaris* Vanderyst, Bull. Agric. Congo Belge 14: 548, 1923, nom. nud.) – Unplaced name.

B. clavipila (Chiov.) Robyns; Fl. Zambes. 10/3: 70–71, 1989; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 136, 2008.

bas.: *Panicum clavipilum* Chiov.

syn.: *Urochloa clavipila* (Chiov.) Sosef, Pl. Ecol. Evol. 149: 359, 2016.

Perennial tufted herb; culms 30–70 cm tall; inflorescence of 2–6 racemes, these 1–4 cm long, with single spikelets in 1–2 rows on a triquetrous rachis which is *clavellate hairy* on the back; *spikelets* 3–4,5 mm long, with appressed *clavellate hairs*.

Dambos; flood plains; swampy savanna; 1000–1400 m alt. (Zambia).

B. comata (Hochst. ex A. Rich.) Stapf – In floras and flora lists figuring under the following names: in W part of Africa *B. comata*, *B. kotschyana*; in E part of Africa *B. comata*, *B. coronifera* (Tanzania), *B. scalaris*. – Fl. W. Trop. Afr. ed. 2, 3/2: 444, 1972 (*B. kotschyana*); Fl. Zambes. 10/3: 75, 1989; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 191, 1994; Fl. Eth. & Eritrea 7: 227, 1995; Lidia 5/5: 127, 128, 2001; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 145, 2006; Cope, Fl. Arab. Penins. 5/1: 214–215, 2007; Reinheimer & Vegetti in Pl. Syst. Evol. 275: 136 (*Brachiaria scalaris*, *B. coronifera*), 140 (*Urochloa comata*), 2008; César & al., Suppl. cat. pl. vascul. Burkina Faso: 11, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010; Sosef in Pl. Ecol. Evol. 149: 359, 2016. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 595, 1982 (with texts for *B. coronifera* p. 596, *B. scalaris* p. 594); Troupin, Fl. Rwanda 4: 197, 1988; van der Zon, Gramin. Cameroun 2: 270–271 (with map), 1992; Fl. Gabon 5b: 65, 1999 (under *Urochloa*); César & Chatelain, Fl. ill. Tchad: 233, 2019.

BRACHIARIA COMATA

bas.: *Panicum comatum* Hochst. ex A. Rich.

syn.: *P. indutum* Steud.; *P. kotschyana* Hochst. ex Steud.; *P. stuhlmanni* K. Schum.; *P. secernendum* Hochst. ex Mez; *P. villosum* var. *erythraeum* Chiov.; *Urochloa comata* (Hochst. ex A. Rich.) Sosef; *Brachiaria kotschyana* (Hochst. ex Steud.) Stapf; *B. secernenda* (Hochst. ex Mez) Henrard; *B. epaleata* Stapf; *B. coronifera* Pilg.; *B. scalaris* (Mez) Pilg.; *B. pilgeriana* H. Scholz, nom. superfl.; *B. heterocraspeda* (Peter) Pilg.; *Panicum heterocraspedum* Peter; *P. scalare* Mez 1904, non Schweinf. 1894.

Annual loosely tufted herb; culms often weak, procumbent or geniculately ascending 0,1–1,1 m long; leaf blades ± lanceolate, 1–15 × 0,3–1,5 cm; inflorescence of 5–15 racemes on an axis 3–20 cm long; racemes 0,5–10 cm long with ± pubescent triquetrous rachis; spikelets borne on short secondary branchlets or in dense fascicles, these copious; *spikelets* 1,5–3 mm long, purple, often pubescent or glabrous (with a wide variation of indumentum), *sometimes* with a *transverse fringe of hairs* to 1 mm long near tip.

Common on rocky hills (Nigeria); savannas; fallows; deciduous bushland; weedy places; roadsides; open places on disturbed ground; woodland; cultivations; on sand; hardened soils on plateau; deep soil in forest; weed in cleared secondary forest or tea gardens; stony (steep) grassland; abundant around field edges; near sea-level–2700 m alt.

Yemen.

B. scalaris is a poor form of *B. comata*, and a paratype of *B. coronifera* (Schlieben 768) represents a mixture of both forms of *B. scalaris* but with a horizontal line of hairs below the top of the spikelet (for more details, See Sosef in Pl. Ecol. Evol. 149: 359, 362, 2016).

B. comata may be a host of *Striga aspera* (Burkill, l.c.).

B. deflexa (Schumach.) C. E. Hubb. ex Robyns, incl. var. *sativa* Portères 1951 (descr. Gallic.); van der Zon, Gramin. Cameroun 2: 272–273, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 191, 1994; Thulin, Fl. Somalia 4: 228–229, 1995; Klaassen & Craven, Checklist grasses Namibia: 16, 2003; Cope, Fl. Arab. Penins. 5/1: 211–212, 2007; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 247, 2011; Schmidt & al. in Phytotaxa 304: 44, 2017; Sosef in Pl. Ecol. Evol. 149: 357, 2016 (synonyms). – Icon.: Bosser, Gramin. pâtur. cult. Madagascar: 418, 1969; Mitt. Bot. Staatssamml. München 8: 161, 163, 1970 (details); Köhler in Cour. Forsch.-Inst. Senckenberg 186: 124, 1995; Fl. Eth. & Eritrea 7: 226, 1995 (inflorescence); Poilecot, Boissiera 50: 399, 1995; idem, ibid. 56: 439, 1999; Boulos, Fl. Egypt 4: 296, 2005; Brink & Belay, Pl. resources trop. Afr. 1, Cereals & pulses: 34, 2006; Agnew, Field key upl. Kenya grasses: pl. 6/22, 2006 (part raceme); idem, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 186, 2012; César & Chatelain, Fl. ill. Tchad: 232, 2019 (details).

bas.: *Panicum deflexum* Schumach.

syn.: *P. ramosum* L. var. *deflexum* (Schumach.) Peter; *P. regulare* Nees; *P. nudiglume* Hochst.; *P. petiveri* Trin. var. *nudiglume* (Hochst.) Chiov., and var. *robustissimum* Chiov.; *P. clavulisetum* Chiov.; *Pseudobrachiaria deflexa* (Schumach.) Launert; *Urochloa deflexa* (Schumach.) H. Scholz; *Brachiaria regularis* (Nees) Stapf; *B. glycerioides* Chiov.; *B. clavulisetia* Chiov.; *B. stapfiana* Basappa & Muniy.

Annual loosely tufted herb; culms 15–70 cm long, often weak, ascending, often branched; leaf blades lanceolate, 4–25 × 0,4–2,2 cm, base rounded; inflorescence 4–20 cm long,



Plate 22. *Axonopus compressus* (Sw.) P. Beauv., see p. 107
 a: habit; b: node; c: ligule; d: inflorescence; e: glumes; f-g: lower lemma; h: upper lemma; i: palea; j: caryopsis.



Plate 23. *Brachiaria brizantha* (Hochst. ex A. Rich.) Stapf, see p. 112
a: habit; b: ligule; c: inflorescence; e: spikelet; f-g: glumes lower and upper; h-i: lemma and palea; j-k: caryopsis.

BRACHIARIA DEFLEXA

of 7–15 racemes borne on an axis 6–15 cm long; racemes 2–10 cm long, *often compound*, bearing mostly paired distant spikelets on a triquetrous rachis – the inflorescence imitating a panicle – ; *pedicels* of spikelets *spreading*, often to 1,5 cm long; *spikelets* 2–3,5 mm long, *distant*, glabrous to pubescent.

Weedy places in deciduous bushland and woodland; margins of riverine forest; often preferring light shade; cultivated land; disturbed soils; road sides; sands; humid and humus-bearing soils in hollows; *Acacia* shrubland, clearings; savannas on degraded soils; often with *Brachiaria villosa*, *Setaria barbata*, *Dactyloctenium aegyptium*, *Panicum brevifolium*, etc.; fallows; occasionally on saline soils; a common weed of cultivation in arable land, under plantations and in flower gardens, irrigated areas; 0–1500 m alt. – Drought resistant.

Cape Verde Isl.; Egypt; Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland; Madagascar, Socotra, Oman, Saudi Arabia, Yemen; India, Pakistan, West Himalaya. Introduced in N. America, U.S.A.

Provides excellent forage. Grain edible (cereal; Sabonet News 7/3: 194, 2002). In the area on the Guinea-Mali border (Fouta Djallon) a cultivar is grown.

Near *B. ramosa* and intergrades with that. – Commonly mistaken for a *Panicum*. But readily distinguishable by its open sub-paniculate inflorescence; the species lies on the boundary between *Brachiaria* and *Panicum*.

B. dictyoneura (Fig. & De Not.) Stapf, incl. subsp. *humidicola* (Rendle) Catasús [figuring in many floras as *B. humidicola* (Rendle) Schweick.]; Fl. Trop. E. Afr., Gramin. 3: 582–583, 1982; Fl. Zambes. 10/3: 66–69, 1989 (incl. *B. humidicola*); Fl. Eth. & Eritrea 7: 221–222, 1995 (idem); Miles & al. (1998): 42–43 (idem); Klaassen & Craven, Checklist grasses Namibia: 16–17, 2003 (idem); Reinheimer & Vegetti in Pl. Syst. Evol. 275: 141, 2008 (under *Urochloa*); Sosef in Pl. Ecol. Evol. 149: 359, 2016. – Icon.: Troupin, Fl. Rwanda 4: 198, 1988; Agnew, Field key upl. Kenya grasses: pl. 6/14, 2006 (spikelet); Fischer & Killmann, Pl. Nyungwe Natl. Park, Rwanda: 344, 2008; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 269, 2012 (incl. *B. humidicola*, inflorescences); Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013.

bas.: *Panicum dictyoneurum* Fig. & De Not.

syn.: *P. alborellereum* K. Schum. ex Engl.; *Brachiaria obvoluta* Stapf; *B. keniensis* Henrard; *B. humidicola* (Rendle) Schweick; *B. rautanenii* (Hack.) Stapf; *Urochloa dictyoneura* (Fig. & De Not.) Veldkamp; *U. humidicola* (Rendle) Morrone & Zuloaga; *Panicum humidicola* Rendle; *P. rautanenii* Hack.; *P. golae* Chiov.; *P. vexillare* Peter

Perennial densely tufted (with stolons growing out of a dense tuft) or stoloniferous (described as *B. humidicola*) herb; culms often geniculate (but not rooting at nodes), 0,35–1,3 m long; leaf blades linear, 4–30 × 0,5–3 cm, coarse, often softly pilose; sheaths villous; inflorescence of 2–12 racemes on a triquetrous axis 2–25 cm long, pubescent; racemes 2–8 cm long bearing the spikelets singly in 2 rows on a narrowly winged rachis; spikelets 4–6 mm long, pubescent (very rarely glabrous).

Seasonally swampy grassland; moist and marshy places; flood plains; stream banks; damp soils in savanna woodland; dambo margins; 0–2300 m alt.

N Namibia, Caprivi Strip, Botswana, S. Africa. Introduced in Laos, Fiji Isl., Cuba (Catasús Guerra in De Poaceis Cubensibus Notulae 3, 2001); cultivated in S. America.

BRACHIARIA

(**B. distachya** (L.) Stapf, incl. *B. miliiformis* (J. Presl) Chase and *B. subquadriflora* (Trin.) Hitchc.); Fl. Trop. E. Afr., Gramin. 3: 584, 1982 (incl. *B. subquadriflora*); Reinheimer & Vegetti in Pl. Syst. Evol. 275: 141, 2008 (under *Urochloa*); Sosef in Pl. Ecol. Evol. 149: 360, 2016; Fl. Mascareignes 203, Gramin.: 127, 147, 2019 (incl. *B. subquadriflora*). – Icon.: Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 112, 114 (*B. miliiformis*), 2002; Fl. China 22, Ill.: 730, 2007 (as *B. subquadriflora*); Kumar Singh & al. in J. Econ. Taxon. Bot. 39: 108, 2015 (idem).

bas.: *Panicum distachyon* L.

syn.: *P. subquadriflorum* Trin.; *P. miliiforme* J. Presl; *P. paspaloides* Hayata 1911, nom. illeg.; *P. pseudodistachyum* Hayata 1917; *P. distachyon* var. *pseudodistachyum* (Hayata) Honda; *Urochloa distachya* (L.) T. Q. Nguyen; *U. subquadriflora* (Trin.) R. D. Webster; *Brachiaria distachya* var. *brevifolia* E. G. Camus & A. Camus; *B. subquadriflora* (Trin.) Hitchc., incl. var. *hirsuta* Jansen, var. *miliiformis* (J. Presl) S. L. Chen & Y. X. Jin, and var. *pubescens* Jansen; *B. miliiformis* (J. Presl) Chase; *B. hybrida* Basappa & Muniy.

Annual creeping herb; culms 5–50 cm long, ascending from a prostrate base, nodes hairy; leaf blades linear-lanceolate, 2–20 × 0,3–1 cm; inflorescence paniculate of 2–5 racemes on an axis 0,5–10 cm long; racemes 1–6 cm long, bearing spikelets singly on a narrowly winged rachis; spikelets 2,5–4 mm long, glabrous.

Grassy places in tropical & subtropical Asia from Oman, India, Sri Lanka E-wards to Australia.

Introduced in Africa; weedy places, 0–1300 m alt.; in Benin, Ivory Coast, Togo, Centr. Afric. Rep., Uganda, Kenya, Tanzania, Zanzibar (often coastal), Madagascar, W. Indian Ocean islands; Pacific islands; S USA, C. & S. America.

B. distachyoides Stapf, Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011.

syn.: *Urochloa distachyoides* (Stapf) Sosef, Pl. Ecol. Evol. 149: 360, 2016.

Slender *annual*, rooting at lower nodes, 30–45 cm tall, *quite glabrous*; culms in small fascicles, erect or suberect, frequently branched, upper branches developed as leaf-tufts shortly emerging from the sheaths at the time of flowering; leaf blades long-tapering to a slender point, 5–12,5 × 0,2–0,6 cm; panicle of 2–4 solitary distant spike-like racemes or reduced to a single raceme; common axis rarely much over 7,5 cm long, slender; racemes 2–4, 2–6 cm long; spikelets *sessile* in 1 row.

In or near water; muddy places along swamps and small rivers.

Rare species.

B. dura Stapf, incl. var. *pilosa* J. G. Anderson; Fl. Zambes. 10/3: 70, 1989; Klaassen & Craven, Checklist grasses Namibia: 16, 2003.

syn.: *Urochloa dura* (Stapf) A. M. Torres, incl. var. *pilosa* (J. G. Anderson) A. M. Torres & C. M. Morton

Densely tufted perennial; culms 0,4–1 m tall; leaf blades 1–2 mm wide when flattened, convolute, wiry; inflorescence of 1–2 racemes, these 4–15 cm long, bearing spikelets singly in 1 row; rachis crescentic in section, c. 1 mm wide, margins irregularly ciliate; spikelets 3,5–5 mm long, glabrous or pubescent, obtuse.

Savanna woodland and grassland on sandy soils; 1000 m alt.

NE Namibia, Caprivi Strip, Botswana, S. Africa.

BRACHIARIA

B. eminii (Mez) Robyns; also figuring in floras and flora lists as *B. decumbens*, *B. ruziziensis*; Fl. Trop. E. Afr., Gramin. 3: 586, 1982 (as *B. eminii*, *B. ruziziensis*); Fl. Zambes. 10/3: 69–70, 1989; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 194, 1994; Miles & al. (1998): 41 (maps); Lidia 5/1: 4, 2000; *ibid.* 5/5: 127, 2001 (both as *B. decumbens*); Reinheimer & Vegetti in Pl. Syst. Evol. 275: 140 (as *Urochloa decumbens*), 141 (as *U. eminii*), 145 (as *U. ruziziensis*), 2008; Gereau & al., Lake Nyasa florist. checklist: 86, 2012 (as *Brachiaria decumbens*); Sosef in Pl. Ecol. Evol. 149: 360–361, 2016 (nomenclature!). – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 87, 1955; Poilecot, Boissiera 50: 387, 1985 (as *B. ruziziensis*); Troupin, Fl. Rwanda 4: 200, 1988 (as *B. decumbens*); Agnew, Field key upl. Kenya grasses: pl. 6/15: 2006 (*idem*, spikelets); *idem*, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; Rodrigues Dias & al. in Flora 260: § 151478: 3, 5, 2019 (as *B. decumbens*).

bas.: *Panicum eminii* Mez

syn.: *Brachiaria decumbens* Stapf, incl. var. *ruziziensis* (R. Germ. & C. M. Evrard) Ndab.; *B. ruziziensis* R. Germ. & C. M. Evrard; *B. bequaertii* Robyns; *Urochloa decumbens* (Stapf) R. D. Webster; *U. eminii* (Mez) Davidse; *U. ruziziensis* (R. Germ. & C. M. Evrard) Crins

Tufted annual and/or perennial with stolons (= prostrate culms rooting at nodes); culms 0,3–1,5 m tall, wiry, decumbent; leaf blades narrow, 5–30 × 0,5–1,7 cm; inflorescence of 2–10 racemes on an axis 1–15 cm long; racemes 1–5 cm long bearing the spikelets singly on a flat winged rachis 1–2 mm wide, margins ciliate; spikelets 4–5 mm long, hairy or glabrous.

Deciduous bushland on alluvial soils; *Acacia* formations; woodland edges; savannas; weedy places on alluvial soils; arable land, old farm; pastures; road sides; periodically flooded plains; abandoned road in papyrus swamp; 600–2000 m alt.

Introduced in Ivory Coast, Burkina Faso, as a forage plant; also in Madagascar, SE Asia to Indonesia, New Guinea, Australia, Hawaii, C. & S. America.

Intergrades with *B. brizantha*, but *B. eminii* has a flat rachis, and *B. brizantha* more plump spikelets. Also similar to *B. oligobrachiata* which has, however, glabrous rachis margins. The distinction with *B. rugulosa* is difficult but can be established based on characters of glumes and lemma (key in Fl. Trop. E. Afr., Gramin. 3: 577, 1982; discussed by Sosef 2016).

B. eruciformis (Sm.) Griseb., incl. var. *divaricata* Basappa & Muniy.; Klaassen & Craven, Checklist grasses Namibia: 16, 2003; Veldkamp in Reinwardtia 12: 319, 2004 (under *Moorochloa*); Cope, Fl. Arab. Penins. 5/1: 212, 214, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 245, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 120, 2015. – Icon.: Fl. Eth. & Eritrea 7: 226, 1995; Thulin, Fl. Somalia 4: 228, 1995; Cook, Aquat. pl. book, ed. 2: 144, 1996; Boulous, Fl. Egypt 4: 293, 2005; Agnew, Field key upl. Kenya grasses: pl. 6/18, 2006 (raceme); Fl. China 22, Ill.: 729, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 251, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013.

bas.: *Panicum eruciforme* Sm.

syn.: *P. isachne* Roth in J. J. Roemer & J. A. Schultes; *P. anisostachium* Bojer, nom. nud.; *P. wightii* Nees; *P. pubinode* Hochst. ex A. Rich.; *Urochloa eruciformis* (Sm.) C. Nelson; *Echinochloa eruciformis* (Sm.) Rchb.; *Moorochloa eruciformis* (Sm.) Veldkamp; *Brachiaria isachne* (Roth) Stapf; *B. poaeoides* sensu Cufodontis 1969, non Stapf 1919; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual loosely tufted herb; culms 10–60 cm long, slender, with knee-like bent lower nodes often forming roots; leaf blades

BRACHIARIA ERUCIFORMIS

± linear, 2–15 × 0,2–0,6 cm, glabrous or pubescent; inflorescence rather small, narrow, of 3–14 ascending racemes on an axis 1–8 cm long; racemes 0,5–2,5 cm long, bearing single spikelets imbricate on a triquetrous rachis; spikelets 2–3 mm long, mostly pubescent, borne in 2 rows.

Damp grassland, particularly on black clays; in moist grass on waterlogging soils; disturbed or overgrazed places in grassland and bushland; weed of cultivated fields, irrigation fields, gardens, and wasteland; 300–2250 m alt.

Morocco, Algeria, Egypt; Namibia, Botswana, Caprivi Strip, S. Africa, Lesotho, Swaziland; Madagascar, Réunion, Rodriguez isl.; Spain and E Mediterranean region; Saudi Arabia, Yemen (Kilian & al. in Willdenowia 34: 178, 2004), Oman, Socotra; Middle East E-wards to India, Viet Nam; introduced in Indonesia, China, New Guinea, Australia, Pacific Isl., C. & S. America.

Very similar to *B. schoenfielderi* (in Namibia, with densely villous spikelets), and also *B. malacodes* (but with racemes borne on a paniculate branch system).

B. falcifera (Trin.) Stapf; Schmidt & al. in Phytotaxa 304: 44, 2017.

bas.: *Panicum falciferum* Trin.

syn.: *P. collare* Schumach.; *Urochloa falcifera* (Trin.) Zon (Blumea 64: 215, 2019).

Tufted perennial to 60 cm tall from a short rhizome; culms 3–4-noded, erect, terete or compressed below, simple or sparingly branched below, glabrous or ± stiffly hairy below the nodes; leaf blades glaucous, 7,5–25 × 0,2–0,4 cm, hard, folded; inflorescence erect, of 3–5 equally distant, oblique, straight or arching, dense secund spike-like racemes; common axis 5–7,5 cm long, subtriquetrous or compressed, glabrous; racemes 1–2-seriate, 2–3 cm long, sparsely ciliate with pale hairs to 2 mm long; spikelets c. 3 mm long.

Savanna.

Barely separable from *B. jubata*. It may be “no more than a local biotype” of that species (Fl. Trop. E. Afr., Gramin. 3: 580, 1982).

B. glomerata (Stapf) A. Camus; Fl. Trop. Afr. 9: 504, 1919 (under *Leucophrys*; Angola: Mossamedes, Coroca Riv., Hopfner 79); Klaassen & Craven, Checklist grasses Namibia: 17, 2003; Figueiredo & Smith, Pl. Angola: 196, 2008. – Icon.: Mitt. Bot. Staatssamml. München 8: 161, 1970; Müller, Grasses Namibia: 79, 2007.

bas.: *Leucophrys glomerata* Stapf

syn.: *Panicum glomeratum* Hack. 1888, nom. illeg., non Moench 1794 nec Buckley 1866.

Annual tufted herb; culms 15–60 cm long, erect or geniculate, branching at nodes, lower nodes with adventitious roots; leaf blades grey-green, flat, hairy, to 13 × 0,7 cm; inflorescence of 4–12 racemes; these 1–2,5 cm long, globose-oblong, arranged at irregular intervals on the central axis; spikelets to 3 mm long, sessile, densely hairy, in tightly packed clusters.

On sand (sand dunes in Botswana).

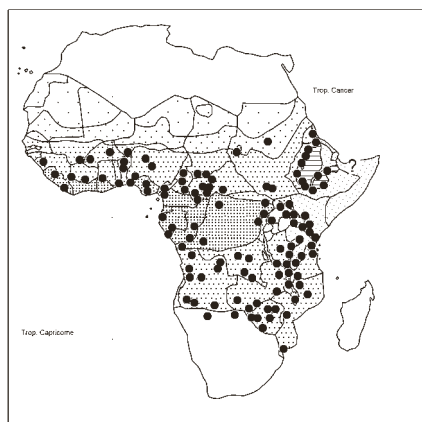
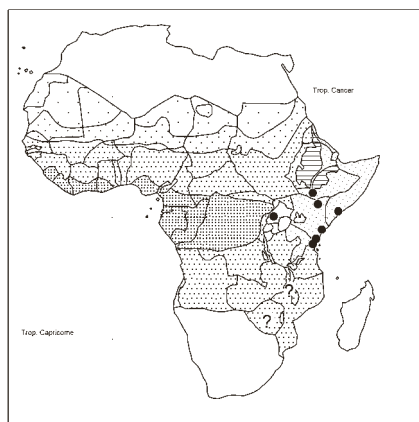
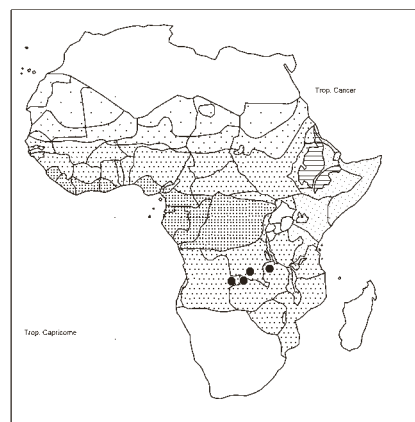
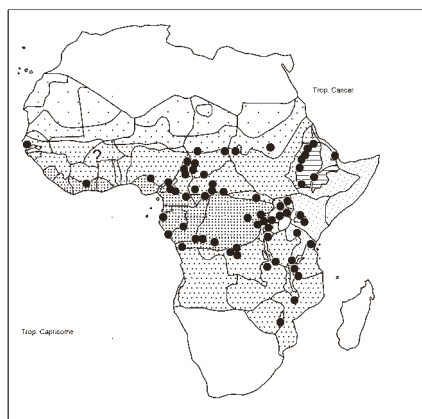
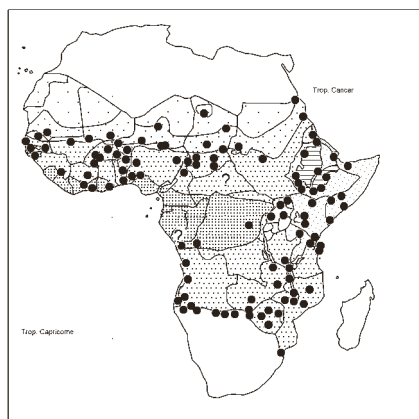
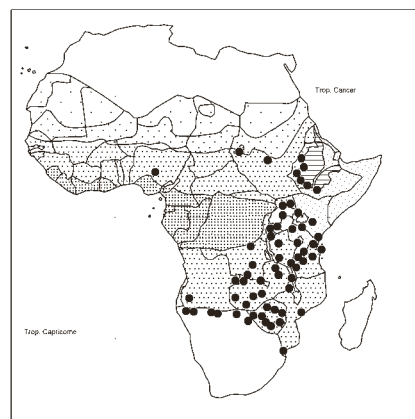
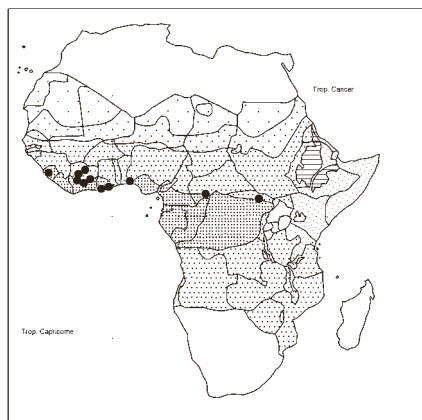
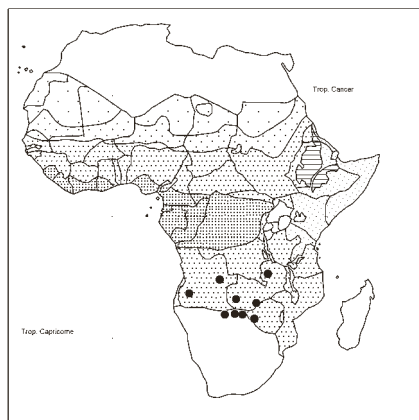
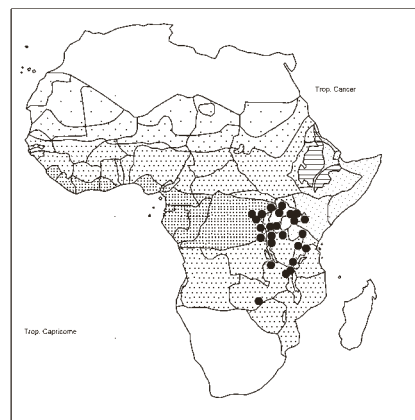
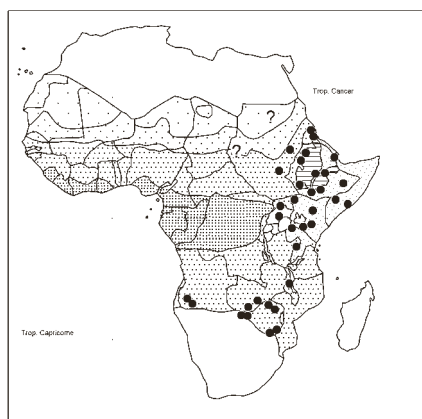
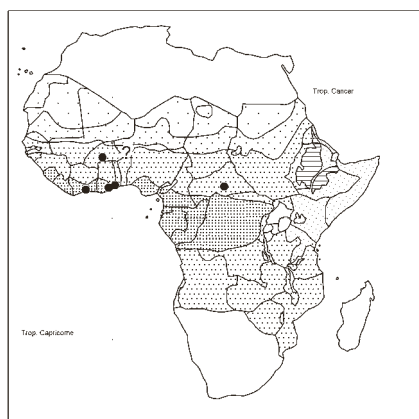
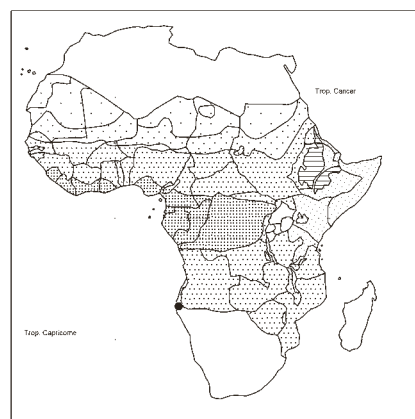
Namibia, Botswana (SW & SE), S. Africa.

In Fl. Zambes. 10/3: 74, 1989, not cited from Angola.

B. grossa Stapf; Klaassen & Craven, Checklist grasses Namibia: 17, 2003; Agnew, Upl. Kenya wild flow., ed. 3: 434, 2013. – Icon.: Fl. Zambes. 10/3: 77, 1989.

syn.: *Panicum nudiglume* Hochst. var. *majus* Rendle

Annual hairless herb; culms 0,3–1 m tall; leaf blades linear, 5–30 × 0,4–1,5 cm, blue-green, cordate or not, margins scaberulous;

*Brachiaria brizantha**Brachiaria chusqueoides**Brachiaria clavipila**Brachiaria comata**Brachiaria deflexa**Brachiaria dictyoneura**Brachiaria distachyoides**Brachiaria dura**Brachiaria eminii**Brachiaria eruciformis**Brachiaria falcifera**Brachiaria glomerata*

BRACHIARIA GROSSA

inflorescence of 3–14 racemes, ascending or appressed to an axis 4–15 cm long; racemes 3–10 cm long with paired loosely contiguous spikelets on a stiff triquetrous rachis; spikelets stalkless, 3–4 mm long.

Dry savanna; wooded grassland; open places in savanna; 500–1500 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa.

Closely related to *B. serrifolia* (with leaf blade margins serrately crinkled).

B. jubata (Fig. & De Not.) Stapf; Renier, Fl. Kwango 1: 37, 1948 (as *B. fulva*, *B. soluta*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 192, 1994; Miles & al., Brachiaria...: 44, 1998 (map); Duarte & al. in Portugal. Acta Biol. 19: 434, 2000; Lidia 5/5: 127–128, 2001; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 120, 2015; Candollea 71: 273, 2016. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 581, 1982; Troupin, Fl. Rwanda 4: 200, 1988; van der Zon, Gramin. Cameroun 2: 262, 264, 1992; Fl. Eth. & Eritrea 7: 223, 1995; Poilecot in Boissiera 56: 433, 1999; Agnew, Field key upl. Kenya grasses: pl. 6/16, 2006 (spikelet); idem, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; César & Chatelain, Fl. ill. Tchad: 165, 231, 2019.

bas.: *Panicum jubatum* Fig. & De Not.

syn.: *Urochloa jubata* (Fig. & De Not.) Sosef; *Brachiaria fulva* Stapf; *B. soluta* Stapf; *B. bomaensis* Vanderyst

Perennial tufted herb; culms 0,25–1,2 m long; leaf blades linear, 5–35 × 0,3–1,7 cm, ± pubescent; inflorescence spike-like of 3–15 racemes on an axis 5–20 cm long; racemes 1–6 cm long, bearing spikelets singly on a ribbon-like rachis 1–2 mm wide, margins ciliate with *bright yellow tubercle-based hairs* 2–6 mm long; spikelets c. 3–4 mm long, pubescent.

Damp grassland and places in deciduous bush; woodland; damp upland pasture; riverine thicket; valley alluvium; swamp margins; scattered tree grassland; on shallow soils with seasonal extremes of drought and waterlogging; abandoned road in papyrus swamp; waysides; arable lands; locally common, rare in Fl. Zambes. area; 500 (and less?)–3000 m alt.

Madagascar.

B. lachnantha (Hochst.) Stapf; Thulin, Fl. Somalia 4: 226–227, 1995; Fl. Eth. & Eritrea 7: 224, 1995; Lye & al. in Lidia 4: 159, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 434, 2013.

bas.: *Panicum lachnanthum* Hochst.

syn.: *Urochloa lachnantha* (Hochst.) A. M. Torres & C. M. Morton

Perennial herb forming fairly large tough tussocks; culms 0,2–1 m tall; basal sheaths silky tomentose; leaf blades ± linear, 5–40 × 0,3–1 cm; inflorescence of 2–15 racemes on an axis 2–15 cm long, bearing spikelets singly (longer racemes with paired spikelets at base) on a *pubescent to villous* triquetrous rachis; spikelets 3–4,5 mm long, pubescent to villous.

Damp or waterlogging soils; on black clays in open grassland and *Juniperus* forest; grassland and clearings in *Acacia* woodland; 0–1700 m alt.

Resembling *B. nigropedata*, which has longer lower glume ($\frac{1}{3}$ – $\frac{2}{3}$ the spikelet length, not $\frac{1}{4}$ – $\frac{1}{3}$) and subulately “tipped” upper glume and lower lemma.

B. lata (Schumach.) C. E. Hubb. subsp. *lata*, incl. var. *pubescens* C. E. Hubb.; van der Zon, Gramin. Cameroun 2: 273, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 192–193, 1994; Cope, Fl. Arab. Penins. 5/1: 211, 2007; Chatelain & al., Cartes distrib. pl. Côte

BRACHIARIA LATA

d'Ivoire: 247, 2011; Thiam & al. in Webbia 68: 179, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 120, 2015; Schmidt & al. in Phytotaxa 304: 44, 2017. – Icon.: Hooker's Icon. Pl. 34: pl. 3363, 1938; Fl. Eth. & Eritrea 7: 226, 1995; Poilecot in Boissiera 50: 401, 1995; idem, ibid. 56: 441, 1999.

bas.: *Panicum latum* Schumach.

syn.: *P. exasperatum* Nees ex Steud.; *P. insculptum* Steud.; *P. amplexifolium* Hochst.; *P. hamadense* Mez; *Urochloa lata* (Schumach.) C. E. Hubb.; *U. insculpta* (Steud.) Stapf

Coarse annual herb 0,2–1,5 m tall; culms erect, geniculate ascending, or decumbent, solitary or tufted, nodes ciliate; leaf blades linear-lanceolate, 5–20 × 1–2,5 cm, margins ciliate with tubercle-based hairs; inflorescence of 6–20 *densely spiculate*, and *crowded*, ascending racemes on an axis 1–10 cm long; racemes 1,5–6 cm long, bearing *subsessile pairs* of closely contiguous spikelets on a triquetrous setose rachis; spikelets c. 3 mm long, *usually glabrous*.

Open rocky slopes; common near moist places; flood plains; wooded savanna along tracks; roadsides; fallows on heavy soils; wooded savannas with *Eleusine indica*, *Cynodon dactylon*, *Setaria pumila*, *S. verticillata*, or *Sporobolus pyramidalis*, *Panicum* spp., or with *Hyparrhenia involucreata* (ferralitic soils), *Andropogon gayanus*, *Diheteropogon amplexens*, *Aristida kerstingii*, etc.; hollows with *Panicum subalbidum*, *P. laetum*, *Echinochloa colona*; weed of (all) cultivated crops and of formal flower gardens; part of the *Cleomo viscosae-Brachiarium latae* association, covering the ground layer over vast areas on Sahelian inselbergs in *Acacia* savannas (N Burkina Faso; Müller in Candollea 63: 62–63, 69, 2008, with photo.); ?–700–1700 m alt.

Oman, Saudi Arabia, Yemen, Socotra; India (Pandey in J. Econ. Taxon. Bot. 26, 2002, var. *pubescens*).

Subsp. **caboverdiana** Conert & C. Kohler [syn.: *Urochloa caboverdiana* (Conert & C. Kohler) Veldkamp, Potdar & S. R. Yadav] in the Cape Verde isl. (Köhler in Cour. Forsch.-Inst. Senckenberg 186: 125, 1995, with fig. and synonyms; Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 24, 2002).

A record of *B. lata* in Chiovenda, Fl. Somalia 2: 445, 1932, and Cufodontis, Enum.: 1314, 1969, from S Somalia is based on Gorini 505 which is *B. ovalis* (Thulin, Fl. Somal. 4: 229, 1995).

Much valued as a palatable cattle feed; provides excellent fodder for all stock, and is cut and bundled for sale in W. African markets (Burkill, l. c.).

Intergrades with *B. ramosa*.

B. leersioides (Hochst.) Stapf; Thulin, Fl. Somalia 4: 227, 1995; Cope, Fl. Arab. Penins. 5/1: 213, 2007; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 120–121, 2015. – Icon.: Troupin, Fl. Rwanda 4: 201, 1988; Fl. Eth. & Eritrea 7: 226, 1995; Poilecot, Boissiera 56: 440, 1999; Boulos, Fl. Egypt 4: 296, 2005; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; César & Chatelain, Fl. ill. Tchad: 233, 2019.

bas.: *Panicum leersioides* Hochst.

syn.: *P. hodjense* Mez; *Urochloa leersioides* (Hochst.) A. M. Torres & C. M. Morton; *Brachiaria distichophylla* sensu Cufodontis, Enum., 1969, non (Trin.) Stapf

Annual herb; culms ascending, 0,1–1 m tall; leaf blades linear, 5–20 × 0,1–1 cm, setaceous acuminate; inflorescence of 3–14 widely spaced racemes, these spreading horizontally or deflexing at maturity, borne on an axis 3–20 cm long, often glaucous with a white waxy coating; racemes 1–7 cm long, secund, bearing mostly paired spikelets on a triquetrous rachis; spikelets 2–3,5 mm long, glabrous; *glumes separated by a distinct internode*.

BRACHIARIA LEERSIOIDES

Waysides; old farmland; weedy places; savannas; dry *Acacia* bushland and woodland; often on sandy soils in light shade; open *Acacia* woodland on red sand; 0–1900 m alt.

SE Egypt; Saudi Arabia, Yemen, Oman.

B. lindiensis (Pilg.) Clayton; Fl. Trop. E. Afr., Gramin. 3: 590, 1982.

bas.: *Panicum lindiense* Pilg.

Perennial tufted herb; culms 30–60 cm long, wiry, sometimes decumbent; leaf blades ± ovate, 4–7 × 0,7–1,3 cm, stiff, margins serrulate towards base; inflorescence often axillary, of 1–4 racemes on an axis to 3 cm long, bearing single or paired spikelets *distant* along a triquetrous rachis; *spikelets 4–6 mm long*, thinly pubescent.

In shade of open forest; 0–250 m alt.

B. longiflora Clayton; Fl. Eth. & Eritrea 7: 222, 1995. – Icon.: Thulin, Fl. Somalia 4: 226, 1995.

Perennial tufted herb from a knotty rootstock; culms wiry, much-branched, 0,2–1,2 m long; leaf blades ± lanceolate, 5–15 × 0,6–2 cm; inflorescence of 2–4 racemes on an axis 3–7 cm long; racemes 2–5 cm long, few-spiculate; spikelets borne loosely, singly or paired on a villous triquetrous rachis; spikelets *large*, 6,5–8,5 mm long, sparsely pubescent.

Coastal bushland, open bushland on fixed dunes; bushland on sandy soils; 0–1200 m alt.

B. malacodes (Mez & K. Schum.) H. Scholz; Fl. Trop. Afr. 9: 554, 1919; Klaassen & Craven, Checklist grasses Namibia: 17, 2003. – Icon.: Chippendall in Meredith, Grasses & pastures S. Afr.: 377, 1955.

bas.: *Panicum malacodes* Mez & K. Schum.

syn.: *Moorochloa malacodes* (Mez & K. Schum.) Veldkamp; *Brachiaria poioides* (“poaeoides”) Stapf

Annual herb; culms 0,25–1 m tall; inflorescence *paniculate*, the primary branches bearing short *pedunculate racemes*, these 0,5–1 cm long, bearing single spikelets on a triquetrous rachis; spikelets 2–3 mm long.

Damp and shady places; common among undergrowth in open forest; among rocks in open forest; abundant in dry grassland.

NW Namibia.

Some intergradation particularly in Zimbabwe with *B. eruciformis*; intermediate specimens known.

Francisco Newton (1864–1909) collected in SW Angola. His specimens of “*B. poioides* Stapf” are discussed by Figueiredo & al. in Phytotaxa 413: 219, 2019.

B. mesocoma (Nees) A. Camus; Fl. Trop. Afr. 9: 503, 1919 (under *Leucophrys*); Klaassen & Craven, Checklist grasses Namibia: 54, 2003 (idem). – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: 380, 1995 (idem); Müller, Grasses Namibia: 224, 2007 (idem).

bas.: *Panicum mesocomum* Nees

syn.: *Leucophrys mesocoma* (Nees) Rendle

Perennial blue-green shrub-like grass; culms loosely tufted, to 0,6–1 m long, *woody, branched from the base*, repeatedly geniculate, ascending or spreading, nodes swollen; leaf blades stiff, brittle, linear, 2,5–7,5–12 × c. 1 cm, long-tapering to a *spinescent recurved point*; sheaths papery, loose, glandular, *thickened into a spongy ring* at nodes, often slipping from the culm and rolling in or breaking away, ligule a dense fringe of short silky hairs; inflorescence a *very narrow panicle* 7,5–15 cm long, c. 3 cm Ø;

BRACHIARIA MESOCOMA

common axis terete, flexuous; racemes 5–6, erect, ± appressed, each 2,5–3,7 cm long, simple, or the longest compound, bearing spikelets from the base; these to < 1 cm long, with white- or straw-coloured hairs.

Gravelly soil by river banks.

NW & S Namibia, S. Africa.

Leaves resembling those of a *Dianthus*.

Resembling *Melinis* species due to the silky-haired spikelets.

B. mutica (Forssk.) Stapf; Renier, Fl. Kwango 1: 37, 1948; Berhaut, Fl. Sénégal, éd. 2: 406, 1967; Fl. Gabon 5: 31, 1962 & 5b: 64, 1999 (under *Urochloa*); van der Zon, Gramin. Cameroun 2: 264, 266, 1992; Thulin, Fl. Somalia 4: 226, 1995; Cook, Aquat. & wetland pl. south. Afr.: 199, 2004; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 245, 2010; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 247, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Schmidt & al. in Phytotaxa 304: 47, 2017; César & Chatelain, Fl. ill. Tchad: 232, 2019. – Icon.: Robyns, Fl. agrost. Congo Belge 2: 99, 1934; Naegelé, Gramin. patur. Mauritanie: 161, 1977; Poilecot, Boissiera 50: 391, 1995; idem, *ibid.* 56: 434, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 166, 2015.

bas.: *Panicum muticum* Forssk.

syn.: *P. appressum* Forssk.; *P. numidianum* Lam.; *P. purpurascens* Raddi; *P. infestum* sensu Wickens, non Andersson; *Brachiaria numidiana* (Lam.) Henrard; *B. purpurascens* (Raddi) Henrard; *Urochloa mutica* (Forssk.) T. Q. Nguyen; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial sprawling herb; culms 0,25–1,25–1,8 m long, prostrate, often rooting at lower nodes; leaf blades ± linear, 6–30 × 0,3–1,5 cm; inflorescence of 5–20 racemes on an axis 7–20 cm long; racemes 2–10 cm long, bearing *paired spikelets in several untidy rows* on a narrow (0,5–1 mm) winged rachis with scabrid margins; spikelets c. 3 mm long, glabrous.

Wet places; invasive plant near water, inundated places; at edges of lakes and streams; in shallow water, sometimes forming a dense cover along streams and floating rafts; on clayey soils; often associated with *Echinochloa pyramidalis*, *Phacelurus gabonensis*, *Oryza longistaminata*, *Leersia hexandra*; in dense aquatic meadows with *Paspalum scrobiculatum*, *Vetiveria nigriflora*, *Setaria sphacelata*, *Sacciolepis africana*, *Echinochloa stagnina*; diagnostic species of *Brachiaria muticae*-*Cynodontium dactyli* communities, i.e. ephemeral vegetation at shorelines of Sahelian seasonal lakes (Müller in Syst. Geogr. Pl. 75: 244, 2005); often found as a naturalized escape; 0–1000 m alt.

Bioko/Fernando Poo; N. Africa from Morocco to Egypt; Yemen; origin uncertain, perhaps of S. America and W. Africa (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 193, 1994); introduced in the Azores, Madeira, Canary Isl.; Somalia, Tanzania, Madagascar, W Indian Ocean islands; S Asia E-wards to New Guinea, Australia, Pacific islands; N., C. & S. America. Throughout the tropics and subtropics. – Cited from Somalia by Chiovenda, Fl. Somalia 2: 443, 1932, but not seen for Fl. Somalia 4.

Well-known as one of the best tropical forage plants under the name Para grass.

Similar to *B. arrecta*. Allied to *Eriochloa meyeriana*.

Our map is tentative, showing the distribution in W Africa E-wards through to Sudan, and south to Congo-Brazzaville.

B. nigropedata (Munro ex Ficalho & Hiern) Stapf; Miles & al., Brachiaria...: 45, 1998 (map); Klaassen & Craven, Checklist grasses Namibia: 18, 2003. – Icon.: Fl. Zambes. 10/3: 72, 1989;

BRACHIARIA NIGROPEDATA

Müller, Grasses Namibia: 83, 2007; van Oudtshoorn, Guide grasses south. Afr.: 248, 2012.

bas.: *Panicum nigropedatum* Munro ex Ficalho & Hiern

syn.: *P. melanotylum* Hack.; *Brachiaria melanotyla* (Hack.) Henrard; *Urochloa nigropedata* (Munro ex Ficalho & Hiern) A. M. Torres & C. M. Morton

Perennial, densely tufted grass with $\pm$ bulbous base clad in tomentose sheaths; tufts round, large, to 30 cm $\varnothing$; culms 0,25–1 m tall; leaves mostly concentrated at base of plant, blades filiform, 6–30 $\times$ 0,5–1 cm, pubescent to villous; inflorescence of 5–16 racemes on an axis 4–11 cm long; racemes 1–6 cm long, bearing spikelets singly in 2 rows on a villous triquetrous rachis; *spikelets* 3–5 mm long, *silky villous* with off-white hairs that become longer above and often are gathered into a loose transverse fringe, supported by a *conspicuous black stipe* c. 0,5 mm long.

Dry rocky or sandy soils in deciduous bushland or wooded grassland; 500–1600 m alt.

N Namibia, Botswana, S. Africa, Lesotho, Swaziland.

Valuable palatable climax grass favoured by game and livestock (Müller 2007: 821).

Not unlike *B. lachnantha* (See that species above).

B. oligobrachiata (Pilg.) Henrard; Fl. Zambes. 10/3: 69, 1989; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 232, 2010 (as *B. platytaenia*).

bas.: *Panicum oligobrachiatum* Pilg.

syn.: *P. interstipitatum* A. Chev. 1911, nom. nud.; *P. platyrhachis* Chiov. 1923, pro syn.; *Brachiaria platyrhachis* Chiov. 1923; *B. interstipitata* Stapf; *B. platytaenia* Stapf; *B. vittata* Stapf; *Urochloa oligobrachiata* (Pilg.) Kartesz; *U. platytaenia* (Stapf) Crins; *U. vittata* (Stapf) Morrone & Zuloaga

Annual coarse herb; culms 0,6–1,2 m tall; leaf blades 20–30 $\times$ 0,5–2,5 cm; inflorescence of 3–15 racemes, these 2–8 cm long, bearing spikelets singly on a ribbon-like *rachis* 1–3 mm wide with *minutely ciliate margins*; spikelets 4–6 mm long.

River banks; 1000 m alt. (Zambia).

Very similar to *B. eminii* (with rachis margins glabrous). Near *B. plantaginea* (Link) Hitchc., an introduced American species with lower glume obtuse (not acute-acuminate) and upper lemma emucronate (without a stubby mucro).

B. orthostachys (Mez) Clayton; Lebrun & al. in Bull. Soc. Bot. France 130, Lettres Bot. 3: 254, 1983; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Schmidt & al. in Phytotaxa 304: 45, 2017; César & Chatelain, Fl. ill. Tchad: 233, 2019. – Icon.: Scholz in Willdenowia 8: 385, 1978 (spikelet); Poilecot, Boissiera 56: 437, 1999; Ibrahim & al., Grasses of Mali: 125, 2018 (under *Urochloa*).

bas.: *Panicum orthostachys* Mez

syn.: *Brachiaria hagerupii* Hitchc.; *B. xantholeuca* sensu Fl. W. Trop. Afr., ed. 2, 3/2: 444, 1972, p.p. (See below); *Urochloa orthostachys* (Mez) Ibrahim & P. M. Peterson, Grasses of Mali: 125, 2018.

Annual tufted herb 20–60–100 cm tall; culms erect or geniculate at base, and branching from the base, glabrous; leaf blades $\pm$ lanceolate, 3–15 $\times$ 0,4–1 cm, shortly pubescent, margins ciliate; inflorescence a ramose linear-oblong panicle of 2–8 erect racemes each 1,5–4 cm long, on an axis 10–12 cm long; spikelets solitary in 2 rows, c. 4 mm long, on a triquetrous rachis.

Sandy or sandy-clayey soils; impoverished areas; bushland; steppe, between dunes; sand on sandstone; old fallow on sand; near water; sometimes under shade.

BRACHIARIA ORTHOSTACHYS

First collection made in Senegal by Adanson c. 1750; described in 1917.

In Flora of West Tropical Africa (l. c.) *B. orthostachys* is treated as a synonym of *B. xantholeuca*. However, Scholz (Willdenowia 8: 38: 384–385, 1978) showed that these two entities are distinct from another, and that *B. hagerupii* is a synonym of *B. orthostachys*. *B. orthostachys* differs from *B. xantholeuca* in the following characters: the spikelets of *B. orthostachys* are elliptic, glabrous (not ovate, hispidulous), and the upper glume 7-nerved (not 5-nerved). *B. orthostachys* is a typical Sahelian species (such as, e.g. *Requienia obcordata*, *Fabaceae*), whereas *B. xantholeuca* is a more southerly plant with a much wider area of distribution.

B. ovalis Stapf; Thulin, Fl. Somalia 4: 229, 1995; Cope, Fl. Arab. Penins. 5/1: 210, 2007; Sánchez-Ken in Kew Bull. 62: 518, 2007 (in key); Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015. – Icon.: Fl. Eth. & Eritrea 7: 226, 1995 (spikelet); Agnew, Field key upl. Kenya grasses: pl. 6/23, 2006 (part of raceme); idem, Upl. Kenya wild flow., ed. 3: pl. 189, 2013.

syn.: *Panicum ovale* R. Br. 1814, nom. nud.; *P. nudiglume* var. *majus* Balf. f.; *Brachiaria glauca* Stapf; *B. somalensis* C. E. Hubb.; *Urochloa ovalis* (Stapf) Zon (Blumea 64: 215, 2019).

Annual tufted grass densely pubescent; culms 10–50 cm tall; leaf blades $\pm$ linear, 3–25 $\times$ 0,2–1,2 cm; inflorescence of 3–15 spreading or appressed racemes borne on an axis 4–15 cm long; racemes 3–7 cm long, bearing single or paired spikelets loosely spaced on a triquetrous rachis; *spikelets* 2,5–4,5 mm long, *pedicel shorter than spikelet*; upper glume and lower lemma *cartilaginous*.

Acacia bushland, deciduous bushland; subdesert grassland; alluvial basins along rivers; limestone hills; weed of cultivation; 0–1600 m alt.

Socotra, Saudi Arabia, Oman, Yemen; Pakistan.

A record of *B. lata* in Chioyenda, Fl. Somala 2: 445, 1932, and Cufodontis, Enum.: 1314, 1969, from S Somalia is *B. ovalis*.

Not in César & Chatelain, Fl. ill. Tchad, 2019.

Spikelets are sometimes reminiscent of *Urochloa panicoides* but that species has a winged raceme-rachis.

(**B. plantaginea** (Link) Hitchc.); Fl. W. Trop. Afr., ed. 2, 3/2: 443, 1972; van der Zon, Gramin. Cameroun 2: 263–264, 1992; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Velayos & al., Fl. Guinea Ecuat. 12: 18, 2015 (in key); Schmidt & al. in Phytotaxa 304: 45, 2017. – Icon.: Köhler in Cour. Forsch.-Inst. Senckenberg 186: 117, 1995; Poilecot, Boissiera 50: 83, 1995.

bas.: *Panicum plantagineum* Link

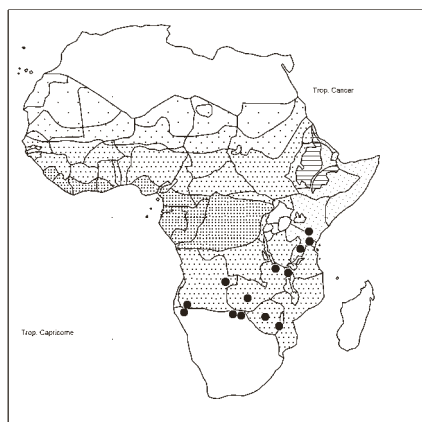
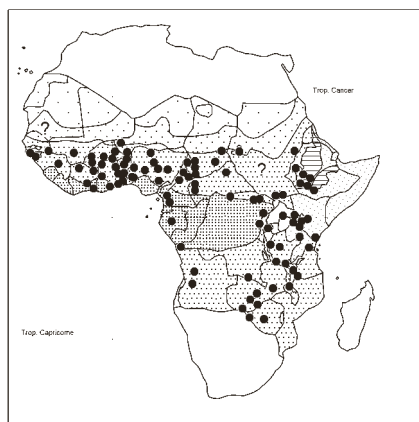
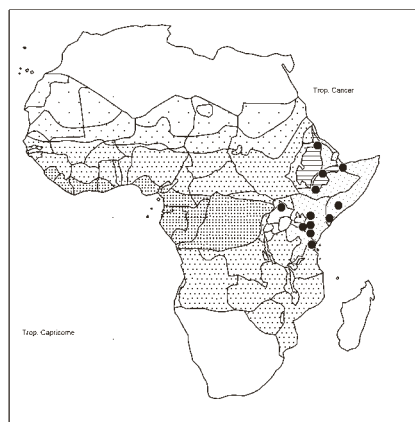
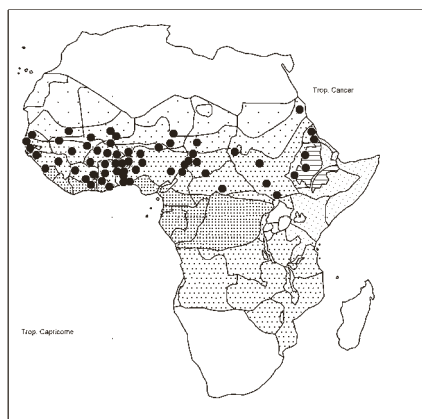
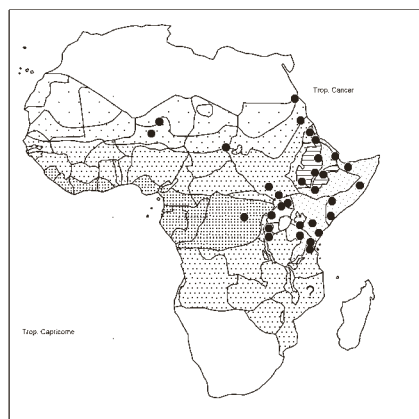
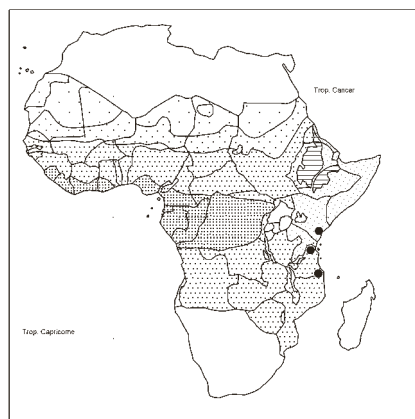
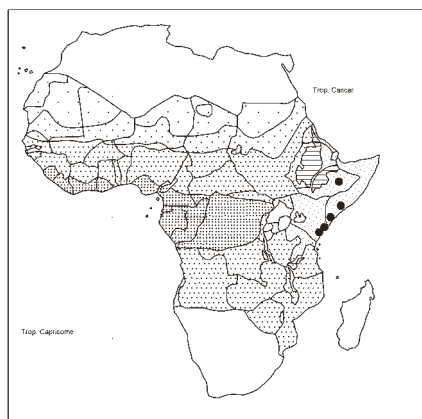
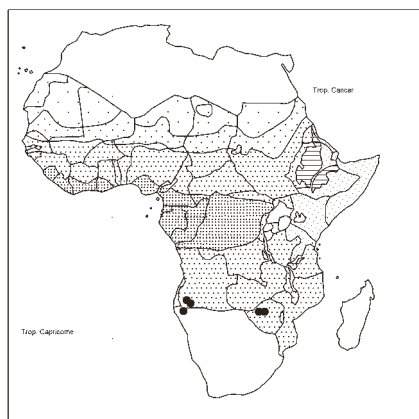
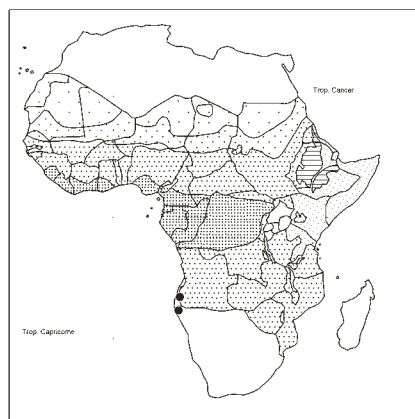
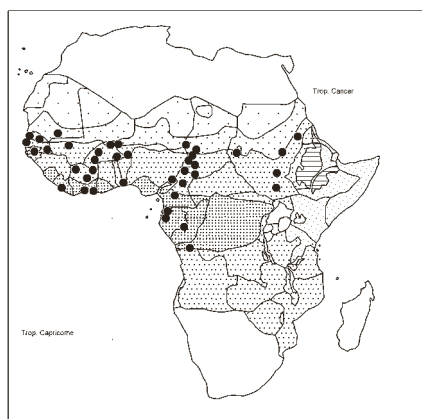
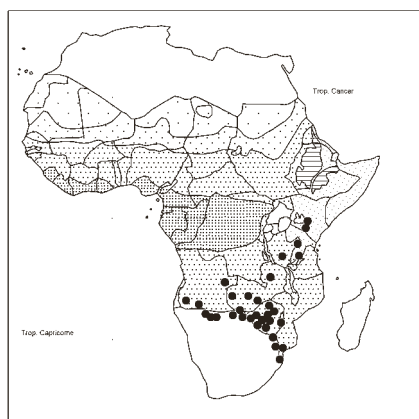
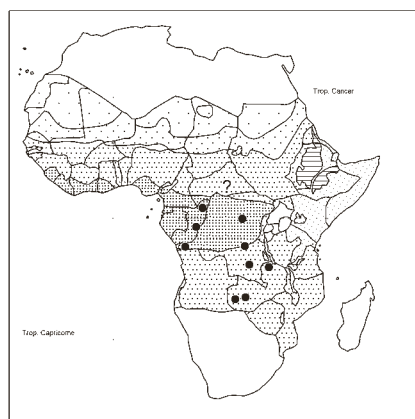
syn.: *P. leandri* Trin.; *P. distans* Salzm. ex Steud.; *P. disciferum* E. Fourn.; *Urochloa plantaginea* (Link) R. D. Webster; *U. discifera* (E. Fourn.) Morrone & Zuloaga

Annual densely tufted ascending herb 35–60 cm tall; culms decumbent, branching and rooting at lower nodes, glabrous; leaf blades linear, c. 10–22 $\times$ 0,5–1,2 cm, edges scabrous; inflorescence of 3–12 racemes laxly borne on an axis 8–18 cm long; racemes 4–9 cm long with sessile spikelets 4–5 mm long, borne in 1–2 rows.

Ruderal; sandy or clayey edges of rivers, or depressions. A good forage plant.

Introduced in Canary isl.; Cape Verde isl.; W tropical Africa: Ivory Coast, Ghana, Burkina Faso, Cameroon, Congo?

Tropical American species from S N. America S-wards to Paraguay, Uruguay in S. America.

*Brachiaria grossa**Brachiaria jubata**Brachiaria lachnantha**Brachiaria lata* subsp. *lata**Brachiaria leersioides**Brachiaria lindiensis**Brachiaria longiflora**Brachiaria malacodes**Brachiaria mesocoma**Brachiaria mutica* (tentative)*Brachiaria nigropedata**Brachiaria oligobrachiata*

BRACHIARIA

B. platynota (K. Schum.) Robyns; Fl. Zambes. 10/3: 65, 1989; Lidia 5/5: 128, 2001. – Icon.: Robyns, Fl. agrostol. Congo Belge 2: 91, 1934; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 85, 1955; Troupin, Fl. Rwanda 4: 203, 1988; Lidia 5/1: 5, 2000. bas.: *Panicum platynotum* K. Schum.

syn.: *P. bifalcigerum* Stapf; *P. geometra* Chiov.; *Urochloa platynota* (K. Schum.) Pilg.; *U. bifalcigera* (Stapf) Stapf

Perennial tufted herb; basal sheaths silky hairy; culms 0.4–1 m tall, erect; leaf blades linear, 4–35 × 0.3–1 cm; inflorescence of 1–5 racemes on an axis 1–15 cm long; racemes 3–13 cm long, ± arcuate, bearing the spikelets singly on a ribbon-like membranous rachis 1–4 mm wide with scaberulous margins; spikelets c. 4 mm long.

Deciduous bushland; grassy savannas, savanna woodland; *Acacia* woodland; fallows; c. 840–2100 m alt.

Very important fodder grass grazed by all domestic animals.

Spikelets resembling *Urochloa* but lower glume clearly adaxial thus providing a link between the two genera.

B. psammophila (Welw. ex Rendle) Launert; Rendle, Cat. Welwitsch's Afric. pl. 2/1: 171–172, 1899 (under *Panicum*); Klaassen & Craven, Checklist grasses Namibia: 18, 2003. – Icon.: Mitt. Bot. Staatssamml. München 8: 161, 1970 (details).

bas.: *Panicum psammophilum* Welw. ex Rendle

syn.: *P. capense* Mez 1921, nom. illeg.; *Leucophrys psammophila* (Welw. ex Rendle) Dandy

Annual plant covered with a tawny pubescence 15–± 50 cm tall, varying greatly in habit according to the development of internodes, size of leaves, and density of inflorescence; culms often densely leaved; leaf blades narrowly lanceolate, c. 5–20 × 0.6–2 cm, tomentose, apex acute-acuminate; inflorescence narrow, 5–22 cm long, to c. 3 cm wide, of racemes arranged closely or laxly on the main axis; spikelets shortly stalked, crowded, covered with long ascending hairs, ovate, 3–5 mm long.

Rather damp sandy spots in littoral valley; sandy gravelly places near the sea, with *Stipagrostis prodigiosa*; common on sand-covered rocks near the sea with *Lycium* sp. and *Boraginaceae* (the only vegetation in the place); near sea-level.

Habit somewhat that of *Tricholaena*.

Near *B. glomerata* from Namibia and S. Africa, with spikelets only 2.5–3.5 mm long.

B. pubescens (Chiov.) S. M. Phillips, Kew Bull. 46: 536, 1991; Fl. Eth. & Eritrea 7: 228, 1995.

bas.: *B. serrifolia* (Hochst.) Stapf var. *pubescens* Chiov.

Perennial loosely tufted, short-lived perennial with basal buds; culms stiff, slender, 60–90 cm long, weakly ascending, sometimes rooting at lower nodes, much-branched, pubescent, nodes villous; leaves cauline, blades narrowly lanceolate, velvety-pubescent, to 25 × 0.7–1.5 cm, margins scaberulous; inflorescence of 5–7 divergent racemes spread along an axis 6–8 cm long; racemes 4–5.5 cm long bearing spikelets in loosely contiguous pairs along the villous triquetrous rachis; spikelets c. 4 mm long, pubescent, shortly acuminate.

Acacia-Commiphora bushland in shade at top of erosion gully; 800–1200 m alt.

Resembling *B. ovalis*, especially when the spikelets are almost glabrous. But *B. pubescens* forms a loose tuft with basal perennating buds.

BRACHIARIA

B. pungipes Clayton; Fl. Zambes. 10/3: 73, 1989.

Perennial densely tufted grass with silky pubescent basal sheaths; culms 50–80 cm tall; leaf blades linear, 3–10 × c. 0.2 cm, glabrous to sparsely hirsute; inflorescence of 5–10 racemes, these 1–2 cm long, bearing the spikelets singly in 1–2 rows on a villous triquetrous rachis; spikelets c. 3 mm long, turbinate, with a transverse fringe of hairs above.

Grassland on sandy soils; 1500 m alt.

The perennial counterpart of *B. turbinata* (annual, from Zaire); see Van der Veken in Bull. Jard. Bot. Brux. 28: 77–81, 1958.

B. ramosa (L.) Stapf, incl. var. *pubescens* Basappa & Muniy.; Fl. Zambes. 10/3: 78, 1989; van der Zon, Gramin. Cameroun 2: 274, 1992; Thulin, Fl. Somalia 4: 229, 1995; Boulos, Fl. Egypt 4: 297, 2005; Cope, Fl. Arab. Penins. 5/1: 211, 2007; Sánchez-Ken in Kew Bull. 62: 518, 2007 (in key); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 245, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Schmidt & al. in Phytotaxa 304: 45, 2017. – Icon.: Willdenowia 12: 289, 1982 (as *B. multispiculata*); Köhler in Cour. Forsch.-Inst. Senckenberg 186: 117, 1995 (Cape Verde Isl.); Poilecot, Boissiera 50: 403, 1995; idem, ibid. 56: 442, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 116, 2002; Ibrahim & al., Grasses Mali: 125, 2018 (as *Urochloa ramosa*); César & Chatelain, Fl. ill. Tchad: 232, 2019 (details).

bas.: *Panicum ramosum* L.

syn.: *P. arvense* Kunth; *P. petiveri* Trin., incl. var. *puberulum* Chiov.; *P. crus-galli* var. *petiveri* (Trin.) De Wild. & T. Durand; *P. brachylachnum* Steud.; *P. sorghum* Steud.; *P. breviradiatum* Hochst.; *P. supervacuum* C. B. Clarke; *P. nidulans* Mez; *P. bispiculatum* Chiov. 1908, pro syn.; *P. pallidum* Peter; *Brachiaria regularis* var. *nidulans* (Mez) Täckh.; *B. multispiculata* H. Scholz.; *Urochloa ramosa* (L.) T. Q. Nguyen; *U. supervacua* (C. B. Clarke) Noltie; *Echinochloa ramosa* (L.) Roberty; for further synonyms see World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew; and Köhler o. c.: 121, 125 (under *B. deflexa*).

Annual loosely tufted grass; culms decumbent, 0.1–1.5 m long; leaf blades ± linear, 2–25 × 0.4–1.4 cm; inflorescence of 3–15 racemes borne on an axis 3–10 cm long; racemes 1–8 cm long, simple or the longest with branchlets at base, bearing mostly paired loosely contiguous spikelets appressed to a triquetrous rachis; spikelets c. 3 mm long, glabrous or pubescent, acute.

Roadsides; old farmland; sandy, humid soils under shade; dry forests on lateritic plateaux; with *Dactyloctenium aegyptium*, *Chloris virgata*, *C. prieurii*, *C. gayana*; muddy sand; dry savanna seasonally inundated; savanna woodland; rocky slopes; coastal dunes; disturbed ground; irrigated cotton-fields and sugar-cane; seasonally water-filled lakes (Sahel; Müller in Syst. Geogr. Pl. 75: 245, 2005); 0–1200 m alt.

A variable grass lying at the centre of a cluster of closely related and intergrading annual species, characterised by their acute or cuspidate spikelets; the boundary is particularly indistinct between *B. ramosa* and *B. reflexa*, *B. xantholeuca* and *B. lata* (Fl. Eth. & Eritrea 7: 229, 1995).

Cape Verde Isl.; Egypt; S. Africa; Socotra, Arab. Peninsula; tropical & subtrop. Asia, from Afghanistan E-wards to India, Sri Lanka, Philippines, New Guinea; introduced in Madagascar, Mauritius, Australia, south. N. America.

The grain is edible and in parts of S India cultivated as a short season grain. Domesticated in S Asia during the 5th millennium BP, probably with 2 independent centres of domestication in S and NW India (García-Granero & al. in Veget. Hist. Archaeobot. 25: 304, 2016).

BRACHIARIA RAMOSA

Can be confused with *B. villosa* that has, however slightly smaller spikelets and leaves with cartilaginous serrate-undulate margins.

(**B. reptans** (L.) C. A. Gardner & C. E. Hubb.); Fl. Trop. E. Afr., Gramin. 3: 591–592, 1982; Fl. Zambes. 10/3: 75, 1989; van der Zon, Gramin. Cameroun 2: 269–270 (map), 1992; Thulin, Fl. Somalia 4: 228, 1995; Fl. Eth. & Eritrea 7: 225, 1995; Cope, Fl. Arab. Penins. 5/1: 214, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 246, 2010; Gereau & al., Lake Nyasa florist. checklist: 86, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Salama & al. in Taeckholmia 36: 65, 2016. – Icon.: Hooker's Icon. Pl. 34: pl. 3363, 1938; Fl. China 22, Ill.: 731, 2007 (under *Urochloa*); Boulos, Fl. Egypt 4: 452, 2005 (photo.); Fl. Mascareignes 203, Gramin.: 146, 2018.

bas.: *Panicum reptans* L.

syn.: *P. prostratum* Lam.; *P. sieberi* Link 1827, nom. superfl.; *P. brachythyrsum* Peter; *Brachiaria prostrata* (Lam.) Griseb.; *Echinochloa reptans* (L.) Roberty; *Urochloa reptans* (L.) Stapf; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual herb; culms usually decumbent, ascending, 15–60 cm long, rooting at (lower) nodes; leaf blades ± lanceolate, 2–8 × 0,3–1,5 cm; inflorescence of 5–15 racemes on an axis 1–8 cm long; racemes 1–4 cm long bearing paired spikelets crowded on a triquetrous rachis; spikelets 1,5–2,2 mm long, globose.

Roadsides, weedy places, disturbed ground; weed of cultivation, fallows; irrigated land (Somalia); miombo woodland (S. Tanzania); 0–1200 m alt.

Native of tropical Asia, Saudi Arabia, Yemen, Afghanistan E-wards to China, New Guinea, Australia, Pacific Islands; introduced in Africa [Egypt, Benin, Togo, SW & N Cameroon, S Somalia, Ethiopia (to be expected), SE Sudan, E Tanzania incl. Zanzibar, S Mozambique]. Also introduced in S N. America, C. & S. America, West Indies.

B. reticulata Stapf; Fl. Trop. Afr. 9: 522, 1919; Renier, Flore Kwango: 37, 1948; Sosef in Pl. Ecol. Evol. 149: 361, 2016.

syn.: *B. nana* Vanderyst, Bull. Agric. Congo Belge 10: 244, 1919, non Stapf 1916 (Madagascar); *Urochloa reticulata* (Stapf) Sosef

Annual (always ?) loosely tufted herb 15–45 cm tall; culms ascending from a geniculate and often prostrate many-noded base, very slender, glabrous, branched, branches often gathered in fascicles; leaves crowded above the base or ± evenly distributed; leaf blades ± lanceolate, 2–12 × 0,5–1 cm, glabrous; inflorescence shortly exserted of 1–3 suberect or oblique secund sessile spiciform racemes; racemes 1–3,5 cm long, bearing spikelets ± contiguous on a flattened rachis to 1 mm wide with a wavy or almost straight prominent keel; spikelets subcontiguous if 1-seriate, otherwise discontinuous.

Sand banks; savanna; overgrazed places; sometimes abundant.

B. rugulosa Stapf; Fl. Zambes; 10/3: 69, 1989.

syn.: *B. umboensis* Stent & J. M. Rattray; *Urochloa rugulosa* (Stapf) Sosef, Pl. Ecol. Evol. 149: 361, 2016.

Tufted *perennial*; culms 0,5–1 m tall; leaf blades 5–30 × 0,2–1 cm; inflorescence of 2–12 racemes on an axis 3–20 cm long; racemes 2–10 cm long, bearing spikelets singly on a narrow winged rhachis with *ciliate* margins; spikelets 2,8–3,5 mm long, glabrous, acute. Streamsides; soils with impeded drainage; 0–1900 m alt.

Near *B. arrecta* but rhachis margins ciliate, or tuberculate-ciliate.

BRACHIARIA

[**B. schoenfelderi** C. E. Hubb. & Schweick.]; Müller, Grasses Namibia: 84–85, 2007 (with ill.).

syn.: *Moorochloa schoenfelderi* (C. E. Hubb. & Schweick.) Veldkamp

An annual open-tufted grass, usually hairy, with inflorescence to 35 cm long of spike-like racemes in pairs, each to 3,5 cm long and densely silky-hairy spikelets.

A pioneer grass growing in damp places in N Namibia.

Cited in Fl. Zambes. 10/3: 74, 1989, from Angola, as similar to *B. eruciformis*. This geographical indication is doubtful.

B. semiundulata (Hochst. ex A. Rich.) Stapf, incl. var. *intermedia* Basappa & Muniy and var. *lanata* Basappa & Muniy.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 88, 1955; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Sosef in Pl. Ecol. Evol. 149: 361, 2016 (typification). – Icon.: Troupin, Fl. Rwanda 4: 205, 1988; Fl. Eth. & Eritrea 7: 223, 1995; Agnew, Field key upl. Kenya grasses: pl. 6/2, 2006 (part, raceme); idem, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; Fl. China 22, Ill.: 729, 2007.

bas.: *Panicum semiundulatum* Hochst. ex A. Rich.

syn.: *Urochloa semiundulata* (Hochst. ex A. Rich.) Ashalantha & V. J. Nair

Annual delicate loosely tufted herb; culms 5–45 cm long, ascending, branching at lower nodes; leaf blades lanceolate-ovate, 1–4 × 0,2–1,5 cm, margins crinkle-serrate, cartilaginous; inflorescence of 3–18 racemes on an axis 1–7 cm long; racemes 0,5–2,3 cm long, bearing single spikelets (rarely clusters of 2–several at base of longer racemes) in 2 compact rows on a triquetrous rachis; spikelets plump, overlapping, *almost hemispherical*, 1,5–2 mm long, glabrous to pubescent.

Common in disturbed bushland and grassland; rocky slopes in bushland and grassland, in the open or in shade; gallery forest; fallow lands; arable weed; *Myrica* vegetation islet; 1100–2600 m alt.

Indian subcontinent, Sri Lanka, S China (Yunnan), Hainan.

Difficult to distinguish from poor forms of *B. comata* and *B. villosa* (Sosef, l. c.).

B. serrata (Thunb.) Stapf, incl. var. *gossypina* (T. Durand & Schinz) Stapf; van der Zon, Gramin. Cameroun 2: 267–268, 1992; Thulin, Fl. Somalia 4: 226, 1995; Lye & al. in Lidia 4: 159, 2000; Klaassen & Craven, Checklist grasses Namibia: 18, 2003; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Schmidt & al. in Phytotaxa 304: 45, 2017. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 63, 1990; Fl. Eth. & Eritrea 7: 223, 1995; Poilecot, Boissiera 50: 395, 1995; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 249, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013.

bas.: *Holcus serratus* Thunb.

syn.: *Sorghum serratum* (Thunb.) Roem. & Schult.; *Panicum serratum* (Thunb.) Spreng., incl. var. *brachylophum* (Stapf) A. Chev., var. *gossypinum* T. Durand & Schinz, var. *holosericeum* T. Durand & Schinz, and var. *hirtum* Kuntze; *P. scopuliferum* Trin.; *P. gossypinum* A. Rich. 1850, nom. illegit.; *P. andongense* Rendle; *P. nigropedatum* Ficalho & Hiern var. *basipiliferum* Chiov.; *P. brachylophum* (Stapf) A. Chev.; *Brachiaria andongensis* (Rendle) Stapf; *B. brachylopha* Stapf; *Eriochloa purpurascens* Hochst. ex A. Rich.; *Tricholaena abbreviata* K. Schum. 1894, nom. nud.; *Urochloa serrata* (Thunb.) Sosef, Pl. Ecol. Evol. 149: 361, 2016.

Perennial densely tufted grass with a small shrub-like growth form; culms 0,15–1 m tall, with silky tomentose leaf sheaths; blades

BRACHIARIA SERRATA

lanceolate, 5–25 × 0,2–1 cm, glabrous to softly pilose, tip sharp, margins thickened, serrate; inflorescence of 5–15 racemes on an axis 3–15 cm long; racemes 0,5–2 cm long, compact, bearing the spikelets singly on a triquetrous rachis; spikelets 2,3–4,5 mm long, covered with *velvety pink or silvery hairs* 1–2,5 mm long. Deciduous bushland; wooded grassland; open scrubland; woodland clearings; dry, rocky, sandy or gritty soils; also sandy-clayey soils; with *Panicum phragmitoides*, *P. nervatum*, *Monocymbium cerasiiforme*, *Hyparrhenia smithiana*, *H. subplumosa*, *H. diplandra*, *Loudetia simplex*...; termite mounds; often ruderal; near sea-level–2500 m alt.

Namibia, Botswana, S. Africa, Swaziland.

Var. *gossypina* is a variety with a creeping growth form and short spiky leaves.

Easily recognisable by its thick basal clusters of velvety leaf sheaths and by its attractive pink fringed spikelets.

B. serrifolia (Hochst.) Stapf, excl. var. *pubescens* Chiov. (= *B. pubescens*); van der Zon, Gramin. Cameroun 2: 267–268, 1992; Lye & al. in Lidia 4: 159, 2000; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015. – Icon.: Fl. Zambes. 10/3: 77, 1989; Fl. Eth. & Eritrea 7: 226, 1995 (spikelet); Poilecot, Boissiera 56: 435, 1999; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; César & Chatelain, Fl. ill. Tchad: 231, 2019 (details).

bas.: *Panicum serrifolium* (“serraefolium”) Hochst.

syn.: *Urochloa serrifolia* (Hochst.) Zon (Blumea 64: 215, 2019).

Annual herb; culms 0,3–1 m tall; leaf blades lanceolate, 5–25 × 0,8–2,5 cm, base cordate to clasping, margins cartilaginous, *serrately crinkled*; inflorescence of 3–14 racemes, ascending or appressed to an axis 5–20 cm long; racemes 3–10 cm long, bearing paired loosely contiguous spikelets on a narrow stiff triquetrous rachis; spikelets 4–5 mm long, glabrous.

Wooded savannas with *Sclerocarya birrea* on sandy soils; deciduous bushland especially *Acacia*, *Commiphora*, in light shade; sands; humid soils; disturbed places in savanna woodland; 400–1800 m alt.

B. stefaninii Chiov.; Thulin, Fl. Somalia 4: 227, 1995.

syn.: *Panicum stefaninii* Chiov. 1928, pro syn.

Perennial densely tufted grass to 40 cm tall, profusely branched above a thick woody base; culms erect; basal leaf sheaths velvety-pubescent; blades ± lanceolate, 2–7 cm × 2–4 mm, *glaucous*, *rigid*, *conspicuously distichous*, *margins thickened*; inflorescence of 2–4 racemes on an axis 2–5 cm long; racemes 1–1,5 cm long, bearing spikelets singly on a glabrous or puberulous triquetrous rachis; spikelets 3–4 mm long, villous.

Limestone pavement; sandy plains; c. 300 m alt.

B. stigmatisata (Mez) Stapf; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 195, 1994; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 247, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Schmidt & al. in Phytotaxa 304: 45, 2017. – Icon.: van der Zon, Gramin. Cameroun 2: 261–262, 1992; Poilecot, Boissiera 50: 379, 1995; idem, ibid. 56: 432, 1999; Ibrahim & al., Grasses Mali: 126, 2018 (under *Urochloa*); César & Chatelain, Fl. ill. Tchad: 231, 2019.

bas.: *Panicum stigmatissatum* Mez

syn.: *Urochloa stigmatisata* (Mez) Ibrahim & P. M. Peterson in Ibrahim & al., Grasses of Mali: 126, 2018.

Annual ± prostrate stoloniferous grass (in open sites forming a turf) 25–70 cm tall; culms geniculate-ascending, rooting at lower

BRACHIARIA STIGMATISATA

nodes, glabrous; leaf blades ± lanceolate, 5–15–20 × 0,8–1,2 cm, flat, rigid, glabrous, margins *cartilaginous*, *minutely spinescent*; inflorescence of 1–6 racemes on an axis 4–7 cm long; racemes 2–6 cm long, loosely disposed, bearing spikelets in 1–2 rows on a *narrow* rachis; spikelets 4–5 mm long, often purple tinted, glabrous.

Disturbed ground; flooded plains; along paths; fallows; dunes; grazed savanna on sandy or rocky soils; pools on rocks, inselbergs (Porembski & Brown in Candollea 50: 357, 1995); growing with *Sporobolus pyramidalis*, *Eragrostis turgida*, *Microchloa indica*, *Vetiveria fulvibarbis*, *Andropogon fastigiatus*, *Ctenium newtonii*; invasive weed.

(**B. subquadripa** (Trin.) Hitchc.) – See above under **B. distachya**. – Introduced grass.

B. subulifolia (Mez) Clayton; Gibbs Russell & al., Grasses south. Afr.: 68, 1990. – Icon.: Fl. Zambes. 10/3: 67, 1989.

bas.: *Panicum subulifolium* Mez

syn.: *Brachiaria filifolia* Stapf; *Urochloa subulifolia* (Mez) A. M. Torres & C. M. Morton

Perennial densely tufted herb; culms 0,2–1 m tall; leaf blades *filiform*, *subterete*, 5–20 cm long, 1 mm Ø; inflorescence of 1–4 racemes on an axis 1–5 cm long; racemes 1–3 cm long, bearing the spikelets singly on a triquetrous rachis with ciliate white or yellow hairs; spikelets 3–4 mm long, pubescent.

Damp soils; margins of lakes and dambos, streamsides; often in peaty bogs; 930–2600 m alt.

S. Africa.

According to Fl. Trop. Afr. 9: 517, 1919, some inflorescences collected by Rogers (10387) at Baya in Katanga (11°52’S × 27°28’E) seem to belong to *B. subulifolia* (marked ? on our map).

B. turbinata Van der Veken – Icon.: Bull. Jard. Bot. Etat, Bruxelles 28: 79, 1958.

syn.: *Urochloa turbinata* (Van der Veken) Sosef, Pl. Ecol. Evol. 149: 362, 2016.

Annual slender herb to 40 cm tall; culms simple or divided at base, glabrous; leaf blades ± lanceolate, flat, 2,5–9 × 0,5–1 cm, margins cartilaginous, spinescent; inflorescence narrow, of 5–10 racemes on an axis to 9 cm long; racemes dense, 1–2 cm long, bearing the spikelets singly on a triquetrous pubescent rachis; *spikelets turbinate*, 3 mm long, silvery hairy.

Sand on sandstone.

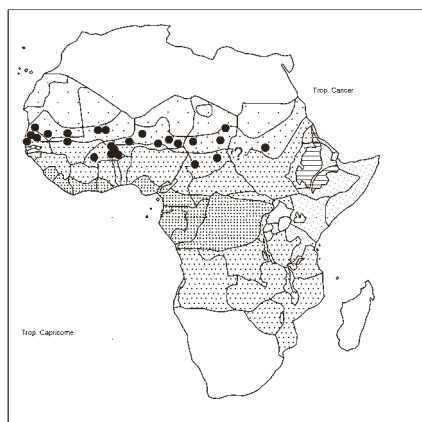
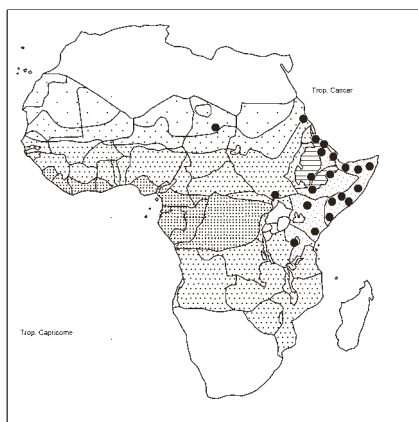
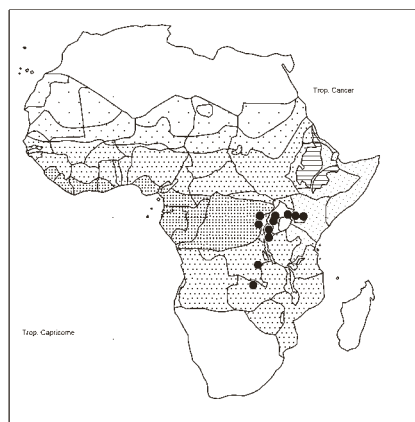
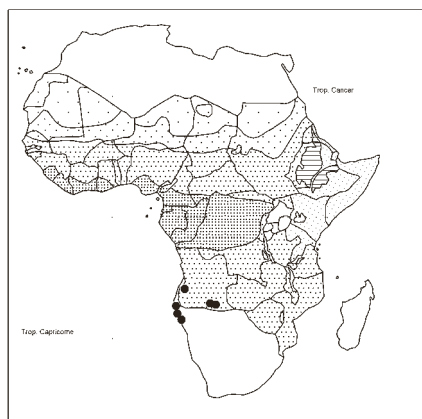
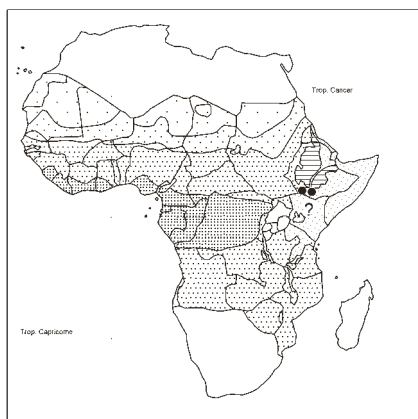
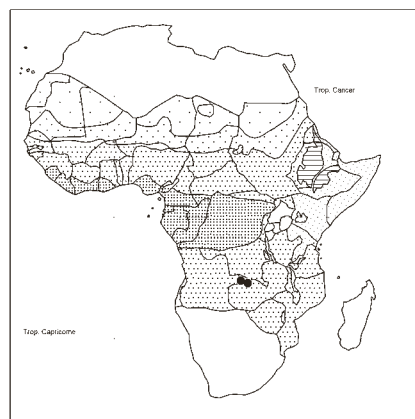
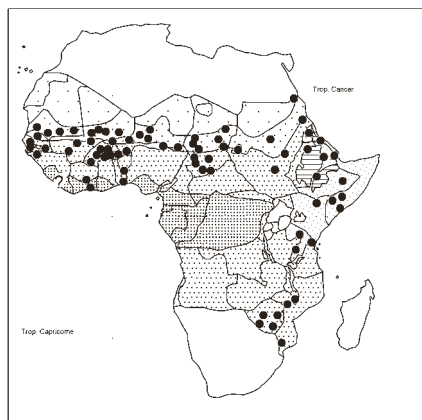
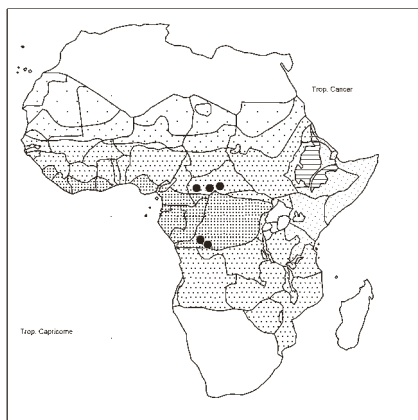
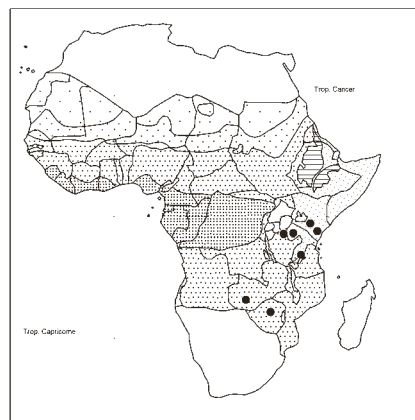
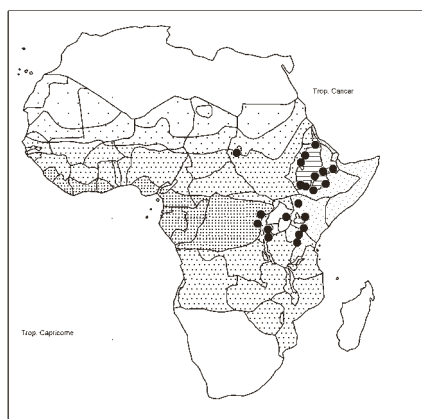
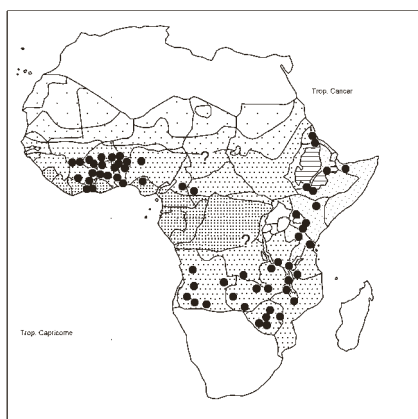
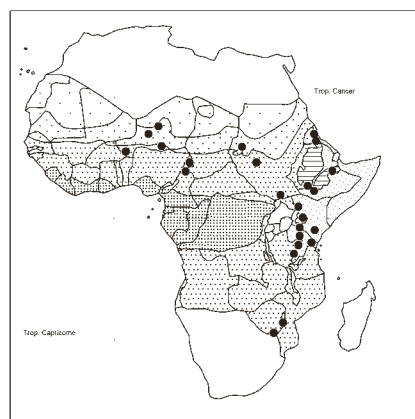
Closely related to *B. serrata*, a perennial densely tufted plant with longer leaf blades (5–25 cm), and spikelets not turbinate.

According to Sosef (l. c.) several collections from near Kolwesi (Haut-Katanga, Zaire) represent a perennial form with narrower leaves; and others show less turbinate spikelets and less long hairs on the pedicels. Further study is needed to assess the taxonomic status of these forms and, eventually, this species.

Known only from the type collected in 1954 (the “typical” annual form).

B. umbellata (Trin.) Clayton, Kew Bull. 34: 559, 1980; Fl. Zambes. 10/3: 74–75, 1989; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 146, 2006. – Icon.: Bosser, Gramin. pâtre. cult. Madagascar: 332, 1969; Fl. Mascareignes 203, Gramin.: 125, 2018.

bas.: *Panicum umbellatum* Trin.

*Brachiaria orthostachys**Brachiaria ovalis**Brachiaria platynota**Brachiaria psammophila**Brachiaria pubescens**Brachiaria pungipes**Brachiaria ramosa**Brachiaria reticulata**Brachiaria rugulosa**Brachiaria semiundulata**Brachiaria serrata**Brachiaria serrifolia*

BRACHIARIA UMBELLATA

syn.: *P. umbellatum* subsp. *nossibense* (Steud.) A. Camus; *P. nossibense* Steud.

Perennial sward-forming grass; culms procumbent, c. 10 cm tall; leaf blades $\pm$ lanceolate, $1-3 \times 0.2-0.6$ cm; inflorescence ovate, of 4–8 closely spaced racemes on an axis 0.5–2 cm long; racemes 0.5–3 cm long, *bare at base*, bearing the spikelets singly on a triquetrous pilose rachis; spikelets 1.5–2 mm long, glabrous.

In shade of trees; locally dominant; 0–1600 m alt.

Madagascar and other W Indian Ocean islands.

Introduced to southern Africa. Planted as a lawn grass and as a cover plant in tea gardens; also an escape in forest clearings.

B. umbratilis Napper; Lye & al. in Lidia 4: 159, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 435, 2013.

Perennial rhizomatous grass with a hard knotty rootstock; basal leaf sheaths tomentose; culms 0.3–1 m long, wiry, rambling; leaf blades broadly linear, $4-10 \times 0.3-1$ cm, margins cartilaginous; inflorescence of 5–10 racemes on an axis 3–10 cm long; racemes 1–5 cm long with a pubescent triquetrous rachis, bearing spikelets paired or on short side-branches or borne singly near the raceme tip; spikelets c. 3 mm long, glabrous or pubescent.

Shallow rocky soils in moist places; among rocks on bare hills; edge of forest patches or under high rainfall conditions in the open; 800–2000 m alt.

Very rare in Uganda, known from one locality only; possibly extinct (Lye & al., l. c.).

Very near *B. comata*, which is, however, perennial and has smaller spikelets (c. 2 mm).

B. uzondoiensis Sánchez-Ken – Icon.: Kew Bull. 62: 517, 2007.

Annual grass 60–70 cm tall; whole plant densely shortly tuberculate-pilose, almost velvety; culms *geniculately ascending*, wiry, rambling, profusely branching above, rooting at lower nodes; leaf blades lanceolate, $3.5-6 \times 0.5-1$ cm, flat, *base rounded*, margins cartilaginous; inflorescence a panicle of racemes, terminal and axillary, peduncle with 3–5 *ascending* racemes; the lowermost racemes 2.5–3 cm long, alternate, sometimes naked at base, with *few* loosely distant spikelets; rachis triquetrous with *few distant* paired, rarely triads or solitary *spikelets*; these c. 3.5 mm long.

Rocky outcrops with small seepage area; 1550 m alt.

Known only from the type collected in 2006.

Near *B. ramosa* and *B. villosa*.

B. villosa (Lam.) A. Camus, incl. var. *barbata* Bor, var. *glaberrima* Basappa & Muniy., var. *glabrata* S. L. Chen & Y. X. Jin, var. *glabriglumis* Ohwi, and fa. *glabriglumis* (Ohwi) Ohwi; Renier, Fl. Kwango 1: 38, 1948 (as *B. distichophylla*); Veldkamp in Blumea 41: 431–432, 1996 (under *Urochloa*); Sánchez-Ken in Kew Bull. 62: 518, 2007 (in key); Lisowski, Fl. Rép. Guinée 1: 452, 2009; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 233, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Schmidt & al. in Phytotaxa 304: 45, 2017. – Icon.: Bol. Soc. Brot., Ser. 4, 44: pl. I after p. 277, 1990; van der Zon, Gramin. Cameroun 2: 271, 1992; Poilecot, Boissiera 50: 397, 1995; idem, ibid. 56: 438, 1999; Fl. Gabon 5b: 65, 1999 (under *Urochloa*); Fl. China 22, Ill.: 729, 2007; César & Chatelain, Fl. ill. Tchad: 233, 2019 (details).

bas.: *Panicum villosum* Lam.

syn.: *P. distichophyllum* Trin.; *P. serrulatum* Schumach.; *P. viviparum* Schumach.; *P. despreauxii* Steud.; *P. pauperulum* Steud.; *Brachiaria distichophylla* (Trin.) Stapf;

BRACHIARIA VILLOSA

Urochloa villosa (Lam.) T. Q. Nguyen; further synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual loosely tufted or creeping grass; culms 10–50 cm long, usually rooting at nodes; leaf blades $\pm$ lanceolate, $1-7 \times 0.2-1$ cm, base rounded, margins scaberrulous to spinulose; inflorescence of 5–12 racemes on an axis 3–7 cm long; racemes alternate or *secund*, 1–4 cm long, bearing single or paired spikelets (sometimes short side branchlets at base of longer racemes) on a $\pm$ pubescent triquetrous rachis; *spikelets* 2–2.8 mm long, glabrous or pubescent, sometimes with a short transverse fringe of hairs near tip.

Weedy places; sandy soils of fallows, along ways; degraded soils; ruderal with *Setaria pumila*, *Eragrostis turgida*, *Digitaria longiflora*, *D. horizontalis*, *Sporobolus pyramidalis*, etc.; savannas with dunes and on ferruginous, washed soils with *Andropogon gayanus*, *Aristida mutabilis*, *A. sieberiana*, *Panicum nigerense*, *Cymbopogon gigantea*, *Digitaria gayana*, etc.; sandy- or sandy-clayey soils with *Aristida mutabilis*, *Eragrostis tremula*, *Cenchrus biflorus*, *Tetrapogon cenchroides*; dry sandy soils; cultivated ground; shady ravines; sometimes forming dense mats; troublesome in fields of maize, millet, ground-nuts (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 195, 1994); inselbergs (Porembski & Brown, Candollea 50: 357, 1995; Parmentier & al., Belg. J. Bot. 139: 74, 2006, as *B. distichophylla*); termite mounds in savanna (Kirchmaier & al., Flora & Veget. Sudano-Sambes. 15: 13, 2012); near sea-level–1200 m alt.

Cape Verde Isl.; trop. & subtrop. Asia from India to China, Japan, Indonesia, Philippines. – Its distribution (Old World tropics) omitting E Africa, is unusual but recalls that of *Phragmites karka* (Retz.) Steud. (Fl. Trop. E. Afr., Gramin. 3: 593, 1982).

Very rare in Uganda, last collection 1943 (Lye & al. in Lidia 4: 159–160, 2000).

Grain collected as a famine-food.

Close to *B. uzondoiensis*, *B. ramosa*. According to Sosef (Pl. Ecol. Evol. 149: 362, 2016) the distinction between poor forms of *B. comata* and *B. villosa* is difficult. The only difference between the two species seems to be the clasping lower glume in *B. villosa*, lower margins of the lower glume running vertical and touching each other or even $\pm$ overlapping; whereas in *B. comata* this glume is not clasping (i. e., margins diverging right from the base).

In *B. comata* the lower floret can be male or sterile, while in *B. villosa* it is always sterile.

B. wittei Robyns; Sosef in Pl. Ecol. Evol. 149: 362, 2016.

syn.: *Urochloa wittei* (Robyns) Sosef

Annual grass procumbent at base, rooting at nodes; culms geniculate-ascending, 30–40 cm long, very ramose at base; leaf blades linear-lanceolate, $2-6 \times 0.3-0.7$ cm, $\pm$ rounded at base; inflorescence erect, 5–7 cm long, of 5–6 erect, $\pm$ appressed racemes; these sessile, dense, villous, to 1.5–2 cm long, in 2 rows on a flattened rachis long-ciliate with *purplish hairs*; spikelets contiguous, c. 3.5 mm long, woolly, generally with purplish hairs.

Ecology not recorded.

Near *B. serrata*, a perennial plant with triquetrous rachis bearing singly set spikelets, these with a transverse fringe of pink or silvery hairs near apex.

B. xantholeuca (Hack. ex Schinz) Stapf – This species comprises 2 vars. treated as 2 distinct species in earlier floras and flora lists, viz., *B. xantholeuca* (present throughout tropical Africa), and *B. leucacantha* restricted to E Africa (cf. Sosef in Pl. Ecol. Evol. 149: 362, 2016). – Robyns & Tournay, Fl. spermat. Parc

BRACHIARIA XANTHOLEUCA

Natl. Albert 3: 88, 1955; Gibbs Russell & al., Grasses south. Afr.: 68, 1990; van der Zon, Gramin. Cameroun 2: 268, 1992; Thulin, Fl. Somal. 4: 228, 1995 (*B. leucacrantha*); Fl. Eth. & Eritrea 7: 229, 1995 (idem & *B. xantholeuca*); Köhler in Cour. Forsch.-Inst. Senckenberg 186: 119, 1995; Klaassen & Craven, Checklist grasses Namibia: 18, 2003; Cope, Fl. Arab. Penins. 5/1: 210, 2007 (both spp.); Agnew, Upl. Kenya wild flow., ed. 3: 435, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015; Schmidt & al. in Phytotaxa 304: 45, 2017. – Icon.: Scholz in Willdenowia 8: 385, 1978 (spikelet); Poilecot, Boissiera 56: 436, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 269, 2012 (inflorescence); César & Chatelain, Fl. ill. Tchad: 232–233, 2019 (details).

bas.: *Panicum xantholeucum* Hack. ex Schinz

syn.: *Urochloa xantholeuca* (Hack. ex Schinz) H. Scholz (see below under the subsp.).

Annual tufted herb, all parts *velvety pubescent*; culms 10–60 cm long, often prostrate-ascending, rooting at nodes; leaf blades $\pm$ linear, 2–15 $\times$ 0.2–1 cm; inflorescence of 2–8 racemes, borne on an axis 2–10 cm long; racemes 1–7 cm long, bearing closely contiguous spikelets in 1 or 2 rows on a triquetrous rachis; spikelets 2–5 mm long (rarely glabrous).

Deciduous and coastal bushland; often on sandy soils in disturbed places; open *Commiphora* bushland on red or orange sand; grassland or clearings in *Acacia* woodland, especially on black clay soils; open deciduous bushland; often in disturbed or weedy or overgrazed places; sandy soils; wadi beds; with *Aristida adscensionis*, *Cenchrus biflorus*, *Tragus berteronianus*, *Eragrostis tremula*, *Dactyloctenium aegyptium*; wooded savannas on red ferrallitic soils with *Hyparrhenia involucreata*, *Diheteropogon amplexens*, *Andropogon gayanus*, *Setaria pumila*, *Brachiaria lata*; weed in cultivations (*Sorghum* etc.); 0–1900 m alt.

A diagnostic species of the *Eragrostio pilosae-Echinochloetum colonsae* association (Wittig in Etudes flor. vég. Burkina Faso 9: 12, 2005).

Cape Verde Isl.; Namibia, Botswana, S. Africa; Saudi Arabia.

Comprises 2 vars.: – subsp. **xantholeuca** [syn.: *P. distichophylloides* Mez; *P. pubifolium* Mez 1904, nom. illeg., non Nash 1899; *P. anisotrichum* Mez; *Brachiaria pubifolia* Stapf; *B. ukambensis* Henrard, nom. superfl.], distributed throughout tropical Africa; – subsp. **leucacrantha** (K. Schum.) ined. [bas.: *Urochloa leucacrantha* K. Schum.; syn.: *U. xantholeuca* (Hack. ex Schinz) H. Scholz var. *leucacrantha* (K. Schum.) Sosef (Pl. Ecol. Evol. 149: 362, 2016)]; Fl. Zambes. 10/3: 76, 78, 1989; Thulin, Fl. Somal. 4: 228, 1995; restricted to E Africa; the spikelets are more strongly acuminate than those of the typical var., and carry 2 hair tufts. Can be confused with *B. villosa* (with smaller spikelets), *B. ramosa* (spikelets mostly paired and less pungent at tip).

SYNONYMS:

Brachiaria andongensis (Rendle) Stapf = **Brachiaria serrata**
bequaertii Robyns = **B. eminii**
bomaensis Vanderyst = **B. jubata**
brachylopha Stapf = **B. serrata**
brizantha (A. Rich.) Stapf var. *angustifolia* Stent & J. M. Rattray = **B. brizantha**
bulawayensis (Hack.) Henrard = *Urochloa oligotricha*
callopus (Pilg.) Stapf = **Echinochloa callopus**
clavulisetia Chiov. = **Brachiaria deflexa**
comorensis (Mez) A. Camus = **Panicum comorense**
coronifera Pilg. = **Brachiaria comata**
decumbens Stapf, incl. var. *ruziziensis* (R. Germ. & C. M. Evrard) Ndab. = **B. eminii**

BRACHIARIA

dictyoneura (Fig. & De Not.) Stapf subsp. *humidicola* (Rendle) Catasús = **B. dictyoneura**
distachya (L.) Stapf var. *brevifolia* E. G. Camus & A. Camus = **B. distachya**

distichophylla (Trin.) Stapf = **B. villosa**
distichophylla sensu Cufod. 1969, non (Trin.) Stapf = **B. leersioides**

epaleata Stapf = **B. comata**

filifolia Stapf = **B. subulifolia**

fulva Stapf = **B. jubata**

gangangalaensis Vanderyst 1919, 1925 = **B. brizantha**

glauca Stapf = **B. ovalis**

glycerioides Chiov. = **Acroceras amplexens**

hagerupii Hitchc. = **Brachiaria orthostachys**

heterocraspeda (Peter) Pilg. = **B. comata**

hians Stapf = **B. bovonei**

hubbardii A. Camus, incl. var. *halophila* A. Camus = **Acroceras hubbardii**

humidicola (Rendle) Schweick. = **Brachiaria dictyoneura**

hybrida Basappa & Muniy. = **B. distachya**

interstipitata Stapf = **B. oligobrachiata**

isachne (Roth) Stapf = **B. eruciformis**

keniensis Henrard = **B. dictyoneura**

kotschyana (Hochst. ex Steud.) Stapf = **B. comata**

latifolia Stapf = **B. arrecta**

longifolia Gilli = **Echinochloa colona**

manzonzoensis Vanderyst = **Brachiaria brizantha**

melanotyla (Hack.) Henrard = **B. nigropedata**

miliiformis (J. Presl) Chase = **B. distachya**

multispiculata H. Scholz = **B. ramosa**

nana Vanderyst 1919, non Stapf 1919 = **B. reticulata**

numidiana (Lam.) Henrard = **B. mutica**

obtusiflora (Hochst. ex A. Rich.) Stapf

= **Echinochloa rotundiflora**

obvoluta Stapf = **Brachiaria dictyoneura**

pilgeriana H. Scholz = **B. comata**

platyrhachis Chiov. 1923 = **B. oligobrachiata**

platytaenia Stapf = **B. oligobrachiata**

poaeoides sensu Cufod. 1969, non Stapf 1919

= **B. eruciformis**

poioides (“poaeoides, pooides”) = **B. malacodes**

pubifolia Stapf = **B. xantholeuca**

purpurascens (Raddi) Henrard = **B. mutica**

radicans Napper = **B. arrecta**

rautanenii (Hack.) Stapf = **B. dictyoneura**

regularis (Nees) Stapf = **B. deflexa**

regularis var. *nidulans* (Mez) Täckh. = **B. ramosa**

rovumensis (Pilg.) Pilg. = **Eriochloa royumensis**

ruziziensis R. Germ. & C. M. Evrard = **Brachiaria eminii**

sadinii Vanderyst = **Panicum sadinii**

scalaris (Mez) Pilg. = **Brachiaria comata**

secernenda (Hochst. ex Mez) Henrard = **B. comata**

serriifolia (Hochst.) Stapf var. *pubescens* Chiov.

= **B. pubescens**

soluta Stapf = **B. jubata**

somalensis C. E. Hubb. = **B. ovalis**

squarrosa (Peter) Clayton = **Panicum peteri**

stapfiana Basappa & Muniy. = **Brachiaria deflexa**

stipitata C. E. Hubb. = **Echinochloa callopus**

stolonifera Gooss. = **Urochloa trichopus**

subquadripara (Trin.) Hitchc., incl. var. *hirsuta* Jansen,

var. *miliiformis* (J. Presl) S. L. Chen & Y. X. Jin, and

var. *pubescens* Jansen = **Brachiaria distachya**

ukambensis Henrard = **B. xantholeuca**

umboensis Stent & J. M. Rattray = **B. rugulosa**

verdickii Robyns = **Echinochloa callopus**

BRACHIARIA

viridula Stapf = **Brachiaria bovonei**
vittata Stapf = **B. oligobrachiata**
xantholeuca sensu Fl. W. Trop. Afr., ed. 2, 3/2: 44, 1972,
 p. p. non (Hack. ex Schinz) Stapf = **B. orthostachys**

BRACHYACHNE / 5

Cynodon sect. *Brachyachne* Benth. 1883.

According to Kellogg in Kubitzki (Families & genera vascular plants 13: 386, 2015), a genus of 10 species in wet areas of tropical Africa, SE Asia, Australia. Very close to *Chrysochloa* and *Microchloa*.

syn.: *Micrachne* P. M. Peterson, Romasch. & Y. Herrera, Taxon 64: 459, 2015.

Maintained on generic level by Christenhusz & al., Plants of the World: 209, 2017, with 5 species in C & E Africa.

“*Micrachne* differs from *Cynodon* sect. *Brachyachne* Benth. in having golden brown to bronze spikelets... bearing a rachilla extension, glumes that completely enclose the floret, and the lower glume being slightly asymmetrical”. – The non-African species of *Brachyachne* are placed in *Cynodon* by P. M. Peterson (Taxon 64: 458, 2015).

For one species, viz. *B. pilosa*, the caryopsis is unknown.

Brachyachne fulva Stapf; Van der Veken in Bull. Jard. Bot. Etat, Brux. 28: 86–87, 1958 (incl. *B. kundelungensis*); Fl. Zambes. 10/2: 242, 1999. – Icon.: Hooker’s Icon. Pl. 31: pl. 3099, 1922; Fl. Trop. E. Afr., Gramin. 2: 312, 1974; Burrows & Willis, Pl. Nyika Plateau, Malawi: 340, 2005.

syn.: *B. fibrosa* C. E. Hubb.; *B. kundelungensis* Van der Veken; *Microchloa fibrosa* (C. E. Hubb.) Pilg. (no basionym ref.); *Micrachne fulva* (Stapf) P. M. Peterson (l. c.).

Perennial densely tufted grass; basal leaf sheaths persistent, splitting into a *cushion* of densely pilose fibres; culms stout, erect or geniculate at base, 15–70 cm long, 1–1,5 mm Ø (at base); leaf blades ± setaceous, 3–25 cm × 1–3 mm; inflorescence of 2–7 digitate 1-sided *racemes*, stout, 1,5–8 cm long, erect or spreading; spikelets 1-flowered, 3,3–5,5 mm long, bronze coloured.

Grassland, usually amongst rocks, rocky slopes; in thin soil on flat bare rock; shallow soil overlying laterite; seasonally wet places over shallow soils; natural meadow on sand; sandy dambos; 1000–2130 m alt.

B. obtusiflora (Benth.) C. E. Hubb.; Van der Veken (1958): 85; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 247, 2011; Schmidt & al. in Phytotaxa 304: 46, 2017. – Icon.: Poilecot, Boissiera 50: 179, 1995; Fl. Zambes. 10/2: 241, 1999; César & Chatelain, Fl. ill. Tchad: 204, 2019 (details).

bas.: *Microchloa obtusiflora* Benth.

syn.: *M. obtusiflora* var. *minor* Rendle; *Micrachne obtusiflora* (Benth.) P. M. Peterson (l. c.).

Annual herb; culms slender, 25–30 cm long, erect or geniculate ascending, leafy throughout; leaf blades 0,5–5 cm long, ± subulate; inflorescence a solitary *raceme* 1–10 cm long; spikelets 2–3 mm long.

In shallow peaty soil over exposed rock on granite outcrops; in shallow soil in laterite pans; often in shallow water; in crevices and on ironstone outcrops; inselbergs (Parmentier & al. in Belg. J. Bot. 139: 74, 2006); 425–1350 m alt.

BRACHYACHNE OBTUSIFLORA

Microchloa obtusiflora var. *minor* was described by Rendle, Welwitsch’s Afric. pl. 2/1: 220, 1899, as a small form c. 9–22 cm high with slender flexuose hair-like stem with basal leaves c. 1,2–1,8 cm long, 0,5 mm wide, and spike < 2,5 cm long, from Angola, Humpata Plateau, “where Welwitsch was attacked by three lions, end of Jan. 1860”. – This variety is not cited by P. M. Peterson (Taxon 64: 458, 2015).

B. patentiflora (Stent & J. M. Rattray) C. E. Hubb.; Van der Veken (1958): 85–86 (incl. *B. upembaensis*); Fl. Zambes. 10/2: 240, 242, 1999. – Icon.: Gibbs Russell & al., Grasses south. Africa: 69, 1990.

bas.: *Microchloa patentiflora* Stent & J. M. Rattray

syn.: *Brachyachne chrysolepis* C. E. Hubb.; *B. upembaensis* Van der Veken; *Micrachne patentiflora* (Stent & J. M. Rattray) P. M. Peterson

Perennial tufted grass with basal leaf sheaths persistent and splitting into a cushion of glabrous fibres; culms slender, erect or geniculate ascending, 8–45 cm long; leaves mostly basal, linear, 3–12 cm × 1 mm; inflorescence a *solitary raceme*, 2,5–12 cm long; spikelets 2,2–4,4 mm long, golden brown.

Seasonal swamps on shallow hard pan soils; damp sand overlying clay in seasonal rainwater pans of mopane woodland; water slicks and shallow soil over exposed granite; cracks in rocks; 880–2300 m alt.

Very rare in Uganda (Lye & al. in Lidia 4: 160, 1990; last collected in 1936) and in Kenya (Agnew, Upl. Kenya wild flow., ed. 3: 428, 2013).

N Botswana.

Very similar in habit to *Microchloa caffra*.

B. pilosa Van der Veken, Bull. Jard. Bot., Brux. 28: 84–85, 1958, non *Microchloa pilosa* Van der Veken (this name given by P. M. Peterson as basionym of his *Micrachne pilosa*!).

syn.: *Micrachne pilosa* (Van der Veken) P. M. Peterson

Annual slender grass 20–40 cm tall; culms erect, simple; leaf blades linear to filiform, to 5–6 cm long; inflorescence of 1–4 digitate *racemes* each 1–7,5 cm long, pale green to purple; spikelets imbricate, flat, 2–3 mm long; caryopsis unknown.

Very marshy places on laterite; large lateritic pans on rivulet.

Near *B. fulva*.

B. simonii Kupicha & Cope; Fl. Zambes. 10/2: 242, 1999.

syn.: *Micrachne simonii* (Kupicha & Cope) P. M. Peterson; *Brachyachne* sp. sensu Simon in Kirkia 8: 58, 1971.

Perennial tufted grass; culms slender, simple, to 60 cm tall; basal leaf sheaths scarcely persistent, glabrous; blades setaceous, 0,5–9 cm × < 1 mm; inflorescence of 3–5 digitate *racemes*, straight, yellowish brown; spikelets 2,8–3,8 mm long, *upper glume* with *irregular rows of tubercles along the keel* and *long crispate hairs* on either side of midrib.

Laterite pans; c. 1130 m alt.

Known from 2 collections made in 1969.

SYNONYMS:

Brachyachne chrysolepis C. E. Hubb.

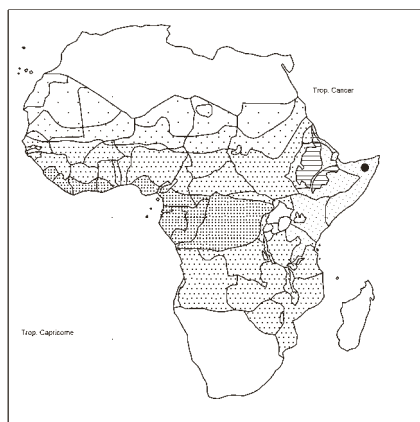
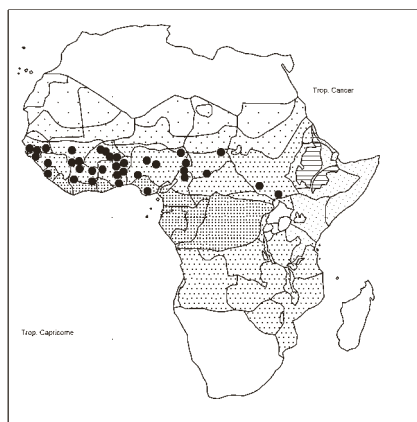
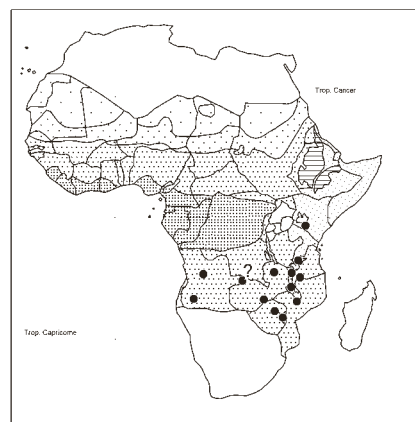
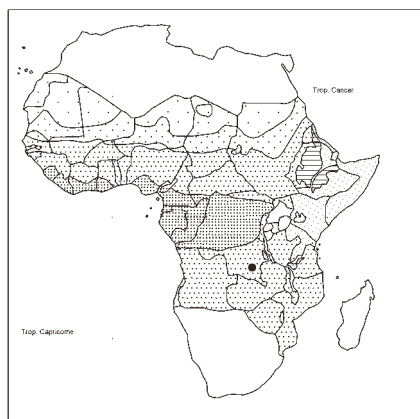
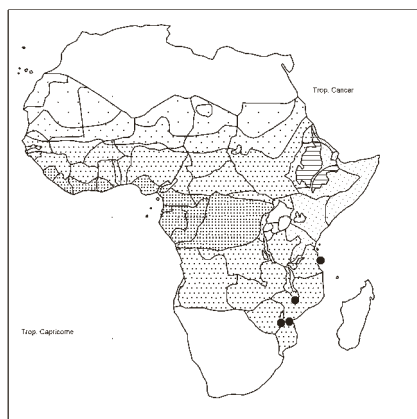
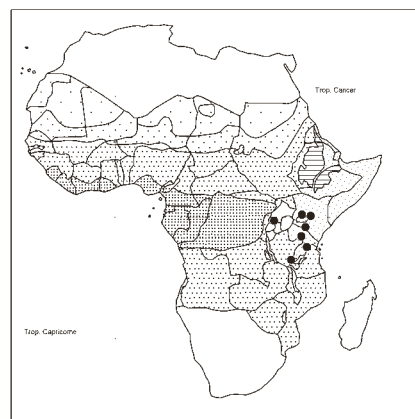
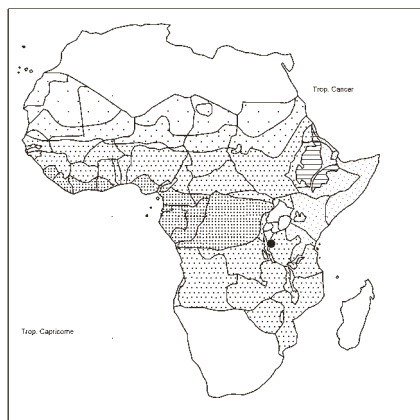
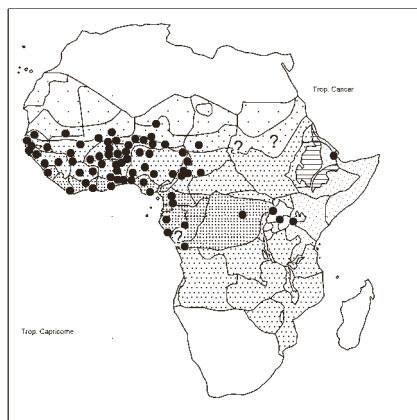
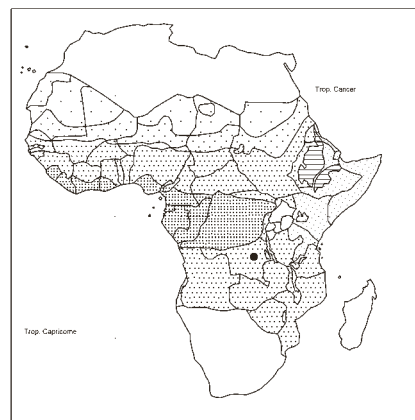
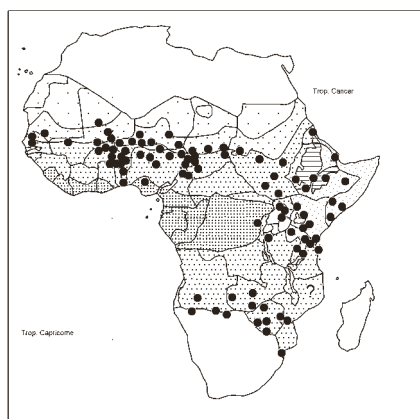
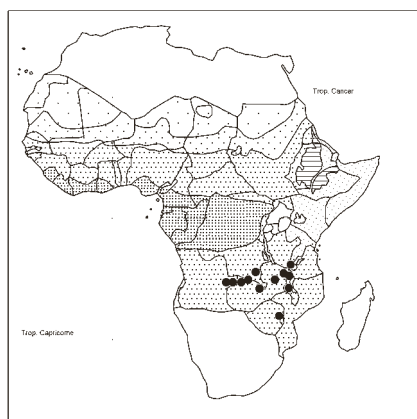
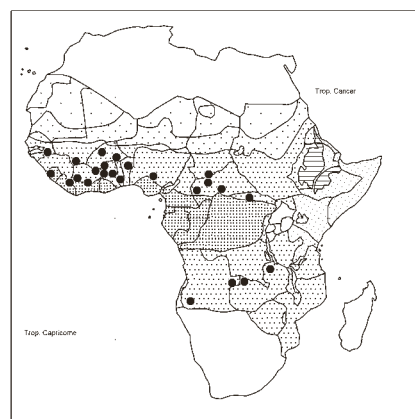
= **Brachyachne patentiflora**

fibrosa C. E. Hubb. = **B. fulva**

kundelungensis Van der Veken = **B. fulva**

sp. sensu Simon in Kirkia 8: 58, 1971 = **B. simonii**

upembaensis Van der Veken = **B. patentiflora**

*Brachiaria stefaninii**Brachiaria stigmatistata**Brachiaria subulifolia**Brachiaria turbinata**Brachiaria umbellata**Brachiaria umbratilis**Brachiaria uzondoiensis**Brachiaria villosa**Brachiaria wittei**Brachiaria xantholeuca**Brachyachne fulva**Brachyachne obtusiflora*

BRACHYCHLOA / 2

Genus of 2 species in SE & S Africa.

Inflorescence composed of racemes irregularly arranged along a central axis.

Brachychloa fragilis S. M. Phillips; Gibbs Russell & al., Grasses south. Afr.: 70, 1990; Fl. Zambes. 10/2: 49, 1999; Darbyshire & al. in PhytoKeys 136: 78, 2019 (endemic pl. Moz.).

Annual tufted grass; culms to 50 cm long, often decumbent, rooting from lower nodes; leaf blades $\pm$ linear, 5–10 cm $\times$ 2–6 mm, apex abruptly pointed; inflorescence 5–10 cm long, comprising 6–10 distant, *horizontally spreading racemes*; spikes in inflorescence > 3 cm long; *deciduous at maturity*; spikelets 4–5 mm long.

In strand associations with trees and shrubs; sandy soil on coastal dunes. Rare.

Known from ? 3 specimens only, 2 from Mozambique, ? 1 from NE S. Africa (the type).

B. schiemaniana (Schweick.) S. M. Phillips; Darbyshire & al.: l. c. – Icon.: Gibbs Russell & al., o.c.: 70; Fl. Zambes. 10/2: 48, 1999.

bas.: *Heterocarpha schiemaniana* Schweick.

Perennial stoloniferous grass; culms 15–30 cm tall; leaf blades $\pm$ lanceolate, 4–8 cm $\times$ 5–8 mm, apex abruptly pointed; inflorescence 4–12 cm long, comprising 10–15 short, *persistent*, erect or ascending racemes; spikes in inflorescence 1.5–4 cm long; spikelets 4.5–5.5 mm long.

Sand dunes at edge of coastal thickets; 0–90 m alt. Rare. NE S. Africa.

(BRACHYELYTRUM)

Brachyelytrum africanum Hack. = **Pseudobromus africanus silvaticum** (K. Schum.) Hack. = **P. africanus**

BRACHYPODIUM / 4

Genus of 16 species centred on the Mediterranean, extending into temperate Europe and Asia, and tropical highlands of both hemispheres (also C. & S. America).

The species are distinguished mainly by vegetative characters, and species intergrade one with another.

The annual species *Brachypodium distachyon* has become a model system for temperate cereals and other economically important grasses. Its tiny stature and small genome make it a good model for understanding the mechanisms of instability of plant genomes after mutagenic treatment (Kus & al., Ann. Bot. 122: 1161, 2018; Catalán & al., Anal. Jard. Bot. Madrid 73/1: e028 2016:1; López-Alvarez & al., Amer. J. Bot. 102: 1073, 2015; idem, Ann. Bot. 119: 545, 2017). The genome sequence of this species was among the first members of grasses to be sequenced (after rice and sorghum, for instance; Nature 463/7282: 763–768, 2010).

Plants previously classified as *B. distachyon* have 10, 20 or 30 pairs of chromosomes; these plants had been treated as chromosomal races, but now appear to constitute 3 separate species (Kellogg in Kubitzky, ed., Fam. & genera vascul. pl. 13: 222, 2015).

CATALÁN, P. & al. (2016). Updated taxonomic descriptions, iconography, and habitat preferences of *Brachypodium distachyon*, *B. stacei*, and *B. hybridum* (Poaceae). *Anal. Jard. Bot. Madrid* 73/1: e028 2016.

BRACHYPODIUM

LÓPEZ-ALVAREZ, D. & al. (2015). Environmental niche variation and evolutionary diversification of the *Brachypodium distachyon* grass complex species in their native circum-Mediterranean range. *Amer. J. Bot.* 102: 1073–1088.

LÓPEZ-ALVAREZ, D. & al. (2017). Diversity and association of phenotypic and metabolomic traits in the close model grasses *Brachypodium distachyon*, *B. stacei* and *B. hybridum*. *Ann. Bot.* 119: 545–561.

NEJI, M. & al. (2015). Assessment of genetic diversity and population structure of Tunisian populations of *Brachypodium hybridum* by SSR markers. *Flora* 216: 42–49.

SABLOK, G. & al., eds. (2018). *Brachypodium genomics: Methods and Protocols*. Humana Press, Springer Nature, New York. XI + 312 pp.

THE INTERNATIONAL BRACHYPODIUM INITIATIVE (2010). Genome sequencing and analysis of the model grass *Brachypodium distachyon*. *Nature* 463/7282: 705, 763–768.

(**Brachypodium distachyon** (L.) P. Beauv.); Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015. – Icon.: Boulos, Fl. Egypt 4: 182, 439, 2005; Cope, Fl. Arab. Penins. 5/1: 55, 2007; Kellogg in Kubitzky, ed., Fam. & genera vascul. pl. 13: 222, 2015; Catalán & al., o.c.: 4, 5 (as *B. stacei*), 6 (as *B. hybridum*), 2016.

bas.: *Bromus distachyos* L.

syn.: *Trachynia distachya* (L.) Link; *Brachypodium hybridum* Catalán, Joch. Müll., L. A. J. Mur & T. Langdon; *B. stacei* Catalán & al. cited; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual plant to 40 cm tall, usually geniculate ascending, with 1–8 reproductive culms; leaf blades straight, “unbendable”, flat, 3–12 cm $\times$ 2–4 mm, sparsely villous; panicle 2–5 cm long, with 2–6 spikelets crowded at top of culm; spikelets oblong-lanceolate, 2–6 cm long, lightly compressed; lemmas tipped with an awn 1.5 cm long.

Sandy and gravelly soils, mostly as a weed of cultivation (Egypt). Native to the circum-Mediterranean region, E-wards to SW & C Asia; introduced elsewhere. However, Darbyshire & al. (l. c.) report the species from NE Sudan; also reported by Brochmann & Rustan (García de Orta, Sér. Bot. 16: 24–25, 2002) from the Cape Verde Isl.

The species is also indicated from Djibouti, Eritrea and Ethiopia in the World Checklist, but it is not mentioned in the floras of this area (Audru & al., Pl. vascul. Rép. Djibouti 2/2, 1994; Thulin, Fl. Somalia 4, 1995; Fl. Eth. & Eritrea 7, 1995).

Not mapped by us.

B. flexum Nees, incl. var. *abyssinicum* Hochst., var. *simplex* Stapf, var. *tenue* Stapf, and var. *trachycladum* Stapf; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 200–201, 1955; Cope, Fl. Arab. Penins. 5/1: 57, 2007; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 72, 1970; Fl. Zambes. 10/1: 64, 1971; Gibbs Russell & al., Grasses south. Afr.: 71, 1990; Fl. Eth. & Eritrea 7: 56, 1995; Burrows & Willis, Pl. Nyika Plateau, Malawi: 340, 2005; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 268, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 167, 2015.

syn.: *B. sylvaticum* (Huds.) P. Beauv. var. *abyssinicum* (Hochst.) Chiov. and var. *pseudopinnatum* Chiov.; *B. diaphanum* Cufod. 1968, nom. superfl.; *B. multiflorum* K. Schum. in Engl. 1895, nom. nud.; *B. quartinianum* (A. Rich.) Hack. ex Engl.; *B. fontesianum* Nees; *B. pubescens* K. Schum. in Engl. 1895, nom. nud.; *B. schumannianum* Pilg., nom. superfl.; *Triticum flexum* (Nees) Hochst. ex A. Rich.; *Festuca flexa* (Nees) Steud.; *F. diaphana* Steud., nom. superfl.; *Brevipodium flexum* (Nees) K. Larsen; *Dinebra pubescens* K. Schum.

BRACHYPODIUM FLEXUM

Perennial weak-stemmed, straggling grass, often forming dense mats; culms 0,3–1,5 m long, often rooting from the nodes, these and the leaf sheaths *retroscarsely scabrid*; leaf blades flat, thin, 5–17 cm × 2–6 mm; inflorescence 6–12 cm long; raceme with 3–9 spikelets; these 1,5–3 cm long, 6–12 flowered, lemmas tipped with an awn 4–8 mm long.

In shade of open or closed upland forest; bamboo thicket; ericaceous bushland; damp forest; *Hypericum* scrub; upland forest with *Podocarpus latifolius*, *Olea capensis*, *Syzygium guineense*; forest margins; stream-sides, river banks in shade; often rambling over bushes; 1500–3000 m alt.

Bioko/Fernando Poo; S. Africa, Lesotho, Swaziland; Madagascar, Mascarenes; Yemen?

Closely related to *B. sylvaticum*, different only in the scabridity of culms and leaf sheaths. Very closely resembling *B. mexicanum* (Roem. & Schult.) Link.

The identity of the W African plants must remain uncertain pending further studies on better material (Fl. W. Trop. Afr., ed. 2, 3/2: 371, 1972).

B. pinnatum (L.) P. Beauv.; Fl. Eth. & Eritrea 7: 57, 1995.

bas.: *Bromus pinnatus* L.

syn.: See World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Slender perennial grass with *sparingly branched* rhizomes; culms 0,3–1 m tall, smooth, nodes pubescent; leaf blades *flat* or lightly rolled, *flaccid*, 10–40 × 0,2–0,7 cm, smooth or scabrid, sometimes thinly pilose; raceme 5–20 cm long, ± erect, with to c. 20 spikelets; these terete, 7–20-flowered 1,5–4 cm long; awn 1–7 mm long.

Grassy hillsides; favouring calcareous soils; 2700–3000 m alt.

Europe, Morocco, Mediterranean region E-wards to Iran/Middle East and Mongolia; introduced in New Zealand, N. America.

For remarks on the identification of *B. pinnatum* in Europe/Great Britain, see R. Burton in BSBI News 131: 34–35, 2016.

B. retusum (Pers.) P. Beauv.; Fl. Eth. & Eritrea 7: 57, 1995; Cope, Fl. Arab. Penins. 5/1: 57, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 247, 2010.

bas.: *Bromus retusus* Pers.

syn.: *Brachypodium ramosum* Roem. & Schult.; *Bromus ramosus* L. 1767, nom. illeg., World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial slender tufted grass arising from a *much-branched* superficial rhizome; culms 30–70 cm long, geniculately ascending, rooting from the lower nodes, *smooth*, glabrous; leaf blades *distichous*, *stiffly convolute*, *pale green or glaucous*, 10–13 cm × 1–3 mm; *sheaths smooth*; raceme of 2–5 *pale green spikelets* (occasionally a single spikelet), 8–15-flowered, 2,5–4,5 cm long; *awn short*.

Dry rocky places, especially on limestone; 2500–3300 m alt.

Mediterranean region, S. Europe to Caucasus, N. Africa from Morocco to Libya; Saudi Arabia, Yemen.

The role of soil conditions, grazing and humidity in S France have been studied by Vidaller & al. (Amer. J. Bot. 105: 1123–1132, 2018; J. Linn. Soc. 192: 536–549, 2020).

B. sylvaticum (Huds.) P. Beauv. subsp. **sylvaticum**; Fl. Eth. & Eritrea 7: 58, 1995; Cope, Fl. Arab. Penins. 5/1: 57–58, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 247, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015. – Icon.: Fl. China 22, Ill.: 515, 2007.

bas.: *Festuca sylvatica* Huds.

BRACHYPODIUM SYLVATICUM

syn.: *Bromus sylvaticus* (Huds.) Pollich; *Brevipodium sylvaticum* (Huds.) Á. Löve & D. Löve; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial *tufted* grass *without rhizomes*; culms *unbranched*, erect or ascending, 0,5–1 m long, *smooth*, nodes pubescent; leaf blades flaccid, drooping, 10–35 × 0,6–1,2 cm, scabrous, loosely pilose; *sheaths smooth*, usually loosely pilose; raceme 8–20 cm long, suberect or nodding, with 6–12 spikelets; these 1,5–4 cm long, 8–16-flowered; awn 0,7–1,4 cm long.

Shady places; pumice cliff; stream bank; 2575 m alt. (Sudan).

Cape Verde Isl. (Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 25, 2012); Madeira, Canary Isl.; N. Africa from Morocco to Tunisia; Europe; temperate Asia and mountains of tropical Asia, to New Guinea; introduced in New Zealand, USA, S. America. – Saudi Arabia: the identity of Arabian material is still doubtful and corresponds perhaps to the E Mediterranean subsp. *glaucovirens* (Cope, l. c.).

Subsp. **glaucovirens** [syn.: *B. glaucovirens* (Murb.) Sagorski; etc.], a taller plant with glaucous rigid leaf blades and glabrous sheaths, and spikelets to 5,5 cm long, 14–22-flowered; occurs in Algeria, and C & E Mediterranean Europe to Turkey; also introduced in the Canary Isl. (Willdenowia 39: 331, 2009).

Closely related to *B. flexum* from which it is distinguished by the smooth (not scabrid and scaberulous) culms and leaf sheaths.

SYNONYMS:

Brachypodium diaphanum Cufod. = **Brachypodium flexum**

fontanesianum Nees = **B. flexum**

glaucovirens (Murb.) Sagorski = **B. sylvaticum** subsp.

glaucovirens

hybridum Catalán, Joch. Müll., L. A. J. Mur & T. Langdon = **B. distachyon**

multiflorum K. Schum. 1895, nom. nud. = **B. flexum**

pubescens K. Schum. 1895, nom. nud. = **B. flexum**

quartinianum (A. Rich.) Hack. ex Engl. = **B. flexum**

ramosum Roem. & Schult., non Gray = **B. retusum**

schumannianum Pilg. = **B. flexum**

stacei Catalán, Joch. Müll., L. A. J. Mur & T. Langdon

= **B. distachyon**

sylvaticum (Huds.) P. Beauv. var. *abyssinicum* (Hochst.)

Chiov. and var. *pseudopinnatum* Chiov. = **B. flexum**

(BRACTEOLA)

Bracteola lucida Swallen = **Chrysochloa subaequigluma**

orientalis C. E. Hubb. = **C. orientalis**

subaequigluma (Rendle) C. E. Hubb. = **C. subaequigluma**

(BREVIPODIUM)

Brevipodium flexum (Nees) K. Larsen

= **Brachypodium flexum**

sylvaticum (Huds.) Á. Löve & D. Löve = **B. sylvaticum**

(BRIZA)

Introduced. Genus of some 22 species (Christenhusz & al., *Plants of the World*: 208, 2017) in Macaronesia, Mediterranean region, temperate Europe E-wards to Siberia, SC China, and S. America. Three species were described by Linnaeus (1753), viz. *B. maxima*, *B. media*, *B. minor*. “Easy to identify in field by the laterally compressed and trembling spikelets, this motion due to the usually curved pedicels” (Essi & al., 2017: 468). The spikelets have no awns, the glumes are boat-shaped, spreading.

BAYÓN, N. D. (1998). Cladistic analysis of the Briza complex (Poaceae, Poae). *Cladistics* 14: 287–296.

ESSI, L. & al. (2017). A synopsis of Briza, Brizochloa, and Chascolytrum (Poaceae, Pooideae, Poae). *Ann. Missouri Bot. Gard.* 102: 466–519.

ISABEL, M. & al. (2018). Revisión taxonómica del genero Briza (Poaceae) en la Península Ibérica e Islas Baleares. *Collect. Bot.* 37: e004. <https://doi.org/10.3989/collectbot.2018.v37.004>

(**Briza maxima** L., incl. many vars. and forms); Gibbs Russell & al., *Grasses south. Afr.*: 72, 1990 (with map); Dobignard & Chatelain, *Index synon. Fl. Afr. N.* 1: 247–248, 2010; Agnew, *Upl. Kenya wild flow.*, ed. 3: 411, 2013. – *Icon.*: *Fl. Trop. E. Afr.*, *Gramin.* 1: 52, 1970; *Fl. Zambes.* 10/1: 46, 1971; Boulos, *Fl. Egypt* 4: 147, 2005; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 134, 2012; Clarke, *Name those grasses*: 158–159, 2015; Weber, *Invasive plant species of the World*, ed. 2: 74, 2017 (with map); Essi & al. (2017): 469.

syn.: World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual grass without rhizomes; culms slender, 10–60 cm tall, loosely tufted or solitary, erect or geniculate; leaf sheaths often purple tinged, loose; blades flat, pale green, 5–20 × 0.3–0.8 cm; panicles 3–10 cm long, loose, prettily nodding, with 2–12 spikelets; pedicels to 2 cm long, capillary; spikelets oblong, plump, 1.4–2.5 × 0.8–1.5 cm, pale- or silver green to purplish, 7–20-flowered.

Naturalised in dry shady places and grassland, roadsides, cultivated ground; a garden escape where occasionally cultivated for ornamental purposes; 1710–2700 m alt.

Reported from Kenya (highlands), Malawi, W & E Zimbabwe; Gulf of Guinea Isl. (San Tomé); S. Africa.

Distributed from Macaronesia to the Mediterranean region (Europe & N. Africa); introduced in Asia E-wards to Japan, New Zealand, the Americas.

(**B. minor** L.); Dobignard & Chatelain (2010): 248; Gereau & al., *Lake Nyasa florist. checklist*: 86, 2012. – *Icon.*: Maire, *Fl. Afr. N.* 3: 104, 1955; *Fl. Zambes.* 10/1: 47, 1971 (spikelet); Gibbs Russell & al. (1990): 72 (with map); Boulos, *Fl. Egypt* 4: 147, 2005; van Oudtshoorn (2012): 265 (inflor.); Clarke (2015): 160–161; Essi & al. (2017): 473.

syn.: *B. virens* L., non Walter; *B. deltoidea* Burm. f.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual grass lacking rhizomes; culms loosely tufted, often branched near base, 10–60 cm tall, nodes dark; leaf blades narrow, 3–14 × 0.3–1 cm, tapering to a fine point; panicle 4–20 cm long with many spikelets; pedicels 0.5–1.5 cm long, capillary; spikelets triangular-ovate, plump, 3–5 × 3–6 mm, green, occasionally purple tinged, 4–8-flowered.

Gardens, adventitious, cultivated and waste ground; c. 1500–2000 m alt.

Reported from S Tanzania (T7), C & W Zimbabwe; S. Africa.

BRIZA MINOR

Distributed from Macaronesia, Mediterranean region, Europe & N. Africa E-wards to Iran-Iraq; introduced in Madagascar, Asia E-wards to New Guinea, Australia; the Americas.

SYNONYMS:

Briza bipinnata L. = **Desmostachya bipinnata**
capensis Thunb., non Schrank = **Eragrostis capensis**
deltoidea Burm. f. = **Briza minor**
dura Desv. = **Eragrostis mokensis**
elegans Osbeck = **E. atrovirens**
eragrostis L. = **E. cilianensis**
mucronata (L.) Lam. = **Halopyrum mucronatum**
multiflora (Forssk.) P. Beauv. = **Eragrostis schweinfurthii**
rubella Steud. = **E. turgida**
virens L., non Walter = **Briza minor**

(BRIZOPYRUM)

Brizopyrum cyperoides (Thunb.) Nees
 = **Cladoraphis cyperoides**
mucronatum (L.) Wight 1837 = **Halopyrum mucronatum**

BROMUNIOLA / 1

Monotypic genus resembling *Bromus* or *Pseudobromus*. Maintained by Christenhusz & al., *Plants of the World*: 208, 2017, but treated as a synonym of *Chasmanium* by Kellogg in K. Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 284, 2015.

Bromuniola gossweileri Stapf & C. E. Hubb.; Van der Veken in *Bull. Jard. Bot. Brux.* 28: 87, 1958. – *Icon.*: *Fl. Trop. E. Afr.*, *Gramin.* 1: 160, 1970; *Fl. Zambes.* 10/1: 144, 1971.

Perennial tufted herb from a creeping rhizome; culms 0.6–1 m long, erect or geniculate-ascending, often straggling; leaf blades lanceolate, 10–20 × 1–2 cm, constricted at base, apex acute, *veins transversely connected*, sparsely pilose; panicle broadly ovate, 10–20 cm long, 12–25 cm Ø, diffuse, with spreading branches, branches to 18 cm long, solitary, simple or few branched; pedicels filiform, flexuous, to 5 cm long; spikelets solitary, 1–2.3 cm long; lemmas with an *awn* 2–4 mm long.

Forest glades; c. 2000 m alt.

BROMUS / 4

Bromus L. 1753.

syn.: *Ceratochloa* P. Beauv. 1812; *Boissiera* Hochst. & Steud., *Flora* 21, *Intelligenzblatt* 1: 25, 1838.

A taxonomically complex genus of some 154 species (Christenhusz & al., *Plants of the World*: 208, 2017), in temperate regions worldwide but mainly in the N Hemisphere, and in mountains in the tropics. The genus can be confused with some species of *Festuca*, *Pseudobromus* and *Helictotrichon*.

The genus *Bromus* “is distinguished from other grass genera by the combination of leaf sheaths that are closed for most of their length, awns are inserted subapically and hairy appendages on the apices of the ovary” (Saarela & al. 2014: 4). Some ten species are agriculturally important as forage plants, but many are problematic invasive weeds. Species of *Bromus* are among the most frequent weeds in, e. g., African wheat (Krämer & al., *Atlas of weed mapping*: 72–73, 2016).

BROMUS

The greatest diversity and most complex taxonomy are met with in SE Europe and W Asia. The taxonomy and nomenclature are difficult and the appropriate ranks of various subspecific, specific and infraspecific taxa remain uncertain and contested (Llamas & Acedo 2019: 54).

LLAMAS, F. & C. ACEDO (2019). Typification of eight current and seven related names and a new section in the genus *Bromus* (Bromeae, Pooideae, Poaceae). *PhytoKeys* 121: 53–72.

NADERI, R. & M. R. RAHIMINEJAD (2015). A taxonomic revision of the genus *Bromus* (Poaceae) and a new key to the tribe Bromeae in Iran. *Ann. Bot. Fennici* 52: 233–248.

NADERI, R. & al. (2016). A new taxonomic concept for *Bromus danthoniae* including comments on *Bromus* sect. *Bromus* and *Triniusia* (Poaceae). *Ann. Naturhist. Mus. Wien*, B, 118: 167–180.

SAARELA, J. M. & al. (2014). A taxonomic revision of *Bromus* (Poaceae: Pooideae: Bromeae) in México and Central America. *Phytotaxa* 185: 1–147.

SCHOLZ, H. (2008). Some comments on the genus *Bromus* (Poaceae) and three new species. *Willdenowia* 38: 411–422.

(***Bromus catharticus*** Vahl); Fl. Zambes. 10/1: 59–60, 1971 (as *B. unioides*); Fl. Eth. & Eritrea 7: 54, 1995; Klaassen & Craven, Checklist grasses Namibia: 19, 2003; Cope, Fl. Arab. Penins. 5/1: 60, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 260, 2010 (as *Ceratochloa unioides*); Agnew, Upl. Kenya wild flow., ed. 3: 414, 2013; Naderi & Rahiminejad (2015): 246. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 69, 1970 (as *Bromus unioides*; spikelet); Gibbs Russell & al., Grasses south. Afr.: 73, 1990; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 140, 2012; Saarela & al. (2014): 63–65; Clarke, Name those grasses: 114–115, 2015; Bull. Soc. Bot. N. France 74: 40–43, 2021.

syn.: *Ceratochloa cathartica* (Vahl) Herter; *C. unioides* (Willd.) P. Beauv.; *C. haenkeana* J. Presl; *Festuca unioides* Willd. 1803; *Bromus unioides* Kunth 1816; *B. unioides* (Willd.) Kunth ex Raspail 1825, nom. illeg.; *B. willdenowii* Kunth; *B. haenkeanus* (J. Presl) Kunth; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual, biennial or short-lived perennial, rather variable grass; culms 0.4–1 m long, 2–4-noded, erect to straggling, glabrous; leaf blades linear, 6–25 × 0.2–1.2 cm; panicle 15–30 cm long, ± oblong, scantily branched, branches 2–4-nate, remote, filiform, obliquely ascending to drooping; spikelets 1.5–4 cm long, 6–12-flowered, strongly *laterally compressed*; lemmas 1.2–1.8 cm long, densely imbricate, *sharply keeled*, awn to 3 mm long.

Roadsides, waste places, gardens, weed of irrigated fields; 1400–2700 m alt.

Introduced worldwide as a winter forage plant, “rescue grass”, and now found as an escape in most temperate countries. – Native in Guatemala – S. America. Introduced in S Europe, N. Africa, the Atlantic islands, Namibia, S. Africa, Lesotho, Swaziland; SW Asia E-wards to China, Japan, Australia; N. America. – In tropical Africa reported from Ethiopia, S Uganda, S Kenya, N Tanzania, Zimbabwe.

(***B. diandrus*** Roth.); Fl. Trop. E. Afr., Gramin. 1: 67, 1978; Klaassen & Craven, Checklist grasses Namibia: 19, 2003; Cope, Fl. Arab. Penins. 5/1: 62–63, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 224–225, 2010 (as *Anisantha diandra*); Agnew, Upl. Kenya wild flow., ed. 3: 414, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015. – Icon.: van Oudtshoorn, Guide grasses south. Afr., ed. 3: 135, 2012; Saarela & al. (2014): 73–74; Clarke, Name those grasses: 116–117, 2015; Malik & Mohammad in Rheede 25: 45, 2015.

BROMUS DIANDRUS

syn.: *B. gussonei* Parl.; *Anisantha diandra* (Roth) Tutin ex Tzvelev; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual tufted grass; culms 25–80 cm long, erect or spreading; leaf blades 5–40 cm long, 0.3–0.8 cm wide; panicle dense or loose, erect or nodding, 15–25 cm long, the branches mostly hairy bearing only 1 spikelet; this cuneate, 2–3 cm long, with awn 3–6 cm long on lemma.

Disturbed places, waste places, old farmland; 2300–3000 m alt.

Introduced in E Africa, from N Sudan, S Kenya, NE Tanzania, C Zimbabwe. – Native in the Mediterranean region, S Europe, N Africa E-wards to Saudi Arabia. Widely introduced: E Atlantic islands, C Namibia, S. Africa; SW & C Asia, N India (Rheede 25: 1. c.), E-wards to New Zealand, also in W N. America S to Mexico, in S. America: Chile, Argentina.

(***B. fasciculatus*** C. Presl); Cope, Fl. Arab. Penins. 5/1: 65, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 225, 2010 (under *Anisantha*); Naderi & Rahiminejad (2015): 242. – Icon.: Boulos, Fl. Egypt 4: 198, 2005.

syn.: *B. fasciculatus* var. *alexandrinus* Thell., var. *fallax* Maire, subsp. *delilei* (Boiss.) H. Scholz, var. *tenuiflorus* Bég. & Vacc., etc.; *B. flabellatus* Hack. ex Boiss.; *B. sterilis* var. *fasciculatus* (C. Presl) Kuntze; *B. rubens* Delile 1813, nom. nud., non L.; *B. rubens* subsp. *fasciculatus* (C. Presl) Trab. 1895, nom. illeg., and var. *eufasciculatus* Maire & Weiller, and var. *alexandrinus* (Thell.) Maire & Weiller, and var. *puberulus* Maire & Weiller; *Anisantha fasciculata* (C. Presl) Nevski and subsp. *delilei* (Boiss.) H. Scholz & Valdés; *A. flabellata* (Hack. ex Boiss.) Holub; *A. madritensis* subsp. *delilei* (Boiss.) Bracchi, Banfi & Galasso; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual grass to 25 cm tall; leaves softly hairy, blades 2–10 cm × 1–2 mm; panicle 2–5 cm long, stiffly erect, fairly dense with rigid branches shorter than spikelets; these ± sessile, 1–2 cm long excl. awn (1–1.5 cm long).

In sandy and stony soils (Egypt).

Mediterranean coasts (Europe & N. Africa) E-wards to Afghanistan. According to the World Checklist also in NE Sudan. In Saudi Arabia & Oman rocky hillsides, 1050–2150 m alt.

According to Cope (l. c.) *B. fasciculatus* is barely distinct from *B. madritensis* and may well turn out to be anything more than a variety. – It is a diploid species, progenitor for the tetraploids *B. madritensis* and *B. rubens* (Naderi & Rahiminejad, l. c.).

The identity of “*B. rubens* L. subsp. *fasciculatus* Presl var. *ambiguus* Maire” from Emi Koussi, Chad (Quézel, Mission botanique au Tibesti: 118, 1958), is uncertain.

(***B. lanceolatus*** Roth; Cope, Fl. Arab. Penins. 5/1: 61, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 252, 2010; Naderi & al. in Ann. Naturhist. Mus. Wien, B: 171, 2016. – Icon.: Boulos, Fl. Egypt 4: 189, 2005; Fl. China 22, Ill.: 537, 2007.

syn.: *B. macrostachys* Desf.; *B. squarrosus* var. *macrostachys* (Desf.) Kuntze; *B. lanceolatus* subsp. *macrostachys* (Desf.) Maire; *B. lanuginosus* Poir. 1811, nom. superfl.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual herb; culms erect or geniculately ascending, 15–90 cm long, solitary or clustered, nodes brown- or violet-black, hairy; leaf blades to 30 cm long, 0.5 cm wide, flat; panicle 6–20 cm long, ± narrow, *erect*, with short erect *stout*, usually 3–4 cm

BROMUS LANCEOLATUS

long branches, usually shorter than spikelets; these 2–5 cm long, 8–20-flowered, with awns 1,5–2,5 cm long, becoming reflexed and twisted at maturity.

Clayey grara; cultivated.

Madeira, Canary Isl.; Mediterranean region E-wards to NW China, Pakistan. Introduced in the Americas.

B. leptoclados Nees; Fl. Eth. & Eritrea 7: 54, 1995; Cope, Fl. Arab. Penins. 5/1: 62, 2007; Agnew, Upl. Kenya wild flow., ed. 3: 414, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 199, 1955 (as *B. runssoroensis*); Fl. Trop. E. Afr., Gramin. 1: 69, 1970; Fl. Zambes. 10/1: 61, 1971; van der Zon, Gramin. Cameroun 2: 81, 1992; Thulin, Fl. Somalia 4: 156, 1995; Agnew, Field key upl. Kenya grasses: pl. 1/28, 2006; Velayos & al., Fl. Guinea Ecuat. 12: 168, 2015.

syn.: *B. petitianus* A. Rich.; *B. cognatus* Steud., incl. var. *macrophyllus* Engl.; *B. scabridus* Hook. f.; *B. runssoroensis* K. Schum.

Perennial tufted grass; culms slender, often weak, partly scandent, 0,5–2 m long; leaf blades flat, 10–30 × 0,5–1,3 cm, often with falcate auricles; panicle loose, diffuse, open, erect or nodding, 15–30 cm long, branches filiform, spreading; spikelets narrow, 2,5–4,3 cm long, 4–10-flowered, with awns 2–12 mm long.

Edge of *Hagenia* woodland in *Loudetia arundinacea* grassland, much *Agauria* and *Nuxia*; grassland; forest clearings and edges; often in moist or shady sites; among rocks in shady sheltered situations; scrubland; often growing among *Erica* bushes; edges of riparian rain-forests; evergreen forest; along roads; sometimes locally common; bamboo forest; 1460–3500 m alt.

Very variable in size of spikelets.

Bioko/Fernando Poo (probably); S. Africa, Lesotho; SW Arabian Peninsula.

(**B. madritensis** L.; *B. matritensis* L. ex Roem. & Schult. 1817, orth. var.) – with many vars. and subspp. described; Fl. Eth. & Eritrea 7: 55, 1995; Fl. China 22, Texts: 381, 2006; Cope, Fl. Arab. Penins. 5/1: 64, 2007; Dobignard & Chatelain, Index synon. fl. Afrique N. 1: 225, 253 (for vars. & subspp.), 2010 (under *Anisantha* and *Bromus*); Patzelt & al. in Edinb. J. Bot. 77: 435, 2020. – Icon.: Boulos, Fl. Egypt 4: 198, 2005; Saarela & al. (2014): 105–106.

syn.: *B. villosus* Forssk. 1775, nom. illeg., non (Roth) C. C. Gmel. 1805 nec Scop.; *B. haussknechtii* Boiss. 1884; *B. madritensis* subsp. *haussknechtii* (Boiss.) H. Scholz; *Anisantha madritensis* (L.) Nevski, incl. subsp. *haussknechtii* (Boiss.) H. Scholz; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual grass 50–70 cm tall; culms erect, loosely tufted, or ascending, 10–60 cm long; leaf blades linear, c. 20 cm × 2–4 mm, glabrous or pubescent, apex acuminate; panicle erect, 4–15 cm long, loosely to densely contracted, branches 2–3 per node and shorter than spikelets; these 2–4 cm long, 5–10-flowered, with awns 1–3 cm long (lemmas much shorter than awns).

Dry grassy places; weed of cultivation.

Recorded from Eritrea. Widely naturalised, but indigenous in Macaronesia, Mediterranean region, W & S Europe, N. Africa, Cape Verde Isl., SW Asia, Middle East, E-wards to Tibet; introduced in S. Africa, New Zealand, Australia, Hawaii, USA S-wards to Mexico, S. America.

For karyotypic investigation, see Sadeghian & al. in Caryologia 73: 3–10, 2020.

BROMUS

B. pectinatus Thunb. 1794, incl. var. *vestitus* (Schrad.) Péntzes; Fl. Trop. E. Afr., Gramin. 1: 68, 1970; Bot. Jahrb. Syst. 102: 474, 1981; Cope, Fl. Arab. Penins. 5/1: 61, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 254, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015. – Icon.: Mém. Inst. Franç. Afrique Noire 8: pl. I, 1950 (as *B. tibesticus*); Fl. Eth. & Eritrea 7: 56, 1995; Boulos, Fl. Egypt 4: 192, 2005; Fl. China 22, Ill.: 536, 2007; Agnew, Field key upl. Kenya grasses: pl. 1/29, 2006 (spikelet); idem, Upl. Kenya wild flow., ed. 3: pl. 184, 2012; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 181, 2012; César & Chatelain, Fl. ill. Tchad: 181, 2019.

syn.: *B. japonicus* Thunb. var. *pectinatus* (Thunb.) Asch. & Graebn., var. *acutidens* Melderis, and subsp. *sinaicus* Hack.; *B. patulus* Mert. & W. D. J. Koch var. *pectinatus* (Thunb.) Stapf; *B. sinaicus* (Hack.) Täckh.; *B. garamas* Maire; *B. tibesticus* Maire; *B. mollis* Thunb. 1794, nom. illeg., non L. 1762; *B. adoensis* Hochst. ex Steud.; *B. capensis* Steud.; *B. pulchellus* Fig. & De Not.; *Danthonia anomala* Steud.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual tufted grass; culms erect or slanted, 10–80 cm long; leaf blades 5–30 cm long, 2–8 mm wide, hairy; panicle 5–25 cm long, lax, nodding or erect with ascending branches, often ± 1-sided; spikelets 1–3 cm long, 5–13-flowered, laterally compressed, usually hairy, with awns 0,7–1,8 cm.

Ruderal of weedy places; old farmland; open situations; field margins; path sides; among rocks; fields of barley and tef; fallows; 1850–3500 m alt.

Mauritania?, Sahara (mountains), Algeria, Libya, Egypt?; S. Africa (introduced); Madagascar; Sinai, Gulf States, Oman, Saudi Arabia, Yemen, Afghanistan E-wards to India, Nepal, Pakistan, China.

Very similar to *B. japonicus* Thunb. from warm temperate Europe and Asia; also resembling *B. arvensis* L. from Europe and temperate Asia. The Australian *B. arenarius* Labill. is probably not distinct.

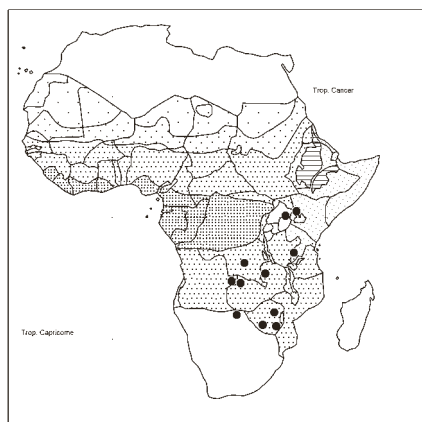
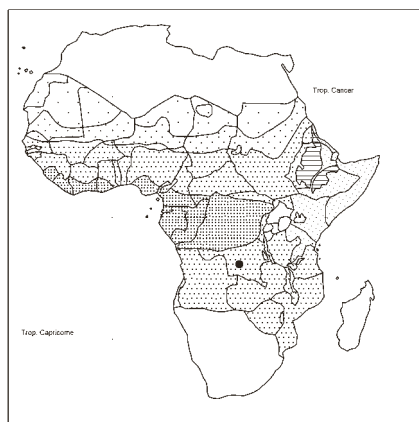
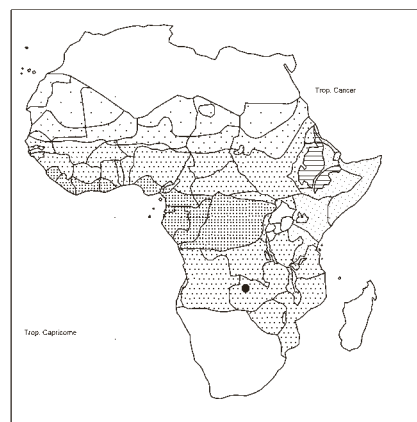
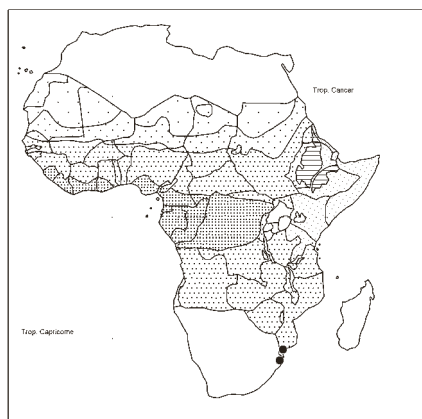
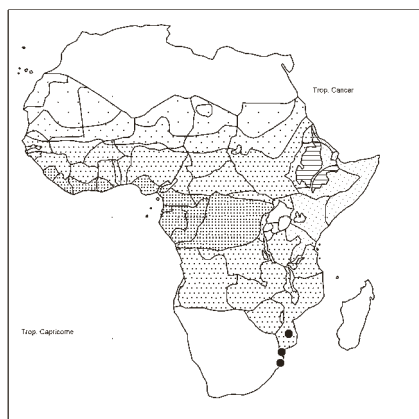
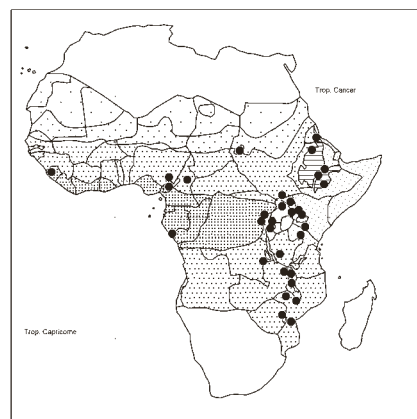
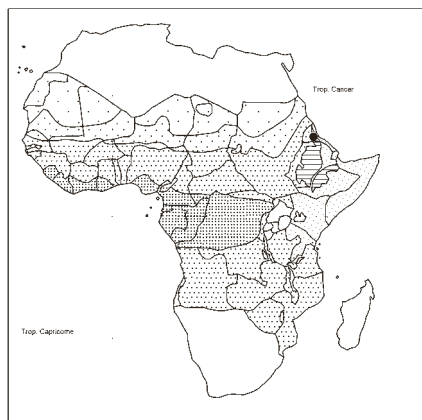
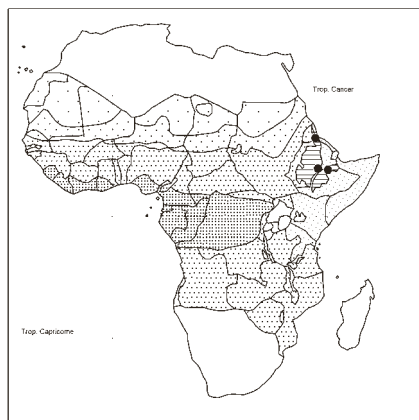
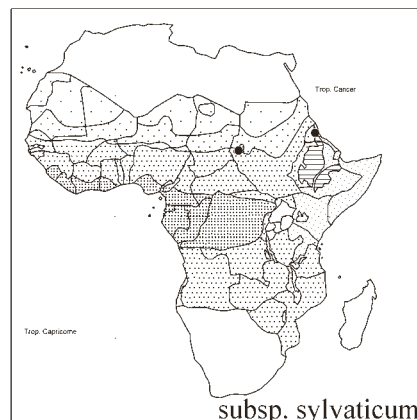
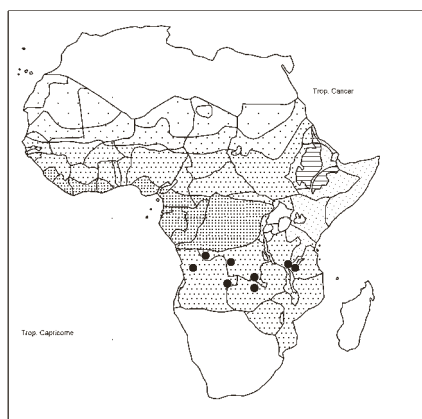
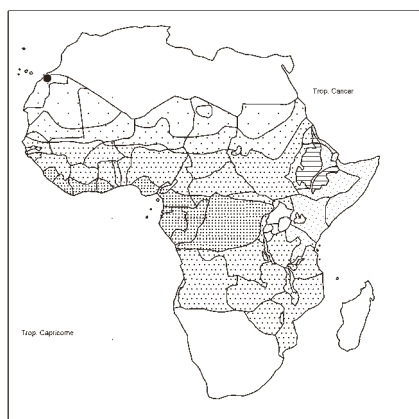
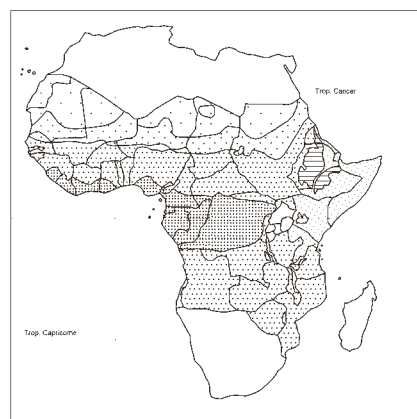
(**B. rigidus** Roth); Gibbs Russell & al., Grasses south. Afr.: 76, 1990; Naderi & Rahiminejad (2015): 242.

Annual loosely tufted grass 40–70 cm tall; leaf blades 5–15 cm long, 3–7 mm wide; panicle 15–20 cm long, dense, erect, branches shorter than spikelets; these 1,5–2,5–3,5 cm long, erect, with awns 3–5 cm long.

In S. Africa (introduced) forming a complete range of intermediates with *B. diandrus* Roth, but distinct in Europe, where *B. rigidus* is native (S & W Europe). A record from Sudan (Darbyshire & al., Pl. Sudan & S. Sudan: 121, 2015) may refer to *B. diandrus*.

B. rubens L. subsp. *rubens*; Klaassen & Craven, Checklist grasses Namibia: 19, 2003; Boulos, Fl. Egypt 4: 196, 2005; Cope, Fl. Arab. Penins. 5/1: 64–65, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 225, 255, 2010 (under *Anisantha*). – Icon.: Saarela & al. (2014): 123–124; Weber, Invasive plant species of the world, ed. 2: 76–77, 2017 (with map); César & Chatelain, Fl. ill. Tchad: 181, 2019 (details).

syn.: *Festuca rubens* (L.) Pers.; *Anisantha rubens* (L.) Nevski; *Bromus madritensis* L. var. *rubens* (L.) Husn.; *B. madritensis* subsp. *rubens* (L.) Husn.; *B. rubens* subsp. *eurubens* Maire 1931, nom. inval.; *B. rubens* var. *ambiguus* Maire; *B. rubens* var. *canescens* Coss. ex Bég. & Vacc.; *B. rubens* fa. *intermedius* Pamp.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

*Brachyachne patentiflora**Brachyachne pilosa**Brachyachne simonii**Brachychloa fragilis**Brachychloa schiemaniana**Brachypodium flexum**Brachypodium pinnatum**Brachypodium retusum**Brachypodium sylvaticum*
subsp. *sylvaticum**Bromuniola gossweileri**Bromus lanceolatus*

BROMUS RUBENS

Annual tufted herb (winter annual germinating in autumn/early winter, then growing rapidly in early spring); culms erect or ascending, 5–40 cm long; leaf *sheaths densely pubescent*; blades linear, flat, 2–12 cm × 2–4 mm, hairy; *panicle dense*, 6–8 cm long, 1–3 cm Ø, *brush-like*, reddish-brown, *branches very short, erect*; spikelets 1.5–3 cm long, 4–11-flowered, with awns (sharp) 1–2 cm long. – Very similar to *B. madritensis* but panicle tightly congested, densely pubescent.

Irrigated cultivations on sand; in the high mountains of the Sahara; 2900–3200 m alt. – Probably introduced in Western Sahara.

Canary Isl.; Mediterranean region (N. Africa, S & W Europe); Saudi Arabia?; Caucasus, Middle East E-wards to Afghanistan, C. Asia, China; introduced in S-most Namibia, Australia, SW USA (where it spread rapidly between 1930 and 1942 due to agricultural transformation). Invading deserts and desert scrub, disturbed sites. Burning seems to favour its establishment. Population fluctuations are large, as seeds are not long-lived.

Subsp. **kunkelii** (H. Scholz) H. Scholz [bas.: *B. madritensis* subsp. *kunkelii* H. Scholz; syn.: *B. kunkelii* (H. Scholz) H. Scholz; *Anisantha rubens* subsp. *kunkelii* (H. Scholz) H. Scholz] occurs in the Canary Isl., Spain, Morocco, Algeria. Not recognized as a separate entity by Naderi & Rahiminejad (2015): 242.

For karyotypic investigation, see Sadeghian & al. in *Caryologia* 73: 3–10, 2020.

SYNONYMS:

- Bromus adoensis* Hochst. ex Steud. = **Bromus pectinatus**
avenoides Baker = **Helictotrichon elongatum**
capensis Steud. = **Bromus pectinatus**
cognatus Steud., incl. var. *macrophyllus* Engl.
= **B. leptoclados**
distachyos L. = **Brachypodium distachyon**
fasciculatus C. Presl var. *alexandrinus* Thell., subsp. *delilei* (Boiss.) H. Scholz, var. *fallax* Maire, var. *tenuiflorus* Bég. & Vacc., etc. = **Bromus fasciculatus**
flabellatus Hack. ex Boiss. = **B. fasciculatus**
garamas Maire = **B. pectinatus**
haenkeanus (J. Presl) Kunth = **B. catharticus**
haussknechtii Boiss. 1884 = **B. madritensis**
japonicus var. *acutidens* Melderis, var. *pectinatus* (Thunb.) Asch. & Graebn., and subsp. *sinaicus* Hack.
= **B. pectinatus**
kunkelii (H. Scholz) H. Scholz = **B. rubens** subsp. **kunkelii**
lanceolatus Roth subsp. *macrostachys* (Desf.) Maire
= **B. lanceolatus**
lanuginosus Poir. 1811 = **B. lanceolatus**
macrostachys Desf. = **B. lanceolatus**
madritensis subsp. *haussknechtii* (Boiss.) H. Scholz
= **B. madritensis**
madritensis subsp. *kunkelii* H. Scholz = **B. rubens** subsp. **kunkelii**
madritensis var. *rubens* (L.) Husn., and subsp. *rubens* (L.) Husn. = **B. rubens**
milanjanus Rendle = **Helictotrichon milanjanum**
mollis Thunb. 1794, non L. 1762 = **Bromus pectinatus**
patulus Mert. & W. D. J. Koch var. *pectinatus*
= **B. pectinatus**
petitianus A. Rich. = **B. leptoclados**
pinnatus L. = **Brachypodium pinnatum**
polystachios Forssk. = **Diplachne fusca** subsp. *fusca*
polystachyus Kunth, non DC. = **D. fusca**
pulchellus Fig. & De Not. = **Bromus pectinatus**
ramosus L. 1767, nom. illeg. = **Brachypodium retusum**
retusus Pers. = **B. retusum**

BROMUS

- rubens* Delile 1913, nom. nud., non L.
= **Bromus fasciculatus**
rubens var. *alexandrinus* (Thell.) Maire & Weiller
= **B. fasciculatus**
rubens var. *ambiguus* Maire = **B. rubens** subsp. **rubens**
rubens var. *canescens* Coss. ex Bég. & Vacc. and subsp.
eurubens Maire 1931 = **B. rubens** subsp. **rubens**
rubens var. *eufasciculatus* Maire & Weiller, and subsp.
fasciculatus (C. Presl) Trab. 1895 = **B. fasciculatus**
rubens fa. *intermedius* Pamp. = **B. rubens** subsp. **rubens**
rubens var. *puberulus* Maire & Weiller = **B. fasciculatus**
runssoroensis K. Schum. = **B. leptoclados**
scabridus Hook. f. = **B. leptoclados**
sinaicus (Hack.) Täckh. = **B. pectinatus**
squarrosus var. *macrostachys* (Desf.) Kuntze
= **B. lanceolatus**
sylvaticus (Huds.) Pollich = **Brachypodium sylvaticum**
tibesticus Maire = **Bromus pectinatus**
trichopodus A. Rich. = **Koordersiochloa longiaristata**
unioloides Kunth 1816 = **Bromus catharticus**
unioloides (Willd.) Kunth ex Raspail 1825
= **B. catharticus**
villosus Forssk. 1775, non (Roth) C. C. Gmel. nec Scop.
= **B. madritensis**
willdenowii Kunth = **B. catharticus**

CALAMAGROSTIS / 2

As Sylvester & al. (PhytoKeys 122: 32–33 2019) summerise the taxonomy of *Calamagrostis* has been disputed over a long period, with many authors placing South American species in *Deyeuxia* Clarion ex P. Beauv. However, recent phylogenetic research does not support the separation of *Deyeuxia* s. str. from *Calamagrostis* s. str. The most recent phylogenetic research done by Saarela & al. found *Calamagrostis* s. l. to be polyphyletic and highlighted that its circumscription needs reassessment. But these authors also point out that eventually many taxa will need to be transferred to other genera, ecologists, botanists and others interested in the natural history of a region need to know what species are present in the ecosystems in question and have the means to identify them. Thus Sylvester & al. opt for a traditional circumscription of *Calamagrostis*.

Saarela & al. (PhytoKeys 87: 72, 2017) expanded their earlier study of *Calamagrostis*/*Deyeuxia*. Although their phylogenetic relationships are mostly unresolved with respect to each other and to various clades of *Agrostis* and *Polypogon*, they found that a few moderately to strongly supported multi-species clades are present in the plastid and nrDNA trees. They conclude that the phylogenetic data do not support recognition of *Calamagrostis* and *Deyeuxia* as separate genera, and thus *Deyeuxia* is a synonym of *Calamagrostis*.

Kellogg (in K. Kubitzki, ed., Families & genera of vascular plants 13: 237–238, 2015) acknowledged the problematic circumscription of “*Calamagrostis*” and *Deyeuxia*; the number of species belonging to *Calamagrostis* s. s. is uncertain, indicating 98 species worldwide in temperate regions; and for *Deyeuxia* 207 species in temperate regions worldwide, and tropical mountains. Christenhusz & al. (Plants of the World: 208, 2017) cite 251 species for *Calamagrostis* s. l., whereas Prasad & al. (Phytotaxa 505: 221, 2021) cite 300 species worldwide.

SAARELA, J. M. & al. (2017). Molecular phylogenetics of cool-season grasses in subtribes Agrostidinae, Anthoxanthinae, Aveninae, Brizinae, Calothecinae, Koeleriinae and Phalaridinae (Poaceae, Pooideae, Poaeae, Poaceae chloroplast group 1). *PhytoKeys* 87: 1–139.

CALAMAGROSTIS

SYLVESTER, S. P. & al. (2019). Páramo Calamagrostis s. l. (Poaceae): An update list and key to the species known or likely to occur in páramos of NW South America and southern Central America including two new species, one new variety and five new records for Colombia. *PhytoKeys* 122: 29–78.

(**Calamagrostis canescens** (Weber) Roth); Thulin, Fl. Somalia 4: 154–155, 1995.

bas.: *Arundo canescens* Weber

syn.: *Arundo calamagrostis* L. 1753; *Calamagrostis lanceolata* Roth var. *somalensis* Chiov.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial laxly tufted grass with rhizomes; culms 0.5–1.5 m tall, erect, smooth; leaf blades linear, to 4 mm wide, scarcely white-hairy above; panicle narrow, loose, 5–20 cm long; spikelets 4–6 mm long, purplish; lemma hyaline with very short awn.

The only specimen known from S Somalia (S2) was found in a sample of fodder, probably introduced in fodder from Italy, and self-sown.

Europe S-wards to N Spain, N Italy, Bulgaria; Turkey, Asia E-wards to Siberia.

C. epigejos (L.) Roth [incl. var. *capensis* Stapf, subsp. *capensis* (Stapf) Tzvelev]; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 177, 1955; Agnew, Upl. Kenya wild flow., ed. 3: 413, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 103, 1970; Gibbs Russell, Grasses south. Afr.: 77, 1990; Fl. Eth. 7: 52, 1995.

bas.: *Arundo epigejos* L.

syn.: *Agrostis epigejos* (L.) Raspail; *Calamagrostis chilensis* Phil. (fide Darwiniana 44: 285, 2006); many forms, vars., subsp., and other synonyms in World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial, big, reedy, tufted grass with creeping rhizomes; culms 0.6–2 m tall, *erect, stout*, smooth but usually rough beneath panicle; leaf blades firm, to 45 cm long or more, 3–14 mm wide, ± scaberulous, setaceous pointed; *ligule 3–10 mm long*, acute; panicle erect, linear-oblong, 10–30 × 1.4–4 cm, (very) dense, spike-like, green or tinged purple, becoming yellowish-brown, pedicels 1–2 mm long; spikelets 6–8 mm long, with awns 3–4 mm long arising below the middle of the back of the lemma.

Forest clearings (and disturbed); (wet) grassland; moist ash soils; often on disturbed sites; 2000–3100 m alt.

S. Africa; temperate Europe and Asia (var. *epigejos*). Introduced in N. America.

Var. *capensis* Stapf in Africa, with longer spikelets (6–8 mm, not 4–7 mm for var. *epigejos*) and longer awns (3–4 mm, not 1–2 mm for var. *epigejos* arising usually between the lemma lobes).

C. hedbergii Melderis – Icon.: idem, Svensk Bot. Tidskr. 50: 545–546, 1956; Agnew, Field key upl. Kenya grasses: pl. 1/24, 2006 (details panicle); idem, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

Perennial loosely tufted grass with slender creeping rhizomes; culms 35–45 cm long, slender, ascending, rooting at lower nodes; leaf blades c. 6 cm long, 2 mm wide, firm, scaberulous, tip ± pungent, ligules 3–6 mm long; *panicle erect, 5–6 cm long*, c. 1 cm wide, spike-like; spikelets c. 5 mm long; lemma with 4 tiny teeth, with awn c. 2 mm long.

Rocky moorland, in rock crevices; 3500–4250 m alt. Rare.

In habit resembling *Agrostis stolonifera*.

CALAMAGROSTIS

C. sp. A sensu Agnew, Field key upl. Kenya grasses: p. 24, pl. 1/25: 2006 (detail, panicle); and idem, Upl. Kenya wild flow., ed. 3: 413, pl. 184, 2013.

Perennial grass; *panicle loose, interrupted*, > 10 cm long; leaf blades 18 cm long, 4 mm wide; glumes < 4 mm long; lemma smooth with awn twice as long as lemma.

Grassland; c. 2500 m alt.

Known from the collection Robertson 7374, Kenya, Nanyuki distr. (= W of Meru; c. 0° × 37°15'E). Not mapped.

SYNONYMS:

Calamagrostis chilensis Phil. = **Calamagrostis epigejos**

huttoniae Hack. = **Agrostis lachnantha**

lanceolata Roth var. *somalensis* Chiov.

= **Calamagrostis canescens**

mannii (Hook. f.) Engl. = **Agrostis mannii**

producta Mez ex Peter 1931 = **A. producta**

schimperiana Hochst. = **Leptagrostis schimperiana**

welwitschii Rendle 1899 = **Agrostis lachnantha**

(CALOTHECA)

Calothea arabica Spreng. = **Odysea mucronata**

mucronata (Poir.) Spreng. = **Megastachya mucronata**

(CAMPULOSUS)

Campulosus aciculatus Trin. = **Ctenium elegans**

canescens (Benth.) Kuntze = **C. canescens**

concinus (Nees) Kuntze = **C. concinnum**

elegans J. Gay ex Kunth = **C. elegans**

rupestris (J. A. Schmidt) Kuntze = **Enteropogon rupestris**

serpentinus (Steud.) Kuntze = **Ctenium elegans**

CAPILLIPEDIUM / I

Genus of 17 or 18 species in Africa (1), Asia and Australia (Kellogg in Kubitzki, ed., Fam. & genera vascul. pl. 13: 311, 2015; Christenhusz & al., Plants of the World: 208, 2017).

Capillipedium parviflorum (R. Br.) Stapf; Kirkia 17: 141–142, 2001; Agnew, Field key upl. Kenya grasses: 56, 2006; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015. – Icon.: Fl. Eth. & Eritrea 7: 305, 1995; Fl. Zambes. 10/4: 43, 2002; Fl. China 22, Illustr.: 848, 2007; Cope, Fl. Arab. Penins. 5/1: 283, 2007.

bas.: *Holcus parviflorus* R. Br.

syn.: *Andropogon parviflorus* (R. Br.) Domin; *A. quartinianus* A. Rich.; *A. micrathorus* var. *quartinianus* (A. Rich.) Hack.; *Bothriochloa parviflora* (R. Br.) Ohwi; *Dichanthium parviflorum* (R. Br.) de Wet & Harlan; *Sorghum quartinianum* (A. Rich.) Schweinf. & Asch.; *S. parviflorum* (R. Br.) P. Beauv.; *Anatherum parviflorum* (R. Br.) Spreng.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial tufted grass; culms slender 0.5–1.5 m tall, nodes barbate; leaf blades linear, 10–30 cm × 2–7 mm, apex finely pointed; inflorescence a panicle 8–25 cm long; racemes reduced to 1 sessile and 2 pedicellate spikelets, rarely with 2 sessile and 3 pedicellate spikelets; sessile spikelet 3–5 mm long with awn c. 2 cm long (incl. lemma); pedicellate spikelets c. 3 mm long.

Grassland with *Themeda*, *Hyparrhenia*; 40–2200 m alt.

CAPILLIPEDIUM PARVIFLORUM

S. Africa; Oman, Yemen (Kilian & al. in Willdenowia 34: 179, 2004); subtropical and tropical Asia, Japan, New Guinea, N & E Australia.

In Asia and Australia the species is more variable, mainly due to introgression from *Bothriochloa bladhii*. De Wet (Amer. J. Bot. 54: 384–387, 1967) distinguished 4 varieties.

CASTELLIA / 1

Monotypic genus.

Castellia tuberculosa (Moris) Bor; Fl. Pakistan 143: 354–355, 1982; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 257, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015. – Icon.: Maire, Fl. Afr. N. 3: 214, 1955; Audry & al., Pl. vascul. Djibouti 2/2: 828, 1994; Fl. Eth. & Eritrea 7: 16, 1995; Thulin, Fl. Somalia 4: 154, 1995; Cope, Fl. Arab. Penins. 5/1: 13, 2007.

bas.: *Catapodium tuberculosum* Moris

syn.: *Castellia tuberculata* Tineo 1846, nom. superfl.; *Festuca tuberculosa* (Moris) Coss. & Durieu; *Desmazeria tuberculosa* (Moris) Bonnier 1896, nom. illeg., non Trab. 1884 [= *Desmazeria sicula* (Jacq.) Dumort.]; *Nardurus tuberculosus* (Moris) Hayek; *Micropyrum tuberculosum* (Moris) Pilg.

Annual loosely tufted grass; culms erect or geniculately ascending, 0.2–1 m long; leaf sheaths with falcate auricles; inflorescence stiff, unbranched or of unbranched branches borne along a central axis below, 4–26 cm long; spikelets ± sessile, compressed, i. e. broadside to branches, alternating, distant, 0.9–1.5 cm long, 6–12-flowered; lemmas densely tuberculate, unawned.

Evergreen bushland in rock crevices; *Juniperus* forest, in shade; 1200–2700 m alt.

Canary Isl.; W & C Mediterranean region; Saudi Arabia, Oman; Pakistan (perhaps introduced, occurrence only along a railway line), India.

Superficially resembling *Lolium*.

An uncommon grass of widespread but very local distribution.

(CATABROSA)

Catabrosa micrantha Hochst. ex A. Rich.

= **Eragrostis japonica**

pilosa Steud. = **E. japonica**

CATAPODIUM / 1

Genus of 4 species in Macaronesia, Europe to the Mediterranean region E-wards to Iran, and Djibouti; introduced in S. Africa, Australia, New Zealand, the Americas. *Catapodium* is treated as a synonym under *Desmazeria* Dumort. by Kellogg in K. Kubitzki, ed., Families & genera of vascular plants 13: 249, 2015; but maintained as a separate genus by Christenhusz & al., Plants of the World: 208, 2017.

Catapodium rigidum (L.) C. E. Hubb. subsp. **rigidum**; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 258, 2010. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 78, 1990; Audru & al., Les plantes vascul. Djibouti 2/2: 827, 1994; Boulos, Fl. Egypt 4: 150,

CATAPODIUM RIGIDUM

2005; Cope, Fl. Arab. Penins. 5/1: 29, 2007; Clarke, Name those grasses: 162–163, 2015.

bas.: *Poa rigida* L.

syn.: *Sclerochloa rigida* (L.) Link; *Scleropoa rigida* (L.) Griseb.; *Desmazeria rigida* (L.) Tutin; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual herb much branched at base, glabrous; culms erect or ascending, 5–30 cm long; leaf blades 10–15 cm long, 0.5–2 mm wide, flat or loosely inrolled; panicle linear to ovate, 1–8 cm long, sparsely branched, main axis and branches 3-angled; spikelets narrowly oblong, 3.5–7 mm long.

Green.

Madeira, Canary Isl.; N Africa; W & south. Europe; Oman, Saudi Arabia, Yemen, W Asia; introduced in S. Africa, Australia, New Zealand, N. & S. America; there often growing in somewhat saline sites.

Subsp. **hemipoa** (Delile ex Spreng.) Kerguelen [bas.: *Festuca hemipoa* Delile ex Spreng.], usually a taller plant with lower branches of the inflorescence devoid of spikelets, occurs in Macaronesia, Mediterrean region, usually on maritime sands, and also in W Asia to Iran.

SYNONYM:

Catapodium bifarium (Vahl) Link = **Eragrostiella bifaria**

CENCHRUS / 7

Genus of 23–26 species (Pathak in Rheede 23: 132, 2013; Christenhusz & al., Plants of the World: 208, 2017) in SE Europe, Africa and Asia E-wards to Viet-Nam, N & E Australia to Pacific, and America, and predominantly in the tropical regions. Most of the species are considered undesirable and noxious weeds, but some (such as *C. ciliaris*) are important forage grasses.

Cenchrus and *Pennisetum* have always been regarded as closely related, and the generic limits of them controversial. *Cenchrus* is distinguished from *Pennisetum* by the transformation of the involucre bristles into a spiny cup. *Cenchrus ciliaris* L. is a “transitional” species, as these bristles are fused only at their extreme bases. The inclusion of *C. ciliaris* is “justified only by its intergradation with *C. pennisetiformis* Steud.” (Boulos, Fl. Egypt 4: 317–318, 2005).

Recent molecular phylogenetic studies have confirmed that *Cenchrus* and *Pennisetum* are very closely related and shown that most species of *Cenchrus* are nested in *Pennisetum*; they have provided evidence on the monophyly of the genera *Cenchrus*, *Pennisetum* and *Odontelytrum*. The generic name *Cenchrus* having priority, these studies propose the unification and transfer of *Pennisetum* and *Odontelytrum* to the genus *Cenchrus*. For new combinations in *Cenchrus*, see Crespo & al. in Phytotaxa 454: 250–251, 2021.

In *Odontelytrum* each spikelet is subtended by a bract-like involucre with a single bristle. In our compilation below we maintain the traditional concept of *Cenchrus*, *Odontelytrum* and *Pennisetum*.

DONADÍO, S. & al. (2009). A preliminary molecular phylogeny of *Pennisetum* and *Cenchrus* (Poaceae-Panicaceae) based on the trnL-F, rpl16 chloroplast markers. *Taxon* 58: 392–404.

GUTIÉRREZ, H. F. (2015). Les especies americanas del género *Cenchrus* s. l. (Poaceae, Panicoideae, Paniceae). *Darwiniana*, N. S. 3: 114–200.

GUTIÉRREZ, H. F. & O. MORRONE (2012). Novedades nomenclaturales en *Cenchrus* s. l. (Poaceae: Panicoideae: Paniceae) *Bol. Soc. Argen. Bot.* 47: 263–269.

CENCHRUS

SOSEF, M. S. M. (2019). Taxonomic novelties in Central African grasses (Poaceae), Paniceae 2. *Pl. Ecol. Evol.* 152: 554–260.

VELDKAMP, J. F. (2014). A revision of *Cenchrus* incl. *Pennisetum* (Gramineae) in Malesia with some nomenclatural notes. *Blumea* 59: 59–75.

VERLOOVE, F. (2012). New combinations in *Cenchrus* (Paniceae, Poaceae) in Europe and the Mediterranean area. *Willdenowia* 42: 77–78.

VERLOOVE, F. & al. (2014). A new combination in *Cenchrus* (Poaceae: Paniceae), with lectotypification of *Panicum divisum*. *Phytotaxa* 181: 59–60.

(*Cenchrus abyssinicus* (Hack.) Morrone) – See under *Odontelytrum abyssinicum* Hack.

(*C. americanus* (L.) Morrone) with new combinations of subsp. *monodii* (Maire) Sosef and subsp. *stenostachyus* (Klotzsch ex A. Braun & Bouché) Sosef in *Pl. Ecol. Evol.* 152: 555–556, 2019. – See under *Pennisetum glaucum* (L.) R. Br.

C. biflorus Roxb.; Fl. Zambes. 10/3: 188, 1989; Thulin, Fl. Somalia 4: 247, 1995; Klaassen & Craven, Checklist grasses Namibia: 19, 2003; Brink & Belay, Pl. resources trop. Afr. 1, Cereals & pulses: 40–41, 2006; Lisowski, Fl. Rép. Guinée 1: 452, 2009; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 259, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015; Schmidt & al. in *Phytotaxa* 304: 54, 2017. – Icon.: Robyns, Fl. agrost. Congo belge 2: 331, 1934 (as *C. barbatus*); Busson, Pl. alimentaires Ouest afric.: 450, 1965; van der Zon, Gramin. Cameroun 2: 348, 351 (map), 1992; Fl. Eth. & Eritrea 7: 278, 1995 (details); Poilecot, Boissiera 50: 469, 1995; idem, ibid. 56: 497, 1999; Setshogo in Sabonet News 7/3: 182, 2002 (details); Boulos, Fl. Egypt 4: 319, 2005 (idem); Cope, Fl. Arab. Penins. 5/1: 251, 2007 (spikelet cluster); Thouzery & Vall, Pl. médicin. Mauritanie: 136, 2011; Velayos & al., Fl. Guinea Ecuat. 12: 169, 2015; Ibrahim & al., Grasses Mali: 41, 2018.

syn.: *C. barbatus* Schumacher; *C. catharticus* Delile; *C. niloticus* Fig. & De Not.; *C. annularis* Andersson; *C. triflorus* Aitch.; *C. perinvolutus* Stapf & C. E. Hubb.; *C. leptacanthus* A. Camus; *C. lapeta* Ham. ex Stapf; *C. rajasthanensis* Kanodia & P. C. Nanda; *Elymus caput-medusae* Forssk. 1775, nom. illeg., non L. 1753.

Annual loosely tufted herb; culms 5–90 cm long, ascending; leaf blades 2–25 cm long, 2–7 mm wide, flat; panicle 2–15 cm long with spiny involucre along a twisted rachis; involucre ovoid 4–11 mm long with 2–3 whorls of spines; *inner spines flattened, connate at base* to form a shallow ovoid or diamond-shaped disc-like cup 2–4 mm Ø, loosely ciliate below, pungent at tip; outer spines numerous, similarly barbellate; spikelets 1–3 per involucre (bur), 3,5–6 mm long.

Noxious weed of overgrazed and waste places or old farmland on sand; deciduous bushland on orange sand; common in dry sandy plains, grows among poor herbage; inselbergs (Burkina Faso; Bois Forêts Trop. 325/3: 21, 2015); with *Aristida mutabilis*, *A. funiculata*, *Schoenefeldia gracilis*, *Eragrostis tremula* and other sand-loving grasses; sands temporarily flooded; coastal savannas on higher sandy cordons; 0–1300 m alt.

Cape Verde Isl.; Morocco?, Algeria, Egypt (introduced weed, naturalised in newly reclaimed lands E & W of the Nile Delta); Namibia, Botswana (accidentally introduced in the Kalahari sand dune savanna; Sabonet News 7/3: 181, 2002), Caprivi Strip, S. Africa; Madagascar; Saudi Arabia, Yemen Ewards to NW India; introduced in USA. – Erroneously determined as *C. biflorus* in Gabon where there is no formal record of the plant though its presence is likely; the collection cited in Fl. Gabon 5b: 17, 1999, is *C. echinatus* L. (Sosef & al., Pl. Ecol. Evol. 152: 100–101,

CENCHRUS BIFLORUS

2019). – Its northernmost dispersal is considered to mark the limit of the Sahel (fide Carvalho & Gillet, Catalogue... des plantes de l'Ennedi, Office anti-acridien, Bull. hors-série: 123, 1960; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 196–198, 1994).

Provides an excellent fodder whilst still young before flowering; the seed normally remains within the husk; threshing is not easy. The grain is edible, very nutritious as famine food; prepared as couscous or porridge, or ground to flour for baking into cakes or unleavened bread, or eaten raw (Burkill, l. c.).

(*C. brownii* Roem. & Schult.); Siebert & al. in Bothalia 34: 71, 2004; Sabonet News 7/3: 216, 2002 (Licuati Forest & Maputo Elephant Reserves, Mozambique); Gibbs Russell & al., Grasses south. Afr.: 80, 1990 (distribution map); Veldkamp in *Blumea* 59: 66, 2014.

syn.: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual tufted herb 30–90 cm tall; leaf blades 8–15 cm long, 8–10 mm wide; inflorescence a false spike 3–10 cm long; spikelet involucre in 2 whorls, inner one with connate plumose spines, outer one with bristle-like spines, disc inconspicuous; spikelets 4–6 mm long and wide.

Invader in NE coastal S. Africa on mainly sandy soil in savanna and grassland. Native to tropical America, now a pantropical weed. – Not mapped.

C. ciliaris L., incl. var. *anachoreticus* (Chiov.) Pirota, var. *leptostachys* (Leeke) Maire & Weiller, var. *nubicus* Fig. & De Not., var. *pallens* (Leeke) Maire & Weiller, var. *robustior* Penz., var. *villifer* Fig. & De Not., and subsp. *ibrahimii* Chrtk & Osb.-Kos; but excl. fa. *intermedius* (Chiov.) Chiov., var. *pennisetiformis* (Steud.) Chiov. ex Pirota, and fa. *rigidifolius* (Fig. & De Not.) Chiov., these = *C. pennisetiformis*; also excl. var. *setiger* (Vahl) Maire & Weiller (= *C. setiger*) – Blue Buffalo Grass – Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 124, 1955; van der Zon, Gramin. Cameroun 2: 347, 349, 351 (map), 1992; Thulin, Fl. Somalia 4: 246, 1995; Klaassen & Craven, Checklist grasses Namibia: 19, 2003; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 259, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Gutiérrez & Morrone (2012): 264 (lectotypification); Veldkamp (2014): 67; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015; Schmidt & al. in *Phytotaxa* 304: 54, 2017. – Icon.: Fl. Zambes. 10/3: 187, 1989; Chrtk & Osbornová in Acta Univ. Carolinae Biol. 39: 97, 1996 (bur); Poilecot, Boissiera 56: 499, 1999; Butler in Queensland Herb. Achievements 2002–2003: 19 (2004); Taiwan 49: 234, 2004 (naturalised, Taiwan); Boulos, Fl. Egypt 4: 319, 2005; Müller, Grasses Namibia: 25, 2007; Cope, Fl. Arab. Penins. 5/1: 251, 2007 (details); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 82, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 191, 2013; Clarke, Name those grasses: 246–247, 2015; Gutiérrez (2015): fig. 2C (details); Catasús Guerra in Revista Jard. Bot. Nac. 36: 120, 2015 (photo., invasive in Cuba); Ibrahim & al., Grasses Mali: 42, 2018; César & Chatelain, Fl. ill. Tchad: 244, 2019.

syn.: *C. longifolius* Hochst. ex Steud.; *Pennisetum cenchroides* Rich., nom. superfl.; *P. ciliare* (L.) Link; *P. longifolium* Fenzl ex Steud.; *P. petraeum* Steud.; *P. polycladum* Chiov.; *P. ciliare* var. *anachoreticum* Chiov., var. *leptostachys* Leeke, var. *pallens* Leeke; *P. rangei* Mez; *P. oxyphyllum* Peter; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial plant, tufted or mat-forming, with underground runners; culms 0,1–1,5 m long, ascending, wiry or sometimes almost woody; leaf blades 3–25 cm long, 0,2–1,3 cm wide; panicle

CENCHRUS CILIARIS

cylindrical to ovoid, 2–14 × 1–2,5 cm, dense, purple to straw-coloured; involucre 0,6–1,6 cm long, inner bristles much exceeding the spikelets, one of them longer, stouter than the rest, *connate only at base* to form a *shallow disk* 0,5–1,5 mm Ø, sparsely or densely ciliate below, filiform above, flexuous, antrorsely scaberulous; outer bristles filiform; spikelets 1–4 per involucre (bur), 2–5 mm long.

Growing in a variety of habitats including extreme desert environment; deciduous bushland, woodland, wooded grassland; rocky hillsides with *Acacia-Commiphora* shrubland; rocky slopes with *Enneapogon lophotrichus*, *E. desvauxii*, *Aristida funiculata*, *Eragrostis cilianensis*, *Lasiurus scindicus*; clayey grara with *Euphorbia echinus*, *E. balsamifera*; near-coastal dunes; irrigated farmland; sandy, silty and alluvial soils; 0–2400 m alt. – For the *C. ciliaris-Chrysopogon aucheri* community in SE Ethiopia, see Dalle & al. in *Community ecology* 6: 170, 2005. – The matting habit of the grass makes it a good sand-binder.

Extremely polymorphic plant.

Cape Verde Isl. (Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 25, 2002); N. Africa from Morocco to Egypt; Namibia, Botswana, Caprivi Strip, S. Africa, Swaziland; Madagascar; Madeira, Canary Isl.; Sicily; Arabian Peninsula E-wards to India, Pakistan. Widely introduced elsewhere in the Old World and America (hot dry areas). Originally introduced to Australia around 1880; then widely sown since the 1920's for pasture and soil stabilization (Butler in Queensl. Herb. Achievements 2002–2003: 18–19, 2004, with ill.). Introduced to U.S.A. and Mexico as a pasture grass and had become an invasive weed. Cultivated in Taiwan as a pasture grass, then escaped and naturalised in S. Taiwan. – The grain is edible (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 198, 1994).

Different cytotypes (ploidy levels) have been studied in S Tunisia (Kharrat-Souissi & al. in *Folia Geobot.* 48: 95–113, 2013). The plant reproduces mainly by aposporous apomixis.

Closely related to *Pennisetum massaicum* and *Cenchrus pennisetiformis* (a smaller, usually annual grass of subdesert habitats). *Cenchrus setiger* is generally maintained as a distinct species because of its flattened, distinctly connate inner bristles, though material is sometimes difficult to name (Veldkamp, 2014: 67).

(**C. echinatus** L.); Fl. W. Trop. Afr., ed. 2, 3/2: 464, 1972; Fl. Trop. E. Afr., Gramin. 3: 695, 1982; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 199, 1994; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 259, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Veldkamp (2014): 60–61, 67–68; Patzelt & al. in *Edinb. J. Bot.* 71: 172, 2014 (Oman); Sosef & al. in *Pl. Ecol. Evol.* 152: 100–101, 2019. – Icon.: Poilecot, Boissiera 50: 471, 1995; Sunil & Sivadasan in *Rheede* 10: 154, 2000 (India); Boulos, Fl. Egypt 4: 319, 2005 (details); Cope, Fl. Arab. Penins. 5/1: 251, 2007 (idem); Verloove & Sánchez Gullón in *Willdenowia* 42: 69, 2012 (bur); Velayos & al., Fl. Guinea Ecuat. 12: 170, 2015; Catasús Guerra in *Rev. Jard. Bot. Nac. Cuba* 36: 120, 2015; Fl. Mascareignes 203, Gramin.: 131, 2018.

syn.: *C. pungens* Kunth; *C. crinitus* Mez; *C. brevisetus* E. Fourn. ex Hemsl.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual coarse tufted herb; culms ascending, branched at nodes (and rooting there); leaf blades linear, 4–25 × 0,3–1 cm, flat; panicle 2–10 cm long, 1–1,4 cm Ø; involucre globose, sessile, 5–10 mm long; inner spines flattened, connate for 1/2 their length to form a deep cup, pubescent, barbellate; outer spines rigid, much shorter than the inner ones; spikelets 2–3 per involucre (bur), 5–7 mm long.

CENCHRUS ECHINATUS

Waste places; beaches; roadsides; fields; savanna; ruderal; in coastal vegetation associated with *Antheophora cristata*, *Brachiaria subquadripata*, *Cynodon dactylon*, *Eleusine indica*, etc.; also gardens, lawns (towns) with *Eragrostis tenella*, *Chrysopogon aciculatus*, *Paspalum notatum*, *Eleusine indica*, etc.; 0–900 m alt. (E. Africa).

Native of (tropical and subtropical) S USA, Mexico, Caribbean, C. & S. America; now adventive in most tropical countries (pan-tropical). In Africa present in W. Africa from Ivory Coast E-wards to Nigeria, Equatorial Guinea, Gabon (collection first erroneously determined as *C. biflorus*; Sosef in *Pl. Ecol. Evol.* 152: 100–101, 2011), Kenya, Tanzania; Egypt, Cape Verde Isl. Also in Canary Isl.; Oman, etc. E-wards to India (*Rheede* 10: 153, 2000), Japan, etc.

Resembling *C. biflorus* in having small spiny burs on the spikelets.

Veldkamp (Blumea 59: 60–61, 2014) investigated old literature to trace the first reports of *C. echinatus*. Piso (De medicina brasiliensis: 120, 1648) mentioned a plant known as *Amongeaba* in the Dutch colonies in NE Brazil (fig. 1 in Veldkamp, o.c.), but a more certain record dates from 1689 (Herman in Sherard's *Paradisi batavi* p. 338): *Gramen aculeatum Curassavicum*. Then Plukenet (1691, 1696) mentioned it with some doubt under the phrase name *Gramen americanum spica echinata majoribus locustis*. The illustration (Plukenet, *Phytographia* 1: 174, t. 92, f. 3, 1691) is reproduced by Veldkamp (o.c.) p. 61 (fig. 2). This illustration was based on plants grown from fruits given by Sherard to a London pharmacist, Samuel Doody (1656–1706), who was Superintendent of the Chelsea Physik Garden from 1691. The lectotype of *C. echinatus* was designated by Veldkamp (*Regnum Veget.* 127: 31, 1993).

C. mitis Andersson; Fl. Trop. E. Afr., Gramin. 3: 694–695, 1982; Fl. Zambes; 10/3: 188, 1989; Thulin, Fl. Somalia 4: 246, 1995. – Icon.: Napper, Grasses of Tanganyika, Minist. Agric. Forests & Wildlife, Tanzania, Bull. 18: pl. 15 fig. 29, 1965 (inflorescence). syn.: *C. aequiglumis* Chiov. 1926 fide Thulin, Fl. Somal. 4: 246, 1995 (or = *C. pennisetiformis* Steud. fide World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew).

Annual herb; culms 0,2–1 m long, decumbent or ascending; leaf blades flat, 5–30 × 0,2–1 cm; panicle 4–18 cm long; *involucre* globose to ovoid, 6–9 mm long; inner spines flattened, connate for 1/3–2/3 their length to form a cup, *pubescent* not grooved on the face, margins ciliate, antrorsely scaberulous, tip aciculate; outer bristles filiform, *acicular*, mostly shorter than the inner; spikelets 2–3 per bur, 4–6 mm long.

Coastal bushland on sandy soils; *Acacia-Commiphora* bushland on reddish soil; areas of heavy grazing and abandoned cultivation; 0–100 m alt.

Not in Ethiopia.

C. pennisetiformis Steud., incl. var. *brevisetosus* Courbon, var. *rigidifolius* (Fig. & De Not.) Chiov., and subsp. *glabratus* Chrtek & Osb.-Kos., but excl. var. *intermedius* Chiov. (= *C. ciliaris*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 199, 1994; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 693, 1982; Audru & al., Pl. vascul. Rép. Djibouti 2/2: 931, 1994; Thulin, Fl. Somalia 4: 247, 1995; Fl. Eth. & Eritrea 7: 277, 1995 (involucre); Chrtek & Osbornová in *Acta Univ. Carolinae Biol.* 39: 103, 1996 (idem); Poilecot, Boissiera 56: 501, 1999 (Niger); Boulos, Fl. Egypt 4: 319, 2005; Cope, Fl. Arab. Penins. 5/1: 251, 2007 (spikelet cluster); Pickering & Awale, *Introd. plants Centr. Somaliland*: 116, 2018 (panicle).

syn.: *C. ciliaris* var. *pennisetiformis* (Steud.) Chiov. ex Pirota, and fa. *rigidifolius* (Fig. & De Not.) Chiov.; *C. rigidifolius*

CENCHRUS PENNISETIFORMIS

Fig. & De Not.; *Pennisetum cenchroides* var. *hampphilahense* A. Terracc., and var. *echinoides* Hook. f.; *P. ciliare* (L.) Link var. *hampphilahense* (A. Terracc.) T. Durand & Schinz; *P. pennisetiformis* (Steud.) Wipff; *P. cenchroides* auct., non Rich.; *Cenchrus aequiglumis* Chiov. (syn. of *C. mitis* according to Thulin, Fl. Somalia 4: 246, 1995); World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual or short-lived perennial plant, rarely tussocky or mat-forming; culms 10–60 cm long, ascending to erect; leaf blades linear, 2–20 cm × 2–5 mm; panicle ± dense, cylindrical 2–6–8 cm long, 1–2.5 cm Ø, purple to straw-coloured; involucre elongate, 0.6–1.6 cm long; *inner bristles* much exceeding the spikelets, one of them longer and stouter than the rest, flattened at base, *connate for 1–2.5 mm above the rim of the basal disk* to form a cup, ± glabrous to sparsely ciliate below, filiform above, flexuous, often wavy, antrorsely scaberulous; outer bristles filiform; spikelets 1–3 per bur, 3–5 mm long.

Subdesert grassland; sandy soils of plains; thin semi-desert *Acacia* scrubland; dunes; gravel plains and streambeds; limestone hillsides and pavements; irrigated farmland; 0–1850 m alt.

Very variable in development and hairiness of inner bristles.

Egypt; Socotra, Arabian Peninsula; Iran, Afghanistan, Pakistan, India, Sri Lanka, Burma. Introduced in Australia. Not in Mauritania; reported from southern Saharian region of Niger (Poilecot, l.c.).

The boundary between *C. pennisetiformis* and *C. ciliaris* is indistinct; the former is smaller, usually annual and favours subdesert habitats.

C. prieurii (Kunth) Maire, incl. var. *scaber* Bhandari; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 199, 1994; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 259, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015; Schmidt & al. in Phytotaxa 304: 54, 2017; César & Chatelain, Fl. ill. Tchad: 244, 2019. – Icon.: Fl. Eth. & Eritrea 7: 277, 1995 (involucre); Poilecot, Boissiera 56: 500, 1999; Cope, Fl. Arab. Penins. 5/1: 251, 2007 (spikelet cluster); Pathak in Rheedia 23: 133, 2013; Ibrahim & al., Grasses Mali: 44, 2018; Markwirth in Eichhorn & Höhn, eds., Trees, grasses & crops... in Sub-Saharan Africa...: 280, 2019 (inflorescence, grain).

bas.: *Pennisetum prieurii* Kunth

syn.: *P. breviflorum* Steud.; *Cenchrus hystrix* Fig. & De Not.; *C. macrostachyus* Hochst. ex Steud.

Annual, loosely tufted herb; culms erect or ascending, 12–75 cm long; leaf blades linear, 10–25 × 0.5–1 cm; panicle spiciform, cylindrical, 5–14 cm long, 2–4 cm Ø; involucres closely set, deciduous; inner bristles *c. 2 cm long*, greatly exceeding spikelets, flattened, united only at base to form a shallow disk, filiform and flexuous above; *outer bristles filiform*, c. 1 cm long; spikelets sessile, 1–3 per bur, 4–5 mm long, obscured by the inner bristles.

Sandy waste places; open sandy places, with *Aristida mutabilis*, *A. sieberiana*, *Eragrostis tremula*, *Brachiaria villosa*, *B. xantholeuca*, *Diheteropogon hagerupii*; green near pool, with *Pennisetum pedicellatum*; wadi in mountain with *Panicum turgidum*, *Stipagrostis acutiflora*; sands temporarily flooded with *Stipagrostis ciliata*, *Cenchrus biflorus*, *Coelachyrum brevifolium*; thalweg in sandstone; frequent in clayey-sandy places (Tibesti); to 1000 m alt.

Mauritania?; Algeria; Yemen; Pakistan, India, Burma. In tropical Africa the distribution is typically sahelian.

CENCHRUS PRIEURII

Grain edible; important food for some desert nomads. Also valued for grazing (Brink & Belay, Pl. resources trop. Africa, Cereals & pulses: 41–42, 2006).

C. setiger Vahl; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 200, 1994; Thulin, Fl. Somalia 4: 246, 1995; Lye & al. in Lidia 4: 160, 2000; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 332, 2010 (under *Pennisetum*); Schmidt & al. in Ecotropica 17: 57, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 122, 2015; Gutiérrez in Darwiniana, N. S. 3: 181–182, 2015. – Icon.: Fl. Eth. & Eritrea 7: 278, 1995; Poilecot, Boissiera 56: 498, 1999; Boulos, Fl. Egypt 4: 319, 2005 (involucre); Cope, Fl. Arab. Peninsula 5/1: 251, 2007 (idem); Agnew, Upl. Kenya wild flow., ed. 3: pl. 191, 2013; César & Chatelain, Fl. ill. Tchad: 245, 2019.

syn.: *C. ciliaris* var. *setiger* (Vahl) Maire & Weiller; *C. tripsacoides* R. Br., nom. nud.; *C. montanus* Nees 1840, nom. nud., Nees 1854; *C. schimperi* Hochst. & Steud. 1840, nom. nud.; *Pennisetum vahlii* Kunth 1829, nom. superfl.; *P. ciliare* var. *setigerum* (Vahl) Leeke; *P. setigerum* (Vahl) Wipff; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial grass forming clumps from a bulbous base; culms 5–80 cm long, geniculately ascending; leaf blades linear, 2–20 × 0.2–0.7 cm; panicle 2–12 cm long, involucre cup-shaped, 3–7 mm long; inner bristles hard, rigid, flattened, connate for 1/4–2/3 their length to form a cup; *outer bristles* few, short, *often suppressed*; spikelets 1–3 per bur, 3–5 mm long.

On a wide variety of soils except on saline or waterlogged sites; humid banks; sub-desert grassland and bushland; arid deciduous grassland; sandy and silty soils; alluvial soil near river; 0–1400 m alt.

Variable plant – a number of strains have been selected for cultivation in India. Specimens with elongated slender inner spines and quite well-developed outer bristles may represent introgression from *C. ciliaris*.

Algeria, Egypt; Arabian Peninsula, Gulf states; Iran, Pakistan, India, Burma. Introduced in several tropical countries, e. g., Hawaii, S USA, C. America, Paraguay.

Resembling *C. biflorus* but without spines (burs). – Cf. also under *C. ciliaris* above.

C. somalensis Clayton; Thulin, Fl. Somalia 4: 246, 1995.

syn.: *Pennisetum somalense* (Clayton) Wipff

Perennial densely tufted grass to 45 cm tall; leaf blades inrolled, filiform, 5–15 cm × 1 mm; panicle 2.5–6 cm long; involucre cup-shaped, 6–9 mm long; inner bristles 6–9 mm long, one of them to 15 mm, flattened at base, connate for 1/2 their length to form a cup, shortly ciliate below, filiform above; outer bristles filiform; spikelets 1–2 per bur, 4–5 mm long.

Edge of open areas in *Juniperus* forest; also under shade of bush and trees; 1500–2200 m alt.

Clearly related to *C. pennisetiformis*.

(**C. spinifex** Cav.) – In many floras and flora lists figuring as *C. incertus* M. A. Curtis – Fl. Zambes. 10/3: 188, 1989; Gibbs Russell & al., Grasses south. Afr.: 80, 1990 (with map S. Africa); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 259, 2010; Veldkamp in Blumea 59: 71, 2014; Gutiérrez in Darwinia, N. S. 3: 182, 2015. – Icon.: Fl. Libya 145: 309, 1988; Verloove & Sánchez Gullón in Willdenowia 42: 69, 2012; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 259, 2012; Catasús Guerra in

CENCHRUS SPINIFEX

Revista Jard. Bot. Nac. Univ. Habana 36: 121, 2015; Roselló Gimeno & al. in Butll. Inst. Catalana Hist. Natural 78: 63, 2015.
syn.: *C. incertus* M. A. Curtis; *C. pauciflorus* Benth.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual tufted grass; culms 10–40–60 cm long, erect or ascending; leaf blades linear, 5–20 cm × 3–6 mm; panicle spike-like, 2–8 cm long; involucre 0.5–1 cm long, connate for 1/3–2/3 its length to form a cup cleft on 2 sides; inner spines flattened, ± pubescent, retrorsely barbellate, pungent; outer spines triangular, flattened, arising irregularly from the surface of the bur, spreading in all directions.

Sand dunes; sea level (S-most Mozambique, Costa do Sol, Maputo).

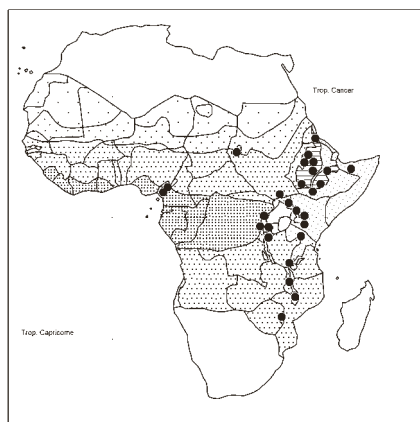
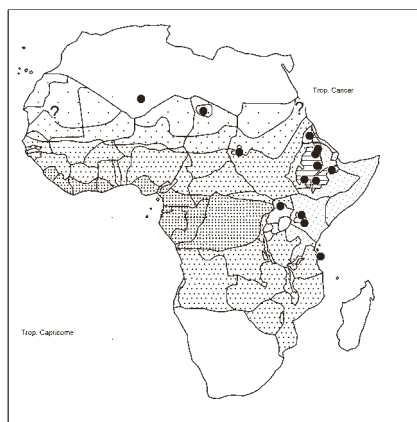
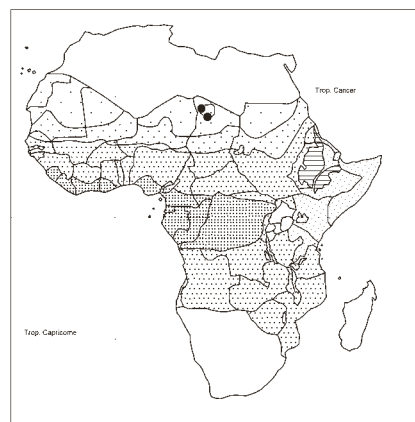
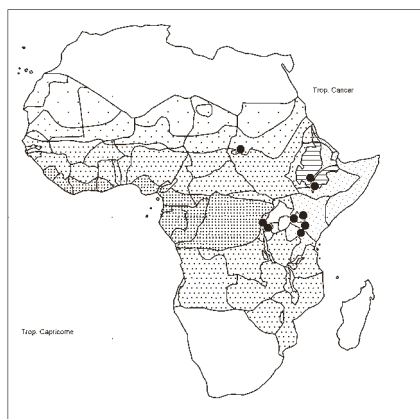
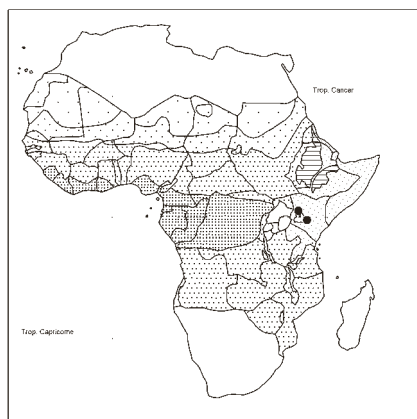
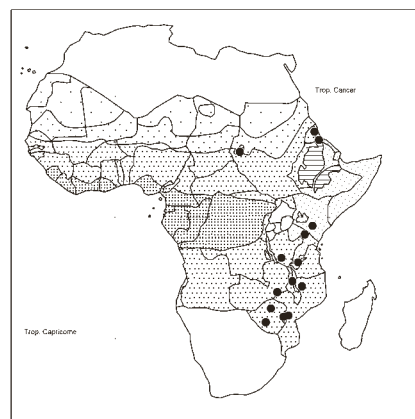
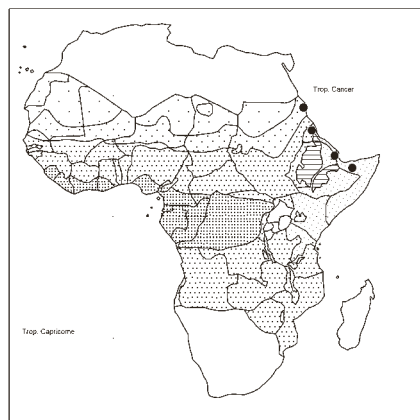
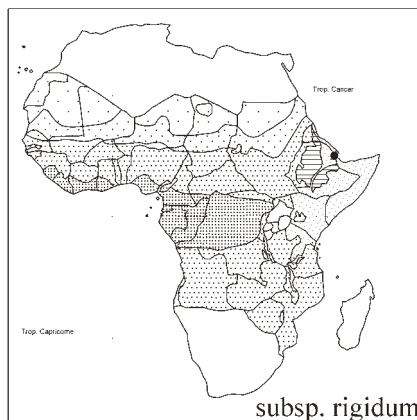
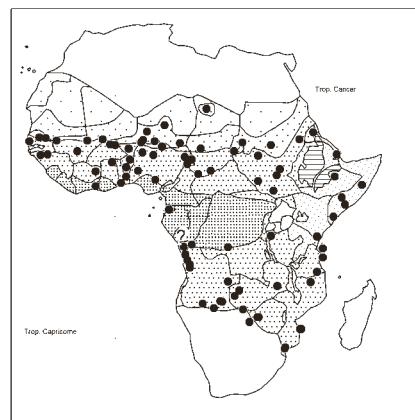
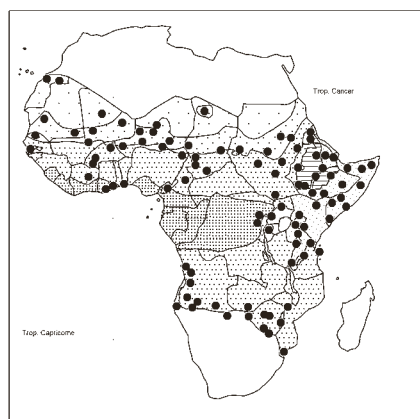
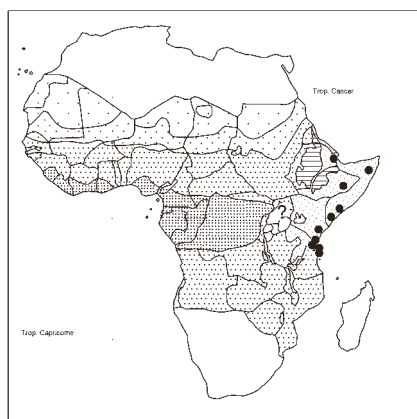
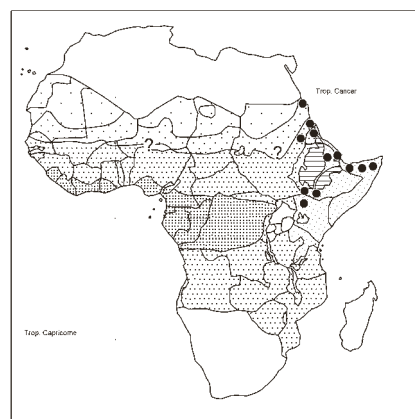
Pantropical weed, native of S USA, Mexico, C. & S. America, West Indies. Widely naturalised as a noxious weed (lawns, cultivated areas, fynbos, savanna, grassland) in S. Africa; N Libya; Mediterranean region of Europe (Spain, Italy, France); China, Australia.

SYNONYMS:

Cenchrus abyssinicus (Hack.) Morrone
= **Odontelytrum abyssinicum**
aeuiglumis Chiov. = **Cenchrus mitis** (fide Thulin) or
C. pennisetiformis?
americanus (L.) Morrone, incl. subsp. *monodii* (Maire)
Sosef and subsp. *stenostachyus* (Klotzsch ex A. Braun
& Bouché) Sosef – See under **Pennisetum glaucum**
annularis Andersson = **Cenchrus biflorus**
barbatus Schumach. = **C. biflorus**
biflorus sensu auct., Gabon, non Roxb. = **C. echinatus**
brevisetus E. Fourn. ex Hemsl. = **C. echinatus**
catharticus Delile = **C. biflorus**
caudatus (Schrader) Kuntze = **Pennisetum macrourum**
ciliaris L. var. *anachoreticus* (Chiov.) Pirota, subsp.
ibrahimii Chrtek & Osb.-Kos, var. *leptostachys* (Leeke)
Maire & Weiller, var. *nubicum* Fig. & De Not., var.
pallens (Leeke) Maire & Weiller, var. *robustior* Penz.,
var. *villifer* Fig. & De Not. = **Cenchrus ciliaris**
ciliaris fa. *intermedius* (Chiov.) Chiov., var. *pennisetiformis*
(Steud.) Chiov. ex Pirota, fa. *rigidifolius* (Fig. & De
Not.) Chiov. = **C. pennisetiformis**
ciliaris var. *setiger* (Vahl) Maire & Weiller = **C. setiger**
clandestinus (Hochst. ex Chiov.) Morrone
= **Pennisetum clandestinum**
crinitus Mez = **Cenchrus echinatus**
divisus (J. F. Gmelin) Verloove, Govaerts & Butler
= **Pennisetum divisum**
dowsonii (Stapf & C. E. Hubb.) Morrone = **P. riparium**
elatus (Hochst. ex Steud.) Verloove = **P. divisum**
geniculatus Thunb. 1794 = **P. thunbergii**
gracilescens (Hochst.) Zon = **P. gracilescens**
granularis L. = **Hackelochloa granularis**
hordeiformis Rottler ex Steud. = **Pennisetum hohenackeri**
hordeoides (Lam.) Morrone = **P. hordeoides**
hystrix Fig. & De Not. = **Cenchrus prieurii**
incertus M. A. Curtis = **C. spinifex**
lapeta Ham. ex Stapf = **C. biflorus**
lappaceus L., non Tausch = **Centotheca lappacea**
laxior (Clayton) Zon = **Pennisetum laxior**
leptacanthus A. Camus = **Cenchrus biflorus**
longifolius Hochst. ex Steud. = **C. ciliaris**
longisetus M. C. Johnst. = **Pennisetum villosum**

CENCHRUS

× *longistylus* (Hochst. ex A. Rich.) Thulin & S. M. Phillips
= **Pennisetum × longistylum** (a sterile hybrid
P. clandestinum × P. villosum)
macrostachyus Hochst. ex Steud. = **Cenchrus prieurii**
macrourus (Trin.) Morrone = **Pennisetum macrourum**
massaicus (Stapf) Morrone = **P. massaicum**
mildbraedii (Mez) Morrone = **P. macrourum**
monostigma (Pilg.) Morrone = **P. monostigma**
montanus Nees = **Cenchrus setiger**
niloticus Fig. & De Not. = **C. biflorus**
nodiflorus (Franch.) Zon 2019 and Sosef 2019
= **Pennisetum nodiflorum**
nubicum (Hochst.) Zon = **P. nubicum**
orientalis (Rich.) Morrone = **P. orientale**
pauciflorus Benth. = **Cenchrus spinifex**
pedicellatus (Trin.) Morrone = **Pennisetum pedicellatum**
pennisetiformis Steud. var. *brevisetosus* Courbon, subsp.
Glabratus Chrtek & Osb.-Kos., var. *rigidifolius*
(Fig. & De Not.) Chiov. = **Cenchrus pennisetiformis**
pennisetiformis var. *intermedius* Chiov. = **C. ciliaris**
perinvolucratum Stapf & C. E. Hubb. = **C. biflorus**
petiolaris (Hochst.) Morrone = **Pennisetum petiolare**
pirotae (Chiov.) Zon = **P. pirottae**
polystachios (L.) Morrone, incl. subsp. *atrichus*
(Stapf & C. E. Hubb.) Morrone = **P. polystachyon**
procerus (Stapf) Morrone = **P. procerum**
pubescens Steud. = **Antheophora pubescens**
pungens Kunth = **Cenchrus echinatus**
purpureus (Schumacher) Morrone
= **Pennisetum purpureum**
racemosus L. = **Tragus racemosus**
rajasthanensis Kanodia & P. C. Nanda
= **Cenchrus biflorus**
ramosissimus Poir. 1804 = **Pennisetum divisum**
rigidifolius Fig. & De Not. = **Cenchrus pennisetiformis**
rogeri (Stapf & C. E. Hubb.) Verloove
= **Pennisetum violaceum**
schimperii Hochst. & Steud. 1840 = **Cenchrus setiger**
schweinfurthii (Pilg.) Zon = **Pennisetum schweinfurthii**
setaceus (Forssk.) Morrone = **P. setaceum**
setosus Sw. = **P. polystachion** subsp. **polystachion**
sieberianus (Schltdl.) Verloove = (*Cenchrus americanus* =)
Pennisetum glaucum (cf. Sosef in Pl. Ecol. Evol. 152:
555, 2019)
sphacelatus (Nees) Morrone = **P. sphacelatum**
squamulatus (Fresen.) Morrone = **P. squamulatum**
stramineus (Peter) Morrone = **P. stramineum**
subangustus (Schumacher) Morrone = **P. polystachion**
subsp. **polystachion**
thulinii (S. M. Phillips) Morrone = **P. thulinii**
thunbergii (Kunth) Morrone 2010, nom. illeg.
= (*Cenchrus geniculatus* =) **Pennisetum thunbergii**
(Sosef in Pl. Ecol. Evol. 152: 556, 2019)
trachyphyllus (Pilg.) Morrone = **P. trachyphyllum**
triflorus Aitch. = **Cenchrus biflorus**
tripsacoides R. Br. = **C. setiger**
trisetus (Leeke) Morrone = **Pennisetum trisetum**
villosus (R. Br. ex Fresen.) Kuntze = **P. villosum**
violaceus (Lam.) Morrone = **P. violaceum**

*Bromus leptoclados**Bromus pectinatus**Bromus rubens* subsp. *rubens**Calamagrostis epigeios**Calamagrostis hedbergii**Capillipedium parviflorum**Castellia tuberculosa**Catapodium rigidum**Cenchrus biflorus**Cenchrus ciliaris**Cenchrus mitis**Cenchrus pennisetiformis*

CENTOTHECA / 1

Centotheca Desv., nom. conserv.

Genus of 3–4 species (Kellogg in K. Kubitzki, ed., *Fam. & genera vascul. pl.*: 287, 2015).

Centotheca lappacea (L.) Desv., incl. var. *inermis* Rendle, and subsp. *inermis* (Rendle) T. Koyama, and var. *longilamina* (Ohwi) Bor; van der Zon, *Gramin. Cameroun* 2: 85, 1992; Burkill, *Useful pl. W. Trop. Afr.*, ed. 2, 2: 200 (1994); *Fl. Gabon* 5b: 18, 1999; Parmentier & al. in *Belg. J. Bot.* 139: 74, 2006; Lisowski, *Fl. Rép. Guinée* 1: 452, 2009; Lejoly & al., *Cat.-fl. Kisangani & Tshopo* in *Taxonom.* 30: 233, 2010; Chatelain & al., *Cartes distrib. pl. Côte d'Ivoire*: 247, 2011. – Icon.: *Fl. Gabon* 5: 215, 1962; *Fl. W. Trop. Afr.*, ed. 2, 3/2: 382, 1972; *Fl. China* 22, Ill.: 849, 2007; Malaisse, *Guide florist. Parc Natl. Cantanhez*: pl. 805, 2010; Velayos & al., *Fl. Guinea Ecuat.* 12: 171, 2015; Kellogg in Kubitzki, o.c.: 288, 2015; Vande weghe & al., *Pl. à fleurs Gabon*: 176, 2016.

bas.: *Cenchrus lappaceus* L. 1763, non Tausch

syn.: *Centotheca latifolia* Trin. 1820, nom. superfl.; *C. parviflora* Andersson; *Holcus latifolius* Osbeck 1757; *Anthoxanthum pulchellum* D. Dietr.; *World Checklist of Selected Plant Families*, Poaceae, Roy. Bot. Gard., Kew.

Perennial plant from a rhizomatous knotty base; culms solitary or loosely tufted, erect, smooth, 0.4–1 m tall; leaf blades lanceolate, asymmetric, 5–25 × 1.5–3 cm, apex long attenuate; panicle open, 12–28 cm long, primary branches erect, then spreading, to 15 cm long; pedicels 2.5–3 cm long, slender, pubescent; spikelets lanceolate, 4–8 mm long, 2–3-flowered, compressed; lemmas emarginate, mucronate at tip, the lowest glabrous, the upper with reflexed tubercle-based bristles.

Semi-forested land, undergrowth, fallow clearings in forest; waste places in forest shade; secondary forest in semi-shaded sites and along rivers and small marigots; under plantation tree crops; forest gallery; rain-forest with *Tarrieta*; small patches of rain-forest in savanna; inselbergs; with *Olyra latifolia*, *Cyrtococcum chaetophoron*, *Oplismenus hirtellus*, *Streptogyna crinita*, *Isachne buettneri*; 10–800 m alt.

Bioko/Fernando Poo, S. Tomé, Príncipe; Madagascar; tropical and subtropical Asia; Queensland, Pacific Isl. Pantropical, but not in E. Africa.

The grain has reflexed spines on the lemma, and can catch on clothing and the fur of passing animals (“dispersal ensured”).

SYNONYMS:

Centotheca latifolia Trin., incl. var. *inermis* (Rendle) Sasaki = ***Centotheca lappacea***
maxima Peter = ***Megastachya mucronata***
mucronata (Poir.) Kuntze = ***M. mucronata***
owariensis Hack. = ***M. mucronata***
parviflora Andersson = ***Centotheca lappacea***
urekana Guinea = ***Megastachya mucronata***

CENTROPODIA / 4

syn.: *Asthenatherum* Nevski

Genus of 4 species in xeric areas of Africa E-wards to Middle East – N India, Pakistan.

Perennials with ligule of leaves a fringe of hairs or a ciliate membrane, blade deciduous at the ligule (Kellogg in K. Kubitzki, ed., *Fam. & genera of vascular plants* 13: 360, 2015).

CENTROPODIA

CONERT, H. J. (1962). Über die Gramineen-Gattung *Asthenatherum* Nevski. *Senckenb. Biol.* 43: 239–266.

KABUYE, C. H. S. & S. A. RENVOIZE (1975). The genus *Alloeochoete*, tribe Danthonieae (Gramineae). *Kew Bull.* 30: 569–577 [in key, *Asthenatherum*].

PETERSON, P. M. & al. (2011). Centropodieae and Ellisochloa, a new tribe and genus in Chloridoideae (Poaceae). *Taxon* 60: 1113–1122.

Centropodia forsskalii (Vahl) Cope; *Fl. Eth. & Eritrea* 7: 73, 1995; Dobignard & Chatelain, *Index synon. fl. Afr. N.* 1: 260, 2010; Darbyshire & al., *Pl. Sudan & S. Sudan*: 122, 2015. – Icon.: Conert (1962): pl. 16 facing p. 256; Poilecot, *Boissiera* 56: 133, 1999; Boulos, *Fl. Egypt* 4: 219, 2005; Cope, *Fl. Arab. Penins.* 5/1: 81, 2007; César & Chatelain, *Fl. ill. Tchad*: 185, 2019. – Pl. 24.

bas.: *Avena forsskalii* Vahl

syn.: *A. pensylvanica* Forssk. 1775, nom. illeg., non L. 1753; *A. arundinacea* Delile; *Danthonia forsskalii* (Vahl) Trin. 1827; *D. forsskalii* (Vahl) R. Br. 1826; *D. arundinacea* (Delile) Steud.; *Trisetum forsskalii* (Vahl) P. Beauv.; *Asthenatherum forsskalii* (Vahl) Nevski; *A. forsskalii* var. *arundinaceum* (Delile) Täckh.

Perennial loosely tufted (sometimes annual), the roots thickly clothed in sand; culms erect or shortly decumbent, rigid, glaucous, 20–50 cm tall; leaf blades rigid, glaucous, to 8 × 0.5 cm, pungent; panicle dense, lanceolate, 2–14 × 1–1.5 cm, base included in uppermost leaf-sheath; spikelets 7–9 mm long, 2–3-flowered; glumes 6–9 mm long, prominently 7–9 nerved, short-hairy between nerves; lemma 4–5 mm long, with straight awn 1–4 mm long.

Sandy and stony desert soils; rolling sand country; maritime sands; sometimes abundant to very abundant; sand on sandstone with diverse species of *Fagonia*, *Heliotropium*, *Monsonia*, *Stipagrostis*; rocky-sandy soils; stony wadi beds; with *Lasiurus scindicus*, *Chrysopogon plumulosus*, *Stipagrostis plumosa*, *S. uniplumis*, *S. vulnerans*; *Panicum turgidum*; also with *Aristida mutabilis*, *Tragus racemosus*, *Cenchrus biflorus*, *Coelachyrum brevifolium*, *Brachiaria xantholeuca*; 0–c. 1550 m alt.

N Africa from Morocco to Egypt; Arabian Peninsula to C Asia, Pakistan.

C. fragilis (Guinet & Sauvage) Cope; Boulos, *Fl. Egypt* 4: 218, 220, 2005; Cope, *Fl. Arab. Penins.* 5/1: 84, 2007; Dobignard & Chatelain, *Index synon. fl. Afr. N.* 1: 260, 2010. – Icon.: Maire, *Fl. Afr. N.* 2: 363, 1953 (details); Poilecot, *Boissiera* 56: 132, 1999. – Pl. 25.

bas.: *Danthonia fragilis* Guinet & Sauvage

syn.: *Asthenatherum fragile* (Guinet & Sauvage) Monod

Perennial tufted robust grass; culms 0.5–1.2 m tall, upper nodes brittle mainly on the living plant; lower leaf sheaths with abundant very short retrorse hairs; blades linear, to 8 × 0.5 cm, glaucous, rigid; panicle 17–35 cm long, dense; spikelets 7–9 mm long, 2–3-flowered; glumes c. 1 cm long, 7–9-nerved; lowest lemma 5–6 mm long with a straight awn 0.1–0.6 mm long.

Only in the true erg; sandy and gravelly soils.

Collected in Chad (Mourdi), Monod 13806, sand, 1.I. 1967 (G).

Morocco, Algeria; Egypt: Sinai (Boulos, *Fl. Egypt*: 1. c.; Gilf Kebir in *Fl. Medit.* 18: 346, 2008); Gulf States, Saudi Arabia, Yemen.

C. glauca (Nees) Cope; *Fl. Eth. & Eritrea* 7: 73, 1995 (remark); Klaassen & Craven, *Checklist grasses Namibia*: 20, 2003 (map). – Icon.: Conert (1962): pl. 17 facing p. 256, pl. 18 facing p. 260; *Fl. Trop. E. Afr.*, *Gramin.* 1: 123, 1976; *Bothalia* 15: 155–157, 1984 (anatomy); *Fl. Zambes.* 10/2: 13, 1999; Müller, *Grasses*



Plate 24. *Centropodia forskalii* (Vahl) Cope, see p. 146

a: habit ($\times 1$); b: node ($\times 3$); c: basal sheath ($\times 4$); d: ligule; e: inflorescence ($\times 1$); f: spikelet ($\times 8$); g-h: glumes lower and upper ($\times 8$); i-j: lemma of lower floret, side and front view ($\times 20$); k: palea ($\times 20$).



Plate 25. *Centropodia fragilis* (Guinet & Sauvage) Cope, see p. 146
 a: habit ($\times 1$); b: node ($\times 2$); c: ligule; d: inflorescence ($\times 1$); e: spikelet ($\times 8$); f–g: glumes lower and upper ($\times 8$);
 h–i: lemma of the lower floret, side and ventral view ($\times 20$); j: palea ($\times 20$); k: caryopsis ($\times 20$).

CENTROPODIA GLAUCA

Namibia: 125, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 100, 2012; Kellogg in Kubitzki, o.c.: 360, 2015.

bas.: *Danthonia glauca* Nees

syn.: *D. glauca* var. *lasiophylla* Pilg.; *D. suffrutescens* Stapf; *Asthenatherum glaucum* (Nees) Nevski, incl. var. *lasiophyllum* (Pilg.) Conert

Perennial (sometimes annual) tufted grass from a much branched woody base arising from a short stout rhizome clothed in imbricate papery or coriaceous scales; culms 15–60 cm tall, branched, brittle, easily breaking; leaf blades flat, blue-green, ± rigid, to 10 × 0,7 cm, tip pungent; panicle dense, 2,5–11 cm long, 2,5–3 cm Ø; spikelets 0,7–1 cm long; lemma 5–8 mm long, very deeply bifid with lobes (2,5–3 mm) longer than the lemma body (1,5–2 mm), awn 5–8 mm long.

Sandy places; dunes in subdesert vegetation; on sandy soil in grassland and open woodland; 1500 m alt.

Disjunct distribution: N Kenya – Namibia (+ S Angola), Botswana, S. Africa (NW).

Near *C. forsskalii*.

C. mossamedensis (Rendle) Cope; Rendle, Cat. Afric. pl. Welwitsch 2/1: 211–212, 1899 (under *Danthonia*); Fl. Trop. Afr. 10/1: 139, 1937 (idem); Gibbs Russell & al., Grasses south. Afr.: 81, 1990; Klaassen & Craven, Checklist grasses Namibia: 20, 2003. – Icon.: Conert (1962): pl. 18 facing p. 260.

bas.: *Danthonia mossamedensis* Rendle

syn.: *Asthenatherum mossamedense* (Rendle) Conert

Perennial tufted pale green grass 6–15 cm tall with a stout woody rhizome clothed with broad densely villous scales; culms ± erect, rigid, unbranched, densely tomentose; leaf blades linear, 8–20 × 0,4–0,7 cm, stiff, densely and minutely pubescent above, scabridulous beneath, tapering to a hard blunt tip; panicle linear, interrupted, 15–25 × 1–2,5 cm; branches short, erect, few-spiculate, the lower to 5 cm long, the upper gradually shorter, pedicels 0,5–8 mm long; spikelets oblong, c. 2–2,5 cm long, 4–6-flowered; glumes 1,7–2,4 cm long, strongly 7–9–11-nerved; lemma with geniculate awn 1–1,6 cm long.

Coarse sandy places near river growing with *Vogelia africana*; rather dry places by river.

Namibia.

Similar to *C. glauca* but smaller.

[CEPHALOSTACHYUM]

Genus of 2 bamboo species in Madagascar belonging to a genus of 12 species in SE Asia. However, these 2 species do not belong in this genus and “will need a new generic name” (Kellogg in K. Kubitzki, Fam. & genera vascul. pl. 13: 184, 2015). However, in Flore d’Afrique Centrale, N. S., Gramineae, Introduction, Tribu I. Phareae à X. Bambuseae (2017): 58, Sosef & De Roeck remark that plants of this genus [viz. **C. pergracile** Munro] have been introduced into botanical gardens and/or experimental gardens, and do not seem to have escaped into natural vegetation in Zaire-Rwanda-Burundi. This species is cited by Renier (Flore du Kwango 1: 63, 1948) as a small ornamental bamboo reaching 10 m height, introduced from India – China (S Yunnan).

Its current valid name should be **Schizostachyum pergracile** (Munro) R. B. Majumdar [syn.: *Oxytenanthera aliena* McClure] according to Vorontsova & al., World Checklist of bamboos and rattans: 214, 2017. See also Ohrnberger, The bamboos of

CEPHALOSTACHYUM

the world: 322, 1999; a photograph (detail, culm leaf sheath) in Meredith, Timber Press pocket guide to bamboos: 60, 2009.

(CERATOCHLOA)

Ceratochloa cathartica (Vahl) Herter = **Bromus catharticus haenkeana** J. Presl = **B. catharticus**

unioloides (Willd.) P. Beauv. = **B. catharticus**

Further synonyms: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

(CHAETARIA)

Chaetaria adscensionis (L.) P. Beauv. = **Aristida adscensionis**

bipartita Nees = **A. bipartita**

canariensis (Willd.) P. Beauv. = **A. adscensionis**

capensis (Thunb.) P. Beauv. = **Stipagrostis obtusa**

coerulescens (Desf.) P. Beauv. = **Aristida adscensionis**

congesta (Roem. & Schult.) Nees = **A. congesta**

curvata Nees = **A. adscensionis**

festucoides (Poir.) P. Beauv. = **A. adscensionis**

forskolii Nees = **A. adscensionis**

interrupta (Cav.) P. Beauv. = **A. adscensionis**

lamarckii Roem. & Schult. = **A. stipoides**

sieberiana (Trin.) Schult. & Schult. f. = **A. sieberiana**

stipiformis P. Beauv. 1812, nom. superfl. = **A. stipoides**

trichodes Nees 1850, nom. superfl. = **A. cumingiana**

vestita (Thunb.) P. Beauv. = **A. vestita**

(CHAETOCHLOA)

Synonyms of **Setaria** under *Chaetochloa* Scribn. are not cited here but for one name, viz.

Chaetochloa nigrirostris (Nees) Skeels = **Setaria nigrirostris** (Nees) T. Durand & Shinz

CHAETOPOA / 2

Genus of 2 species in Tanzania.

“Inflorescence branches unbranched, short, with a group of sterile pedicellate spikelets surrounding a sessile, bisexual spikelet” (Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 327, 2015).

Little known genus allied to *Antheophora* but with subulate glumes.

Chaetopoa pilosa Clayton

Annual grass; culms 15–20 cm tall; leaf blades 1–2 cm long, 1–3 mm wide; inflorescence 2–3 cm long, pedicels of clusters pilose; outer spikelets 1–2 mm long excluding awn (1 mm).

Nearly bare rock; 1200 m alt.

Known only from the type collected in 1970.

C. taylori C. E. Hubb. – Icon.: Hooker’s Icon. Pl. 37: pl. 3646, 1967; Fl. Trop. E. Afr., Gramin. 3: 665, 1982.

Annual grass; culms 30–60 cm tall, ascending; leaf sheaths with white patent or reflexed hairs; blades 6,5–30 cm long, 2–6 mm wide; inflorescence 3,5–7 cm long, pedicels of clusters glabrous; outer spikelets 3,5–4 mm long excluding awn (1,5 mm).

In soil pockets on rock; 1170 m alt.

Known only from the type collected in 1956.

(CHAETOSTICHUM)

Chaetostichum majusculum C. E. Hubb.

= **Oropetium minimum**

minimum (Hochst.) C. E. Hubb., incl. var. *macrochaetum* Chiov. and var. *microchaetum* Chiov. = **O. minimum**

CHASMOPODIUM / I

The circumscription of *Chasmopodium* is discussed by Kellogg in K. Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 291–292, 2015, where *Robynsiochloa* Jacq.-Fél. is treated as a synonym. However, *Rottboellia* L. f. is partly kept as a separate genus [for *R. cochinchinensis* (Lour.) Clayton and *R. purpurascens* Robyns]. For the latter species Clayton (Kew Bull. 28: 51, 1973) provided the new combination *Chasmopodium purpurascens* (Robyns) Clayton [with synonym *Robynsiochloa purpurascens* (Robyns) Jacq.-Fél.]. In the present check-list we keep *Chasmopodium* (with 1 species) apart, and *Robynsiochloa* Jacq.-Fél. as a synonym under *Rottboellia* L. f.

Chasmopodium caudatum (Hack.) Stapf, M. Renier, Fl. Kwango 1: 23, 1948; Burkill, *Useful pl. W. Trop. Afr.*, ed. 2, 2: 201, 1994; Chatelain & al., *Cartes distrib. pl. Côte d'Ivoire*, 247, 2011; Darbyshire & al., *Pl. Sudan & S. Sudan*: 122, 2015; César & Chatelain, *Fl. ill. Tchad*: 266, 2019. – Icon.: Jacques-Félix, *Les gramin. Afr. trop.* 1 (Inst. Rech. Agron. Trop. & Cultures Vivrières, Paris, Bull. Sci. 8): 284, 1962; van der Zon, *Gramin. Cameroun* 2: 531, 536 (map), 1992; Poilecot, *Boissiera* 50: 667, 1995; idem, *ibid.* 56: 656, 1999; Lidia 6: 3, 2003.

bas.: *Rottboellia caudata* Hack.

syn.: *R. kerstingii* Pilg.; *R. cylindrica* Vandyerst 1918, nom. provis.; *R. afzelii* Hack.; *Chasmopodium afzelii* (Hack.) Stapf; *Manisuris afzelii* (Hack.) Kuntze

Perennial, or annual tufted grass; culms 1–4 m tall, prop-rooted, rooting at lower nodes, cane-like, pithy, branched above, branches short, simple, appressed, all flowering; leaf blades linear, 20–120 × 0.6–4.5 cm, often with a false petiole at base, ligule a fringe of hairs; inflorescence terminal, branched, composed of spiciform fragile racemes 5–13 cm long, the glumes of the terminal spikelet foliaceous and produced into a tail to 2.5 cm long; spikelets 5–8 mm long, in pairs; sessile spikelet bisexual with lower glume coriaceous, *laterally winged* towards tip; pedicellate spikelet male, lower glume variously winged at tip.

Dry forests on lateritic plateau with *Digitaria gayana*, *Loudetia hordeiformis*, *Eragrostis turgida*, *Setaria pumila*, *Aristida adscensionis*; savannas with deep soils; forest edges sometimes under light shade; with *Andropogon tectorum*, *A. shirensis*, *Rottboellia cochinchinensis*, *Pennisetum polystachyon*, *P. unisetum*; path sides; plantations; fallows; forest gallery; rocky places; swampy places; moist *Terminalia*, *Phileoptera* woodland with tall grass, with *Grewia mollis*, *Hyparrhenia filipendula*, *Hyperthelia dissoluta*, *Panicum maximum*; slightly acidic clayey sandy soil; open dry *Combretum*, *Terminalia* woodland with *Loudetia arundinacea*; lightly grazed seasonally flooded *Combretum* woodland with *Hyperthelia dissoluta*, *Hyparrhenia filipendula*, *Sporobolus pyramidalis*; often in large stands in swamps; inselbergs (Porembski & Brown, *Candollea* 50: 357, 1995); to 1044 m in Uganda.

Species with considerable range of variation in both spikelet and vegetative characters.

Rather similar to *Rottboellia cochinchinensis* (with spikelets sunk in a cylindrical segment formed from the fused spikelet-stalk; in *Ch. caudatum* spikelet-stalks are free from the internodes of

CHASMOPODIUM CAUDATUM

the rachis); the basic chromosome numbers are also different (cf. Lidia 6: 4, 2003).

SYNONYMS:

Chasmopodium afzelii Hack. = **Chasmopodium caudatum purpurascens** (Robyns) Clayton
= **Rottboellia purpurascens**

CHEVALIERELLA / I

Monospecific genus in WC Africa.

Chevalierella dewildemanii (Vanderyst) Van der Veken ex Compère, E. Kami & al (2010), *Analyse floristique et phytogéographique des Gramineae du Congo (Brazzaville)*, in X. van der Burgt & al., eds., *Systématique et conservation des plantes africaines*: 239, Roy. Bot. Gard., Kew. – Icon.: Camus in *Rev. Bot. Appl. Agric. Colon.* 142: 423, 1933 (as *A. congoensis*); Jacques-Félix, *Les Graminées d'Afrique Tropicale* 1: 140, 1962 (I.R.A.T., Paris).
bas.: *Ichnanthus dewildemanii* Vanderyst

syn.: *Chevalierella congoensis* A. Camus

Perennial tufted grass 1–2 m tall; culms clustered, erect, simple, glabrous, hollow; leaf blades broad, 32–40 × 4.5–5 cm, glabrous, *nerves tessellated*, base constricted to a false petiole 1.5–5 cm long, apex acuminate-subulate; inflorescence terminal, racemose, dense, 30–35 cm long, 10–13 cm Ø, primary branches unbranched, branches clustered, racemes 3-angled, pedicels 0.5–2 mm long; spikelets in 2 rows, c. 5 cm long, *flattened*, each 2–3-flowered, the *lower flower hermaphrodite*, the upper rudimentary; glumes and lemmas awned.

Primary forest.

(CHLOACHNE)

Chloachne oplismenoides (Hack.) Stapf ex Robyns

= **Poecilostachys oplismenoides**
secunda Stapf = **P. oplismenoides**

(CHLORIDION)

Chloridion cameronii Stapf = **Stereochlaena cameronii**

CHLORIS / 15

syn.: *Pterochloris* (A. Camus) A. Camus; *Stapfochloa* H. Scholz (however, maintained as a separate genus by P. M. Peterson in *Taxon* 64: 459–460, 2015).

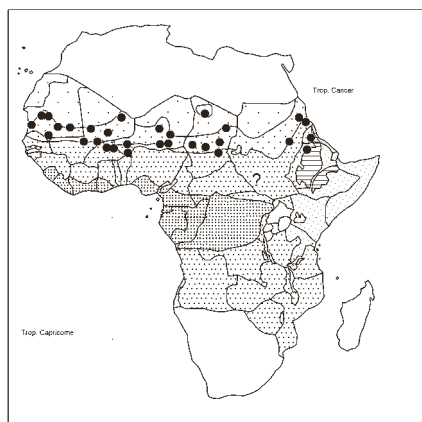
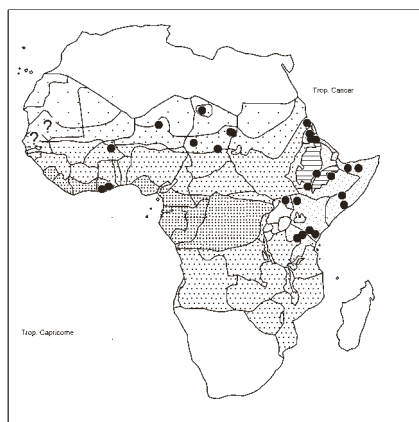
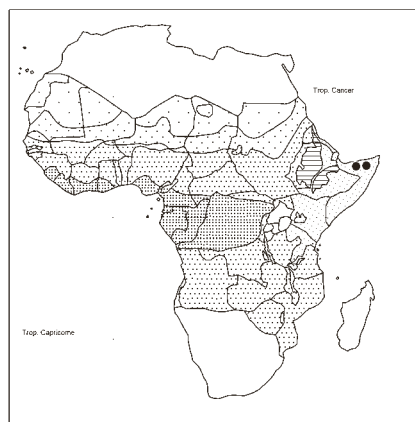
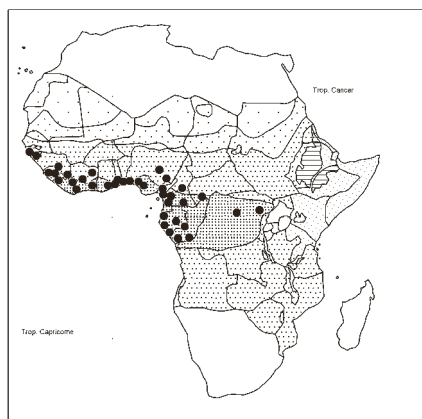
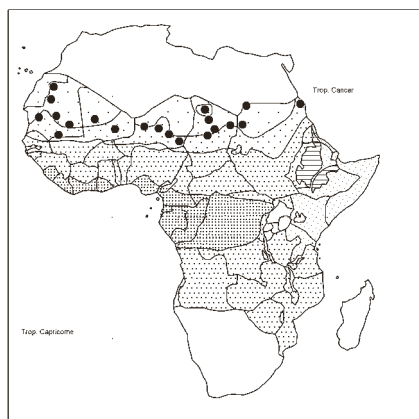
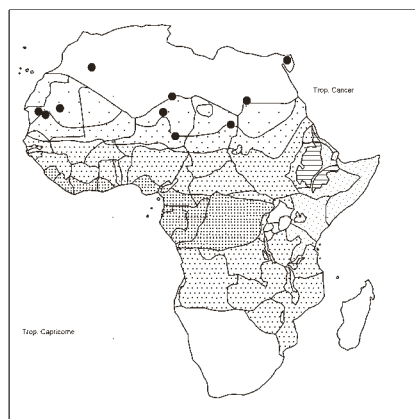
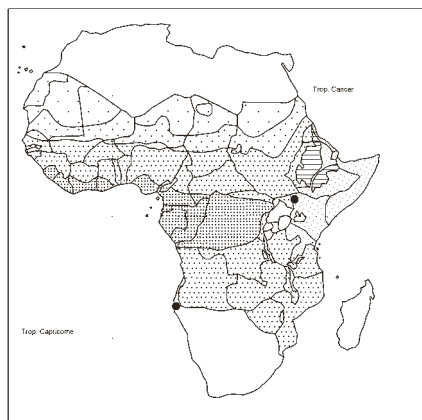
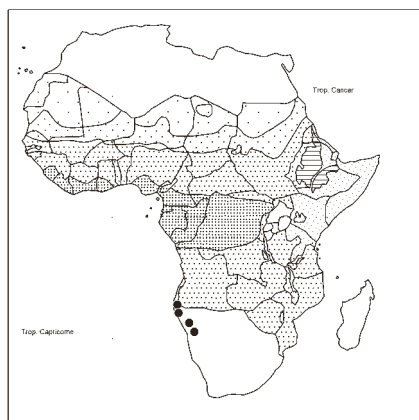
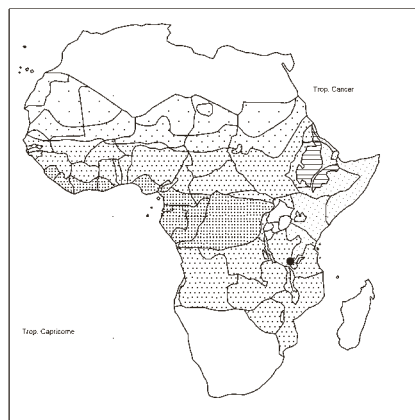
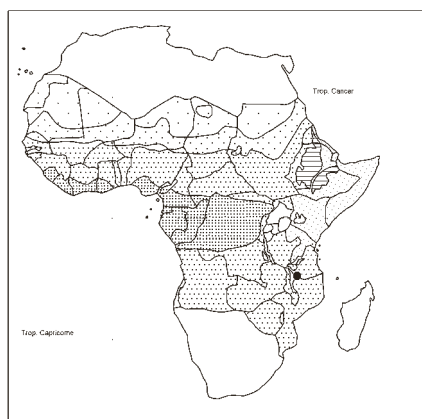
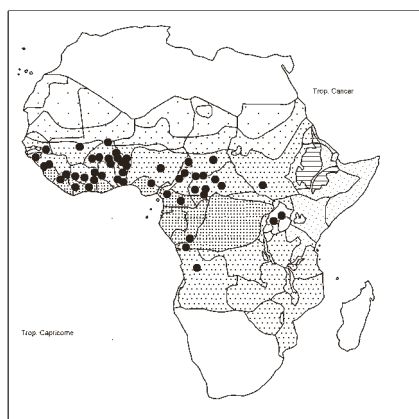
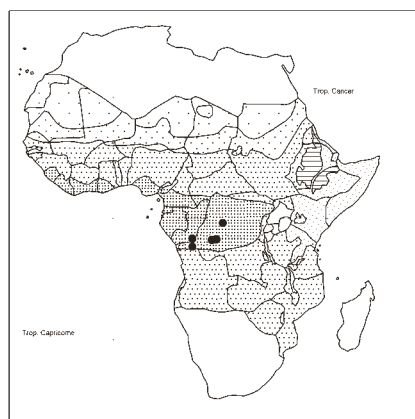
Genus of 50–60–63 species in tropical and warm-temperate regions of the world.

CERROS-TLATILPA, R. & al. (2015). El género *Chloris* Sw. (Poaceae: Chloridoideae) en México. *Acta Bot. Mexic.* 112: 95–147.

MOLINA, A. M. & Z. E. RÚGOLO DE AGRASAR (2004). Revisión taxonómica de las especies del género *Chloris* (Poaceae: Chloridoideae) en Sudamérica. *Candollea* 59: 347–428.

MUCHUT, S. E. & al. (2020). Uncovering the inflorescence evolution of Eleusininae (Cynodonteae: Chloridoideae: Poaceae). *Bot. J. Linn. Soc.* 192: 208–223.

PETERSON, P. M. & al. (2015). A molecular phylogeny and classification of the Eleusininae with a new genus, *Micrachne* (Poaceae: Chloridoideae: Cynodonteae). *Taxon* 64: 445–467 [*Chloris* p. 457–460].

*Cenchrus prieurii**Cenchrus setiger**Cenchrus somalensis**Centotheca lappacea**Centropodia forsskalii**Centropodia fragilis**Centropodia glauca**Centropodia mossamedensis**Chaetopoa pilosa**Chaetopoa taylorii**Chasmopodium caudatum**Chevalierella dewildemanii*

CHLORIS

In our area 2 species are known only from the type gatherings (viz. *C. ruahensis* and *C. woodii*).

Chloris amethystea Hochst.; Puff & Sileshi, Pl. Simen: 249, 2005; Agnew, Upl. Kenya wild flow., ed. 3: 426, 2013. – Icon.: Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 107, 1974; Fl. Trop. E. Afr., Gramin. 2: 338, 1974 (spikelet); Fl. Eth. & Eritrea 7: 170, 1995 (floret).

Perennial loosely tufted herb with short rhizomes; culms 0.2–1 m tall; leaf blades 5–20 cm × 1.5–4 mm, scabrid, *abruptly acute* at apex; basal sheaths strongly keeled; inflorescence of 4–8 (sub) digitate, loose to spreading, flexuous naked spikes 7–10 cm long; spikelets 2-flowered, 0–1-awned; awn 0.1–4 mm long.

Grassland with *Acacia*; woodland margins; dry grassland sumps or seasonally damp on poor soils; 1200–1800 m alt.

May be confused with *C. gayana*, a commoner, usually taller and more robust grass with *digitate* head of more numerous spikelets with 3 flowered spikelets.

C. barbata Sw. 1797, incl. var. *divaricata* Kuntze; Fosberg in Taxon 25: 176, 1976; Rhodora 94: 135–140, 1992; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 260, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 247, 2011; Schmidt & al., Phytotaxa 304: 56, 2017. – Icon.: Poilecot, Boissiera 50: 173, 1995; idem, ibid. 56: 273, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 118, 2002; Cope, Fl. Arab. Penins. 5/1: 183, 2007 (florets); Acta Bot. Mexic. 112: 102, 2015; Fl. Mascareignes 203, Gramin.: 105, 2018; César & Chatelain, Fl. ill. Tchad: 207, 2019.

syn.: *Andropogon barbatus* L. 1771, nom. illeg., non L. 1759; *Chloris inflata* Link; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual or short-lived perennial, loosely tufted, stoloniferous grass; culms 0.3–1 m tall; leaf blades linear, to 40 cm × 2–3 mm; inflorescence of 5–22 digitate, loose to spreading, purplish feathery spikes, each 4–8 cm long; spikelets flat, 3-flowered, 3-awned; awns 5–7 mm long; lower flower fertile with *lemma ciliate at tip*.

In a wide variety of habitats. Waste places or disturbed ground usually near the coast, generally on poor soils, dry or humid, sandy-clayey; with *Eragrostis tremula*, *Tetrapogon cenchrififormis*, *Aristida mutabilis*, *A. funiculata*, *Schoenefeldia gracilis*; cultivated fields, beaches, roadsides; sometimes very abundant; 0–400 m alt.

Tropical and subtropical Old World. Morocco, Algeria; Madagascar, Indian Ocean Islands; Arabian Peninsula, S Asia from Iran E-wards to Indonesia, New Guinea, Philippines; introduced in Australia, Pacific islands, S N. America, C. America, S. America – widespread in warm temperate to tropical regions of the world. Recently found in Canary Isl. (Verloove in Acta Bot. Croat. 76: 122, 2017).

C. barbata auct., non Sw. = *C. virgata* [as *C. barbata* var. *decora* (Nees ex Steud.) Benth. and var. *meccana* (Hochst. & Steud. ex Schldl.) Asch. & Schweinf.].

C. diluta Renvoize; Gibbs Russell & al., Grasses south. Afr.: 83, 1990; Fl. Zambes. 10/2: 212, 1999.

Perennial rhizomatous and stoloniferous herb 30–85–100 cm tall; culms wiry, erect or ascending; leaf blades 10–30 cm long, 4–7 mm wide, tapering to a fine point; inflorescence of 4–6 (sub-) digitate racemes 5–8 cm long; spikelets 2-flowered, 2-awned, ± *their own length apart*.

In shade of riverine and kloof (rock fissures) forest; scrub forest on river banks; 1400–1700 m alt.

S. Africa.

CHLORIS

(*C. elegans* (Kunth) Roberty = *Ctenium elegans* Kunth)

(*C. ferruginea* Renvoize = *Tetrapogon ferrugineus* (Renvoize) S. M. Phillips)

C. flabellata (Hack.) Launert; Gibbs Russell & al., Grasses south. Afr.: 83–84, 1990; Klaassen & Craven, Checklist grasses Namibia: 20, 2003. – Icon.: Volk, Gräser des Farmgeb. Südwestaf. N° 46 after text, 1974.

bas.: *Tetrapogon flabellatus* Hack.

syn.: *Chloris pubescens* Peyr. 1860, nom. illeg., non Lagasca 1805.

Dense perennial grass with stout compressed woody stolons to 1 m long; culms usually ascending from a prostrate base, rooting at lower nodes, rarely erect, growing in dense tufts, simple or branched, often bulbous at base, terete, 20–50 cm tall; leaves densely crowded at base; sheaths softly pilose to densely pubescent; blades linear, 5–8 cm × 3–5 mm, softly pilose to velvety pubescent, obliquely ascending, flaccid; spikes 8–20, densely crowded at apex of culm, 1–3 cm long, curved, thus forming a rather compact head-like flat-topped inflorescence, yellowish green to brownish; spikelets 3-flowered, 2.5–3.5 mm long, flattened; upper glume with a distinct, dense rim of silky white hairs on the margins.

Forming dense masses like a carpet in saline marshes or flats; usually in sand; rocky places by the sea; clayey thickets; near sea-level–50 m alt.

NW Namibia.

(*C. flagellifera* (Nees) P. M. Peterson = *Ochthocloa compressa* (Forssk.) Hilu)

C. gayana Kunth, incl. subsp. *oligostachya* Murb., and fa. *oligostachya* (Murb.) Maire & Weiller – Rhodes grass – Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 154, 1955; van der Zon, Gramin. Cameroun 2: 173–174, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 202, 1994; Thulin, Fl. Somalia 4: 206, 1995; Fl. Eth. & Eritrea 7: 170, 1995; Fl. Zambes. 10/2: 213, 1999; Klaassen & Craven, Checklist grasses Namibia: 21, 2003; Puff & Sileshi, Pl. Simen: 249, 2005; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 260, 2010. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 401, 1972; Poilecot, Boissiera 50: 169, 1995; idem, ibid. 56: 271, 1999; Molina & Rúgolo de Agrasar in Candollea 59: 416, 2004; Boulos, Fl. Egypt 4: 278, 2005; Cope, Fl. Arab. Penins. 5/1: 183, 2007 (florets); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 223, 2012; Agnew, Upl. Kenya wild flow., ed. 3: 188, 2013; Clarke, Name those grasses: 234–235, 2015; Ibrahim & al. Grasses Mali: 45, 2018; César & Chatelain, Fl. ill. Tchad: 207, 2019 (details).

syn.: *C. abyssinica* Hochst. ex A. Rich.; *C. repens* Hochst.; *C. glabrata* Andersson; *C. multiradiata* Hochst. var. *ragazzii* Pirota; *Eustachys gayana* (Kunth) Mundy

Short-lived perennial leafy grass with stolons; culms 0.5–2.2 m long, erect or ascending, sometimes rooting at lower nodes; leaf blades linear, 15–50 cm × 2–9 mm, smooth, tapering; inflorescence a head of 5–20 lax digitate spikes these 4–15 cm long; spikelets 2–5 mm long, brown, 3–4-flowered, 2-awned.

Riverine woodland; scattered tree grassland; open grassland on light or heavy soils; *Acacia* scrubland; woodland clearings; fertile soils; moist soils of floodplains; lake shores; river banks; with *Chloris robusta*, *Leptochloa caerulea*, *Vetiveria nigriflora*; also on sandy and sandy-clayey soils; dune slopes under treelet

CHLORIS GAYANA

shade with *Chloris virgata*, *Enteropogon priurii*, *Dactyloctenium aegyptium*; *Brachiaria ramosa*; arable land; 0–2450 m alt.

Varies widely in habit, plant height, lemma pubescence and awn length.

Madeira; Canary Isl.; Cape Verde Isl.; Namibia, Caprivi Strip, S. Africa, Lesotho, Swaziland; Arabian Peninsula. Introduced in N. Africa, Madagascar, tropical Asia to China, New Zealand, Australia, N., C. & S. America. Used in pastures and in crop rotations. Naturalized as a field weed.

Two geographical strains are cultivated: – giant rhodes grass from Tanzania; – Katambora rhodes grass from NE Botswana (Fl. Zambes, l.c.).

Very similar to *C. virgata*, a larger grass with a tuft of stiff erect hairs on the lemma tips.

C. jubaensis Cope – Icon.: Kew Bull. 50: 112, 1995; Thulin, Fl. Somalia 4: 205, 1995.

Perennial grass to 95 cm tall, erect or ascending, tufted or stoloniferous; leaves linear, tapering; inflorescence a head of 5–6 digitate racemes these 7–8 cm long; spikelets 2–3-flowered, 2–3-awned; *fertile lemma* smooth, *glabrous*, awn 6–7 mm long. Open bushland on dark grey sandy loam with manganese concretions.

Closely resembling *C. gayana*, but spikelet structure different.

Known from 2 collections (the type collected in 1982).

C. lamproparia Stapf; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 202–203, 1994; Lye & al. in Lidia 4: 160, 2000. – Icon.: Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 31, 1974; Fl. Trop. E. Afr., Gramin. 2: 338, 1974 (spikelet); van der Zon, Gramin. Cameroun 2: 172, 1992; Scholz & Müller in Willdenowia 34: 130, 132, 2004 (under *Stapfochloa*); César & Chatelain, Fl. ill. Tchad: 207, 2019 (details).

syn.: *Stapfochloa lamproparia* (Stapf) H. Scholz

Annual tufted herb 10–60 cm tall; culms erect or ascending, occasionally rooting at nodes; leaf blades flat, linear, 4–20 cm × 3–5 mm; inflorescence of 2–4 paired or closely digitate, *silky*, *golden spikes* each 4–11 cm long, all embraced by an inflated leaf sheath; spikelets 4-flowered, 2-awned, *densely silky ciliate with pallid hairs*.

Open deciduous bushland; wooded grassland; shallow sandy soil with *Acacia senegalensis*; sandy or clayey soils; bare, compact clayey-sandy soils; cuirass; open places on shallow sandy soils over rocks; lake shore; 100–1500 m alt.

Often confused with *Tetrapogon cenchroides*.

Note: The genus *Stapfochloa* H. Scholz is recognised as a separate entity by Peterson in Taxon 64: 459–460, 2015. Thus he maintains *Stapfochloa lamproparia* (Stapf) H. Scholz, that is the only African species in the genus comprising additional 5 species in the New World.

(*C. longiaristata* Napper = *Enteropogon longiaristatus* (Napper) Clayton)

C. mensensis (Schweinf.) Cufod.; Fl. Eth. & Eritrea 7: 171, 1995; Thulin, Fl. Somalia 4: 206–207, 1995. – Icon.: Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 31, 1974 (as *C. somalensis*).

bas.: *Gymnopogon mensensis* Schweinf.

syn.: *Chloris somalensis* Rendle

CHLORIS MENSENSIS

Perennial tufted herb; culms lax, 0.55–1 m tall; leaf blades linear, to 50 cm long, *tip setaceous*; basal sheaths strongly flattened; inflorescence a head of 2–4 digitate olive-green spikes each 6–16 cm long; spikelets 2-flowered, 2-awned; awn of fertile lemma 0.6–2 cm long.

Dry open scrubland and grassland; rocky hillsides with former *Juniperus* woodland; 1300–2200 m alt.

Yemen.

C. mossambicensis K. Schum.; Thulin, Fl. Somalia 4: 203, 1995; Agnew, Upl. Kenya wild flow., ed. 3: 426, 2013. – Icon.: Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 124, 1974; Fl. Trop. E. Afr., Gramin. 2: 338, 1974 (spikelet); Fl. Zambes. 10/2: 211, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 268, 2012.

syn.: *Tetrapogon mossambicensis* (K. Schum.) Chippind.

Perennial tufted grass, shortly rhizomatous or stoloniferous; culms 20–85 cm tall, erect or ascending; leaf sheaths strongly keeled, flabellate, basal ones becoming papery; blades 6–35 cm long, 3–6 mm wide, tip blunt; inflorescence of 2–7 digitate, spreading, often yellowish spikes, these 3–8 cm long; spikelets 2-flowered, 2-awned; *lowest lemma ciliate*; awns 7–11 mm long; callus pungent.

Grassland with scattered trees or bushland; heavy soils; locally abundant; mopane woodlands on margins of floodplain grassland; river bank alluvium; often on termitaria; consolidated dunes; 20–1150 m alt.

(*C. nutans* (Stapf) P. M. Peterson, Taxon 64: 458, 2015) – See *Lintonia nutans* Stapf

C. pilosa Schumach., incl. var. *nigra* (Hack.) Vanden Berghen; Renier, Fl. Kwango 1: 59, 1948 (as *C. breviseta*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 203, 1994; Fl. Zambes. 10/2: 213–214, 1999; Lisowski, Fl. Rép. Guinée 1: 453, 2009; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 248, 2011; César & Chatelain, Fl. ill. Tchad: 206, 2019. – Icon.: Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 79, 1974; van der Zon, Gramin. Cameroun 2: 172, 174, 1992; Poilecot, Boissiera 50: 167, 1995; idem, ibid. 56: 270, 1999; Fl. Gabon 5b: 17, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 172, 2015; Adodo, Medicinal pl. Nigeria: 140, 2018; Ibrahim & al., Grasses Mali: 46, 2018.

syn.: *C. breviseta* Benth.; *C. virgata* var. *breviseta* (Benth.) Peter; *C. nigra* Hack.

Annual sprawling grass; culms 0.1–1 m tall, erect or geniculate ascending, often rooting at lower nodes; leaf blades to 35 cm long, 2–5 mm wide, tapering to a fine point; inflorescence of 3–12 loosely digitate spikes, these 2–10 cm long; spikelets 3-flowered, 0–2-awned.

Grassy places on sandstone; banded vegetation; gravelly soil and colluvium in thalweg; sometimes rather abundant; disturbed habitats; roadsides, old cultivation; light or heavy soils; fallows; with *Dactyloctenium aegyptium*, *Eleusine indica*, *Heteropogon contortus*, *Sporobolus pyramidalis*, *Eragrostis tenella*; ferrolitic soils; flooded small pools; shorelines of Sahelian seasonal lakes (Müller in Syst. Geogr. Pl. 75: 245, 2005); *Acacia seyal* savanna; inselbergs; 0–1500 m alt.

C. pilosa is an accompanying species in *Echinochloa colonae* vegetation (Burkina Faso; Wittig in Etudes flor. vég. Burkina Faso 9: 12, 2005).

Cape Verde Isl.; Bioko/Fernando Poo, ? S. Tomé & Príncipe; introduced in Mauritius, N Australia.

CHLORIS

(*C. prieurii* Kunth) – See *Enteropogon prieurii* (Kunth) Clayton

C. pycnothrix Trin.; Renier, Fl. Kwango 1: 59, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 154–155, 1955; van der Zon, Gramin. Cameroun 2: 171, 174, 1992; Thulin, Fl. Somalia 4: 202, 1995; Fl. Gabon 5b: 18, 1999; Fl. Zambes. 10/2: 210, 1999; Lidia 5/5: 128, 2001; Klaassen & Craven, Checklist grasses Namibia: 21, 2003; Boulos, Fl. Egypt 4: 277, 279, 2005; Longhi-Wagner & Baldini in Kew Bull. 62: 401, 2007 (Raddi coll.); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 260, 2010; César & Chatelain, Fl. ill. Tchad: 208, 2019. – Icon.: Fl. Eth. & Eritrea 7: 170, 1995; Poilecot, Boissiera 50: 171, 1995; Cope, Fl. Arab. Penins. 5/1: 183, 2007 (florets); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 227, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 173, 2015; Cerros-Tlatilpa & al., Acta Bot. Mexic. 112: 120, 2015; Fröberg in Bot. Not. 151/1: 8, 2018.

syn.: *C. intermedia* A. Rich.; *C. leptostachya* Hochst. ex A. Rich., incl. var. *intermedia* (A. Rich.) T. Durand & Schinz; “*C. radiata* Sw.” sensu Raddi, Agrostogr. brasil. (1823): 378, non (L.) Sw.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual *delicate* tufted grass; culms 15–50(–80) cm long, erect or, often, knee-like bent, rooting at lower nodes; leaf blades oblong, 2–11 cm × 3–5 mm, tip rounded; inflorescence silky-silvery, 4–10 cm long, of 2–13 paired (sub-)digitate or verticillate often purplish spikes, these 4–10 cm long; spikelets 2-flowered, 1–2-awned; awns 1–2, 7 cm long.

Grassland with scattered trees; *Acacia* woodland; disturbed ground on light or heavy soils; fallows, arable land; miombo riverine woodland; open land in humid areas; sandy river beds; limestone hillsides; with *Dactyloctenium aegyptium*, *Eragrostis tennella*, *E. turgida*; around small temporary pools on rocky outcrops; lava plain; usually as a common weed in disturbed ground; 0–2300 m alt.

Cape Verde Isl.; Bioko/Fernando Poo, ? S. Tomé, Príncipe; NE Namibia, ? Botswana, S. Africa, Swaziland; Canary Isl. (Verloove in Acta Bot. Croat. 76: 122, 2017); Egypt (introduced); Yemen; Socotra; Madagascar, Mauritius, Rodriguez, Seychelles; India, Burma (introduced); S tropical America (Molina & Rúgolo de Agrasar, Candollea 59: 389–390, 2004). Introduced as a garden weed, even in S Sweden (Svensk Bot. Tidskr. 113/1: 12, 2019).

Very similar to *C. radiata* (L.) Sw. from W. Indies, C. & N S. America.

(**C. radiata** (L.) Sw.) – Icon.: Cerros-Tlatilpa & al. in Acta Bot. Mexic. 112: 122, 2015.

bas.: *Agrostis radiata* L.

syn.: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual grass 20–80 cm tall; leaf blades 2–18 cm long, 2–8 mm wide; inflorescence of 7–19 spikes; spikelet awns 0.5–1 cm long. Similar to *C. pycnothrix* (See above).

Introduced in Cape Verde Isl.

Indigenous in C. & S. America; introduced in S USA.

C. robusta Stapf; Lye & al. in Lidia 4: 160, 2000; Sosef & al., Checklist pl. vascul. Gabon: 182, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; Schmidt & al., Phytotaxa 304: 56, 2017. – Icon.: Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 44, 1974; Fl. Trop. E. Afr., Gramin. 2: 338, 1974 (spikelet);

CHLORIS ROBUSTA

Poilecot, Boissiera 50: 165, 1995; idem, ibid. 56: 269, 1999; César & Chatelain, Fl. ill. Tchad: 207, 2019 (details).

Perennial grass; culms robust, 1–3 m long, erect or decumbent, branching, often thick, woody below, often rooting at lower nodes; leaf blades 15–40 cm long, 3–8 mm wide; inflorescence of 10–28 (sub-)digitate, loose of spreading, silky spikes these 8–20 cm long; spikelets 3-flowered, shortly 2-awned; *lowest lemma* with a *tuft of spreading cilia to 4 mm long*.

Sandy river banks, river beds; often in pure very dense stands; also often with *Leptochloa caerulea*, *Cynodon dactylon*, *Digitaria debilis*, *Hemarthria altissima*, *Panicum anabaptistum*, *Vetiveria nigriflora*; 100–2300 m alt.

C. roxburghiana Schult. 1824; Thulin, Fl. Somalia 4: 202, 1995; Fl. Zambes. 10/2: 209–210, 1999; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 153, 1955 (as *C. myriostachya*); Anderson in Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 23, 1974; Fl. Eth. & Eritrea 7: 170, 1995; Cope, Fl. Arab. Penins. 5/1: 183, 2007 (florets); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 210, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013.

syn.: *C. polystachya* Roxb. 1820, nom. illeg., non Lag. 1816; *C. myriostachya* Hochst., incl. var. *minor* Chiov.

Perennial densely tufted grass; culms 0.4–1.5 m tall, erect, occasionally geniculate ascending; leaf blades linear; 10–40 × 0.2–1 cm; basal sheaths strongly keeled, flabellate; inflorescence compact, purplish or yellowish, a feathery head of numerous spikes these 3–8 cm long, *densely clustered* on an *axis 6–18 cm long*; spikelets 1–3 mm long, 3–4-flowered, 3–4-awned.

Wooded grassland; *Acacia* bushland; mopane and mixed dry woodland on granite sands; usually on dry, stony or sandy soils; often on termitaria; rocky hillsides and outcrops; sometimes dominant on wide surfaces; 15–1600 m alt.

S. Africa, Botswana; Madagascar; Yemen; S India, Burma (Myanmar).

C. ruahensis Renvoize

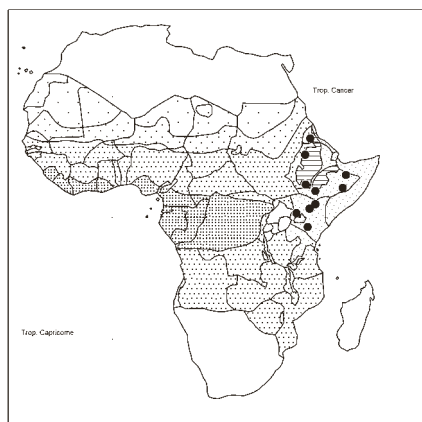
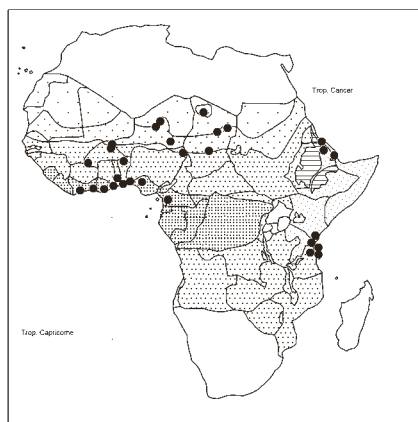
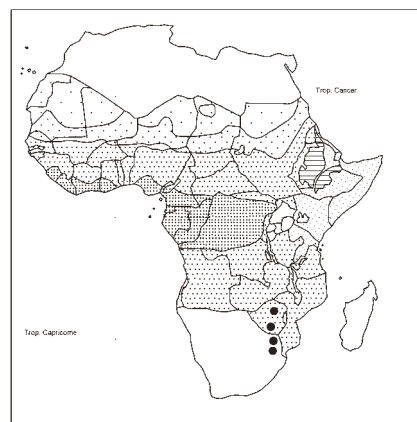
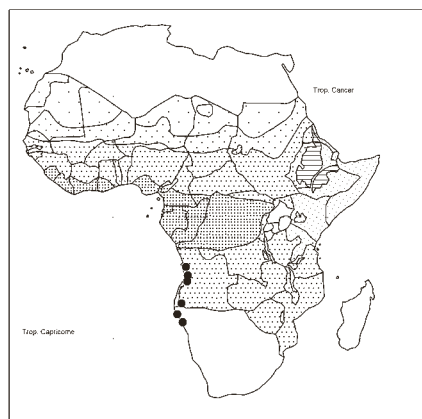
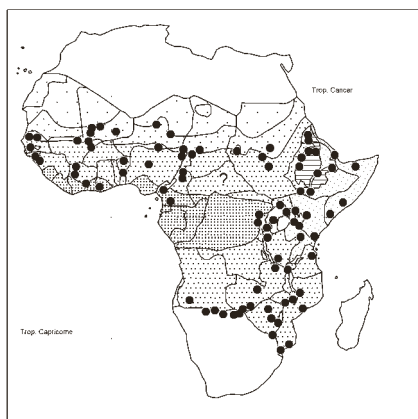
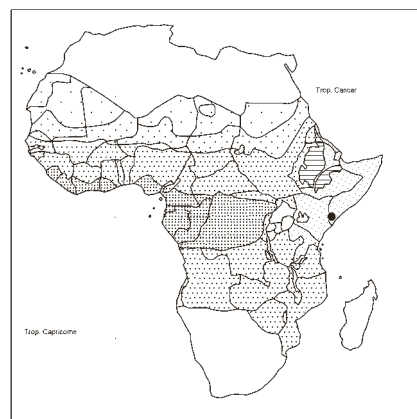
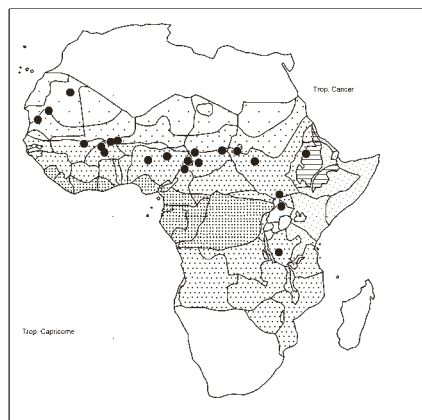
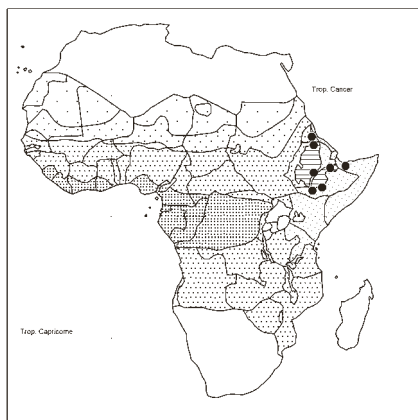
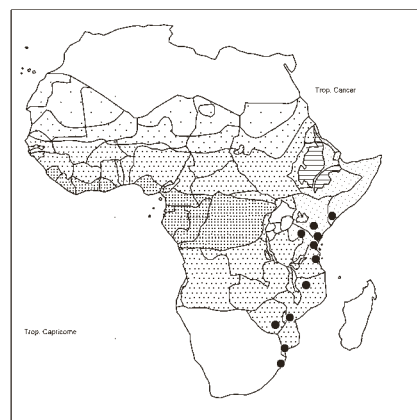
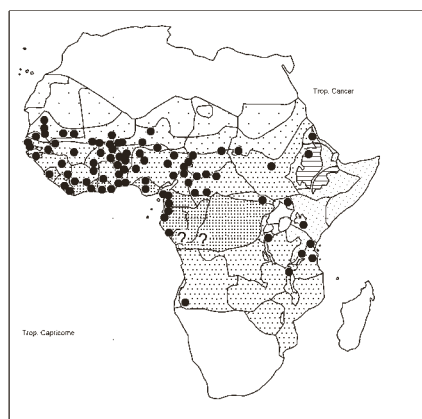
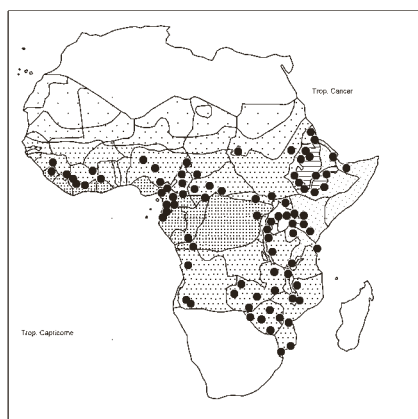
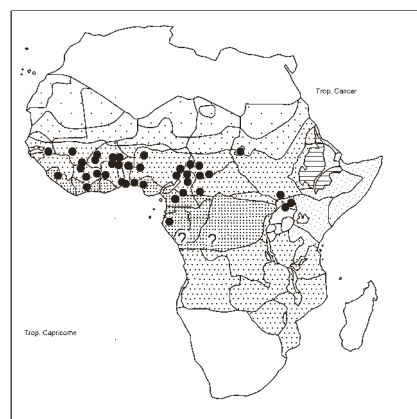
Annual delicate herb; culms erect, to 40 cm tall; leaf blades pilose, linear, 4–9 cm × c. 2 mm; inflorescence of 4–5 digitate purplish spikes these 4–5 cm long; spikelets 3-flowered, 3-awned, awns curved outwards.

Low *Sporobolus iocladius* grassland with *Dactyloctenium giganteum*, *Brachiaria pubiflora*, scattered *Acacia kirkii*; 810 m alt.

Very similar to *C. barbata* but annual, and spikes 4–5 (not 5–22 with densely packed spikelets, and) sterile florets weakly clavate, length of glumes c. 3 mm (not 1–2.5 mm) and of awns c. 10 mm (not 2.5–7 mm).

Known only from the type collected in 1972.

(**C. virgata** Sw., incl. var. *elegans* (Kunth) Stapf); Renier, Fl. Kwango 1: 59, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 155, 1955; Fl. W. Trop. Afr., ed. 2, 3/2: 400, 1972; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 204, 1994; Fl. Zambes. 10/2: 212–213, 1999; Figueiredo & Smith, Pl. Angola: 196, 2008; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 261, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; Schmidt & al., Phytotaxa 304: 56, 2017. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 344, 1974; van der Zon, Gramin. Cameroun 2: 176–177 (map), 1992; Poilecot, Boissiera 56: 272, 1999; Molina & Rúgolo de Agrasar in Candollea 59: 427, 2004; Boulos, Fl. Egypt 4: 278, 2005; Müller, Grasses Namibia, ed. 2: 57, 2007; Cope, Fl. Arab. Penins. 5/1: 183, 2007 (florets); Pickering & Roe, Wild flowers

*Chloris amethystea**Chloris barbata**Chloris diluta**Chloris flabellata**Chloris gayana**Chloris jubaensis**Chloris lamproparia**Chloris mensensis**Chloris mossambicensis**Chloris pilosa**Chloris pycnothrix**Chloris robusta*

CHLORIS VIRGATA

Victoria Falls area: 94, 2009 (inflorescence); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 266, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013; Clarke, Name those grasses: pl. 17 facing p. 281, 2015; Ibrahim & al., Grasses Mali: 47, 2018; César & Chatelain, Fl. ill. Tchad: 207, 2019 (details, map).

syn.: *Rabdochloa virgata* (Sw.) P. Beauv. 1812 (genus not validly published); *Chloris elegans* Kunth; *C. brachystachys* Andersson; *C. meccana* Hochst. & Steud. ex Schldtl.; *C. multiradiata* Hochst.; *C. polydactyla* subsp. *multiradiata* (Hochst.) Chiov.; *C. notocoma* Hochst.; *C. rogeonii* A. Chev.; *C. tibetica* Quétel; *C. pulchra* Schumach. 1827, nom. superfl., not a synonym of *Ctenium canescens* as cited in Fl. W. Trop. Afr., ed. 2, 3/2: 399, 1972; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual, occasionally biennial, tender grass; culms erect or geniculate, 30–75–100 cm long, often rooting at lower nodes; leaf blades folded open, 10–30 cm long, 2–6 mm wide; inflorescence contracted, digitate, conspicuously hairy (spikelets), of 4–12 slender, one-sided, feathery spikes these 2–10 cm long; spikelets in 2 rows on one side of axes, c. 3 mm long, (2)3-flowered, 2-awned; lowest lemma with a crown of hairs at apex; awn 5–15 mm long.

Introduced species in Africa, now widespread and a common weed of disturbed ground, cultivation, waste places on a variety of soils, including brackish and saline; *Acacia* woodland on sand overlying limestone or gypsum; scattered tree savanna; bushland; loamy depressions; 10–2000 m alt.

Native in temperate and subtropical America: S N. America – C. & S. America, West Indies; now widespread through the tropics, subtropics and warm temperate regions of the world (see Weber, Invasive plant species of the world, ed. 2: 111, 2017, with map); in Africa: N Africa, Cape Verde Isl., in a belt from Mauritania E-wards to Sudan, Ethiopia, Somalia; present in W Trop. Africa from Ivory Coast, Togo, Nigeria to Cameroon, coastal and E & S Zaire; from Uganda S-wards to S. Africa, Angola, Namibia. – Not mapped by us.

No specific control methods are available. Plants may be dug out. Larger patches can be cut to prevent seed formation.

Closely related to *C. gayana*, *C. roxburghiana*.

C. woodii Renvoize

Perennial tufted or stoloniferous herb; culms to 65 cm tall, erect or ascending; leaf blades flat, linear, 5–15 cm × 2–3 mm, strongly keeled, base flabellate; inflorescence of 5–7 digitate, loose or spreading spikes these 9–10 cm long; spikelets 4–6-flowered, 4–6-awned; lowest lemma with keel long-ciliate, awn 12 mm long.

Open *Boscia*, *Commiphora*, *Acacia* bush on basement complex sand; c. 300 m alt.

Known only from the type collected in 1967.

Closely resembling *C. barbata*.

SYNONYMS:

Chloris abyssinica Hochst. ex A. Rich. = **Chloris gayana**
barbata auct., non Sw. = **C. virgata**
barbata Sw. var. *decora* (Nees ex Steud.) Benth.
 and var. *meccana* (Hochst. & Steud. ex Schldtl.)
 Asch. & Schweinf. = **C. virgata**
barbata var. *divaricata* Kuntze = **C. barbata**
boivinii A. Camus = **Daknopholis boivinii**
brachystachys Andersson = **Chloris virgata**
brevisetia Benth. = **C. pilosa**
campulodes Trin. ex Steud.
 = **Enteropogon macrostachys**

CHLORIS

capensis (Houtt.) Thell. = **Eustachya paspaloides**
cenchriformis (A. Rich.) Baill.

= **Tetrapogon cenchriformis**

cryptostachya Steud. ex J. A. Schmidt

= **Enteropogon priurii**

ctenoides Steud. = **Dactyloctenium ctenoides**

elegans Kunth = **Chloris virgata**

elegans (Kunth) Roberty = **Ctenium elegans**

equitans Trin. = **Eustachys paspaloides**

ferruginea Renvoize = **Tetrapogon ferrugineus**

flagellifera (Nees) P. M. Peterson

= **Ochtochloa compressa**

floccifolia Poir. = **Eleusine floccifolia**

geminata Hochst. = **Tetrapogon cenchriformis**

glabrata Andersson = **Chloris gayana**

guineensis Schumach. = **Dactyloctenium aegyptium**

inflata Link = **Chloris barbata**

intermedia A. Rich. = **C. pycnothrix**

leptostachya Hochst. ex A. Rich., incl. var. *intermedia*

(A. Rich.) T. Durand & Schinz = **C. pycnothrix**

longiaristata Napper = **Enteropogon longiaristatus**

macrantha Desv., and *macrantha* Jaub. & Spach.

= **Tetrapogon tenellus**

macrostachya Hochst. ex A. Rich.

= **Enteropogon macrostachys**

meccana Hochst. & Steud. ex Schldtl. = **Chloris virgata**

multiradiata Hochst. = **C. virgata**

multiradiata var. *ragazii* Pirota = **C. gayana**

myriostachya Hochst., incl. var. *minor* Chiov.

= **C. roxburghiana**

nigra Hack. = **C. pilosa**

notocoma Hochst. = **C. virgata**

nutans (Stapf) P. M. Peterson – See **Lintonia nutans** Stapf

parva Mimeur = **Enteropogon priurii**

paspaloides Hochst. = **Eustachys paspaloides**

perrieri A. Camus, incl. var. *aristata* A. Camus

= **Daknopholis boivinii**

petraea Thunb., non Sw. = **Eustachys paspaloides**

polydactyla subsp. *multiradiata* (Hochst.) Chiov.

= **Chloris virgata**

polystachya Roxb. 1820, non. Lag. 1816

= **C. roxburghiana**

priurii Kunth = **Enteropogon priurii**

pubescens Peyr. 1860, non Lagasca 1805

= **Chloris flabellata**

pubescens Lagasca = **C. virgata**

pulchra Schumach. 1827 = **C. virgata** (not *Ctenium*

canescens)

punctulata Hochst. ex Steud. = **Enteropogon priurii**

“*radiata* Sw.” sensu Raddi 1823 = **Chloris pycnothrix**

ramosissima A. Camus = **Daknopholis boivinii**

repens Hochst., non Steud. = **Chloris gayana**

repens Steud. = **Eleusine indica**

rogeonii A. Chev. = **Chloris virgata**

savatieri Baill. = **Tetrapogon cenchriformis**

simplex Schumach. & Thonn.

= **Enteropogon monostachys**

somalensis Rendle = **Chloris mensensis**

spathacea Hochst. ex Steud. = **Tetrapogon cenchriformis**

subaequigluma Rendle = **Chrysochloa subaequigluma**

subtriflora Steud. = **Enteropogon priurii**

tenella J. Koenig ex Roxb. = **Tetrapogon tenellus**

tetrapogon P. Beauv. = **T. villosus**

tibetica Quétel = **Chloris virgata**

transiens Pilg. = **Schoenefeldia transiens**

triangulata Hochst. ex A. Rich. = **Tetrapogon tenellus**

CHLORIS

villosa (Desf.) Pers., incl. var. *sinaica* Decne. = **T. villosus**
virgata var. *brevisetata* (Benth.) Peter = **Chloris pilosa**
virgata var. *elegans* (Kunth) Stapf = **C. virgata**

CHLOROCALYMMA / 1

“A curious new genus from Tanzania” (Clayton in Kew Bull. 24: 461, 1970). – Monotypic.

Chlorocalymma cryptacanthum Clayton – Icon.: Kew Bull. 24: 462, 1970; Fl. Trop. E. Afr., Gramin. 3: 667, 1982.

Annual tufted grass; culms erect or ascending, 30–60 cm long; leaf blades linear, 4–10 cm × 3–8 mm; inflorescence composed of 2–3 deciduous pseudo-racemes (primary branches) distant along a central axis; pseudo-racemes 1–1.5 cm long, enclosing c. 12 densely imbricate involucre, each subtending 1–2 spikelets these 5.5–7 mm long; spikelets and involucres borne on a *foliaceous rachis* which *enfolds them*.

Dry deciduous bushland; 500–900 m alt.

CHRYSOCHLOA / 3 (4)

Tropical African genus of 3 or 4 species. Inflorescence of 1-many digitate 1-sided racemes bearing imbricate spikelets on a flat rachis; spikelets 2-flowered, sessile, in 1 row on a tough axis.

Chrysochloa hindsii C. E. Hubb.; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 248, 2011; César & Chatelain, Fl. ill. Tchad: 204, 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 185, 1992; Poilecot, Boissiera 50: 175, 1995; idem, ibid. 56: 275, 1999; Fl. Zambes. 10/2: 239, 1999; Ibrahim & al., Grasses Mali: 47, 2018.

syn.: *C. annua* C. E. Hubb.; *C. caespitosa* Clayton; *C. subaequigluma* sensu Berhaut, Fl. Sénégal., éd. 2: 398, 1967, non (Rendle) Swallen; *Bracteola subaequigluma* sensu A. Chevalier in Rev. Bot. Appl. Agric. Trop. 14/149: 127, 1934.

Annual stoloniferous or sometimes tufted grass; culms erect or geniculate, 10–75 cm long; leaf blades 1–17 cm long, 2–6 mm wide; inflorescence of 1–5 digitate spikes these 1–12 cm long; spikelets ovate, 3–4 mm long; *upper glume 1-nerved*; awn 1–2 mm long.

Open places on seasonally damp sandy soils; seasonally flooded pans and clayey soils; rocky outcrops; overgrazed places with *Eragrostis turgida*, *Brachiaria stigmatistata*, *Sporobolus pyramidalis*, *Vetiveria fulvibarbis*, *Andropogon africanus*, *Microchloa indica*; to 1500 m alt.

C. subaequigluma (Rendle) Swallen is similar, but has larger spikelets (c. 5 mm long) and larger anthers (1.6–2 mm, not 0.6–1.2 mm long).

C. hubbardiana Germ. & Risop.; Fl. Trop. E. Afr., Gramin. 2: 327–328, 1974. – Icon.: Ntore & al. in Scripta Bot. Belg. 58: 185, 2018.

Perennial tufted robust grass; culms 40–60 cm tall, with creeping stolons; leaf blades 5–16 cm long, c. 1 cm wide, rigid, glaucous; inflorescence of 4–9 digitate spikes these 4–11 cm long; spikelets densely imbricate, ovate, 3–4 mm long; upper glume 1-nerved; awn 1–3 mm long.

Open places on seasonally waterlogged shallow soils; lawn with *Sporobolus spicatus*; c. 1000 m alt.

CHRYSOCHLOA HUBBARDIANA

Sometimes considered to be a synonym of *C. hindsii*, but leaves very different.

Rarely collected (mostly old collections).

C. orientalis (C. E. Hubb.) Swallen; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 156, 1955; Lye & al. in Lidia 4: 160–161, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 428, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 328, 1974.

bas.: *Bracteola orientalis* C. E. Hubb. 1934, nom. inval.; C. E. Hubb. 1947 (Ann. list grasses Uganda: 8, 1947).

Creeping perennial grass with spreading stolons and fan-shaped tufts of folded leaves; culms 10–75 cm long; leaf blades 2–19 cm long, 3–7 mm wide, tips rounded; sheaths keeled, loosely flabellate; inflorescence of 2–3 digitate spikes these 5–18 cm long; spikelets oblong, 3.5–5 mm long; *upper glume 3–5 nerved*; awn very short.

Scattered tree and open grassland on black cracking clay and similar soils; grassy savanna; flooding clay soils; bare clayey grounds; locally abundant; 950–1700 m alt.

“A widespread rare grass in parts of Uganda with a prolonged dry season” (Lye & al., l.c.).

(**C. subaequigluma** (Rendle) Swallen)

bas.: *Chloris subaequigluma* Rendle in Hiern, Cat. Welwitsch's Afric. pl. 2/1: 222–223, 1899.

syn.: *Bracteola subaequigluma* (Rendle) C. E. Hubb. 1934, genus not validly published; *B. lucida* Swallen, idem; *Chrysochloa lucida* (Swallen) Swallen

Perennial grass spreading by slender woody runners; culms erect from an ascending base, geniculate, simple or branched, 20–50 cm long; leaf blades short, linear, glaucous, emarginate, radical leaves distichously crowded, short; cauline leaves (c. 4 cm × 2 mm), resembling the radical, but blades becoming shorter upwards; inflorescence of 2 digitate spikes c. 5 cm long; spikelets 4.5–5 mm long.

Ecology not recorded.

Angola: Pungo Andongo? “No information”.

Similar to *C. hindsii* (with smaller spikelets and anthers). Taxonomic status uncertain. Not mapped.

C. sp. sensu César & Chatelain, Fl. ill. Tchad: 205, 2019 (partial drawing).

Annual slender grass 40–50 cm tall; leaf blades linear, 20 cm × 2 mm; inflorescence somewhat enclosed within a spathe, of 6 spikes these 6 cm long; glumes unequal, a feature placing the plant as intermediate between *Chloris* and *Chrysochloa*.

Margin of pool.

Perhaps a new species, but the description of the herbarium specimen (AG 634, Massaguet, 1. IX. 1965; Herb. Farcha) impossible, as the plant has lost all its inflorescences. Details of a part of the remaining raceme, the lemma and the palea are given.

Taxonomic status uncertain. Not mapped.

SYNONYMS:

Chrysochloa annua C. E. Hubb. = **Chrysochloa hindsii**
caespitosa Clayton = **C. hindsii**

lucida (Swallen) Swallen = **C. subaequigluma**

subaequigluma sensu Berhaut 1967, non (Rendle) Swallen
 = **C. hindsii**

CHRYSOPOGON / 5

Chrysopogon Trin. 1820, nom. conserv., incl. *Vetiveria* Bory 1822. – *Vetiveria zizanioides* (*Chrysopogon zizanioides*) is a well known source of aromatic oils (vetiver oil), and lately proposed as a good soil-binder; “so this name doubtlessly will continue to be widely used with the usual complaints about taxonomists always changing names... Proposing conservation of *Vetiveria* over *Chrysopogon* seems doomed to fail ...” (Veldkamp in *Austrobaileya* 5: 505, 1999).

Genus of c. 48 species distributed in tropical and subtropical regions of the Old World, E-wards to the Pacific, SC & SE U.S.A. S-wards to Cuba in the Caribbean. Introduced elsewhere.

VELDKAMP, J. F. (1999). A revision of *Chrysopogon* Trin. including *Vetiveria* Bory (Poaceae) in Thailand and Malesia with notes on some other species from Africa and Australia. *Austrobaileya* 5: 503–533.

(***Chrysopogon aciculatus*** (Retz.) Trin.); Fl. W. Trop. Afr., ed. 2, 3/2: 468, 1972; Fl. Trop. E. Afr., Gramin. 3: 736, 1982; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 205, 1994; Sosef & al., Checklist pl. vascul. Gabon: 182, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 414, 413 (map), 1992; Poilecot, Boissiera 50: 487, 1995; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 120, 2002; Fl. China 22, Ill.: 845, 2007; Giraldo-Cañas in Revista Acad. Colomb. Cie. Exact., Físic., Natural. 138: 6, 8, 2012; Velayos & al., Fl. Guinea Ecuat. 12: 174, 2015; Vande weghe & al., Plantes à fleurs du Gabon: 176, 2016.

bas.: *Andropogon aciculatus* Retz.

syn.: *A. acicularis* Willd. 1806, orth. var.; *A. acicularis* Roem. & Schult. 1817, nom. superfl.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial sward-forming grass; culms creeping and rooting at nodes, 15–50 cm long; leaves distichous, all along the culm; blades lanceolate, 3–10 cm × 4–6 mm (on creeping parts), 10–20 cm × 2–4 mm (on erect parts); inflorescence a terminal ± pyramidal panicle, 5–10 × 2–5 cm, of spikelet-triplets, on filiform to 3 cm long branches; sessile spikelet 3–4 mm long, pedicellate spikelet 4–5 mm long, all purplish; callus 3–4 mm long, needle-like, readily penetrating the mouths of cattle and the paws of dogs. – Commonly called “love-grass” because of the attachment of spikelets to the bodies of animals and clothes of man.

Commonly grown as a lawn-grass, ruderal around towns and villages in association with other ruderal grasses, such as *Eleusine indica*, *Eragrostis tenella*, *Sporobolus pyramidalis*, *Cynodon dactylon*, etc.; 0–1600 (Rio Muni, Bioko) m alt.

As a lawn-grass requires frequent mowing; produces a good turf for roadside verges, consolidates sandy beach shores.

A tropical Asiatic species, from Madagascar E-wards to China, Japan, Philippines, New Guinea, Australia, Pacific Isl. Introduced in Africa from Sierra Leone, Liberia E-wards to SW Cameroon, Gabon; in Uganda rare (Entebbe).

C. aucheri (Boiss.) Stapf, incl. var. *chrysopus* (Hack.) Maire & Weiller, but excl. var. *pulvinatus* Stapf and var. *quinqueplumis* (A. Rich.) Stapf (both = *C. plumulosus*); Thulin, Fl. Somalia 4: 254, 1995; Fl. Eth. & Eritrea 7: 304, 1995; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 261, 2010. – Icon.: Maire, Fl. Afr. N. 1: 274, 1952; Cope, Fl. Arab. Penins. 5/1: 275, 2007.

bas.: *Andropogon aucheri* Boiss.

syn.: *A. aucheri* var. *subpungens* Hack.; *A. chrysopus* (Hack.) Trab.; *Chrysopogon ciliolatus* Boiss. var. *aucheri* (Boiss.) Boiss.; *C. fulvus* (Spreng.) Chiov. var. *migiurtinus* (Chiov.)

CHRYSOPOGON AUCHERI

Chiov.; *C. montanus* Trin. var. *migiurtinus* Chiov.; *Sorghum aucheri* (Boiss.) Kuntze; see also Cope (2007): l.c.

Perennial tufted herb with short rhizome; culms slender, to 60 cm tall, branching but not forming bushy fasciculate clusters; leaf blades to 25 cm long, 2–4 mm wide, *densely pubescent*, usually tuberculate-setose on margins, acute-acuminate; panicle ovate, 5–10 cm long, branches 4–6-verticillate, branch-tips ± fulvously ciliate, pedicels and callus bearded; sessile spikelet 5–8 mm long; pedicellate spikelets 4–10 mm long, lower glume with a fine *glabrous awn* 4–7 mm long.

Dry stony slopes, usually in semi-desert areas; semi-desert grassland; *Chrysopogon aucheri*-*Commiphora africana* community, *Cenchrus ciliaris*-*Chrysopogon aucheri* community, *Bidens hil-debrandtii*-*Chrysopogon aucheri* community (Dalle & al. in Community Ecol. 6: 170, 2005); near the coast–1300 m alt.

Morocco, Algeria; Socotra; Oman, Saudi Arabia, Yemen; Palestine; Afghanistan, Iran, W Himalaya.

As to the relationships with *C. plumulosus* and *C. serrulatus* see under *C. serrulatus* below.

C. fulvibarbis (Trin.) Veldkamp; the following references are all under *Vetiveria*; Fl. Trop. Afr. 9/1: 158, 1917; Rev. Bot. Appl. Agric. Trop. 13/148: 860, 1933; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 375, 1994. – Icon.: van der Zon, Gramin. Cameroun 2: 410, 413 (map), 1992; Poilecot, Boissiera 50: 491, 1995; idem, ibid. 56: 528, 1999; Ibrahim & al. Grasses Mali: 48, 2018.

bas.: *Andropogon fulvibarbis* Trin.

syn.: *A. verticillatus* Schumacher. 1827, nom. illeg.; *Sorghum fulvibarbe* (Trin.) Kuntze; *Anatherum fulvibarbe* (Trin.) Keng; *Vetiveria fulvibarbis* (Trin.) Stapf; *Rhaphis zizanioides* var. *fulvibarbis* (Trin.) Roberty 1960, nom. inval.; *R. zizanioides* subvar. *fulvibarbis* (Trin.) Roberty 1960, nom. inval.

Perennial tufted grass to 2 m tall; culms sparingly branched; leaves mostly basal; blade linear, c. 25–100 cm long, 6–8 mm wide; panicle oblong, 10–20 cm long, erect or often ± nodding, secund; racemes in whorls, these 6–8, with > 12 rays; racemes to 5 cm long, very slender; sessile and pedicellate spikelets similar, linear, 4–8 mm long; callus fulvously bearded; awn 1–2 cm long.

Marshy places near rivers, floodplains, thalweg bottom; often with *Andropogon africanus*, *Brachiaria jubata*, *Panicum pilgeri*, *P. dregeanum*, *Schizachyrium sanguineum*, etc.; up to c. 300 m alt.

C. nigritanus (Benth.) Veldkamp – In most floras figuring as *Vetiveria nigritana*. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 375–376, 1994; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; César & Chatelain, Fl. ill. Tchad: 249, 2019. – Icon.: Robyns, Fl. agrost. Congo belge 1: 101, 1929; Fl. Trop. E. Afr., Gramin. 3: 740, 1982; Troupin, Fl. Rwanda 4: 393, 1988; Gibbs Russell & al., Grasses south. Afr.: 352, 1990; van der Zon, Gramin. Cameroun 2: 410, 1992; Poilecot, Boissiera 50: 489, 1995; idem, ibid. 56: 527, 1999; Fl. Zambes. 10/4: 37, 2002; Lisowski, Fl. Rép. Guinée 2: fig. 564, 2009; Ibrahim & al., Grasses Mali: 48, 2018.

bas.: *Andropogon nigritanus* Benth.

syn.: *A. squarrosus* var. *nigritanus* (Benth.) Hack.; *A. zizanioides* var. *nigritana* (Benth.) A. Chev.; *Chrysopogon zizanioides* var. *nigritanus* (Benth.) Roberty; *Vetiveria nigritana* (Benth.) Stapf; *V. zizanioides* var. *nigritana* (Benth.) A. Camus; *Mandelorna insignis* Steud.; *Jardinea kibambeensis* Vanderyst; *Rhaphis zizanioides* var. *nigritana* (Benth.) Roberty 1954, nom. inval.

CHRYSOPOGON NIGRITANUS

Perennial tufted grass; culms 1,5–3 m tall; leaf blades to 1 m long, c. 1 cm wide; panicle 15–40 cm long, with 8–10 whorls each with up to 15 racemes, these very slender; the longest raceme 5–15 cm long; sessile spikelet 5–7 mm long; pedicellate spikelets shorter than the sessile; glumes dark purple, short-spiny; awn (2–)5–(12) mm long.

Clayey pools; flood plains and other seasonally flooded places sometimes slightly brackish; coastal savannas with *Chrysopogon fulvibarbis*, *Andropogon africanus*, *A. perligulatus*, *Panicum pilgeri*, *P. dregeanum*, *P. subalbidum*, *Paspalum scrobiculatum*, etc.; occasionally roadsides and in forested areas; locally dominant; 0–1300 m alt.

N Namibia, N Botswana, Caprivi Strip, S. Africa.

Sometimes grown as an ornamental or planted to mark field boundaries; also used for extraction of essential oil (Biochem. Syst. Ecol. 36: 68–70, 2008).

Difficult to separate from *C. zizanioides* (they may easily be confused, and the uses attributed to *C. nigritanus* may well pertain to *C. zizanioides*); *C. zizanioides*, an Asiatic species, is typically awn-less and the spikelets are shorter (3–5 mm).

C. plumulosus Hochst.; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 261, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 738, 1982; Fl. Eth. & Eritrea 7: 304, 1995; Thulin, Fl. Somalia 4: 254, 1995; Poilecot, Boissiera 56: 523, 1999; Boulos, Fl. Egypt 4: 330, 2005; Agnew, Upl. Kenya wild flow., ed. 3: pl. 191, 2013; César & Chatelain, Fl. ill. Tchad: 249, 2019.

syn.: *C. quinqueplumis* A. Rich.; *C. aucheri* (Boiss.) Stapf var. *quinqueplumis* (A. Rich.) Stapf and var. *pulvinatus* Stapf; *Aristida chrysophila* Steud. 1840, nom. nud.; *Andropogon quinqueplumis* (A. Rich.) Steud.; *A. aucheri* Boiss. var. *quinqueplumis* (A. Rich.) Hack.

Perennial loosely tufted grass from a short stout rootstock; culms 10–90 cm long, erect or ascending, wiry, bushy above the base; leaves cauline or sometimes forming a compact basal cushion; blades 1–15 cm long, 1–4 mm wide, glaucous, glabrous or pubescent, with or without tubercle-based hairs, tip finely acute; panicle ovate, 3–10 cm long; branches 4–6 in whorls, fulvously bearded at tip; sessile spikelet 4–6 mm long, pedicellate ones 4–8 mm, glumes tipped with fine plumose awns (5 from each triad).

Deciduous bushland (often with *Commiphora*); sub-desert grassland on dry stony soil or black clays; sandy and alluvial plains; rocky sandstone hillsides; lightly wooded grassland; sands on hillocks or ravine sides; with *Cenchrus ciliaris*, *Aristida funiculata*, *A. mutabilis*, *Enneapogon lophotrichus*, *Cymbopogon schoenanthus*, *Schoenefeldia gracilis*; grassland (palatable to grazing animals when mature) dominated by *Botriochloa insculpta*, *Sehima nervosum*, *Themeda triandra*, *Sporobolus helvolus* (see Friis & Vollesen, Fl. Sudan-Uganda border area: 708–709, in Biol. Skr. 51/2, 2005); open *Acacia* bushland; rocky wadi beds; sometimes frequent; 0–2500 m alt.

Variable species in pubescence of leaves and in presence of plumose hairs on awns (perhaps due to introgression from *C. serrulatus*). – The distinction between glabrous and plumose awns is a little vague (cf. *C. aucheri* above and *C. serrulatus* below).

SE Egypt; Socotra, Gulf States, Saudi Arabia, Yemen, Oman.

In comparison with *C. serrulatus* that species is generally more vigorous with culms arising from a basal tuft of distinctly keeled leaf sheaths and lacking conspicuous fascicles of branches above ground level.

CHRYSOPOGON

C. serrulatus Trin.; Veldkamp in Austrobaileya 5: 519–520, 1999; Setshogo in Kirkia 17: 140, 2001; Fl. Zambes. 10/4: 34–35, 2002; Agnew, Upl. Kenya wild flow., ed. 3: 444, 2013. – Icon.: Cope, Fl. Arab. Penins. 5/1: 275, 2007 (spikelets); Gibbs Russell & al., Grasses south. Afr.: 85, 1990; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 133, 2012.

syn.: *Andropogon tremulus* Hack.; *A. trinii* var. *simplicior* Hack. and var. *increscens* (Steud.) Hack.; *Chrysopogon montanus* Trin. var. *serrulatus* (Trin.) Stapf and var. *tremulus* (Hack.) Stapf; *C. fulvus* (Spreng.) Chiov. var. *tremulus* (Hack.) Chiov. and var. *serrulatus* (Trin.) R. R. Stewart; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial grass; culms 0,3–1,5 m tall, erect, unbranched; leaves blue-green, mostly borne towards base of plant; blades linear, 10–30 × 0,2–1 cm, glabrous or sparsely pilose; panicle narrow, purplish, 3–15 cm long, with delicate capillary whorled branches fulvously bearded at apex; raceme reduced to a triad of 1 sessile and 2 pedicellate spikelets; sessile spikelet 4–7 mm long, awns 0,6–1,2 and 2–3 cm long; pedicellate spikelets 3–8 mm long, awn c. 3 mm long; awns glabrous or plumose only at base.

Common in shallow sandy soils and in rocky places; black clays in bushland; dry overgrazed soils in deciduous bushland; 230–1600 m alt.

Botswana, S. Africa; Madagascar; from Afghanistan E-wards to N Malesia.

Very similar to *C. plumulosus* but with longer callus (to 1,5 mm), awns not plumose (but glabrous or obscurely hispidulous), upper lemma with 2-lobed apex (not entire).

Notes: *C. serrulatus* (with *C. aucheri* and *C. plumulosus*) belongs to a cluster of intergrading entities whose taxonomic relationships are far from understood. It is probable that they represent nothing more than local variants... Plants with glabrous awns on the pedicellate spikelets divide very neatly in Arabia into those with glabrous leaves (*C. serrulatus*), and those with pubescent leaves (*C. aucheri*). Plants with plumose awns on the pedicellate spikelets divide equally well into these same two groups, but only one name (*C. plumulosus*) is extant for them. But the distinction between glabrous and plumose awns is a little vague.

(**C. zizanioides** (L.) Roberty, excl. var. *nigritana* (Benth.) Roberty (= *C. nigritanus*); usually cited as *Vetiveria zizanioides*) – Vetiver grass – Rendle in J. Linn. Soc., Bot. 40: 224, 1911 (as *Anatherum muricatum*); Fl. Gabon 5: 148, 1962; idem 5b: 66, 1999; van der Zon, Gramin. Cameroun 2: 408, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 376–377, 1994; Veldkamp in Austrobaileya 5: 522, 1999; Fl. Zambes. 10/4: 35, 2002; Boulos, Fl. Egypt 4: 333–334, 2005; Sosef & al., Check-list pl. vascul. Gabon: 191, 2006. – Icon.: Fl. China 22, Ill.: 843, 2007; Garance Voyageuse 136: 17, 2021.

bas.: *Phalaris zizanioides* L.

syn.: *Vetiveria zizanioides* (L.) Nash; *V. muricata* (Retz.) Griseb.; *V. arundinacea* Griseb.; *V. odorata* Virey; *V. odoratissima* Bory ex Cloquet; *Anatherum zizanioides* (L.) Hitchc. & Chase; *A. muricatum* (Retz.) P. Beauv.; *Andropogon aromaticus* Roxb. ex Schult.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial densely tufted, rhizomatous (aromatic) grass; culms 0,5–1,5–2 m tall, all nodes concealed within leaf sheaths; blades linear, conduplicate, 23–94 cm × 2,5–7 mm; panicle oblong, 20–33 cm long, 2,5–6 cm Ø, yellowish brown to purplish, branches whorled (6–10 whorls); raceme peduncles 1–4 cm long, with 6–14 spikelet groups per branch; sessile spikelet 4–6 mm long,

CHRYSOPOGON ZIZANIOIDES

spinulose on glumes, with awn 2–4 mm long; pedicellate spikelet male, smooth. Does not flower in cultivation.

Cultivated as a soil stabilizer on (steep) road edges, also for thatching; often cultivated in villages. Long cultivated for the fragrant roots which contain the essential Oil of Vetiver. The oil is used in fine perfumery and in soaps, deodorants, and other cosmetic applications.

Native to Pakistan, India, Nepal E-wards to SE Asia. Cultivated in W and C tropical Africa; Madagascar; now introduced in most tropical countries, West Indies, C. & S. America; also in New Zealand (for erosion control, uncommon) and southern European countries. The plant has a potential in removing polycyclic aromatic hydrocarbon (PAH) contaminated soils (Pakistan J. Bot. 47: 291–296, 2015).

ADAMS, R. P. & M. R. DAFFORN (1997–1998). Lessons in diversity: DNA sampling of the pantropical vetiver grass uncovers genetic uniformity in erosion-control germplasm. *Diversity* 13/4: 27–28 (with map).

ADAMS, R. P. & al. (1998). DNA genetic diversity of *Vetiveria zizanioides* (Poaceae). *Phytologia* 85: 85–95 [cultivars cited].

BOARD ON SCIENCE AND TECHNOLOGY FOR INTERNATIONAL DEVELOPMENT (1993). *Vetiver grass, A thin green line against erosion*. National Academy Press, Washington, D. C. XIV + 171 pp.

DUMAS, F. & F. HEMERY (2021). Le vétiver, une graminée au parfum... *La Garance Voyageuse* 136: 17–19.

MAFFEI, M., ed. (2002). *Vetiveria. The genus Vetiveria*. Taylor & Francis, London & New York [Medicinal and Aromatic Plants – Industrial Profiles 20]. VIII ± 191 pp.

RODRÍGUEZ PARISCA, O. & G. YÉPEZ TAMAYO (2006). Una extraordinaria planta para la protección ambiental. *Natura (La Salle)* 128: 30–37.

SYNONYMS:

Chrysopogon aucheri (Boiss.) Stapf var. *pulvinatus* Stapf and var. *quinqueplumis* (A. Rich.) Stapf = **Chrysopogon plumulosus**
ciliolatus Boiss. var. *aucheri* (Boiss.) Boiss. = **C. aucheri**
distachyos (L.) L. Rossi = **Andropogon distachyos**
fulvus (Spreng.) Chiov. var. *migiurtinus* (Chiov.) Chiov. = **Chrysopogon aucheri**
fulvus var. *serrulatus* (Trin.) R. R. Stewart and var. *tremulus* (Hack.) Chiov. = **C. serrulatus**
montanus Trin. var. *migiurtinus* Chiov. = **C. aucheri**
montanus var. *serrulatus* (Trin.) Stapf and var. *tremulus* (Hack.) Stapf = **C. serrulatus**
quinqueplumis A. Rich. = **C. plumulosus**
zizanioides var. *nigritanus* (Benth.) Roberty = **A. nigritanus**

(CHRYSURUS)

Chrysurus aureus (L.) Besser = **Lamarckia aurea**
cynosuroides Pers. = **L. aurea**

CLADORAPHIS / I

Genus of 2 species in Angola, Namibia, S. Africa.

Cladoraphis cyperoides (Thunb.) S. M. Phillips; Gibbs Russell & al., Grasses south. Africa: 86, 1990. – Icon.: L. Schultze, Namaland und Kalahari: 94, 1907; Volk, Gräser des Farmgebietes von Südwestafrika: fig. 138, 1974.

bas.: *Poa cyperoides* Thunb.

syn.: *Eragrostis cyperoides* (Thunb.) P. Beauv.; *E. enodis* Hack.; *Brizopyrum cyperoides* (Thunb.) Nees

CLADORAPHIS CYPEROIDES

Perennial tufted, bushy, spiny grass, 20–80 cm tall; leaf blades 2–11 cm long, 4–9 mm wide; inflorescence panicle, with distant branches more than their own length apart, not always produced as a spine, to 8 cm long (usually much shorter); spikelets 4–8 mm long, 3–5 mm wide, usually clustered and appressed to the branches, 4–20-flowered.

Ecology in Angola unknown; in Namibia, S. Africa (W) deep loose sand; coastal dunes; edges of fresh or saltwater lagoons; locally common.

CLEISTACHNE / I

Monotypic genus.

Cleistachne sorghoides Benth. – Icon.: Hooker's Icon. Pl. 14: pl. 1379, 1882; Fl. Trop. E. Afr., Gramin. 3: 735, 1982; Gibbs Russell & al., Grasses south. Afr.: 87, 1990; Fl. Eth. & Eritrea 7: 302, 1995; Fl. Zambes. 10/4: 33, 2002; Cope, Fl. Arab. Peninsula 5/1: 275, 2007.

syn.: *C. macrantha* Stapf; *C. stocksii* Hook. f.

Annual coarse erect grass often stilt-rooted; culms 0,6–2,5 m tall; leaf blades linear, 20–90 × 0,4–1,5 cm, narrowed to the midrib towards ligule and sometimes falsely petiolate; panicle linear, compact, 8–40 cm long, branches 4–8 cm long; spikelet bearing axes, racemes, narrow, with many joints, pilose; *spikelets solitary*, biseriate, 3–6 mm long, golden brown to black, pubescent with white to fulvous hairs; awn 1,5–3,5 cm long.

Moist grassland; old cultivations; dambo; especially near rivers; savanna; 0–2000 m alt.

S. Africa; Oman; India. – Not in Sudan (Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015).

Plants with paired spikelets: See *Sorghastrum*.

SYNONYMS:

Cleistachne macrantha Stapf = **Cleistachne sorghoides**
stocksii Hook. f. = **C. sorghoides**
teretifolia Hack. = **Miscanthus junceus**

(CLIFFORDIOCHLOA)

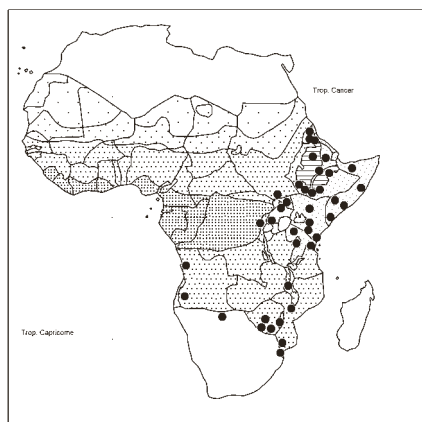
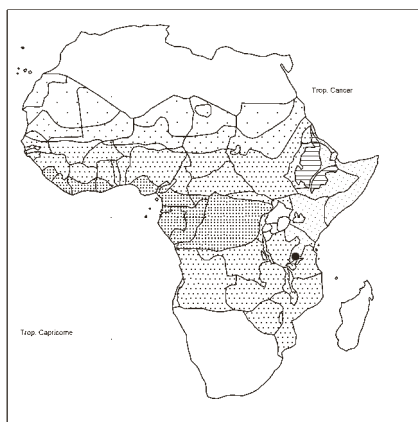
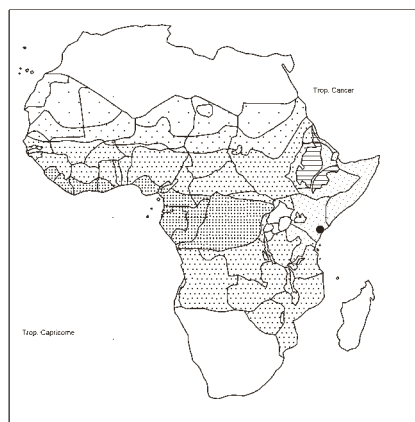
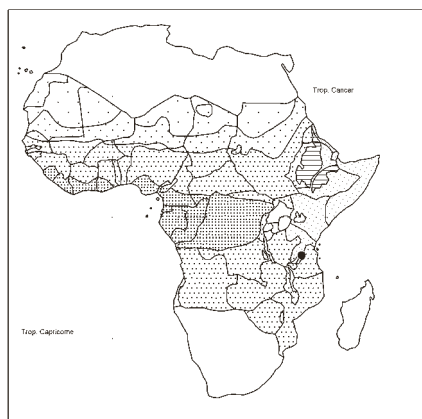
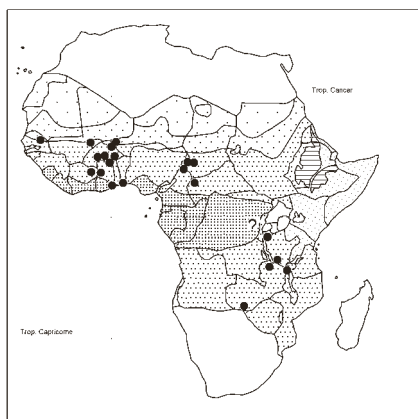
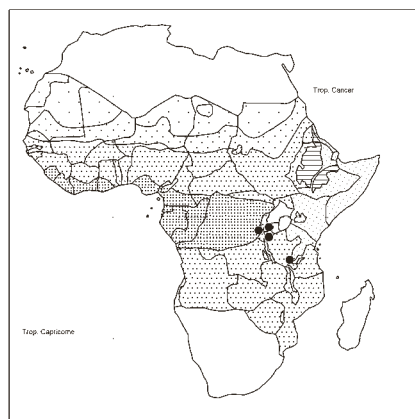
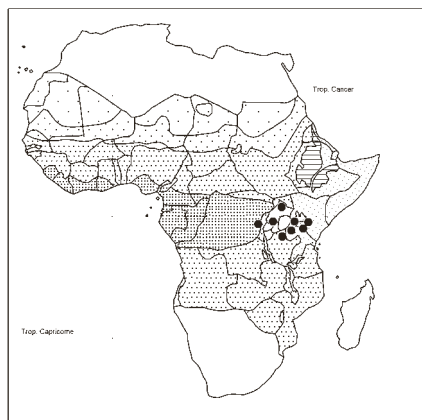
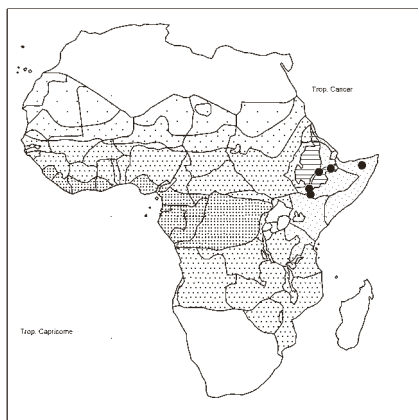
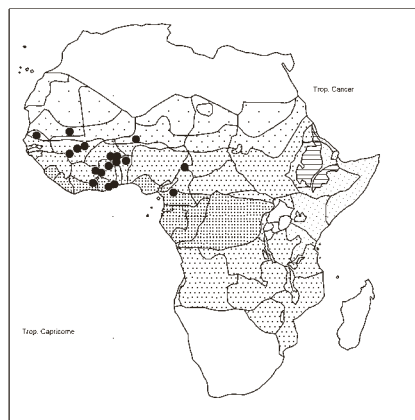
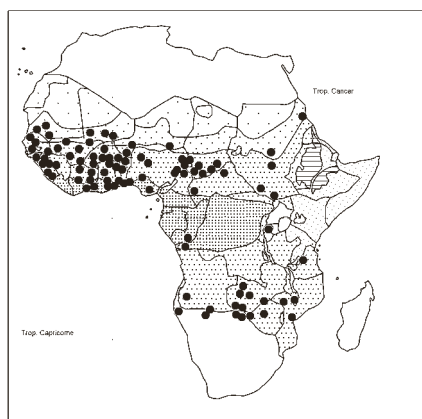
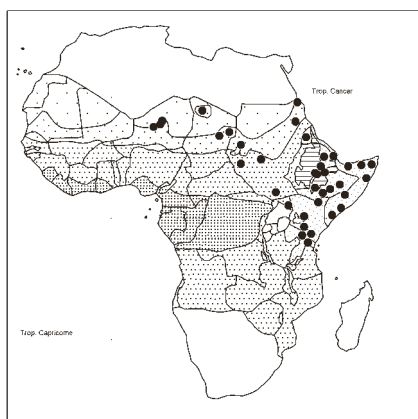
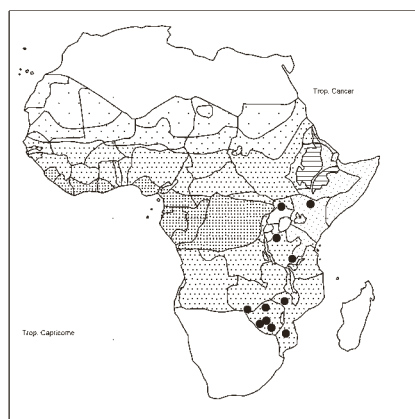
Cliffordiochloa parvispicula B. K. Simon
 = **Steinchisma laxum** (introd.)

COELACHNE / 3

Genus of c. 11 species distributed in the tropics and subtropics of the Old World. Genus sometimes confused with *Panicum*, but may be recognised by its low stature, short obtuse glumes, and fertile lower floret (Fl. Trop. E. Afr., Gramin. 2: 436, 1974).

Coelachne africana Pilg.; Renier, Fl. Kwango 1: 52, 1948; Lye & al. in Lidia 4: 161, 2000; Lidia 5/5: 128, 2001; Walters & al. in Edinb. J. Bot. 68: 431, 2011; Agnew, Upl. Kenya wild flow., ed. 3: 442, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 437, 1974; Troupin, Fl. Rwanda 4: 218, 1980; Fl. Zambes. 10/3: 196, 1989; van der Zon, Gramin. Cameroun 2: 352, 1992; Fl. Eth. & Eritrea 7: 284, 1995; Burrows & Willis, Pl. Nyika Plateau, Malawi: 343, 2005; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda: 349, 2008.

syn.: *C. paludosa* Peter

*Chloris roxburghiana**Chloris ruahensis**Chloris woodii**Chlorocalymma cryptacanthum**Chrysochloa hindsii**Chrysochloa hubbardiana**Chrysochloa orientalis**Chrysopogon aucheri**Chrysopogon fulvibarbis**Chrysopogon nigritanus**Chrysopogon plumulosus**Chrysopogon serrulatus*

COELACHNE AFRICANA

Perennial mat-forming herb; *culms* 5–20 cm long, ascending from a creeping branched base and rooting at nodes; leaf *blades* lanceolate, 0,6–2 cm × 1,5–4,5 mm, flat; *panicle* 1,2–8 cm long, 2,5 cm Ø, branches short (2 cm long), well-spaced, *spreading*, few-spiculate; *spikelets* c. 2 mm long, purplish or green; *glumes* *glabrous*.

Stream banks and bogs in grassland; wet rocks bordering waterfalls; *Sphagnetum*; swamp in bamboo forest; swampy *Miscanthus* community; 1040–2700 m alt.

Abundant in its only Gabonese locality (Walters & al., l.c.).

Madagascar.

C. auquieri Ndob. – Icon.: Bull. Jard. Bot. Natl. Belg. 53: 286, 1983.

Annual or perennial grass; *culms* 30–50 cm long, erect or ascending, rooting at lower nodes; leaf *blades* lanceolate-linear, 2–5,5 cm × 2–4 mm, flat; *panicle* 10–20 cm long, 3–4 cm wide, rather dense, branches 2–4 cm long, spreading or reflexed; *spikelets* 2–2,7 mm long, purplish or green; *glumes* *glabrous*.

River banks; humid places in forest; swamp at forest edge; 1920–2100 m alt.

Resembling *C. africana* but culms, leaves and panicle longer.

C. friesiorum C. E. Hubb.; Fl. Trop. E. Afr., Gramin. 2: 438, 1974; Agnew, Upl. Kenya wild flow., ed. 3: 442, 2013.

Perennial grass; *culms* 2,5–5 cm long, ascending from a creeping base with tiny stolons; leaf *blades* lanceolate, 0,4–1 cm × 3,5 mm, flat; *panicle* contracted, 0,6–3 cm long, few-spiculate, branches erect; *spikelets* 3 mm long, purplish; *glumes* *glabrous*.

Streamsides; wet places, swamp; c. 3000 m alt.

Endemic on the Aberdare range (Kenya). This taxon represents perhaps a high mountain variant of *C. africana*.

Known only from the type collected in 1922.

SYNONYMS:

Coelachne angolensis (Rendle) Jacq.-Fél.

= *Isachne angolensis*

occidentalis Jacq.-Fél. = *I. angolensis*

paludosa Peter = *Coelachne africana*

COELACHYRUM / 4

syn.: *Coelochloa* Steud.; *Cypholepis* Chiov.

Genus of 5 or 6 species in N & E Africa E-wards through the Arabian Peninsula to Pakistan, India, Sri Lanka; also in S Africa [*C. yemenicum* (Schweinf.) S. M. Phillips].

Coelachyrum brevifolium Hochst. & Nees; Thulin, Fl. Somalia 4: 186, 1995; Cope, Fl. Arab. Penins. 5/1: 151, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 261, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; César & Chatelain, Fl. ill. Tchad: 201, 2019. – Icon.: Hooker's Icon. Pl. 14: pl. 1368, 1881 (as *Eragrostis coelachyrum*); Fl. Eth. & Eritrea 7: 134, 1995; Poilecot, Boissiera 56: 242, 1999; Boulos, Fl. Egypt 4: 264, 2005; Iran. J. Bot. 23: 87, 2017; Ibrahim & al., Grasses Mali: 49, 2018.

syn.: *C. oligobrachiatum* A. Camus, incl. var. *villiglume* Maire; *Coelochloa brevifolia* (Hochst. & Nees) Steud.; *Eragrostis coelachyrum* Benth.; *Eleusine brevifolia* (Hochst. & Nees) Hochst. & Steud.; *El. wallichii* Munro ex Hook. f. 1896, pro syn.

COELACHYRUM BREVIFOLIUM

Annual grass forming a sprawling tuft; culms stoloniferous, 9–45 cm tall; basal leaf sheaths golden yellow; blades lanceolate, 2–6 × 0,5 cm; inflorescence of 3–8 racemes each 1–5,5 cm long, clustered towards top of culm; spikelets shortly pedicellate, densely imbricate on the triquetrous rachis; spikelets c. 2–4 mm long, yellowish green with dark green nerves.

Sandy soils on coastal plain with *Jatropha crinita*; common in dry valleys in Niger; dunes with *Panicum turgidum*, *Aristida mutabilis*, *A. sieberiana*, *Tragus racemosus*, *Cenchrus biflorus*, *Brachiaria xantholeuca*, *Eragrostis tremula*; temporarily flooded places with *Cenchrus prieurii*, *C. biflorus*, *Aristida mutabilis*, *Stipagrostis uniplumis*, *Tragus berteronianus*; also on pure sand (Chad, Ennedi); sandy wadi beds; humid sands; sandy steppes of the Sahara; sea-level–1200 m alt.

? Morocco, Algeria, Egypt; Gulf States, Saudi Arabia, Oman, ? Yemen, Iran.

C. longiglume Napper; Agnew, Upl. Kenya wild flow., ed. 3: 422, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 247, 1974; Fl. Eth. & Eritrea 7: 134, 1995; Thulin, Fl. Somal. 4: 187, 1995.

Annual delicate tufted grass; culms 17–68 cm long, geniculately ascending; leaf blades 6–16 cm long, 2,5–4 mm wide, soft, smooth, glabrous, tip fine; panicle ovate, open, 6–12 cm long, branches sometimes simple, reduced to (small) racemes; spikelets ovate, c. 5–7 mm long.

Dry grassland; locally abundant; gypseous saline plain with *Limonium*; c. 200–1500 m alt.

Near *C. piercei*.

Confused with an *Eragrostis* but glumes multi-nerved, and lemma densely asperulous.

C. piercei (Benth.) Bor; Thulin, Fl. Somalia 4: 186, 1995; Cope, Fl. Arab. Penins. 5/1: 151, 2007. – Icon.: Hooker's Icon. Pl. 14: pl. 1370, 1881 (under *Eragrostis*).

bas.: *Eragrostis piercei* Benth. (“*E. piercii*”).

syn.: *Coelachyrum stoloniferum* C. E. Hubb.

Perennial tufted grass, sometimes stoloniferous, to 45 cm tall; leaf blades 2,5–5 cm long; panicle open, 5,5–11 cm long, branches often ramose; spikelets borne on pedicels 1–4 mm long; spikelets 4,5–7,5 mm long; lemma *glabrous* or *shortly ciliate* on margins.

Grassland or evergreen bushland on sand overlying limestone; fixed coastal dunes; 0–1000 m alt.

Gulf States, Saudi Arabia, Oman, Yemen; Pakistan; Iran.

C. poiflorum Chiov.; Thulin, Fl. Somalia 4: 186, 1995; Cope, Fl. Arab. Penins. 5/1: 151, 2007. – Icon.: Audru & al., Pl. vascul. Rép. Djibouti 2/2: 862, 1994; Fl. Eth. & Eritrea 7: 134, 1995.

syn.: *C. induratum* Pilg.; *Eleusine poiflora* (Chiov.) Chiov.

Perennial stoloniferous grass forming dense tufts at the nodes; culms 13–60 cm long; leaf blades to 15 cm long, 4 mm wide; inflorescence with 4–7 spikes each 1–4 cm long, clustered towards tip of culm, sometimes forming a compact head; spikelets ± sessile, densely biserial on a flattened rachis, 3–7 mm long, greyish-green; lemma c. 3 mm long, scarious, *back glabrous*, *conspicuously villous along nerves*.

Grassland on thin soil over rock; open *Acacia* shrubland overlying limestone, gypsum or gneiss; mountain forests; 750–1900 m alt.

Saudi Arabia, Yemen, Oman.

COELACHYRUM

SYNONYMS:

Coelachyrum induratum Pilg. = **Coelachyrum poiflorum**
oligobrachiatum A. Camus, incl. var. *villiglume* Maire
 = **C. brevifolium**
stoloniferum C. E. Hubb. = **C. piercei**
yemenicum (Schweinf.) S. M. Phillips
 = **Disakisperma yemenicum**

(COELOCHLOA)

Coelochloa brevifolia (Hochst. & Nees) Steud.
 = **Coelachyrum brevifolium**

COELORACHIS / 2

syn.: *Rottboellia* sect. *Apogonia* Nutt.

Genus of 21 species in the tropics and subtropics of the world (Christenhusz & al., Plants of the World: 208, 2017). Sometimes included in *Mnesithea* Kunth (30 spp.). Included in *Rottboellia* L. f. by Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 300, 2015.

“Variable genus very closely related to *Rhytachne*; no single diagnostic character is wholly reliable, and a few of the species are difficult to assign... The spikelets are sometimes borne in triplets, a character often regarded as diagnostic for the genus *Mnesithea*... the character is rather plastic, and is an unsound criterion for generic delimitation” (Clayton & Renvoize, Gen. Gramin.: 365, 1986).

CLAYTON, W. D. (1970). Coelorachis and Rhytachne: a study in numerical taxonomy. *Kew. Bull.* 24: 309–314.

CLAYTON, W. D. (1973). The awnless genera of Andropogoneae. Studies in the Gramineae: XXXIII. *Kew. Bull.* 28: 49–58 [p. 51].

Coelorachis afraurita (Stapf) Stapf, Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011; Agnew, Upl. Kenya wild flow., ed. 3: 450, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; Schmidt & al., in Phytotaxa 304: 62, 2017; César & Chatelain, Fl. ill. Tchad: 266–267, 2019. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 841, 1982; van der Zon, Gramin. Cameroun 2: 531, 1992 (under *Mnesitea*); Fl. Eth. & Eritrea 7: 362, 1995; Poilecot, Boissiera 50: 669, 1995; Fl. Gabon 2b: 39, 1999 (under *Mnesitea*); Fl. Zambes. 10/4: 173, 2002.

bas.: *Rottboellia afraurita* Stapf

syn.: *Mnesithea afraurita* (Stapf) de Koning & Sosef

Perennial reedy tufted grass, base surrounded by imbricate keeled leaf-sheaths; culms 1.2–4 m tall, erect, with constricted nodes; leaf blades linear, 0.3–1 m × 0.4–1.5 cm; inflorescence a false copious panicle 0.5–1 m long, untidy, unawned, with erect racemes; these 2–7 cm long, dorsally flattened, numerous, solitary in the upper leaf sheaths, each enclosed basally by its spatheole; sessile spikelet c. 4 mm long; pedicellate spikelet 3–4.5 mm long, pedicel with a narrowly lanceolate auricle on one side at top.

Marshy grassland and plains, hollows, swamps with *Andropogon africanus*, *Setaria sphacelata*, *Aristida recta*, *Panicum congoense*, *Brachiaria jubata*, *Monocymbium ceresiiforme*; edges of watercourses, rivers, ponds; ? (c. 1000)–2000 m alt.

C. lepidura Stapf, Fl. Trop. E. Afr., Gramin. 3: 842–843, 1982; Fl. Zambes. 10/4: 172, 174, 2002. – Icon.: Hooker’s Icon. Pl. 31: pl. 3081, 1922; Fl. Deutsch. Ost-Afr. 1, Anh.: 11, fig. 8/1 c–n & 16/3, 1929 (as *Rottboellia inermis*).

COELORACHIS LEPIDURA

syn.: *Rottboellia lepidura* (Stapf) Pilg.; *R. inermis* Peter; *Mnesithea lepidura* (Stapf) de Koning & Sosef

Perennial tufted grass; culms to 1.5 m tall, erect; basal leaf sheaths laterally compressed; blades linear, c. 30 cm × 2–7 mm; inflorescence a large leafy false panicle; racemes 6–12 cm long, dorsally flattened with imbricate spikelets and enclosed by the spatheoles; sessile spikelet with inferior glume 3–4 mm long; pedicellate spikelet 2.5–4 mm long, *pedicel without an auricle*.

Swampy grassland; floodplains; 0–300 m alt.

Very similar to *C. capensis* Stapf from S. Africa (with lower glume of sessile spikelet 4.5–5 mm long, not 3–4 mm); the relationships between these two species need further investigation.

SYNONYMS:

Coelorachis fascicula Peter = **Phaselurus huillensis**
hirsuta Brogn. = **Lasiurus scindicus**
undulatifolia (Chiov.) Chiov. = **Phaselurus huillensis**

[COIX]

“*Coix* comprises nine species with a host of synonyms and intergrade forms. Only the three conventionally recognized species (*C. aquatica* Roxb., *C. gigantea* Koen. and *C. lacrymajobi* L.), on which considerable knowledge is currently available, are widely distributed in South and South-East Asia, Polynesia and to some extent in Australia, but *C. lacrymajobi*, known as job’s tears, has become pan-global. The rest of the species (67%) are endemic to different highly restricted regions...” (Rao 2012: 34). – Kellogg (in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 293, 2015) recognises 4 species in tropical Asia, whereas Christenhusz & al. (Plants of the World: 208, 2017) maintain 3 species.

The genus is unique; the pistillate spikelet is enclosed in an indurated leaf sheath, which becomes stony hard on seed formation (“fruit case”, “false fruit”, “shell”) and is used as a bead for necklaces, rosaries and other decorative articles; at top it has an opening through which the feathery bifid style protrudes, and also the upper portion of the raceme which is staminate with a few to many spikelets.

The characters mentioned for each species are inconsistent and variable within species and therefore unreliable for classification purposes. Only two characters, i.e. presence or absence of rhizome, and the false fruit shape are consistent in a species (Rao & Nirmala 2010: 51).

RAO, P. N. (2012). Coix: an unique and remarkable genus. *J. Indian Bot. Soc.* 91: 33–43.

RAO, P. N. & A. NIRMALA (2010). Classification of the genus Coix L. (Maydeae). *J. Indian Bot. Soc.* 89: 51–62.

VIDAL, N. (2019). Ces grains dont on fait des chapelets. *Hommes & Plantes* 111: 45–49.

[**Coix lacryma-jobi** L. 1753 var. **lacryma-jobi**]; Renier, Fl. Kwango 1: 21, 1948; Fl. W. Trop. Afr., ed. 2, 3/2: 511, 1972; van der Zon, Gramin. Cameroun 2: 541, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 206–208, 1994; Fl. Gabon 5b: 20, 1999; Boulos, Fl. Egypt 4: 349, 2005; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 261, 2010; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 233, 2010; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 858, 1982; Gibbs Russell & al., Grasses south. Afr.: 89, 1990; Poilecot, Boissiera 50: 680, 1995; Brink & Belay, Pl. resources trop. Afr., Cereals & pulses: 47, 2006; Velayos & al., Fl. Guinea Ecuat. 12: 175, 2015; Fl. China 22, Ill.: 902, 2007; Ibrahim & al., Grasses Mali: 49, 2018.

COIX LACRYMA-JOBI

syn.: *C. lacryma* L. 1759, nom. superfl.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual (or perennial) coarse grass; culms 1–3 m tall; leaf blades $\pm$ lanceolate, 10–45 $\times$ 2–7 cm, base cordate; cupule globose-ovoid, 5–15 mm long, bony, white or bluish; male raceme 3–5 cm long, exerted from mouth of cupule; spikelets imbricate, 7–8 mm long, borne in pairs or threes, one pedicellate, the other(s) sessile.

(In Africa:) stream sides also in wet forest, swampy places; occasionally cultivated (source of beads; fodder); 0–2000 m alt.

There is considerable variation in size, colour and hardness of cupules; only var. *lacryma-jobi* with large hard ovoid cupules seems to have been introduced (Africa).

Indigenous to S & E Asia; cultivated since ancient times, 3000–4000 years ago in India, 2000 years ago in China, and was very important before maize and rice became widespread staple foods (Brink & Belay, o.c.: 46–47). Dispersed by man to tropical America and to most temperate countries worldwide, often running wild. There are some varieties and cultivated races in Asia, but only var. *lacryma-jobi* is known in Africa, spontaneous and anthropophile around villages and in old cultivation sites (Burkill, o.c.: 206). – Found “wild” in W. Africa from Senegal to W. Cameroon, locally in Zaire; in E. Africa: Uganda, Kenya, Tanzania S-wards to Zimbabwe (C) and SE S. Africa, also in NW Angola. In N. Africa: Algeria, Egypt; also Madeira, Canary Islands. – A good fodder plant.

COLPODIUM / 2

The number of species given for this genus varies from one author to another. Kellogg (in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 253, 2015) cites 13 species distributed mainly in Asia, from Turkey E-wards to C Asia – E Siberia, with a few species in mountainous areas of Africa. *Zingeria* is mentioned as a sister group in molecular phylogenetic studies (see below).

According to Christenhusz & al. (Plants of the World: 208, 2017) *Colpodium* comprises 21 species. Recently Röser & Tkach (Taxon 69: 264–265, 2020) transferred mainly Asiatic species of *Zingeria* to *Colpodium*, and to the new genus *Arctohyalopoa* Röser & Tkach and to *Paracolpodium* Tzvelev.

A discussion of the taxonomic history of *Colpodium* Trin. s.l. was provided by Hedberg & Hedberg (Nord. J. Bot. 14: 601–607, 1994). They enumerate 3 species for Africa, viz. *C. chionogeiton*, *C. hedbergii*, and the new *C. drakensbergensis* which they describe from Lesotho. The latter species was ultimately transferred to *Catabrosa* as *Catabrosa drakensbergensis* (Hedberg & I. Hedberg) Soreng & Fish.

SORENG, R. J. & L. FISH (2011). *Catabrosa* versus *Colpodium* (Poaceae: Poeae) in southern Africa, with a key to these genera and their species in Africa. *Kew Bull.* 66: 101–110.

Colpodium chionogeiton (Pilg.) Tzvelev; Agnew, Upl. Kenya wild flow., ed. 3: 411, 2013. – Icon.: Melderis in Svensk Bot. Tidskr. 50: 539, 1956 (under *Keniochloa*); Fl. Trop. E. Afr., Gramin. 1: 50, 1970.

bas.: *Agrostis chionogeiton* Pilg.

syn.: *A. oreades* Peter; *Colpodium oreades* (Peter) E. B. Alexeev; *Keniochloa chionogeiton* (Pilg.) Melderis, incl. var. *oreades* (Peter) Melderis

Perennial tufted grass; culms 4–40 cm tall, erect or ascending; leaf blades to 12 cm long, 4 mm wide; *panicle contracted, spike-like*, 1.5–12 cm long, basal part often concealed in $\pm$ inflated

COLPODIUM CHIONOGEITON

uppermost leaf sheath; spikelets 1-flowered, 4–6.5 mm long, light green to purple.

Upland moor; moist ground along small brooks or streams in moorland; 3800–5000 m alt. (highest patch of vascular plant observed).

C. hedbergii (Melderis) Tzvelev; Fl. Trop. E. Afr., Gramin. 1: 51, 1970; Lye & al. in Lidia 4: 161, 2000; Puff & Sileshi, Pl. Simen: 244, 2005; S. M. Phillips in Symb. Bot. Upsal. 35/2: 137, 2011; Agnew, Upl. Kenya wild flow., ed. 3: 411, 2013; Soreng & Fish (2011): 104. – Icon.: Melderis in Svensk Bot. Tidskr. 50: 539, 541, 1956 (under *Keniochloa*); Fl. Eth. & Eritrea 7: 16, 1997.

bas.: *Keniochloa hedbergii* Melderis

Perennial loosely tufted grass; culms erect, 7–40 cm tall; leaf blades flat, 6.5–11 cm long, 2.5–4 mm wide; panicle ovate, *open*, 4–11 cm long, *branches spreading*; spikelets 1-flowered, c. 4 mm long, light green.

In crater; moist ground at a small stream from a spring; muddy places along stream sides, pools; wet moorland; in shallow water in a small stream; in water c. 5 cm depth; in shallow lakelet; 3580–4200 m alt.

SYNONYM:

Colpodium oreades (Peter) E. B. Alexeev
= ***Colpodium chionogeiton***

(COMMELINIDIUM)

Commelinidium gabunense (Hack.) Stapf

= ***Acroceras gabunense***

mayumbense (Franch.) Stapf = ***A. gabunense***

nervosum Stapf = ***A. gabunense***

[CORTADERIA]

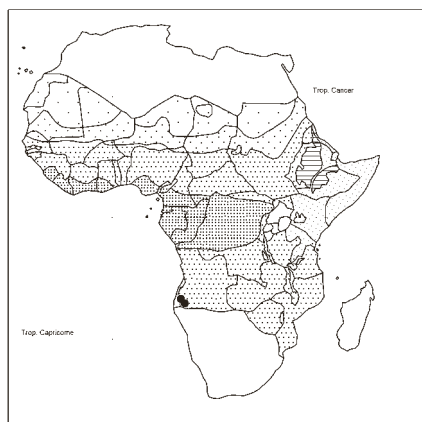
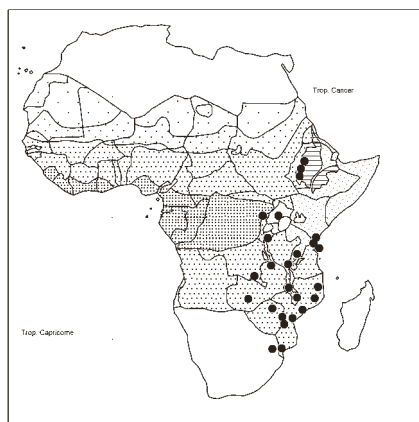
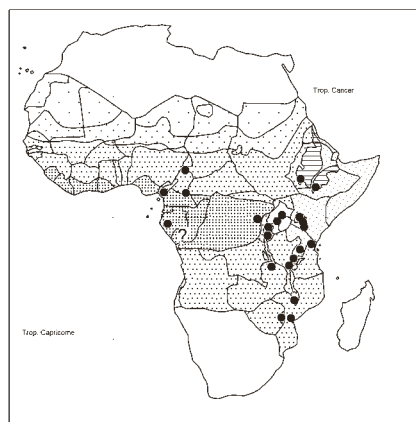
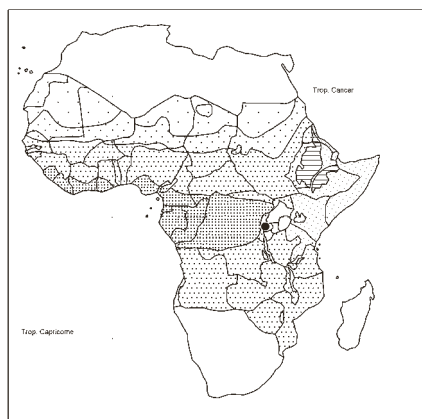
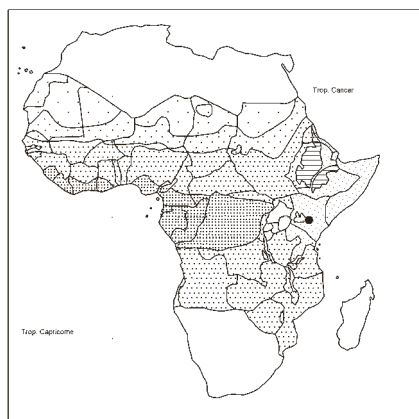
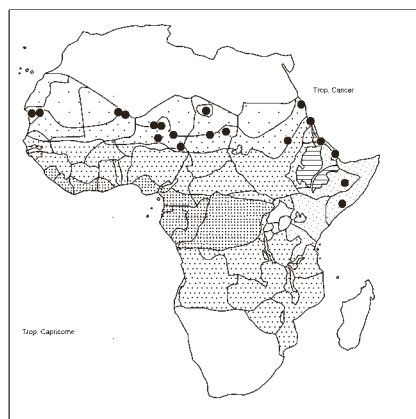
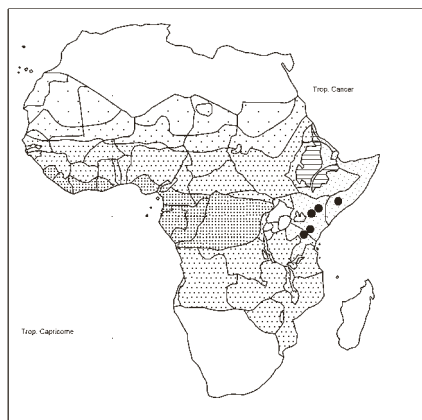
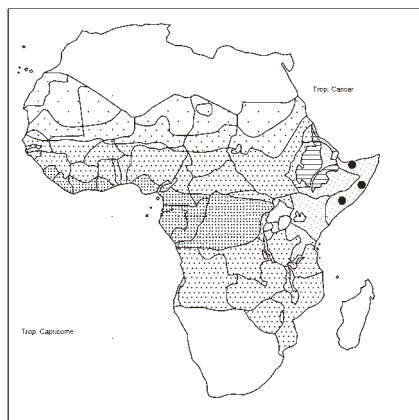
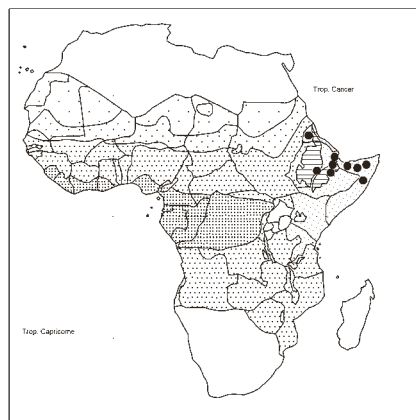
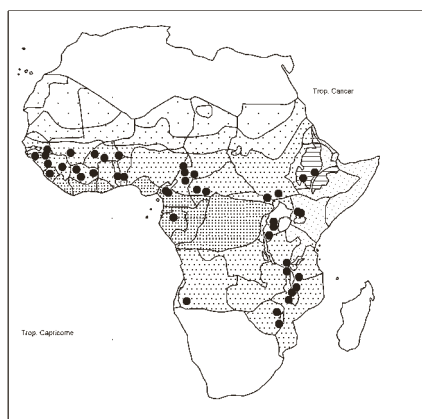
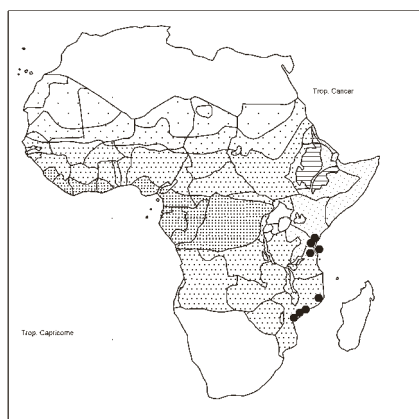
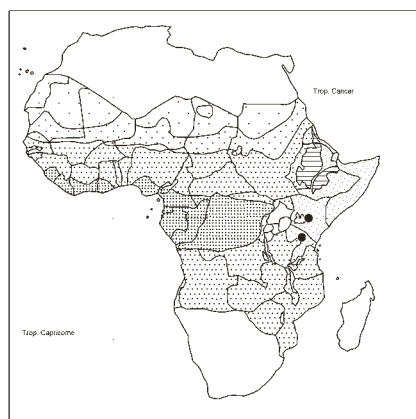
Genus of c. 20 species in C. & S. tropical America. Two species are widely cultivated in the world, and are becoming invasive. J. Armitage (Plantsman, N. S. 9: 78–83, 2010) has solved some identity issues referring to *Cortaderia jubata* and *C. selloana*. The breeding systems of these species have been the cause of confusion.

C. jubata (Lemoine ex Carrière) Stapf [syn.: *C. selloana* subsp. *jubata* (Lemoine ex Carrière) Testoni & Villamil, Darwiniana, N. S. 2/2: 272, 2014; cf. PhytoKeys 76: 50, 2017], a plant typical of the Andean forests from Colombia to N Argentina, is an apomictic species represented outside its native range by a single female clone. *C. selloana* “is gynodioecious, meaning that a proportion of plants are female (49% in natural populations) and a proportion hermaphrodite (51% in natural populations). The female parts of hermaphrodite flowers are reduced in size and set little seed and they are often considered functionally male”. “This difference in reproductive function is expressed in differences in the appearance of the inflorescence, which in turn has an impact on their ornamental qualities. In female plants the hairs of the lemma ... are longer and more abundant than in hermaphrodite plants, giving the inflorescence a thick, fleecy appearance... Female flowers are carried on more robust, strictly upright stems and make a more compact... plume.”

ANONYMOUS (2013). Pampas confusion. *Plantsman*, N. S. 12: 211.

ARMITAGE, J. [D.] (2010). Cortaderia on trial. *Plantsman*, N. S. 9: 78–83.

ARMITAGE, J. D. (2013). The application of the name Cortaderia ‘Candy Floss’ and additional notes on pink-flowered Cortaderia. *Hanburyana* 7: 41–46.

*Cladoraphis cyperoides**Cleistachne sorghoides**Coelachne africana**Coelachne auquieri**Coelachne friesiorum**Coelachyum brevifolium**Coelachyum longiglume**Coelachyum piercei**Coelachyum poiflorum**Coelorachis afraurita**Coelorachis lepidura**Colpodium chionogeiton*

CORTADERIA

- LINDER, H. P. & al. (2010). A generic classification of the Danthonioidae (Poaceae). *Ann. Missouri Bot. Gard.* 97: 306–364 [p. 318, 341–343].
- TESTONI, D. (2015). Estudios en el género Cortaderia (Poaceae). II. Cortaderia atacensis, nuevo sinónimo de C. speciosa. *Bol. Soc. Argent. Bot.* 50: 115–119.
- TESTONI, D. & H. P. LINDER (2017). Synoptic taxonomy of Cortaderia Stapf (Danthonioidae, Poaceae). *PhytoKeys* 76: 39–69.
- TESTONI, D. & C. B. VILLAMIL (2014). Estudios en el género Cortaderia (Poaceae). I. Sistemática y nomenclatura de la sect. Cortaderia. *Darwiniana*, N. S. 2: 260–276.

[**Cortaderia selloana** (Schult. & Schult. f.) Asch. & Graebn.] – Pampas grass – Fl. Zambes. 10/2: 1, 1999; Boulos, Fl. Egypt 4: 220–221, 2005; Cope, Fl. Arab. Penins. 5/1: 87, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 262, 2010. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 91, 1990; Fl. China 22, Ill.: 630, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 262, 2012 (inflorescence); Clarke, Name those grasses: pl. 14a–f, 2015; Weber, Invasive plant species of the World, ed. 2: 130, 2017.

bas.: *Arundo selloana* Schult. & Schult. f.

syn.: *A. dioeca* Spreng.; *Cortaderia dioeca* Spreng. 1902, nom. superfl.; *Gynierium argenteum* Nees; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial densely tufted robust grass 2–4 m tall; leaves mainly basal; blades harsh, rasp-like, glaucous, 0.8–1 m long, 8–10 mm wide, margins sharply serrate, tips setaceous, V-shaped in cross section; panicle oblong, 0.3–1 m long, plumose; branches erecto-patent in bisexual plants, patent in female plants; spikelets silvery or pinkish; female 1.5–1.8 cm long, 4–6-flowered with silky-hairy lemmas; bisexual 1.8–2.3 cm long, 2–6-flowered with glabrous or sparsely hairy lemmas; lemmas with long terminal awn; upper glume with a long awn.

Damp habitats often beside waterways in its native countries at lower altitudes. Cultivated ornamental in Africa (and elsewhere), spreading (invasive) in abandoned fields, disturbed vegetation.

Native in S. America from Bolivia to S S. America. Introduced in Europe, Madeira, Canary Isl., Morocco, Egypt, Arabia, southern Africa, Angola (WC); Australia, New Zealand; cf. map in Weber 2017: 130.

(COTTEA)

Cottea sarmentosa Nees ex Steud. = **Enneapogon desvauxii**

CRASPEDORHACHIS / 3

Genus of 3 species in southern Africa and Madagascar. Leaf ligule a fringed membrane. Inflorescence branches unbranched. Spikelets enclosed in hollows in the branch axis.

Craspedorhachis africana Benth.; Gibbs Russell & al., Grasses south. Afr.: 92, 1990; Fl. Zambes. 10/2: 221, 223, 1999; Klaassen & Craven, Checklist grasses Namibia: 22, 2003. – Icon.: Hooker's Icon. Pl. 14: pl. 1377, 1882; Bosser, Gramin. pâtur. cult. Madag.: 78, 1969.

Perennial densely tufted grass to 1.2 m tall; culms erect or geniculately ascending; leaf blades 2–20 cm long, 2–5.5 mm wide; inflorescence 6–19 cm long of 2–14 *scattered racemes*, these 2–20 cm long; *spikelets* 3–4 mm long; *lemma and palea softly pilose*.

Dambo grassland and associated miombo on sandy soils; sandveld; coastal plain; swampy grassland; 20–1520 m alt.

NE Namibia, S. Africa; Madagascar.

CRASPEDORHACHIS

C. digitata Kupicha & Cope; Fl. Zambes. 10/2: 223, 1999.

syn.: *C. sp.* fide Simon in Kirkia 8: 24, 1971.

Perennial forming dense tussocks c. 30 cm tall; culms *wiry* 50–75 cm tall arising from a knotty base; leaf blades filiform, 2–10 cm × 1–2 mm; inflorescence of 1–5 *digitate racemes*; these 6–9 cm long; spikelets 2.4–3 mm long.

Granite outcrops; often in fissures in exposed granite domes; 1000–1400 m alt.

C. rhodesiana Rendle, incl. var. *gracilior* C. E. Hubb.; Klaassen & Craven, Checklist grasses Namibia: 22, 1990. – Icon.: Rendle in J. Linn. Soc., Bot.: pl. 5/5–13, 1911; Gibbs Russell & al., Grasses south. Afr.: 92, 1990; Fl. Zambes. 10/2: 222, 1999.

Perennial densely tufted grass with short oblique rhizome; culms erect, to 1.2 m tall; leaf blades linear, 3–20 cm × 1–5 mm; inflorescence to 20 cm long, often partially embraced below by uppermost leaf sheath, of 6–25 *scattered racemes*, these 6–16 cm long, slender; *spikelets* 2–3 mm long, *lemma and palea glabrous*.

Wooded grassland on Kalahari sand; sandveld; miombo and mopane woodlands on granite sand; 1000–1500 m alt.

NE Namibia, Botswana.

According to Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 382, 2015, *C. rhodesiana* is triploid, and the species may be a sterile hybrid.

SYNONYMS:

Craspedorhachis menyharthii Hack. = **Trigonochloa uniflora sarmentosa** (Hack.) Pilg. = **Willkommia sarmentosa uniflora** (Hochst. ex A. Rich.) Chippind.
= **Trigonochloa uniflora**

CRINIPES / 2

Genus of 2 species in NE tropical Africa.

Crinipes abyssinica (Hochst. 1841 ex A. Rich. 1850) Hochst. 1855; Fl. Eth. & Eritrea 7: 68, 1995.

bas.: *Danthonia abyssinica* Hochst. ex A. Rich.

syn.: *D. tenuiglumis* Steud. 1854, nom. superfl.; *Triraphis abyssinica* (Hochst. ex A. Rich.) Nees ex Engl.

Perennial tough grass forming large tussocks to 1 m Ø; culms 0.55–1 m tall, pendulous; leaf blades linear, as long as or longer than culms, 4–9 mm wide, pilose above, glabrous beneath, margins and tip (setaceous) strongly scabrid; inflorescence a copious panicle, narrowly oblong, 17–35 cm long, branches capillaceous; spikelets 2-flowered; lemma with *awn* 7–14 mm long.

Rocky slopes on mountains; upland river gorges; 2000–3200 m alt. With a more northerly distribution than *C. longifolius* in Ethiopia.

C. longifolius C. E. Hubb.; Fl. Eth. & Er. 7: 68, 1995; Lye & al. in Lidia 4: 161, 2000; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 131, 1970.

Perennial course grass forming large loose tussocks; culms 0.5–1.5 m tall, erect or pendulous; leaf blades linear, to 75 × 0.5–1.4 cm, stiff, pilose above, glabrous beneath, tip setaceous; inflorescence a copious elliptic-ovate, ± open panicle 15–30 cm long, brownish; spikelets 2-flowered; lemma with *awn* 3–7 mm long.

CRINIPES LONGIFOLIUS

Hanging from moist crevices on rocky slopes and cliffs; under boulders; cliff edges; sometimes locally abundant; moorland, grassland; 1850–3000 m alt.

Very similar to *C. abyssinicus*, but that species has smaller spikelets with longer awns, and distribution more northerly.

SYNONYMS:

Crinipes gynoglossa Gooss. = ***Styppeiochloa gynoglossa longipes*** (Stapf & C. E. Hubb.) C. E. Hubb.
= ***Nematopoa longipes***

(CROSSOTROPIS)

Crossotropis arenaria (Steud.) Rendle = ***Trichoneura mollis eleusinoides*** Rendle = ***T. eleusinoides grandiglumis*** (Nees) Rendle, incl. var. *minor* Rendle = ***T. grandiglumis***
mollis (Kunth) Stapf = ***T. mollis***

CRYPISIS / 3

Crypsis Aiton 1789.

syn.: *Sporobolus* sect. *Crypsis* (Aiton) P. M. Peterson subsect. *Crypsis* (Aiton) P. M. Peterson

Genus of 9–11 species in temperate Europe and Asia, particularly in the Mediterranean region, SW Asia, extending to China and Central Asia, and in Central Africa; naturalised in America (see Hammel & Reeder, o.c.). These plants are characteristic of arid and semiarid habitats (at least temporarily inundated during winter).

Already Hubbard (Hooker's Icon. Pl. 35: page facing pl. 3457, *Urochondra*, 1947) recognised the affinity of *Crypsis* with *Sporobolus*. Following the phylogenetic analysis made by Peterson & al., *Crypsis*, as well as *Spartina*, belong in *Sporobolus*. However, the names *Crypsis* and *Spartina* have priority over *Sporobolus* (See Peterson & al. 2014b). We do not follow Peterson's wider concept here.

Crypsis species are stoloniferous annuals with prostrate or ascending culms; ligule a line of hairs; inflorescence branches branched; spikelets 1-flowered, strongly laterally compressed and keeled.

On specific level there is considerable disagreement regarding the *C. schoenoides* – *C. niliaca* (*C. vaginiflora*) species pair. Detailed studies were carried out by Hammel & Reeder who concluded that these two entities represent two distinct species. In many current floras and floristic treatises they are considered synonymous.

HAMMEL, B. E. & J. R. REEDER (1979). The genus *Crypsis* (Gramineae) in the United States. *Syst. Bot.* 4: 267–280.

PETERSON, P. M. & al. (2014a). A molecular phylogeny and new subgeneric classification of *Sporobolus* (Poaceae: Chloridoideae: Sporobolinae). *Taxon* 63: 1212–1243.

PETERSON, P. M. & al. (2014b). (2332) Proposal to conserve the name *Sporobolus* against *Spartina*, *Crypsis*, *Poncelletia*, and *Heleochoa* (Poaceae: Chloridoideae: Sporobolinae). *Taxon* 63: 1373–1374 [Proposal recommended by the Committee for Vascular Plants, *Taxon* 65: 176, 2016].

PETERSON, P. M. & al. (2017). A molecular phylogeny of the subtribe Sporobolinae and a classification of the subfamily Chloridoideae (Poaceae). *Memoirs New York Bot. Gard.* 118: 127–151 [*Crypsis* p. 136].

Crypsis aculeata (L.) Aiton; Cope, Fl. Arab. Penins. 5/1: 173, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 263, 2010. – Icon.: Maire, Fl. Afr. N. 2: 90, 1953; Boulos, Fl. Egypt 4: 273, 2005; Gore & al. in Rheedia 24: 53–54, 2014; César & Chatelain, Fl. ill. Tchad: 209, 2019.

CRYPISIS ACULEATA

bas.: *Schoenus aculeatus* L.

syn.: *Sporobolus aculeatus* (L.) P. M. Peterson; *Crypsis schoenoides* P. Beauv. 1812, nom. illeg.; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual glaucous procumbent or ascending herb; culms to 30 cm long; leaf sheaths glabrous, the uppermost conspicuously inflated bearing a reduced blade continuous with its sheath c. 1 cm long; panicle capitate, 0.5–7.5 cm long, ± as wide as long, embraced by the 2 uppermost sheaths; spikelets 3–4.5 mm long; palea 1-nerved.

Sandy bed of wadi, abundant; guelta; in Ennedi (Chad) with other Mediterranean species.

N Africa from Morocco to Tunisia, Egypt; C & S Europe E-wards through SW Asia to Central Asia, Korea, China, India (Gore & al., o.c.: 52, 2014); in Saudi Arabia?

C. schoenoides (L.) Lam., incl. fa. *minima* Roshev. – ***C. vaginiflora*** (Forssk.) Opiz.

There has been considerable disagreement regarding the circumscription of each of these two entities. Older African floras (e. g. Fl. W. Trop. Afr., ed. 2, 3/2: 411, 1972; Fl. Trop. E. Afr., Gramin. 2: 353, 1974; Poilecot, Les Poaceae du Niger, Boissiera 56: 318–320, 1999) do not distinguish *C. schoenoides* from *C. vaginiflora*. The differences between the two species were resolved by Hammel & Reeder (1979: 274) who concluded that there are 2 distinct species involved. As to their distribution range, *C. vaginiflora* occurs most over the African continent, whereas *C. schoenoides* has an easterly occurrence. The distribution of each entity in Asia is uncertain due to confusion between the 2 species. Flora of China 22, Texts: 485, 2006, cites *C. schoenoides* for the country; *C. vaginiflora* occurs in Africa E-wards to India, and is expected in W China (Xizang).

Both species are prostrate annuals with culms 1–30 cm long; the blade of the uppermost leaf is clearly demarcated from its sheath; the panicle is capitate, longer than wide, and the palea 2-nerved. The differences are:

C. schoenoides has leaf sheaths glabrous; panicle ellipsoid, 0.5–3(–7.5) cm, embraced below by the 2 uppermost leaf sheaths; spikelets c. 3(–4) mm long, tardily deciduous; glumes unequal, glabrous on margins, and stiffly ciliolate on keel.

C. vaginiflora has leaf sheaths hairy on margins and collar; panicle ovoid, 0.3–1.5 cm, almost wholly embraced by the 2 uppermost leaf sheaths; spikelets c. 3 mm long, readily deciduous; glumes subequal, ciliolate on keel, at least the lower also hairy on the margins.

Both species grow on sandy and moist ground; seasonally flooded muds by rivers and lakes; river bank alluvium; sometimes dominant and forming a turf; low altitude to 2400 m (Ethiopia, Eritrea).

The more detailed distributions are (for Africa our map includes both species):

C. schoenoides occurs in temperate Eurasia, Mediterranean region (from Morocco to Egypt), and reported from Niger, Tanzania, Malawi, Mozambique; introduced in Senegal, Mauritania, Mali, Madagascar; in Asia from Yemen E-wards to China; introduced in N. America.

C. vaginiflora occurs in Africa, in Mauritania, Senegal, Algeria, Egypt, Ethiopia, Eritrea, Sudan, Tanzania, Malawi, Mozambique; Madagascar; in Asia from Yemen E-wards to NW India, Pakistan; introduced in N. America.

Species treatment:

CRYPISIS

C. schoenoides (L.) Lam., incl. fa. *minima* Roshev.; Fl. Trop. E. Afr., Gramin. 2: 353, 1974, p. min. p.; Hammel & Reeder, o.c.: 276–277, 1979; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 264, 2010; Peterson in Taxon 63: 1234, 2014. – Icon.: Hammel & Reeder o.c.: 273, 274, 1979; Boulos, Fl. Egypt 4: 273, 2005; Cope, Fl. Arab. Penins. 5/1: 174, 2007.

bas.: *Phleum schoenoides* L.

syn.: *Spartina schoenoides* (L.) Roth; *S. phleoides* (L.) Roth; *Heleochloa schoenoides* (L.) Host; *Sporobolus schoenoides* (L.) P. M. Peterson; etc.

C. vaginiflora (Forssk.) Opiz 1824, non *Sporobolus vaginiflorus* (Torr. ex A. Gray) A. W. Wood; Fl. W. Trop. Afr., ed. 2, 3/2: 411, 1972 (as *C. schoenoides* p.p.); Fl. Trop. E. Afr., Gramin. 2: 352, 1974 (idem); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 208, 1999; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 264, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 352, 1974 (as *C. schoenoides*); Hammel & Reeder, o.c.: 273, 274, 1979 (incl. “compacta”); Fl. Eth. & Eritrea 7: 143, 1995; Poilecot, Boissiera 56: 320, 1999 (as *C. schoenoides*); Fl. Zambes. 10/2: 199, 1999 (idem); Boulos, Fl. Egypt 4: 273, 2005.

bas.: *Phalaris vaginiflora* Forssk. 1775.

syn.: *Crypsis schoenoides* sensu auctt., non (L.) Lam. (cf. above); *Heleochloa schoenoides* sensu Drar, non (L.) Host.; *H. compacta* (Steud.) T. Durand & Schinz; *Crypsis compacta* Steud.; *C. niliaca* Fig. & De Not. 1854; *Sporobolus niliacus* (Fig. & De Not.) P. M. Peterson

SYNONYMS:

Crypsis compacta Steud. = **Crypsis vaginiflora**
myosurus Nees ex Steud. = **Sporobolus spicatus**
niliaca Fig. & De Not. 1854 = **Crypsis vaginiflora**
schoenoides P. Beauv. 1812, nom. illeg., non (L.) Lam.
 1791, nec Hochst. ex Steud. 1854 = **C. aculeata** (L.) Aiton
schoenoides sensu auctt., non (L.) Lam. = **C. vaginiflora**
setulosa (Trin.) Mez = **Urochondra setulosa**

(CRYPTOCHLORIS)

Cryptochloris spathacea Benth. = **Tetrapogon cenchriformis**

CTENIUM / 9

Genus of c. 20 species in tropical Africa, Madagascar and America. Inflorescence unbranched or with unbranched primary branches, these with spikes unilateral; spikelets with 2 awned sterile flowers below the fertile one; glumes longer than flowers.

In our area 2 species are poorly known, viz. *C. longiglume* (no fruit seen), and *C. sesquiflorum* (idem) not collected since 1945. *C. bennae* is known only from the type locality.

LONGHI-WAGNER, H. M. & T. A. COPE (2014). The genus *Ctenium* (Poaceae: Chloridoideae: Chlorideae) in Africa. *Kew Bull.* 69/4: § 9541: 1–30 [with many illustrations].

STEENTOFT, M. (2008). *Flowering plants in West Africa*: 326–327.

Ctenium bennae Xanthos – Icon.: *Kew Bull.* 76: 746–747, 2021. Perennial tufted grass 1–1,1 m tall; leaf blades filiform, 20–30 cm × 1,5–5 mm, glabrous; inflorescence of 3–7 spikes each 11–15 cm long, peduncle puberulous; spikelets c. 4 mm long, base bearded with white hairs, 3-flowered (with the most

CTENIUM BENNAE

reduced spikelet structure among the African *Ctenium* species: only the 3rd floret fully developed).

Rheophyte (the only in the genus); on rocks in rapids of permanent stream flowing over sandstone bedrock in gallery forest, just above water level; 780 m alt.

Known only from 1 site, the type locality (Benna Plateau, SW Guinea).

C. canescens Benth.; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 169, 1992; Poilecot, Boissiera 50: 163, 1995; *Kew Bull.* 69/4: 4, 2014.

syn.: *Campulosus canescens* (Benth.) Kuntze

Perennial tufted grass 0,9–1,5 m tall with a well developed curved rhizome covered with white scales; leaf sheaths not becoming fibrous; blades flat, 15–50 cm long, 3–6 mm wide, scabrid; inflorescence of (1–)2–5 digitate spikes each 2–20 cm long, straight or twisted; spikelets flattened, 6–8 mm long.

Dry sandy soils; fallows; road sides; disturbed savannas, locally frequent; sandy riverbanks; often associated with *Andropogon pseudapricus*, *A. fastigiatus*, *Loudetia hordeiformis*, *Ctenium newtonii*, *Hyperthelia dissoluta*, *Digitaria delicatula*; laterite hard pan; disturbed ground near villages; c. 300–1400 m alt.

C. concinnum Nees, incl. var. *indutum* Pilg. and var. *minus* Pilg.; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 156, 1955; Lye & al. in Lidia 4: 161–162, 2000; Lidia 5/5: 128, 2001 (as *C. somalense*); Agnew, Upl. Kenya wild flow., ed. 3: 427, 2013 (idem); Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015 (idem). – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 74, 1969; Fl. Trop. E. Afr., Gramin. 2: 326, 1974 (as *C. somalense*); Troupin, Fl. Rwanda 4: 220, 1988 (idem); Gibbs Russell & al., Grasses south. Afr.: 93, 1990; Fl. Eth. & Eritrea 7: 166, 1995 (as *C. somalense*); Fl. Zambes. 10/2: 227, 1999 (idem); Burrows & Willis, Pl. Nyika Plateau, Malawi: 343, 2005 (idem); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 70, 2012; *Kew Bull.* 69/4: § 9541: 6–8, 2014; Malaisse & al., Copper-cobalt flora Upper Katanga: 383, 2016 (inflorescence).

syn.: *C. nubicum* var. *somalense* Chiov.; *C. somalense* (Chiov.) Chiov.; *C. minus* (Pilg.) Clayton; *Campulosus concinnum* (Nees) Kuntze

Perennial densely tufted, wiry grass; culms 0,4–1,1 m tall, base surrounded by a dense mass of fine chestnut brown, chaffy fibres; leaves almost borne at base of plant, blades 6–30 cm long, 2–6 mm wide; inflorescence a solitary 1-sided spike 5–17 cm long, sickle-shaped to corkscrew-like, with a ring of long hairs at base; spikelets 5–7 mm long, greyish-green; glumes with yellow glands on nerves; awns 3–6 mm long.

Swampy grassland, dambo; granite sandveld; rocky hillsides; sandy plateau grassland; open grassy places in deciduous bushland; (copper) steppe savanna; (–)490–2400 m alt.

S. Africa, Swaziland; Madagascar.

Inflorescences used in flower arrangements.

C. elegans Kunth, incl. var. *longispicatum* A. Chev.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 208, 1999; Lisowski, Fl. Rép. Guinée 1: 453, 2009; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; Schmidt & al. in Phytotaxa 304: 73, 2017. – Icon.: Poilecot, Boissiera 50: 159, 1995; idem, ibid. 56: 255, 252 (map), 1999; van der Zon, Gramin. Cameroun 2: 167, 1992; *Kew Bull.* 69/4:

CTENIUM ELEGANS

§ 9541: 12, 2014; Ibrahim & al., Grasses Mali: 50, 2018; César & Chatelain, Fl. ill. Tchad: 206, 2019 (details).

syn.: *C. serpentinum* Steud.; *Chloris elegans* (Kunth) Roberty, non Kunth; *Campulosus aciculatus* Trin.; *C. elegans* J. Gay ex Kunth, pro syn.; *C. serpentinus* (Steud.) Kuntze

Annual or (short-lived) perennial in narrow tufts 0,6–1,5 m tall, with or without a short non-scaly rhizome; culms slender, glabrous, wiry, to 1 m tall; leaves principally basal, aromatic; sheaths not becoming fibrous, scabrid, with or without hairs (2–3 mm long) at apex; blades 15–35 cm long, 1–3 mm wide, occasionally with hairs (2–3 mm long) above; inflorescence a solitary spike 6–30 cm long, margins of rachis ciliate; spikelets c. 4 mm long, sessile; lower florets with yellow glands on nerves; awn 0–5–14 mm long.

Dry sandy fallows, and in disturbed areas around villages; sandy-clayey ± stony soils; depleted tree savanna; sandy open grasslands; steppe with *Eragrostis tremula*, *Aristida mutabilis*, *A. sieberiana*; road sides (as a weed); bowé; open forest on lateritic plateau with *Loudetia togoensis*, *Tripogon minimus*, *Dactyloctenium aegyptium*, *Aristida adscensionis*, *Microchloa indica*, *Andropogon fastigiatus*; also swampy sandy soils; ± 0–500 m alt.

Saudi Arabia?

C. ledermannii Pilg.; Harvey & al., Pl. Bali Ngemba ...: 138, 2004; Cheek & al., Pl. Dom, Bamenda Highl., Cameroon: 151, 2010; Onana & Cheek, Red Data Book flow. pl. Cameroon: 376–377, 2011; Onana, Fl. Cameroun 40: 241, 2013. – Icon.: van der Zon, Gramin. Cameroun 2: 169, 1992; Kew Bull. 69/4: § 9541: 29, 2014.

Perennial (or even annual) tufted grass 0,5–1,5 m tall, base covered with hard broad sheaths; leaves usually basal; blades 15–30 cm long, 2–6 mm wide, densely scabrid; inflorescence of 2 (or 1–4) spikes 7–14–18 cm long; rachis densely pilose and ciliate on margins; spikelets 6–9 mm long; awns 1–1,5 cm long.

Steep grassland; rocks; rocky slopes; crevices in granite and quartzite; forest edge; locally abundant and dominant; 1500–2300 m alt.

C. longiglume Kupicha ex Longhi-Wagner & Cope – Icon.: Kew Bull. 58: 230, 2003; idem 69/4: § 9541: 15, 2014.

syn.: *C. concinnum* auctt., non Nees (“most of the specimens have been identified as such in previous Floras”; Kew Bull. 58: 229, 2003).

Perennial tufted grass 1,2–1,4 m tall with a short non-scaly rhizome; leaf sheaths densely scabrous usually becoming fibrous with age; blades 20–30 cm × 3–7 mm, densely scabrid; inflorescence a single spike 10–19 cm long; spikelets 5-flowered, lower lemmas glabrous on back and margins long-ciliate (in *C. concinnum* hairy on back); awns 3–8 mm long; caryops unknown.

Marshy grassland on sandy soil; savannas with scattered trees; 1500–1700 m alt.

C. newtonii Hack., incl. var. *annuum* J-P. Lebrun, var. *majusculum* Pilg., and var. *productum* Pilg.; Renier, Fl. Kwango 1: 58, 1948; Fl. Zambes; 10/2: 228, 1999; Lye & al. in Lidia 4: 162, 2000; Harvey & al., Pl. Bali Ngemba ...: 138, 2004; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 123, 2015; Schmidt & al., Phytotaxa 304: 73, 2017. – Icon.: Fl. Gabon 5: 271, 1962; van der Zon, Gramin. Cameroun 2: 167, 1992; Poilecot, Boissiera 50: 161, 1995; idem, ibid. 56: 257, 1999; Kew Bull. 69/4: § 9541: 18–20, 2014; Vande weghe & al., Pl. à fleurs du Gabon: 186, 2016; Ibrahim & al., Grasses Mali: 50, 2018; César & Chatelain, Fl. ill. Tchad: 205, 2019 (details). – Pl. 26.

CTENIUM NEWTONII

syn.: *C. schweinfurthii* Pilg.; *C. camposum* A. Chev.; *C. nubicum* De Not.

Perennial (sometimes short-lived) wiry tufted grass; culms 0,4–1,5 m tall, puberulous at base of raceme; leaves aromatic; blades 5–30 cm long, 4–5 mm wide, tightly involute; sheaths not markedly fibrous; raceme solitary, straight to coiled in a lax corkscrew spiral, puberulous or shortly pubescent, 5–30 cm long; spikelets 4–7 mm long, densely imbricate; lemmas glabrous or rarely sparsely pubescent on keel and margins; awns 2–3 mm long.

Open bushland; sandy or clayey soils; also stony or rocky places; wooded savanna on ferrallitic and fine gravelly plateau with *Andropogon shirensis*, *Schizachyrium sanguineum*, *Pennisetum polystachyum*, *Rottboellia cochinchinensis*; damp and swampy grassland; road sides; coastal savanna; open bushland; 1–2700 m alt. – In places in Sudan it has colonised large areas as a result of over-grazing eliminating other more palatable grasses. Its presence is taken as an indicator of overgrazing. It is an aggressive pioneer colonizer in shallow stony impoverished soil (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 209, 1999). It is the most common *Ctenium* species on shallow soils from coastal savanna to sahel.

With a considerable range of variation. It tends to intergrade with *C. concinnum*; specimens in E. Africa are not easy to separate. *C. newtonii* is best recognised by the absence of a beard at base of spike.

Bioko/Fernando Poo.

C. sesquiflorum Clayton – Icon.: Kew Bull. 69/4: § 9541: 23, 2014.

Annual decumbent grass; culms 30–40 cm long, rooting at lower nodes; leaf sheaths glabrous; blades 20–35 cm × 3–4 mm; inflorescence digitate of 2–5 spikes, each 4–10 cm long, obliquely patent; spikelets sessile, densely imbricate, c. 4 mm long, usually with only 2–3 florets; glumes 1–4 mm long; lemmas poorly developed (basal florets) or 3 mm long; awns 1–5 mm long; caryops unknown?

Collected on a high plateau; ecology unknown (savanna?).

The spikelets of this species are the smallest and simplest of the genus. They differ from other *Ctenium* in being apparently 2-flowered.

Probably known from only 2 collections (Guinea): Chevalier 12860 and Pitot s. n. Last report from 1945 (Couch & al., Threatened habitats & tropical important plant areas, TIPAS, of Guinea, W. Africa: Table A, 2019). Specimens Adam 24646, 30244 (Guinea, Liberia) are in need of revision. Presence in Togo doubtful (Brunel 2473, 4276).

C. villosum Berhaut; Lisowski, Fl. Rép. Guinée 1: 454, 2009; Schmidt & al. in Phytotaxa 304: 73, 2017. – Icon.: Poilecot, Boissiera 56: 256, 1999; Kew Bull. 69/4: § 9541: 23, 2014; Ibrahim & al., Grasses Mali: 51, 2018.

Annual delicate grass; culms erect or geniculately ascending, (15–)25–70 cm tall; leaf sheaths glabrous, not becoming fibrous; blades 3–15 cm long, 1–2 mm wide; inflorescence a single spike, this 2–10 cm long, coiled in a flat spiral, rachis of spike long ciliate along margins (hairs 1–3 mm long); spikelets solitary, 4-flowered; upper glume glabrous on central nerve below awn; awns 1–6 mm long.

Savanna; secondary grassland on laterite and dry soils; shallow soils with fine gravel or impoverished soils in savanna; shallow sand pockets; crevices in bare humid rock; edges of marshes in shallow sand pockets; ?–230 m alt.

CTENIUM

SYNONYMS:

Ctenium camposum A. Chev. = **Ctenium newtonii**
concinnum auctt. non Nees = **C. longiglume**
minus (Pilg.) Clayton = **C. concinnum**
nubicum De Not. = **C. newtonii**
nubicum var. *somalense* Chiov. = **C. concinnum**
rupestre J. A. Schmidt = **Enteropogon rupestris**
schweinfurthii Pilg. = **Ctenium newtonii**
sechellense Baker = **Enteropogon sechellensis**
serpentinum Steud. = **Ctenium elegans**
somalense (Chiov.) Chiov. = **C. concinnum**

CUTANDIA / 1

Genus of 6 species in the Mediterranean region and W Asia, one species extending to Pakistan. One species introduced in N. America [*C. memphitica* (Spreng.) Benth., Barkworth & al., Manual grasses N. America: 143, 2007].

Annual plants; inflorescence branches branched, *disarticulating* at base of branches, pedicels or flowers. Lemma keeled, with 3 conspicuous veins (Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 248, 2015).

Cutandia memphitica (Spreng.) Benth.; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 265, 2010. – Icon.: Boulos, Fl. Egypt 4: 154, 2005; Cope, Fl. Arab. Penins. 5/1: 29, 2007.

bas.: *Dactylis memphitica* Spreng.

syn.: *Festuca memphitica* (Spreng.) Boiss. ex Coss.; *F. divaricata* var. *memphitica* (Spreng.) Coss. & Durieu; *Cutandia dichotoma* (Forssk.) Trab. var. *memphitica* (Spreng.) Maire & Weiller; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual erect or procumbent herb 10–40 cm tall; leaf sheaths inflated; blades to 10 cm long, 1–2 mm wide; panicle 2–18 cm long, partly enclosed in the uppermost sheath, mostly with 1 spikelet and 1 or 2 branches at each node; spikelets 0.7–1 cm long, 2–4-flowered; glumes 1-nerved, 3–5 mm long; *lemmas* 7–8 mm long with an awn 0.5–1.8 mm long, or at least *mucronate*.

Sandy, sometimes saline soils.

Cape Verde Isl.; Macaronesia, SE Spain, N Africa; Arabia, Palestine, E-wards to C. Asia, Pakistan. Introduced in SW N. America (Barkworth & al., Manual grasses N. America: 143, 524 map, 2007).

According to Maire, Fl. Afr. N. 3: 38, 1955, rather widespread in Western Sahara.

SYNONYM:

Cutandia dichotoma (Forssk.) Trab. var. *memphitica* (Spreng.) Maire & Weiller = **Cutandia memphitica**

(CYMBACHNE)

Cymbachne amplexens (Nees) Roberty
 = **Diheteropogon amplexens**
amplexens var. *calva* (Stapf) Roberty
 = **Andropogon schirensis**
amplexens subvar. *heteropogonoides* Roberty
 = **Diheteropogon amplexens** var. *catangensis*
amplexens subvar. *schinzii* (Hack.) Roberty
 = **Andropogon chinensis**

CYMBACHNE

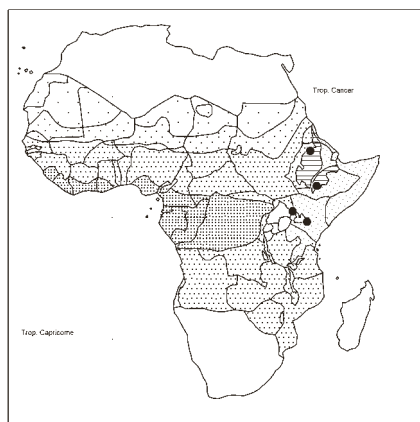
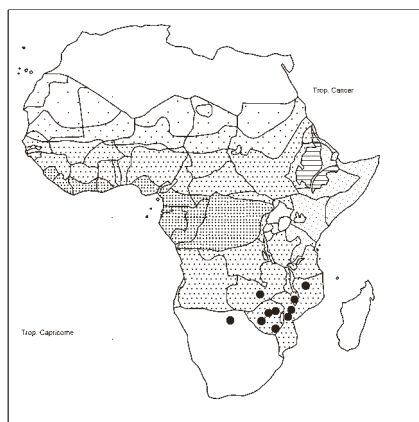
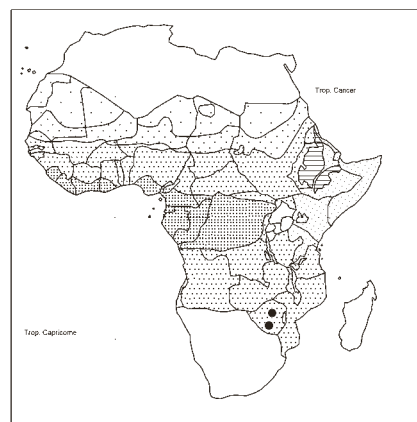
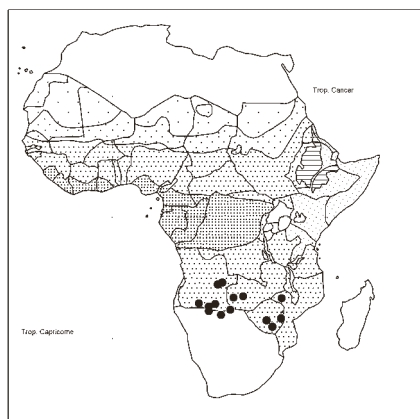
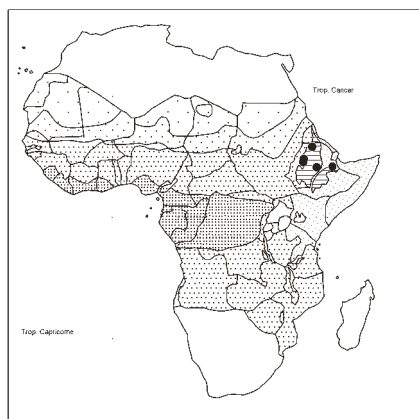
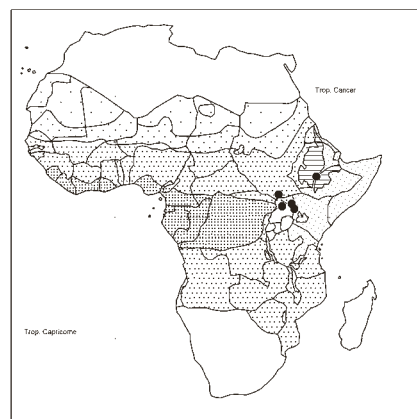
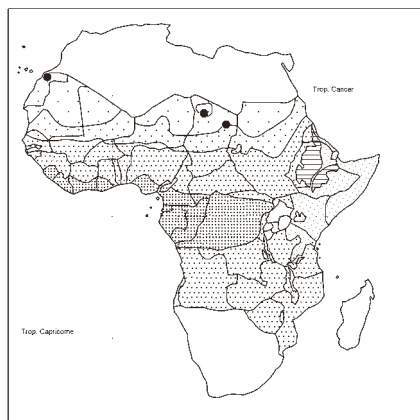
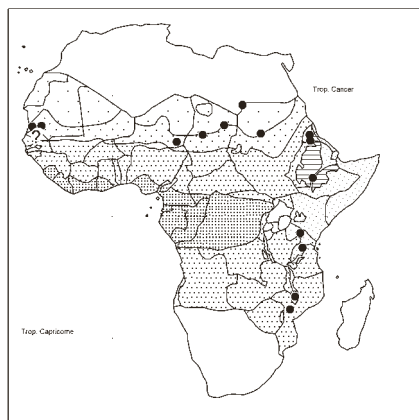
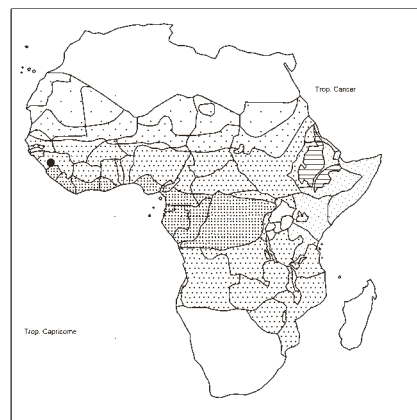
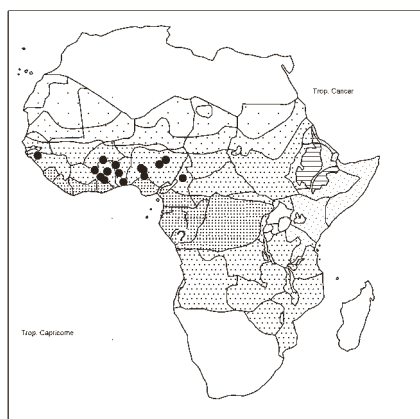
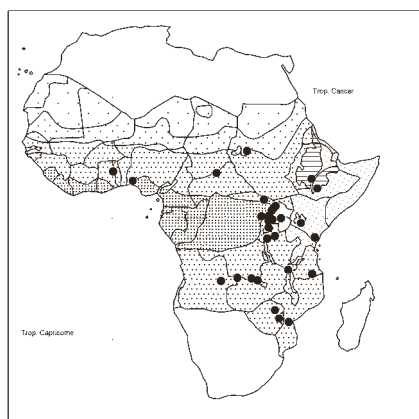
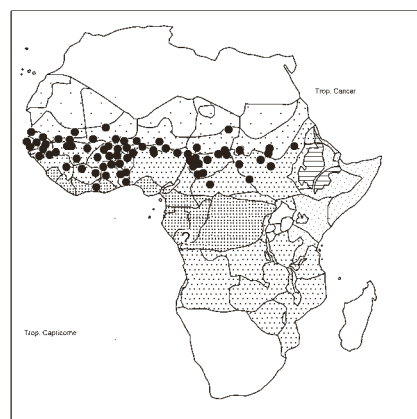
amplexens subvar. *shirensis* (Hochst. ex A. Rich.) Roberty
 = **A. schirensis**
angustata var. *africana* (Hack.) Roberty
 = **A. pseudapricus**
angustata var. *chinensis* (Nees) Roberty = **A. chinensis**
angustata var. *indica* (Hack.) Roberty = **A. chinensis**
ciliata var. *canaliculata* (Schumach.) Roberty
 = **A. canaliculatus**
ciliata var. *perligulata* (Stapf) Roberty and var. *tumidula* (Stapf) Roberty = **A. perligulatus**
ciliata var. *pinguipes* (Stapf) Roberty = **A. pinguipes**
fastigiata (Sw.) Roberty = **A. fastigiatus**
filifolia (Nees) Roberty = **Diheteropogon filifolius**
guineensis (Schumach.) Roberty with many subvars.
 created by Roberty = **Andropogon gayanus** var. **gayanus**
guineensis var. *auriculata* (Stapf) Roberty
 = **A. auriculatus**
guineensis var. *bisquamulata* (Hochst.) Roberty and subvar. *cordofana* (Hochst.) Roberty = **A. gayanus** var. **bisquamulatus**
guineensis var. *chevalieri* (Reznik) Roberty and subvar. *felicis* (Reznik) Roberty = **A. chevalieri**
guineensis subvar. *dummeri* (Stapf) Roberty
 = **A. schirensis**
guineensis subvar. *gabonensis* (Stapf) Roberty
 = **A. gabonensis**
guineensis subvar. *gayana* (Kunth) Roberty = **A. gayanus**
guineensis subvar. *helophila* (K. Schum.) Roberty
 = **A. gayanus** var. **polycladus**
guineensis subvar. *lindiensis* (Pilg.) Roberty = **A. chinensis**
guineensis subvar. *squamulata* (Hochst.) Roberty
 = **A. gayanus** var. **polycladus**
guineensis subvar. *tectorum* (Schumach. & Thonn.) Roberty and subvar. *tenuiculmis* (Reznik) Roberty
 = **A. tectorum**
guineensis subvar. *tomentella* (Steud.) Roberty and subvar. *tridentata* (Hack.) Roberty = **A. gayanus** var. **tridentatus**
textilis (Rendle) Roberty = **A. textilis**

CYMBOPOGON / 8

Genus of 53 or 59 species (Christenhusz & al., Plants of the World: 208, 2017, and Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 309–310, 2015, respectively) in tropical and subtropical Old World, predominantly in Asia; introduced in tropical America. Soenarko (1977) presented taxonomic accounts of 55 species, some of which were too narrowly circumscribed. Adhikari & al. (2015) and Khanuja & al. (2005) indicate some 140 species, whereas Kumar & al. (2000) cite some 70 species. Flora of Ethiopia (vol. 7: 327, 1995) and Flora Zambesiaca (10/4: 75, 2002) cite about 40 species.

The genus is “easily divided into complexes, but within the complexes the individual species are both variable and intergrading and are often based on rather ill-defined characters” (Fish 2005: 82).

The plants usually have aromatic leaves, i.e. they produce characteristic aromatic essential oils that have commercial importance in perfumery, cosmetics and pharmaceutical applications. The inflorescence is composed of short paired racemes borne on a short common peduncle and ± enclosed by a boat-shaped spatheole; the racemes are crowded into a leafy false panicle; the sessile spikelet is dorsally compressed, with or without awn; the pedicellate spikelet is male or barren, ± as long as the sessile, awnless.

*Colpodium hedbergii**Craspedorhachis africana**Craspedorhachis digitata**Craspedorhachis rhodesiana**Crinipes abyssinicus**Crinipes longifolius**Crypsis aculeata**Crypsis schoenoides* / *C. vaginiflora**Ctenium bennae**Ctenium canescens**Ctenium concinnum**Ctenium elegans*

CYMBOPOGON

ADHIKARI, S. & al (2015). Efficiency of ISSR marker for characterization of *Cymbopogon* germplasms and their suitability in molecular barcoding. *Plant Syst. Evol.* 301: 439–450.

FISH, L. (2005). Name used in the FSA region for the *Cymbopogon excavatus-caesius-giganteus* complex. *Bothalia* 35: 82.

KHANUJA, S. P. S. & al. (2005). Essential oil constituents and RAPD markers to establish species relationship in *Cymbopogon* Spreng. (Poaceae). *Biochem. Syst. Ecol.* 33: 171–186.

KUMAR, S. & al., eds. (2000). *Cymbopogon. The aromatic grass. Monograph*. Central Institute of Medicinal & Aromatic Plants, Lucknow. [8+] 380 pp.

SOENARKO, S. (1977). The genus *Cymbopogon* Sprengel (Gramineae). *Reinwardtia* 9/3: 225–375.

Cymbopogon caesius (Hook. & Arn.) Stapf, incl. var. *gracillimus* (Hook. f.) E. G. Camus & A. Camus; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 762, 1982; Troupin, Fl. Rwanda 4: 223, 1988; Gibbs Russell & al., Grasses south. Afr.: 94, 1990 (as *C. excavatus*); Thulin, Fl. Somalia 4: 262, 1995; Fl. Eth. & Eritrea 7: 329, 1995 (details); Fl. Zambes. 10/4: 78, 2002 (subsp. *caesius*); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 50, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013.

bas.: *Andropogon caesius* Hook. & Arn.

syn.: *A. bicornis* Forssk. 1775, nom. illeg., non L. 1753; *A. schoenanthus* L. var. *caesius* (Hook. & Arn.) Hack.; *A. nardoides* Nees var. *minor* Nees; *A. excavatus* Hochst.; *A. connatus* Hochst. ex A. Rich.; *Cymbopogon excavatus* (Hochst.) Stapf ex Burtt Davy; *C. connatus* (Hochst. ex A. Rich.) Chiov., incl. var. *muticus* Chiov.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass with basal sheaths soon falling away; culms wiry, 0,3–1,2(–1,6) m long, arising from a dense tussock or rambling from a knotty rootstock, leafy; leaf blades linear, 5–30 cm × 0,15–1,4 cm, glaucous, with strongly aromatic smell and bitter taste; false panicle linear to oblong, 5–30 cm long; racemes 1–1,5 cm long, the lowermost internode and pedicel connate and swollen; sessile spikelet 3–4,5 mm long, awn 6–15 mm long with distinct column (cf. at end of *C. giganteus*), lower glume without oil-streaks; pedicellate spikelet 3–5 mm long.

Wooded grassland; deciduous bushland; open grassland; from stony limestone hillsides to black clay plains; open forest; cultivated fields; sometimes growing through bushes; *Acacia* woodland; pastures, roadsides; 0–2570 m alt.

Namibia, Botswana, S. Africa, Lesotho, Swaziland; Madagascar, Comoros, Réunion; Yemen, Afghanistan, India, Sri Lanka, Bangladesh. – Not in Burkina Faso (confusion with *C. giganteus*).

Comment: Fish (o.c.) treats all specimens of which the lowermost internode and pedicel of the raceme are swollen and connate as *C. caesius*.

[***C. citratus*** (DC.) Stapf] Lemon grass; van der Zon, Gramin. Cameroun 2: 447, 1992; Thulin, Fl. Somal. 4: 261–262, 1995; Burkill, Useful pl. W. Trop. Afr., ed. 2: 209–210, 1995; Fl. Zambes. 10/4: 75–76, 2002; Boulos, Fl. Egypt 4: 340, 2005; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 266, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 248, 2011. – Icon.: Poilecot, Boissiera 50: 541, 1995; idem, ibid. 56: 573, 1999; Letham & Konda, Pl. utiles Bas-Congo, ed. 2: 115, 2007; Velayos & al., Fl. Guinea Ecuat. 12: 176, 2015.

bas.: *Andropogon citratus* DC.

syn.: *A. citriodorus* Desf. 1815, nom. nud.; *Cymbopogon nardus* (L.) Rendle subvar. *citratus* (DC.) Roberty; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

CYMBOPOGON CITRATUS

Perennial tufted culigen; culms to 2 m tall, glabrous, base leafy; lower leaf sheaths with a characteristic waxy bloom; blades linear, 50–90 × 0,5–2 cm, smooth; false panicle (rare) loose, nodding, 30–60 cm long; racemes c. 1,5 cm long, the lowest pedicel not swollen, free from adjacent internode; sessile spikelet c. 6 mm long, awnless; pedicellate spikelet c. 4 mm long. – Rarely flowering.

Commonly planted along roads and in gardens, near houses for its fragrant foliage (can be recognised by the lemon scent when crushed; citronella oil); 0–2000 m alt.

Wild origin unknown, but believed to be of Indian – Malesian origin; now grown worldwide in the tropics.

CAGIOTTI, M. R. & al. (2001a). *Cymbopogon citratus* (DC.) Stapf: caratterizzazione biologica ed acclimatazione. *Inform. Bot. Ital.* 33: 67–72.

CAGIOTTI, M. R. & al. (2001b). Caratterizzazione ecofisiologica e fitochimica di *Cymbopogon citratus* (DC.) Stapf. *Inform. Bot. Ital.* 33: 73–78.

FOLORUNSO, A. E. & O. A. OYETUNJI (2007). Comparative foliar epidermal studies in *Cymbopogon citratus* (Stapf) and *Cymbopogon giganteus* (Hochst.) Chiov. in Nigeria. *Not. Bot. Hort. Agrobot. Cluj* 35: 7–14.

LAWAL, O. A. & al. (2017). *Cymbopogon citratus*. In: KUETE, V., ed., *Medicinal spices and vegetables from Africa*: 397–423.

C. commutatus (Steud.) Stapf; Thulin, Fl. Somalia 4: 263, 1995; Lye & al. in Lidia 4: 162, 2000; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015; César & Chatelain, Fl. ill. Tchad: 256, 2019. – Icon.: Audru & al., Plantes vascul. Rép. Djibouti 2/2: 948, 1994; Fl. Eth. & Eritrea 7: 329, 331, 1995; Cope, Fl. Arab. Penins. 5/1: 300, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013.

bas.: *Andropogon commutatus* Steud.

syn.: *A. floccosus* Schweinf.; *A. commutatus* var. *flavicundus* Chiov. and var. *violaceus* Chiov.; *Cymbopogon floccosus* (Schweinf.) Stapf; *C. divaricatus* Stapf; *Gymnanthelia commutata* (Steud.) Schweinf.; *Sorghum commutatum* (Steud.) Kuntze; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted sweetly scented grass with persistent basal sheaths; culms 0,15–1,5 m tall; leaf blades filiform, 10–50 cm × 1–4 mm; false panicle linear-oblong, 5–35 cm long; racemes 1,5–3 cm long, with hairs to 2 mm long, the upper with 5–8 pairs of spikelets; the lowermost pedicel swollen (barrel-shaped), free from adjacent internode; sessile spikelet 4–7 mm long, awn geniculate, 1–2 cm long with distinct column; pedicellate spikelet 5–7 mm long.

Deciduous bushland (typically *Acacia*, *Commiphora*); subdesert grassland; grassy plains on limestone and gypsum hills; degraded juniper forest; meadows; 100–2500 m alt.

Polymorphic species with weakly defined geographical variants (Fl. Eth. & Eritrea 7: 330, 1995).

Probably adventitious in Senegal. – Arabian Peninsula, Palestine, Iraq, Iran, Afghanistan, N India, Pakistan.

C. densiflorus (Steud.) Stapf; Fritsch in Bull. Herb. Boissier, Sér. 2, 1: 1099–1102, 1901 (as *C. stypticus*); Burkill, Useful pl. W. Trop. Afr., ed. 2: 211, 1994; van der Zon, Gramin. Cameroun 2: 448, 450, 1992; Fl. Zambes. 10/4: 76, 2002; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006. – Icon.: Robyns, Fl. agrost. Congo belge 1: 151, 1929; Engler & Prantl, Natürl. Pflanzenfam. 14c: 165, 1940; Fl. Gabon 5: 177, 1962; idem 5b: 20, 1999; Latham & Konda, Pl. utiles Bas-Congo, ed. 2: 116, 2007; Vande weghe, Pl. à fleurs Gabon: 177, 2016; Malaisse & al., Copper-cobalt flora Upper Katanga...: 383, 2016.

bas.: *Andropogon densiflorus* Steud.

syn.: *A. schoenanthus* L. var. *densiflorus* (Steud.) Hack. and subsp. *densiflorus* (Steud.) Hack.; *A. stypticus* Welw. 1862,

CYMBOPOGON DENSIFLORUS

nom. provis.; *Cymbopogon schoenanthus* (L.) Spreng.
var. *densiflorus* (Steud.) Rendle and var. *stypticus* Rendle;
C. giganteus Chiov. var. *densiflorus* (Steud.) Chiov.;
C. stypticus (Welw.) Fritsch

Perennial tufted grass with basal sheaths falling away; culms stout, 1–2 m tall; leaf blades aromatic, 25–45–60 × 0,8–3 cm, base rounded to cordate; false panicle globose to obovate, 6–20 cm long, 10 cm Ø, very dense; racemes 1–1,5 cm long, lowermost internode and pedicel connate in their lower half but *not swollen*; sessile spikelet 3–4 mm long; lower glume narrowly winged, *flat on the back*, upper lemma *entire*; awn 4–5 mm long *without a column*, yellowish; pedicellate spikelet 2–3 mm long.

Open places along roads or drainage lines in wooded grassland; woodland; swamps; dambos; fallows; sand, gravelly soils; heavily grazed areas; on rather high hills on river banks; grassy thickets; sometimes very common or common; disturbed copper polluted soils; meadows; 680–1700 m alt.

Introduced in N Nigeria; cultivated in villages of Zaire, Bas-Congo and elsewhere. Introduced in Brazil.

C. giganteus Chiov., incl. var. *inermis* Clayton, but excl. var. *densiflorus* (Steud.) Chiov. (= *C. densiflorus*); A. Chevalier in Rev. Bot. Appl. Agric. Trop. 13/148: 871, 1933; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 211–213, 1994; Fl. Eth. & Eritrea 7: 329, 1995; Thulin, Fl. Somalia 4: 262–263, 1995; Agnew, Upl. Kenya wild flow., ed. 3: 445, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015; Schmidt & al., Phytotaxa 304: 75, 2017 (as *C. caesioides*). – Icon.: van der Zon, Gramin. Cameroun 2: 449, 1992; Poilecot, Boissiera 50: 539, 1995; idem, ibid. 56: 572, 1999; Fl. Zambes. 10/4: 79, 2002 (as *C. caesioides* subsp. *giganteus*); Ibrahim & al., Grasses Mali: 51, 2018 (as *C. caesioides*); César & Chatelain, Fl. ill. Tchad: 254, 2019 (as *C. caesioides* subsp. *giganteus*; details).

syn.: *C. caesioides* subsp. *giganteus* (Chiov.) Sales; *C. connatus* var. *benearmatus* Chiov.; *Andropogon giganteus* Hochst. 1844, nom. illeg., non Tenore 1811.

Perennial loosely tufted grass from a tough basal rootstock; basal sheaths soon falling away; culms 1–3 m tall, erect, sometimes supported by stilt roots at base; leaf blades 15–60 cm long, 1–3 cm wide, firm, dark green, base cordate to subamplexicaule; false panicle linear, 20–70 cm long; racemes 1–1,5 cm long with swollen internode fused to the spikelet stalk; sessile spikelet 3,5–5 mm long; awn 10–17 mm long (var. *inermis* awn-less); pedicellate spikelet 3,5–5 mm long.

Deciduous bushland; *Eucalyptus* plantation; grassland; silky soil on riverside levée; fallows; fields; old maize fields; roadsides; open forest; waste ground; often on wet soils; wooded grassland with *Combretum molle*, *C. collinum*, *Stereospermum kunthianum*, *Acacia hockii*; sandy, coarse soils of dunes; sandy terraces on sandstone; with *Diheteropogon hagerupii*, *Cenchrus biflorus*, *Aristida mutabilis*, *A. stipoides*, *Ctenium elegans*, *Digitaria gayana*; ± wooded savannas on lightly humid and fertile soils; with *Hyparrhenia subplumosa*, *Schizachyrium sanguineum*, *Panicum phragmitoides*, *Hyperthelia dissoluta* etc.; dominant over large regions of the savanna constituting the major part of the herbaceous flora (W. Africa); it requires good soil, no shade, often colonising fallows and fire-devastated areas; it prevents soil erosion (Burkill, l.c.); after dry years in Nigeria, the species is in regression; 0–2300 m alt.

The awnless variety (var. *inermis*) is reported from Mauritania and Mali.

Botswana; Madagascar.

CYMBOPOGON GIGANTEUS

C. caesioides and *C. giganteus*, each of very different habit in the typical form, intergrade completely. Further studies in the field and/or better characters must be searched for to separate *C. caesioides* from *C. giganteus*. Fish (o.c.) treated all specimens of which the lowermost internode and pedicel of the raceme are swollen and connate as *C. caesioides*.

A smut fungus, *Anthracozygus compacta* (Ványi) McTaggart & R. G. Shivas, is reported on *C. giganteus* in E Senegal (the type collection) and later also in SW Mali (Mycobiota 7: 13–18, 2017, with figs. and map).

C. giganteus sensu Stent & Rattray 1933 = *Hyparrhenia bracteata*.

C. nardus (L.) Rendle, incl. var. *confertiflorus* (Steud.) Bor, var. *luridus* (Hook. f.) N. Rama Rao, and var. *nilgiricus* Hack.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 213–214, 1994; Fl. Zambes. 10/4: 80, 2002; Boulos, Fl. Egypt 4: 340, 2005; Gereau & al., Lake Nyasa florist. checklist: 87, 2012; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 57, 1955 (as *C. afronardus*); Troupin, Fl. Rwanda 4: 223, 1988; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 55, 2012; Agnew, Upl. Kenya wild flow., ed. 3: 192, 2013.

bas.: *Andropogon nardus* L.

syn.: *A. nardus* var. *validus* Stapf; *Sorghum nardus* (L.) Kuntze; *Cymbopogon validus* (Stapf) Stapf ex Burtt Davy, incl. var. *lysocladus* Stapf; *C. afronardus* Stapf; *C. claessensii* Robyns; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass with a strong turpentine smell and a bitter taste; basal sheaths persistent; culms 0,75–3 m tall; leaf blades 20–70 cm long, 0,3–1,5 cm wide, base attenuate; false panicle linear, 8–60 cm long, dense, *interrupted*, brownish; racemes 1–2 cm long, lowest pedicel not swollen, free from adjacent internode, internodes and pedicels pilose with silvery white hairs; sessile spikelet 3–7 mm long, awn 5–15 mm long; pedicellate spikelet 3–6 mm long.

Fallows; deciduous bushland; grassland; wooded grassland; forest margins; often in rocky stony and sandy soils, also in clay or shale soils; in small tussocks; grassy places on river banks, flooded in summer; lava plains; slightly swampy hollows; 0–3000 m alt.

E S. Africa, Botswana, Lesotho, Swaziland; Madagascar, Seychelles; India, Sri Lanka to Indo-China; introduced in Sierra Leone, Nigeria, Egypt; (other) tropical countries, e.g. Americas.

Cultivated for its aromatic oil (Citronella). Also grown in gardens as an ornamental.

Similar to *C. pospischilii* in habit; but leaf ligule much longer (2,5–20 mm, not 0,5–15 mm).

C. nervatus (Hochst.) Chiov., incl. var. *aerythraeum* Chiov.; Thulin, Fl. Somalia 4: 262, 1995; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015. – Icon.: Andrews, Flow. pl. Sudan 3: 424, 1956; Fl. Eth. & Eritrea 7: 329, 1995 (detail).

bas.: *Andropogon nervatus* Hochst.

syn.: *A. schoenanthus* L. subsp. *nervatus* (Hochst.) Hack.; *Gymnanthelia nervata* (Hochst.) Schweinf. & Asch.

Annual or short-lived perennial *pale green* grass, sometimes tufted; culms 0,5–1,5 m tall; leaf blades linear, *thin*, 15–40 × 0,6–1,2 cm, base rounded; false panicle linear to oblong, 15–40 cm long, congested; racemes 1–1,5 cm long, the lowermost internode and pedicel connate, slightly swollen; sessile spikelet 4–5 mm long, *lower glume* with 2 broad brown oil-streaks; pedicellate spikelet 3,5–5,4 mm long.

Open plains, on clay soils; wooded grassland; 800–2300 m alt.

CYMBOPOGON NERVATUS

In Sudan, Ethiopia, Somalia. Report from Saudi Arabia not confirmed. Darbyshire & al. (l.c.) note that in the e-Monocot database this species is given a wider distribution, from Central African Rep. to Tanzania, Arabia and SE Asia (Indo-China).

C. pospischilii (K. Schum.) C. E. Hubb.; Gibbs Russell & al., Grasses south. Afr.: 95, 1990 (as *C. plurinodis*); Thulin, Fl. Somalia 4: 263, 1995; Fl. Zambes. 10/4: 263, 2002; Klaassen & Craven, Checklist grasses Namibia: 23, 2003; Cope, Fl. Arab. Penins. 5/1: 297, 2007. – Icon.: van Oudtshoorn, Guide grasses south. Afr., ed. 3: 51, 2012; Agnew, Upl. Kenya wild flow., ed. 3: 192, 2013.

bas.: *Andropogon pospischilii* K. Schum.

syn.: *A. plurinodis* Stapf; *A. nardus* L. var. *stenanthus* Hack. and var. *stracheyi* Hook. f.; *Cymbopogon plurinodis* (Stapf) Stapf ex Burt Davy; *C. stracheyi* (Hook. f.) Raizada & S. K. Jain

Perennial tufted grass; culms slender, 0.4–1 m tall, enclosed at base by tight bundles of old sheaths; leaf blades linear, 15–30 cm × 1–4 mm, base attenuate; false panicle narrow, loose, 10–30 cm long; racemes 1.5–3.5 cm long, pedicels ciliate with hairs to 3 mm long, lower pedicels not swollen, the upper with 5–8 pairs of spikelets; sessile spikelet 4–7 mm long, lower glume wingless, concave, awn 1–2 cm long; pedicellate spikelet 4–7 mm long.

Deciduous bushland; subdesert grassland; dry rocky slopes in bushland and cleared woodland; dry grassy plains; sandy or hard loamy soils; roadsides; degraded juniper forest on limestone hillsides or plateaux; 40–2400 m alt.

Namibia, S. Africa, Botswana, Lesotho, Swaziland; Yemen, Oman; N Pakistan, Nepal, India, W China.

Very close to *C. commutatus*, and the two intergrade. Similar to *C. nardus* but more delicate. Confused with *C. caesioides*.

C. schoenanthus (L.) Spreng., excl. var. *densiflorus* (Steud.) Rendle (= *C. densiflorus*) and subsp. *laniger* (Desf.) Maire & Weiller.

bas.: *Andropogon schoenanthus* L.

syn.: *Cymbopogon citriodorus* Link 1821, nom. superfl.; *Trachypogon schoenanthus* (L.) Nees; *Sorghum schoenanthus* (L.) Kuntze; *Lagurus schoenanthus* Steud. 1821, pro syn. – See also under the subspecies below.

Compactly tufted perennial grass with persistent basal sheaths; culms 0.2–1.2 m tall; leaf blades filiform, 10–35 cm × 1–4 mm, base attenuate; false panicle narrowly oblong, 5–40 cm long; racemes 2–3 cm long, woolly-villous with hairs 2–4 mm long, the lowermost pedicel swollen, barrel-shaped; sessile spikelet 4–7 mm long, awn 5–9 mm long; pedicellate spikelet 4–7 mm long. – Represented by 2 subspp, separated by the Sahara; they converge in Egypt, and intergrade where they meet.

Limestone hillsides; sandy-clayey hollows; dry open places in subdesert bushland; with *Aristida sieberiana*, *A. funiculata*, *Stipagrostis uniplumis*, *Cymbopogon giganteus*, *Andropogon gayanus*, *Panicum turgidum*, *Trichoneura mollis*; wooded formations along kori (rivulet) sides with *Brachiaria xantholeuca*, *Cenchrus biflorus*, *Eragrostis tremula*, *Tragus berteronianus*; thin stony or rocky soils with *Schoenefeldia gracilis*, *Pennisetum pedicellatum*, *Aristida kerstingii*, *Loudetia togoensis*, *Schizachyrium nodulosum*; ferruginous crust; muddy-sandy places; sands; *Acacia seyal* savanna; lowland plain; 125 (? and less) – 2600 m alt.

Comprises 2 subspp.: – subsp. **proximus** (Hochst. ex A. Rich.) Maire & Weiller [bas.: *Andropogon proximus* Hochst. ex A. Rich.;

CYMBOPOGON SCHOENANTHUS

syn.: *A. sennarensis* Hochst.; *A. jwarancusa* Jones var. *proximus* (Hochst. ex A. Rich.) Hack. and var. *sennarensis* (Hochst.) Hack.; *A. giganteus* Fenzl ex Steud. 1854, pro syn.; *A. schoenanthus* var. *proximus* (Hochst. ex A. Rich.) A. Chev., and subsp. *proximus* (Hochst. ex A. Rich.) Maire; *Cymbopogon sennarensis* (Hochst.) Chiov. incl. var. *proximus* (Hochst. ex A. Rich.) Chiov.; *C. proximus* (Hochst. ex A. Rich.) Chiov.; *C. proximus* var. *sennarensis* (Hochst.) Drar; *Gymnanthelia sennarensis* (Hochst.) Schweinf. & Asch.; *G. proxima* (Hochst. ex A. Rich.) Andersson; Wickens, Jebel Marra: 171, 1976 (as *C. sennarensis*); Fl. Trop. E. Afr., Gramin. 3: 766, 1982; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 214, 1994; Thulin, Fl. Somalia 4: 263, 1995; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 266, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 248, 2011; Agnew, Upl. Kenya wild flow., ed. 3: 445, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015; Schmidt & al., Phytotaxa 304: 75, 2017. – Icon.: Fl. Eth. & Eritrea 7: 329, 1995 (details); Poilecot, Boissiera 50: 543, 1995; idem, ibid. 56: 574, 1999; Ibrahim & al., Grasses Mali: 52, 2018; César & Chatelain, Fl. ill. Tchad: 254, 2019 (details). – False panicle with raceme pairs aggregated into dense clusters; racemes 1–2 cm long on glabrous common peduncle 2–7 mm long; awn a sessile spikelet 5–7 mm; dry open places in subdesert bushland, 600–1000 m alt.; like *C. giganteus* but leaves narrower and awn short; in N. Africa, W tropical Africa E-wards to Ethiopia, Somalia, Kenya, and Sinai; – subsp. **schoenanthus** [syn.: *Cymbopogon circinnatus* (Hochst. & Steud.) Hochst. ex Hack.; *C. arabicus* Nees ex Steud., pro syn.; *C. schoenanthus* subsp. *velutinus* Cope; *C. versicolor* (Nees ex Steud.) W. Watson; *Andropogon circinnatus* Hochst. & Steud.; *A. eriophorus* Willd.; *A. nardoides* Nees; *A. laniger* Munro 1882, nom. nud., non Desf. 1799; *A. jwarancusa* Jones subsp. *laniger* (Desf.) Hook. f.; *A. versicolor* Nees ex Steud.; *A. schoenanthus* var. *versicolor* (Nees ex Steud.) Hack.; *A. mascatensis* Gand.]; Cope, Fl. Arab. Penins. 5/1: 298, 2007; Dobignard & Chatelain, l. c. (2010). – Icon.: Boulos, Fl. Egypt 4: 338, 2005. – False panicle loose with longer racemes (2–3 cm); in N. Africa, Somalia, Djibouti; Sinai, Arabia, Palestine, Iran.

UNPLACED NAME:

Cymbopogon stipulatus Chiov. Pl. Nov. Aethiop.: 17, 1928 (Lavori del R. Istituto Botanico Catania 1: 17, 1928).

bas.: *Andropogon stipulatus* Chiov. in herb.

Perennial densely tufted grass with many shoots from old leaf sheaths; leaves linear, glaucous; blades 60 cm × 7–8 mm, tip subulate-acuminate; ligule membranous, 5–8 mm long, denticulate, adpressed pilose; culms erect, c. 2 m long, with 6–8 nodes below inflorescence; panicle 40–50 cm long, with solitary branches to 18 cm long; racemes paired, equal, 18 mm long, each with 6 spikelets; fertile spikelet 4.5–5 mm long, glabrous; pedicellate spikelet 5 mm long.

Described from Eritrea. Cultivated in the Botanical Garden of Palermo from seed received from Bombay; dried specimens with young flowers and a living specimen sent (to Chiovenda) by Dr. Fr. Bruno, “prodirector” of Palermo Bot. Gard.

Related to *C. commutatus*, but plant more robust.

SYNONYMS:

Cymbopogon acutispathaceus De Wild.

= **Hyparrhenia variabilis**

afonardus Stapf = **Cymbopogon nardus**

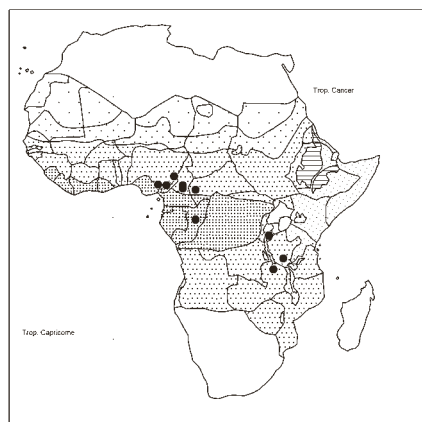
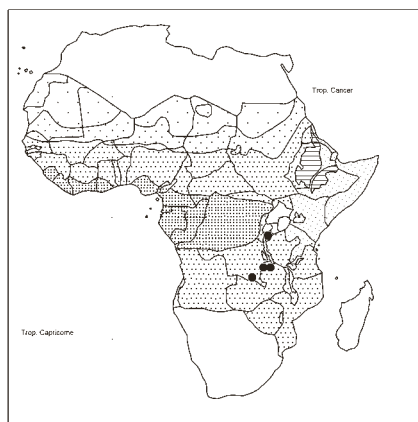
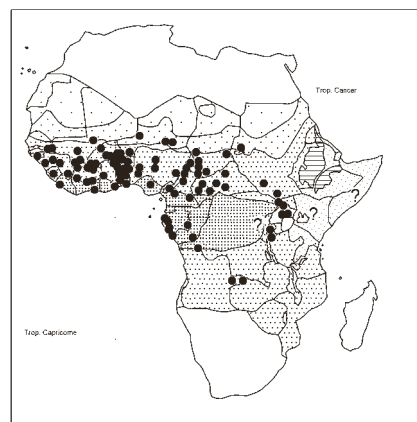
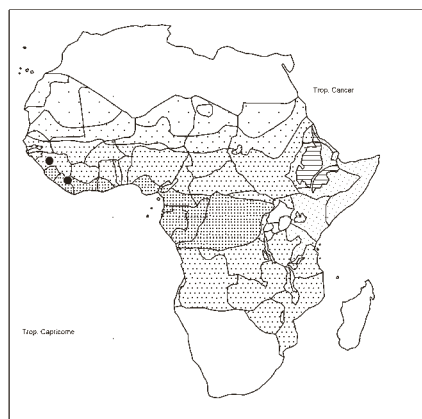
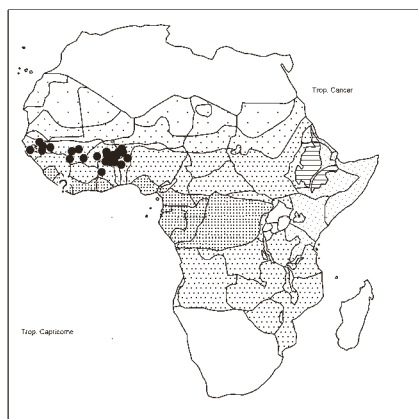
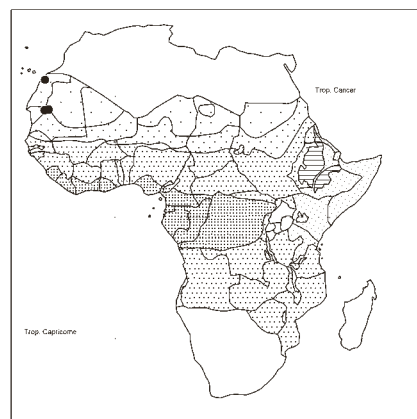
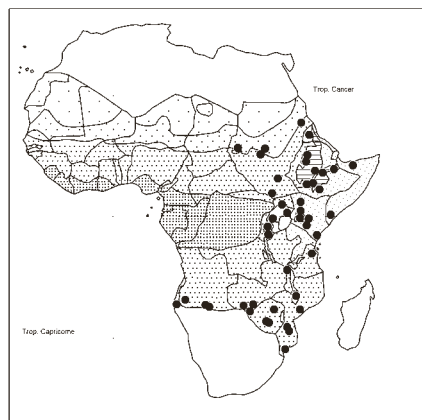
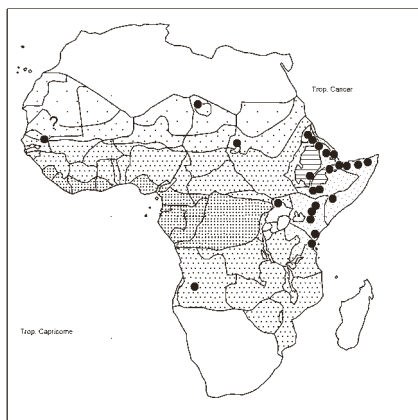
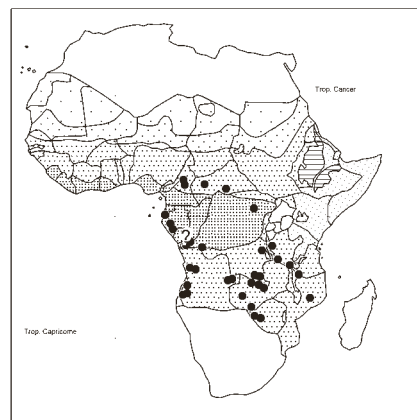
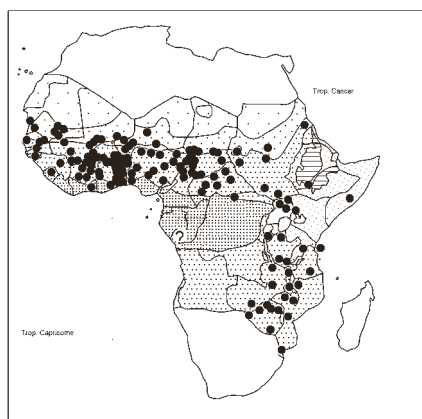
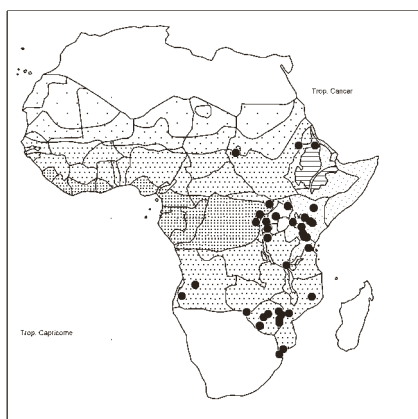
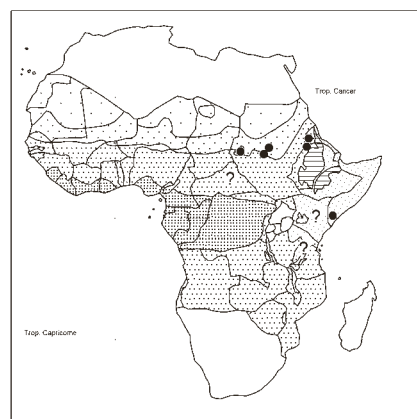
andongensis Rendle = **Hyparrhenia andongensis**

arabicus Nees ex Steud. = **Cymbopogon schoenanthus**

subsp. **schoenanthus**

bagirmicus Stapf = **Hyparrhenia bagirmica**

bequaertii De Wild. = **H. gossweileri**

*Ctenium ledermannii**Ctenium longiglume**Ctenium newtonii**Ctenium sesquiflorum**Ctenium villosum**Cutandia memphitica**Cymbopogon caesius**Cymbopogon commutatus**Cymbopogon densiflorus**Cymbopogon giganteus**Cymbopogon nardus**Cymbopogon nervatus*

CYMBOPOGON

caesius (Hook. & Arn.) Stapf subsp. *giganteus* (Chiov.)
 Sales = **Cymbopogon giganteus**
chevalieri A. Camus = **Exotheca abyssinica**
citriodorus Link 1821 = **Cymbopogon schoenanthus**
claessensii Robyns = **C. nardus**
coleotrichus (Steud.) Chiov. = **Hyparrhenia coleotricha**
collinus Pilg. = **H. collina**
connatus (Hochst. ex A. Rich.) Chiov., incl. var. *muticus*
 Chiov. = **Cymbopogon caesius**
connatus var. *benearmatus* Chiov. = **C. giganteus**
cyanescens Stapf = **Hyparrhenia cyanescens**
cymbarius (L.) Rendle = **H. cymbaria**
dichroos (Steud.) Pilg. = **H. dichroa**
diplandrus (Hack.) De Wild. = **H. diplandra**
divaricatus Stapf = **Cymbopogon commutatus**
effusus (Balansa) A. Camus = **Hyparrhenia familiaris**
elegans Spreng. = **H. cymbaria**
exarmatus Stapf = **H. exarmata**
excavatus (Hochst.) Stapf ex Burtt Davy
 = **Cymbopogon caesius**
familiaris (Steud.) De Wild. = **Hyparrhenia familiaris**
figarianus Chiov. = **H. figariana**
filipendulus (Hochst.) Rendle = **H. filipendula**
filipendulus var. *angolensis* Rendle = **H. filipendula** var.
filipendula
finitimus (Hochst.) Thomson = **H. finitima**
floccosus (Schweinf.) Stapf = **Cymbopogon commutatus**
gazensis Rendle = **Hyparrhenia gazensis**
giganteus Chiov. var. *densiflorus* (Steud.) Chiov.
 = **Cymbopogon densiflorus**
giganteus var. *inermis* Clayton = **C. giganteus**
hirtus (L.) Nees ex Baker = **Hyparrhenia hirta**
kapandensis De Wild. = **H. diplandra**
lecomtei (Franch.) Rendle = **H. newtonii** var. *newtonii*
lepidus (Nees) Chiov. = **H. cymbaria**
luembensis De Wild. = **H. dichroa**
micratherus Pilg. = **H. dregeana**
modicus De Wild. = **H. hirta**
nardus (L.) Rendle subvar. *citratius* (DC.) Roberty
 = **Cymbopogon citratius**
nardus var. *confertiflorus* (Steud.) Bor, var. *luridus*
 (Hook. f.) N. Rama Rao and subsp. *nilgircicus* Hack.
 = **C. nardus**
nyassae (Rendle) Pilg. = **Hyparrhenia nyassae**
papillipes (Hochst. ex A. Rich.) Chiov. = **H. papillipes**
phoenix Rendle = **H. diplandra**
pilosovaginatus De Wild. = **H. bracteata**
pleiarthron (Stapf) Stapf = **H. poecilotricha**
plurinodis (Stapf) Stapf ex Burtt Davy
 = **Cymbopogon pospischilii**
princeps Stapf = **Hyparrhenia dybowski**
proximus (Hochst. ex A. Rich.) Chiov.,
 incl. var. *sennarensis* (Hochst.) Drar
 = **Cymbopogon schoenanthus** subsp. **proximus**
rufus (Nees) Rendle, incl. var. *filicomus* (Hochst.) Rendle
 and var. *major* Rendle = **Hyparrhenia rufa**
ruprechtii (Hack.) Rendle = **Hyperthelia dissoluta**
scabrimarginatus De Wild. = **Hyparrhenia collina**
schimper (Hochst. ex A. Rich.) Rendle = **H. schimper**
schmidianus (A. Camus) A. Camus ex M. Schmid
 = **H. nyassae**
schoenanthus (L.) Spreng. var. *densiflorus* (Steud.) Rendle
 and var. *stypticus* Rendle = **Cymbopogon densiflorus**
schoenanthus subsp. *velutinus* Cope = **C. schoenanthus**
 subsp. **schoenanthus**

CYMBOPOGON

sennarensis (Hochst.) Chiov., incl. var. *proximus* (Hochst.
 ex A. Rich.) Chiov. = **C. schoenanthus** subsp.
proximus
setifer (Pilg.) Pilg. = **Hyparrhenia bracteata**
solutus Stapf = **H. bagirmica**
solutus fa. *trichophyllus* Stapf = **H. nyassae**
stipulatus Chiov. = ? (Ethiopia)
stolzii Pilg. = **Hyparrhenia pilgeriana**
stracheyi (Hook. f.) Raizada & S. K. Jain
 = **Cymbopogon pospischilii**
stypticus (Welw.) Fritsch = **C. densiflorus**
suaveolens Pilg. = **C. caesius**
subcordatifolius De Wild. = **Diheteropogon amplexans**
 var. **catangensis**
tamba (Hochst. ex Steud.) Rendle = **Hyparrhenia tamba**
tenuis Gilli = **H. mobukensis**
transvaalensis (Stapf) Stapf ex Burtt Davy = **H. hirta**
umbrosus (Hochst.) Pilg. = **H. umbrosa**
validus (Stapf) Stapf ex Burtt Davy, incl. var. *lysocladus*
 Stapf = **Cymbopogon nardus**
vanderystii De Wild. = **Hyparrhenia nyassae**
versicolor (Nees ex Steud.) W. Watson
 = **Cymbopogon schoenanthus** subsp. **schoenanthus**
welwitschii Rendle = **Hyparrhenia welwitschii**
welwitschii var. *minor* Rendle = **H. niariensis** var.
niariensis

(CYMBOSETARIA)

Cymbosetaria sagittifolia (A. Rich.) Schweick.
 = **Setaria sagittifolia**

CYNODON / 4

Genus of some 8–9 species in the Old World tropics and warm temperate regions; one species pantropical (Kellogg in K. Kubitzki, ed., *Fam. & gen. vascul. pl.* 13: 387, 2015).

The taxonomy is a difficult problem: the three species occurring in SE tropical Africa are variable in morphological and in their ploidy levels; they are interfertile to some extent. They have been deliberately planted on dunes, road verges and canal banks as soil stabilizers, and also cultivated for grazing. Man's activities have blurred both the natural variation patterns of the species and their patterns of geographical distribution (Fl. Zambes. 10/2: 233, 235, 1999).

MUCHUT, S. E. & al. (2021). A developmental approach expanding the knowledge of inflorescence diversity in subtribe Eleusininae (Chloridoideae: Poaceae). *Bot. J. Linn. Soc.* 195: 124–138.

Cynodon aethiopicus Clayton & J. R. Harlan; Burkill, *Useful pl. W. Trop. Afr.*, ed. 2, 2: 216, 1994; Lidia 5/1: 4, 2000; idem 5/5: 129, 2001; Agnew, *Upl. Kenya wild flow.*, ed. 3: 427, 2013; Darbyshire & al., *Pl. Sudan & S. Sudan*: 124, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 320, 1974; Troupin, *Fl. Rwanda* 4: 225, 1988; Fl. Eth. & Eritrea 7: 177, 1995.

Perennial coarse stoloniferous grass without rhizome, but with stout *stolons* lying flat on ground; *culms* very robust, 0.4–1 m tall, 2–6 mm Ø, often as hard and woody that they rattle in the wind; leaf blades flat, 3–25 cm × 3–7 mm, stiff, harsh, ± glabrous, glaucous; inflorescence of 2–5 racemes 5–17 cm long, in 2–5 *whorls*, *stiff, red or purple*; spikelets c. 2.5 mm long.

Moist soils or semi-aquatic, streamsides; disturbed ground incl. old kraals, abandoned cultivations; old cattle pounds; nitrogen

CYNODON AETHIOPICUS

enriched grassland; bushland; abandoned road in papyrus swamp; also widely planted on embankments, etc.; 400–2400 m alt. – An important fodder grass.

Botswana; introduced in N Nigeria, S. Africa; Australia, Hawaii; Texas (N. America).

C. dactylon (L.) Pers., incl. var. *aridus* J. R. Harlan & de Wet, var. *elegans* Rendle, var. *glabratus* (Steud.) Chiov., var. *densus* Hurcombe, var. *maximus* Cuénod (in Cuénod, Fl. Tunes.: 97, 1954), subvar. *hirsutissimus* Litard. & Maire etc. – Bermuda grass, Star grass. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 216–217, 1994; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 266–267, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 404, 1972; Gibbs Russell & al., Grasses south. Afr.: 6, 11, 96, pl. 50, 1990; van der Zon, Gramin. Cameroun 2: 181, 177 (map), 1992; Thulin, Fl. Somalia 4: 212, 1995; Poilecot, Boissiera 50: 181, 1995; idem, ibid. 56: 285, 1999; Fl. Zambes. 10/2: 236, 1999; Fl. Gabon 5b: 21, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 128, 2002; Boulos, Fl. Egypt 4: 281, 2005; Cope, Fl. Arab. Penins. 5/1: 187, 2007; Müller, Grasses Namibia: 58–59, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 225, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 177, 2015; Clarke, Name those grasses: 238–239, 2015; Vande weghe & al., Pl. à fleurs Gabon: 170, 2016; Weber, Invasive plant species of the world, ed. 2: 143, 2017 (with map); Ibrahim & al., Grasses Mali: 52, 2018; César & Chatelain, Fl. ill. Tchad: 204, 2019 (details). – Pl. 27.

bas.: *Panicum dactylon* L.

syn.: *Cynodon glabratus* Steud.; *C. hirsutissimus* (Litard. & Maire) Caro & E. A. Sánchez; *C. polevansii* Stent; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial sward-forming stoloniferous grass with *underground rhizomes and slender surface stolons*; culms slender, erect or ascending, 8–40 cm long, 0.5–1 mm Ø, rooting at lower nodes; leaf blades flat, blue-green, 1–12 cm long, 2–4 mm wide, scaberrulous, with or without hairs; inflorescence digitate (in a *single whorl*) or 4–6 one-sided racemes, these 2–6 cm long; spikelets c. 2 mm long, awn-less.

Near sources and ooze; clayey places; often in pure stands; roadsides; old farmland; weedy or trodden places around habitations; slightly humid or temporarily flooded ground; with *Eleusine indica*, *Chloris pilosa*, *Eragrostis turgida*, *Sporobolus pyramidalis*, *Digitaria delicatula*, *D. longiflora*; humid sand in river beds with *Eragrostis barteri*, *Chloris robusta*, *Hemarthria altissima*; disturbed ground; termitaria; also in salty hollows with *Diplachne fusca*, *Panicum repens*, *Imperata cylindrica*, *Paspalidium geminatum*, *Sporobolus spicatus*; in *Brachiario muticae*-*Cynodontion dactyli* communities (Müller in Syst. Geogr. Pl. 75: 244, 2005; Sahel); weed of disturbed ground, rice and maize fields; tolerates drought and salinity stresses (Manuchehri & Salehi, S. Afric. J. Bot. 92: 83–88, 2014); 0–2700 m alt. – An aggressive colonizer of disturbed ground as well as in nitrogen-rich habitats especially on farms; important as soil stabilizer, i.e. an excellent sand-binder; universally employed for lawns in the tropics; frequent weed in African maize fields (H. Krähmer, ed., Atlas of weed mapping: 75–76, 2016).

Grass with an extensive genetic diversity (Ramgareeb & al. in S. Afric. J. Bot. 67: 250–257, 2001). Many different strains have been selected for lawns (22 cultivars reported from China, India, Australia, USA fide Z. Wang, 2013: 108). But identification of

CYNODON DACTYLON

different cultivars is often very difficult (Roodt & al. in Bothalia 32: 117–122, 2002). Comprises (rarely) diploid (2n = 18), normally tetraploid, and polyploid cytotypes. There are attempts to identify different cultivars by DNA fingerprinting.

Geographically widely distributed between latitudes 45°N and 45°S, in Europe to 53°N. Temperate, subtropical and tropical Old World to Australia. – Cape Verde Isl.; N Africa; Bioko, S. Tomé, Annobón (Velayos, Phytotaxa 171: 20, 2014); Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland, Lesotho; Madagascar, W Indian Ocean islands; Socotra, Egypt, Palestine, Arabian Peninsula, E-wards to China, Japan; introduced in New Zealand, Pacific islands, N., C. & S. America. – One of the most widely distributed grass species in the world, and invasive. Used for turfgrass, pasture, forage, soil stabilization and remediation in arid and semi-arid regions of the world (J. Zhang & al. in Folia Geobot. 54: 267–278, 2019).

WANG, Z. & al. (2013). Genetic diversity analysis of *Cynodon dactylon* (bermudagrass) accessions and cultivars from different countries based on ISSR and SSR markers. *Biochem. Syst. Ecol.* 46: 108–115.

(**C. incompletus** Nees); Fl. Zambes. 10/2: 238, 1999. – Icon.: van Oudtshoorn, Guide grasses south. Africa, ed. 3: 268, 2012 (inflorescence).

syn.: *C. bradleyi* Stent; *C. hirsutus* Stent

Perennial stoloniferous grass, lacking rhizomes, very similar to *C. dactylon*, but leaf ligule hyaline 0.4–1 mm long (not membranous 0.2–0.3 mm long).

A South African species (map by Gibbs Russell & al., Grasses south. Afr.: 97, 1990), common there in fynbos, savanna and grassland; also introduced in Australia, Argentina, N. America (used as a lawn grass; icon.: Barkworth & al., Manual grasses N. America: 455, 2007, text p. 240).

Occasionally introduced into the Flora Zambesiaca area; reported for Angola, Bié & Huila, by Leistner in Figueiredo & Smith, Pl. Angola: 197, 2008.

C. nlemfuensis Vanderyst, incl. var. *robustus* Clayton & J. R. Harlan; Fl. W. Trop. Afr., ed. 2, 3/2: 403, 1972; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 217, 1994; Thulin, Fl. Somalia 4: 211–212, 1995; Fl. Eth. & Eritrea 7: 175–176, 1995; Fl. Zambes. 10/2: 237–238, 1999; Lidia 5/5: 129, 2001; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015; César & Chatelain, Fl. ill. Tchad: 204, 2019. – Icon.: Tadros, Atlas of common grasses of Tanzania 1: fig. 10, 1971 (Publ. Dept. Herbar., Bot. Dept., Univ. Dar es Salam); Chippindall & Crook, 240 grasses of southern Africa 1 (part 42), 1976; Poilecot, Boissiera 50: 183, 1995 (var. *robustus*); van Oudtshoorn, Guide grasses south. Africa, ed. 3: 224, 2012; Agnew, Upl. Kenya wild flowers, ed. 3: pl. 5/14, 2013.

syn.: *C. lemfuensis* Vanderyst 1920, nom. provis.; *C. parodii* Caro & E. A. Sánchez

Perennial sward-forming grass with extensive creeping woody surface stolons, lacking rhizomes; culms robust to fairly slender (not woody), *soft*, 20–60 cm tall; leaf blades 5–16 cm long, 2–6 mm wide, green or glaucous; inflorescence of 4–13 racemes in 1, sometimes 2, whorls, each 4–10 cm long; spikelets 2–3 mm long.

Clearings in forest and deciduous bushland; cattle paddocks; old cultivations; often on dark seasonally flooded soils; loose soils; pathsides; weedy and waste places; moist streamsides; 0–2400 m alt. – Also cultivated; becoming a serious weed of cereals and plantations.

Native in E Africa, Egypt?, ? Arabia; introduced in S. Africa, W Trop. Africa (Ivory Coast, Ghana, S Nigeria); SE Asia,

CYNODON NLEMFUENSIS

Philippines, Australia, Hawaii, S N. America, C. America, West Indies, S. America.

Two varieties are often distinguished: – var. **nlemfuensis** with somewhat wiry culms c. 1 mm Ø, leaf blades 2–5 mm wide, racemes 4–9, each 4–7 cm long; – var. **robustus** Clayton & J. R. Harlan, with stout stems (2–3 mm Ø), thin green leaves 5–6 mm wide, racemes 6–13, each 6–10 cm long. – The varieties intergrade, but typical specimens do not hybridise easily.

An important fodder grass.

C. plectostachyus (K. Schum.) Pilg., incl. var. *ruspolianus* (Chiov.) Chiov.; Fl. Zambes. 10/2: 238, 1999; Lye & al. in Lidia 4: 162, 2000. – Icon.: Fl. Eth. & Eritrea 7: 177, 1995 (spikelet); Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013; César & Chatelain, Fl. ill. Tchad: 204, 2019 (details).

bas.: *Leptochloa plectostachya* K. Schum.

syn.: *Cynodon ruspolianus* Chiov.

Perennial grass without rhizome but with tough woody arching stolons; culms robust, erect, 30–90 cm long, 1–4 mm Ø; leaf blades soft, 10–30 cm long, 4–7 mm wide, thin, thinly pilose above and beneath; *ligule* 1–2 mm long, *membranous*; inflorescence of 6–20 stout racemes, 3–7 cm long and borne in (1–)2–7 closely spaced whorls; spikelets 2,5–3 mm long, *glumes* tiny (0,2–0,5 mm long); palea keels stiffly ciliate.

Deciduous bushland, usually in disturbed and weedy places; ephemeral rainfed grassland or alluvial; 1000–2200 m alt.

Introduced into Nigeria, C Zimbabwe; Madagascar; Nepal; C. America, cultivated in Cuba. – Not in Somalia (Thulin, Fl. Somalia 4: 211, 1995; specimen from Ethiopia, Ogaden).

A distinctive species. But plants dwarfed by heavy grazing and up to 15 cm tall may be mistaken for *C. dactylon*.

(**C. transvaalensis** Burt Davy, incl. subsp. *poissonii* A. Camus); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 151, 1955; Gibbs Russell & al., Grasses south. Afr.: 97, 1990; Fl. Eth. & Eritrea 7: 175, 1995; Fl. Zambes. 10/2: 238, 1999; Boulos, Fl. Egypt 4: 280, 2005; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 267, 2010; Agnew, Upl. Kenya wild flow., ed. 3: 427, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015.

syn.: *C. poissonii* (A. Camus) Bosser

Perennial, very slender sward-forming grass with *underground rhizomes and slender prostrate stolons*; culms delicate, prostrate, 4–15(–30) cm long, < 0,4 mm Ø; leaf blades filiform, 1–4 cm × c. 1 mm, pale green; racemes 0,7–1,5 cm long, solitary or paired, occasionally 1–4 in a single whorl, 0,7–1,5 cm long; spikelets c. 2,5 mm long.

Roadsides and weedy places (adventive), occasionally planted as a lawn grass; 1200–2600 m alt.

Native of SE S. Africa. Introduced: Ethiopia, S Sudan, Uganda, S Kenya, N Tanzania, Zaire, C Zimbabwe; Libya, Egypt; Madagascar; Iran; Australia; N. America, S. America.

Closely related to and crossing with *C. dactylon*. *C. × magennisii* Hurcombe is a tetraploid hybrid *C. dactylon* (2n = 36) and *C. transvaalensis* (2n = 18).

“This short and small grass is excellent for making a lawn. It looks nice when regularly maintained by weeding” (Lidia 5/1: 6, 2000; Uganda).

SYNONYMS:

Cynodon abyssinicus (Jacq.) Raspail = **Eragrostis tef**
amabilis (P. Beauv.) Raspail = **E. amabilis**
bradleyi Stent = **Cynodon incompletus**

CYNODON

brizoides (L. f.) Raspail = **Eragrostis capensis**

glabratus Steud. = **Cynodon dactylon**

hirsutissimus (Litard. & Maire) Caro & E. A. Sánchez
= **C. dactylon**

hirsutus Stent = **C. incompletus**

lemfuensis Vanderyst 1920 = **C. nlemfuensis**

x magennisii Hurcombe = **C. dactylon** × **C. transvaalensis**

parodii Caro & E. A. Sánchez = **C. nlemfuensis**

paspaloides Vahl = **Eustachys paspaloides**

poissonii (A. Camus) Bosser = **Cynodon transvaalensis**

polevansii Stent = **C. dactylon**

ruspolianus Chiov. = **C. plectostachyus**

ternatus A. Rich. = **Digitaria ternata**

(CYNOSURUS)

Cynosurus aegyptiacus Link = **Dactyloctenium aegyptium**

aegyptiacus sensu Forssk. 1775 = **D. aristatum**

aegyptius L. = **D. aegyptium**

aureus L. = **Lamarckia aurea**

ciliaris Rottler ex Hook. f. 1896, non Raspail

= **Dactyloctenium aegyptium**

coracan L. 1759 and *coracanus* L. 1762

= **Eleusine coracana**

durus Forssk. 1775, non L. 1753

= **Desmostachya bipinnata**

floccifolius Forssk. = **Eleusine floccifolia**

indicus L. = **E. indica**

monostachyos Vahl = **Enteropogon monostachyos**

paspaloides Vahl = **Eustachys paspaloides**

retroflexus Vahl = **Dinebra retroflexa**

ternatus Forssk. = **Ochthochloa compressa**

(CYPHOLEPIS)

Cypholepis yemenica (Schweinf.) Chiov.

= **Disakisperma yemenicum**

CYRTOCOCCUM / 3

Genus of 14–15 species in the Old World tropics. “A segregate from *Panicum*, distinguished by the laterally compressed spikelets...and crested upper lemma” (Fl. Trop. E. Afr., Gramin. 3: 499, 1982).

Cyrtococcum chaetophoron (Roem. & Schult.) Dandy; Renier, Fl. Kwango 1: 45, 1948; Lye & al. in Lidia 4: 162, 2000; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire : 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015. – Icon.: Fl. Gabon 5: 77, 1962; Fl. Trop. E. Afr., Gramin. 3: 501, 1982; Adam, Fl. descript. Mts Nimba 6: 2148, 1983; van der Zon, Gramin. Cameroun 2: 242, 1992; Poilecot, Boissiera 50: 283, 1995; Lisowski, Fl. Rép. Guinée 2: fig. 535, 2009; Velayos & al., Fl. Guinea Ecuat. 12: 178, 2015.

bas.: *Panicum chaetophoron* Roem. & Schult.

syn.: *P. setigerum* P. Beauv. 1806 nom. illeg., non Retz. 1786; *P. jardinii* Steud.; *Cyrtococcum setigerum* Stapf; *Isachne jardinii* (Steud.) T. Durand & Schinz; *I. kingundaensis* Vanderyst

Perennial decumbent grass with culms rooting at lower nodes; culms 0,3–1 m long; leaf blades lanceolate, 5–15 × 0,5–1,5 cm; *panicle* diffuse, open, 10–25 cm long; branches capillary; *pedicels* much longer than *spikelets*; these 1,5–2 mm long, hispidulous.



Plate 26. *Ctenium newtonii* Hack., see p. 169
 a: habit; b: ligule; c: inflorescence; d: spikelet; e-f: glumes lower and upper;
 g: florets; h-i: lemma of fertile flower; j-k: palea of fertile flower.

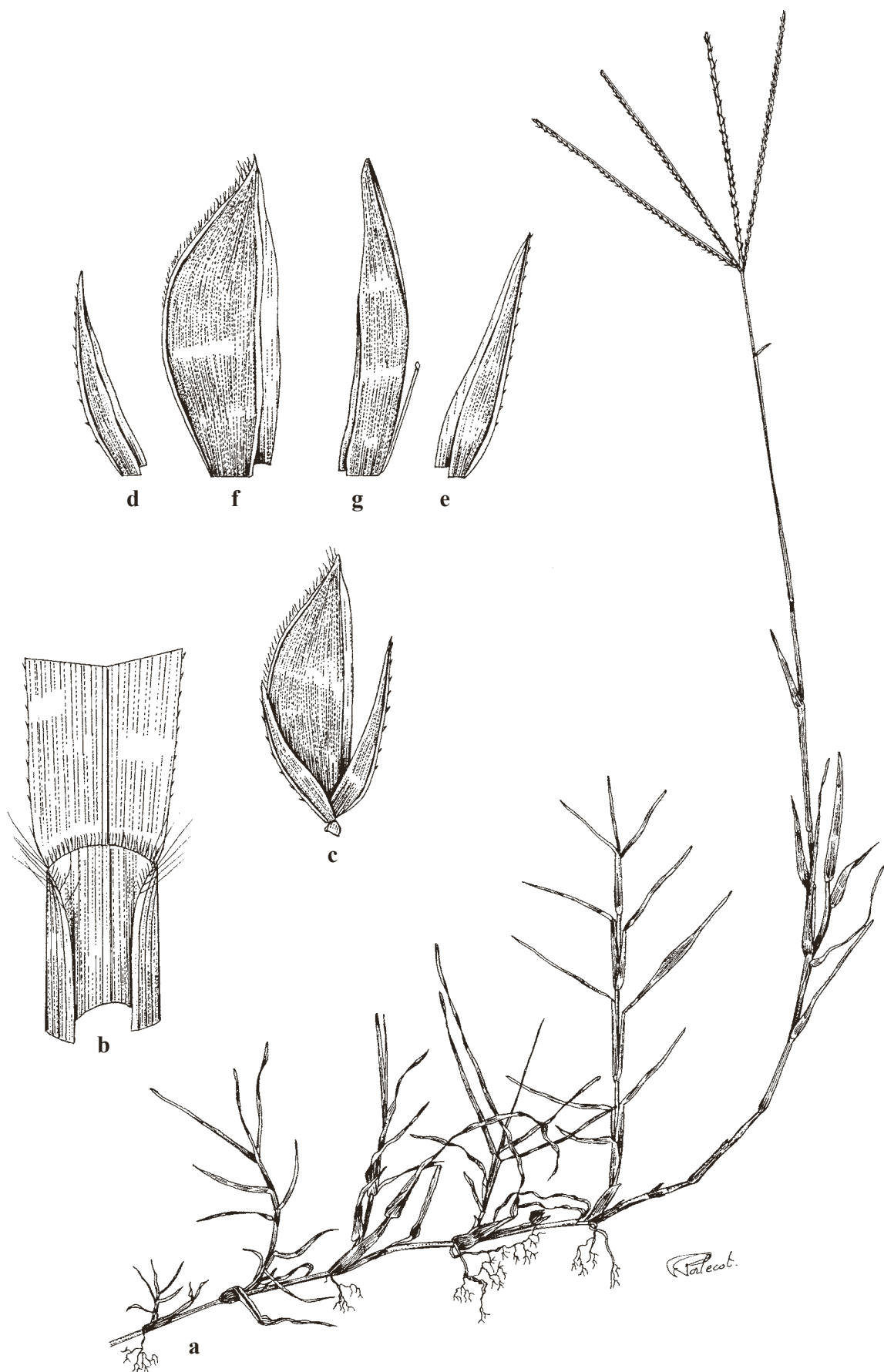


Plate 27. *Cynodon dactylon* (L.) Pers., see p. 177
a: habit; b: ligule; c: spikelet; d-e: glumes; f-g: palea and lemma.

CYRTOCOCCUM CHAETOPHORON

In forest shade; along tracks in forest; forest edges; riverside rain-forest, primary and secondary rain-forest; roadsides; old cultivations; semi-deciduous forest patches in savanna; with *Streptogyna crinita*, *Centotheca lappacea*, *Oplismenus hirtellus*, *Leptaspis zeylanica*, *Acroceras zizanoides*, *Pseudechinolaena polystachya*, *Isachne buettneri*; rain-forest with *Chrysophyllum albidum*, *Cola gigantea*, *Erythrophleum suaveolens*, *Alstonia boonei*, *Parinari excelsa*, *Milicia excelsa*, small swamp along brook; 0–950 m alt.

Bioko/Fernando Poo.

C. multinode (Lam.) Clayton

bas.: *Panicum multinode* Lam.

syn.: *P. johannense* Henrard; *P. cyrtococcoides* Napper

Perennial mat-forming trailing grass with culms rooting at lower nodes; culms 0,3–1 m long; leaf blades lanceolate, 5–20 × 0,8–2,5 cm; panicle diffuse, 8–22 cm long; branches glabrous or sparsely hirsute; terminal pedicels much longer than spikelets; these 1,2–1,5 mm long *glabrous*.

In forest shade: 900–1300 m alt.

Madagascar, Mauritius, Réunion, Comoros.

C. trigonum (Retz.) A. Camus, incl. var. *celebicum* Jansen – Icon.: Stapf in Hooker's Icon. Pl. 31: pl. 3096, 1922; Napper, Grasses Tanganyika, Minist. Agric., Forests Wildlife, Tanzania, Bull. 18: pl. 11, p. 125, 1965; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 129, 2002.

bas.: *Panicum trigonum* Retz.

syn.: *P. diffforme* Roth; *Loxostachys lachnantha* Peter

Perennial creeping, mat-forming grass; culms 5–15 cm tall; leaf blades lanceolate, delicate, 1–7 × 0,2–1 cm; panicle *contracted*, pyramidal, 1–5 cm long; spikelets contracted about the erect or divergent primary branches; pedicels ± the same length as spikelets; these 1,5–2 mm long, *silky pubescent* to warty hispidulous.

In forest shade; 0–400 m alt.

Madagascar, Seychelles; India, Sri Lanka E-wards to Philippines, New Guinea and S Pacific islands. Introduced in the West Indies.

SYNONYMS:

Cyrtococcum mossibeense A. Camus = ***Panicum pleianthum***
setigerum Stapf = ***Cyrtococcum chaetophoron***

(DACTYLIS)

Genus of 2 species in temperate Eurasia, widely introduced as a hay or pasture grass into most temperate countries.

(*Dactylis glomerata* L.); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 268–270, 2010. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 44, 1970; Gibbs Russell & al., Grasses south. Afr.: 99, 1990; Boulos, Fl. Egypt 4: 147, 438, 2005; Cope, Fl. Arab. Penins. 5/1: 29, 2007 (details); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 269, 2012 (details); Clarke, Name those grasses: 164–165, 2015; Kellogg in K. Kubitzki, ed., Fam & genera vascul. pl. 13: 247, 2015; Weber, Invasive plant species of the World, ed. 2: 148, 2017.

syn.: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial, coarsely tufted grass; culms 0,15–1,4 m tall, vegetative shoots and leaf sheaths strongly compressed; leaf blades

DACTYLIS GLOMERATA

flat, 10–45 × 0,2–1,4 cm; inflorescence oblong-ovate, 12–30 cm long, a lobed 1-sided, condensed panicle, the branches crowded with compact fascicles of spikelets; these 2–5-flowered, 5–9 mm long; awn rigid, to 1,5 mm long.

Cultivated as hay or pasture grass; disturbed places, roadsides, etc.; 2000–2300 m alt. (N Tanzania, W. Usambaras).

Native in temperate Europe, Mediterranean region, temperate Asia. Introduced world-wide. In our area reported from Cameroon, Ethiopia, Tanzania; C & E Zimbabwe; also in S. Africa.

D. glomerata is a polyploid complex composed of diploid (2n = 14), tetraploid (2n = 28) and also hexaploid populations. They are morphologically indistinguishable (Amirouche & Misset in Pl. Syst. Evol. 264: 157–174, 2007). However, 6 subspecies are recognized (key by Amirouche & Misset, o.c.); the plants in our area belong to subsp. **glomerata**.

SYNONYMS:

Dactylis brevifolia J. Koenig ex Willd. 1797

= ***Aeluropus lagopoides***

lagopoides L. = ***A. lagopoides***

massauensis (Fresen.) Steud. = ***A. lagopoides***

memphitica Spreng. = ***Cutandia memphitica***

mucronata (Forssk.) Steud. = ***Odyssea mucronata***

paspaloides Willd. = ***Dinebra retroflexa***

paucinervis Nees = ***Odyssea paucinervis***

repens Desf. = ***Aeluropus lagopoides***

repens Sieber ex Spreng. = ***A. lagopoides***

spicata Willd., non Brot. ex Spreng.

= ***Elytrophorus spicatus***

DACTYLOCTENIUM / 9

Genus of 13 species mainly in Africa, tropical and subtropical Asia E-wards to N India, Australia. Introduced elsewhere. The genus is actively speciating in E Africa, one species is a cosmopolitan weed [*D. aegyptium* (L.) Willd.].

Leaf blades have a sharp pointed or mucicous apex; inflorescence unbranched or with unbranched primary branches, *digitate*, *ending in a naked point*. Spikelet-bearing axes are disarticulating, falling entire.

Dactyloctenium aegyptium* (L.) Willd., incl. var. *mucronatum (Michx.) Schweinf. 1894, and *D. aegyptius* var. *mucronatum* (Michx.) Lanza & Mattei 1910, and fa. *viviparum* Beetle, but excl. var. *aristatum* (Link) A. Chev., subsp. *aristatum* (Link) M. Sharma, both = *D. aristatum*; Renier, Fl. Kwango 1: 59, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 218–220, 1994; Thulin, Fl. Somalia 4: 189, 1995; Sosef & al., Check-list pl. vascul. Gabon: 182, 2006; Cope, Fl. Arab. Peninsula. 5/1: 155–156, 2007; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 270, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 124, 2015; Schmidt & al., Phytotaxa 304: 80, 2017. – Icon.: Busson, Pl. aliment. Ouest africain: 454, 1965; Fl. W. Trop. Afr., ed. 2, 3/2: 394, 1972; van der Zon, Gramin. Cameroun 2: 141, 1992; Fl. Eth. & Eritrea 7: 136, 1995; Poilecot, Boissiera 50: 147, 1995; idem, ibid. 56: 228, 1999; Fl. Zambes. 10/2: 164, 1999; Fl. Gabon 5b: 21, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 131, 2002; Boulos, Fl. Egypt 4: 266, 2005; Müller, Grasses Namibia: 61, 2007; Malaisse, Guide florist. du Parc Natl. Cantanhez: pl. 809, 2010; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 231, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 187, 2013; Catasús Guerra, Consideraciones sobre las gramíneas invasoras en Cuba:

DACTYLOCTENIUM AEGYPTIUM

124, 2015 (inflorescence); Velayos & al., Fl. Guinea Ecuat. 12: 179, 2015; Ibrahim & al., Grasses Mali: 53, 2018; Pickering & Awale, Introd. plants Central Somaliland: 116, 2018; Adodo, Medicinal plants of Nigeria: 141, 2018; César & Chatelain, Fl. ill. Tchad: 200, 2019 (details); Cerrato & al. in Acta Bot. Croat. 80: 222, 2021 (herb. specimen).

bas.: *Cynosurus aegyptius* L.

syn.: *C. ciliaris* Rottler ex Hook. f. 1896, nom. inval.; *Eleusine aegyptia* (L.) Desf.; *Dactyloctenium mucronatum* (Michx.) Willd.; *D. aegyptiacum* Willd., orth. var.; *D. prostratum* Willd.; *D. figarei* De Not.; *D. mpuetense* De Wild.; *D. ciliare* Chiov.; *Cynosurus aegyptiacus* Link 1829, pro syn.; *Chloris guineensis* Schumacher; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Spreading annual, *exceedingly variable* grass, typically with sprawling, geniculately ascending culms rooting at lower nodes; culms 0,1–1 m long, less often erect; leaves along culm; blades flat, 3–25 cm long, 3–12 mm wide; inflorescence of 1–9 linear spikes 1,2–6,5 cm long, *ascending or often radiating horizontally at culm tip*; spikelets c. 4 mm long; grain c. 1 mm long, *coarsely transversely rugose*.

Open situations in grassland; open woodland; roadsides, waste ground; humid sands; rich soils; with *Aristida adscensionis*, *Eragrostis pilosa*, *Cynodon dactylon*; extremely common; fallows, gardens; with many other ruderals such as *Eleusine indica*, *Eragrostis tenella*, *Brachiaria villosa*, *B. stigmatistata*, *Heteropogon contortus*; gravelly soils; clayey salt soil; sand on sandstone; clayey-muddy soil; disturbed areas near water; common around villages; occurs as a pest in lawns and gardens; 0–2400 m alt.

Tropical and warm temperate Old World; N Africa; Bioko/Fernando Poo; Namibia, Botswana, S. Africa, Swaziland; Madagascar, W Indian Ocean islands; Palestine, Arabian Peninsula, E-wards to Indonesia, Philippines, New Guinea; introduced in Madeira, Cape Verde Isl.; S Europe; Pacific islands, N., C. & S. America (map by T. Pullaiah, Biodiversity in India: 10, 2003). Dispersal possible through contaminated batches of coconut fibre substrate (Cerrato & al., l.c.).

D. aristatum Link; Cope, Fl. Arab. Penins. 5/1: 156, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 270, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Fl. Eth. & Eritrea 7: 136, 1995; Boulos, Fl. Egypt 4: 266, 2005; Subbaiah & al. in Indian J. Forestry 37: 114, 2014.

syn.: *D. aegyptium* var. *aristatum* (Link) A. Chev., and subsp. *aristatum* (Link) M. Sharma; *D. seminipunctatum* Courbon; *D. glaucophyllum* Courbon var. *villosum* Mattei; *Cynosurus aegyptiacus* sensu Forssk. 1775, non *C. aegyptiacus* L. 1753; *Dactyloctenium radulans* sensu Chiov. 1932, non (R. Br.) P. Beauv.

Sprawling tufted annual grass; culms 4–38 cm long, geniculately ascending from decumbent base, often rooting at lower nodes; leaf blades flat, 1–13 × 0,15–0,7 cm, papillose-hispid; inflorescence *compact* with 2–11 oblong spikes 0,8–1,8 cm long, clustered in a *dense* often subglobose *head*; spikelets 4–5 mm long; grain 1 mm long, granular or *granular striate*; lemma *pointed*.

Seashore on sand; exposed coral outcrops; coral sand; limestone outcrops; disturbed ground; 0–550 m alt.

Egypt; Saudi Arabia, Yemen, Kuwait, Oman, Socotra, Pakistan, NW & S India, W Himalaya.

Sometimes confused with small specimens of *D. aegyptium*, but grain different.

DACTYLOCTENIUM

D. australe Steud.; Gibbs Russell & al., Grasses south. Afr.: 100, 1990; Fl. Zambes. 10/2: 162–163, 1999; Klaassen & Craven, Checklist grasses Namibia: 23, 2003. – Icon.: Bosser, Gramin. pâturages cultures Madag., Mém. ORSTOM 35: 174, 1969; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 239, 2012.

Perennial stoloniferous mat-forming grass; culms 32–80 cm long, erect or geniculately ascending; leaf blades flat, 5–27 cm long, 2–4 mm wide, *softly pilose* with tuberculate-based spreading hairs; inflorescence of 3–6 linear-oblong ascending spikes 3–5 cm long; spikelets c. 5 mm long; upper glume 1,7–1,9 mm long, keel with stout awn $1\frac{1}{3}$ – $1\frac{3}{4}$ as long as glume; lemmas c. 3,5 mm long, tip flexuous, with an awn-point c. 0,6 mm long; grain obovate, apex rounded to convex.

Bushland, grassland; 0–870 m alt.

Occurring also in Mozambique; Namibia, S. Africa; Madagascar. Cultivated occasionally (erosion control, lawn grass growing well in shade, ornamental); introduced Zimbabwe; Madeira; Australia.

D. ctenoides (Steud.) Bosser; Fl. Trop. E. Afr., Gramin. 2: 253, 1974; Fl. Zambes. 10/2: 165, 1999. – Icon.: Bosser, Gramin. pâturages cultures Madag., Mém. ORSTOM 35: 172, 1969.

bas.: *Chloris ctenoides* Steud.

Spreading annual grass forming lax open mats; culms slender, ascending, to 20–50 cm long, prostrate, rooting at lower nodes; leaf blades flat, 3–13 cm × 3–7 mm; inflorescence open, of 4–7 narrowly oblong spikes 1,4–3,3 cm long, stiffly *ascending or radiating* from culm-tip; spikelets c. 4 mm long; lemma 2,8–3,4 mm long; grain *finely granular-striate*.

Sand dunes, coral outcrops; sea-level.

Madagascar and other W. Indian Ocean islands.

Can barely be distinguished from *D. aegyptium* except by its granular grain; also shows signs of introgression with that species; experimental work is needed.

D. geminatum Hack.; Gibbs Russell & al., Grasses south. Afr.: 100–101, 1990; Fl. Eth. & Eritrea 7: 137, 1995; Peters in Timberlake & Kativu, eds., African Plants: Biodiversity, Taxonomy and Uses: 495, 1999; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 257, 1982; Thulin, Fl. Somalia 4: 190, 1995; Fl. Zambes. 10/2: 164, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 268, 2012 (inflorescence); Agnew, Upl. Kenya wild flow., ed. 3: pl. 187, 2013.

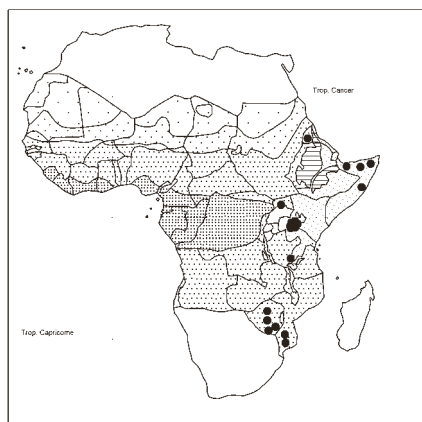
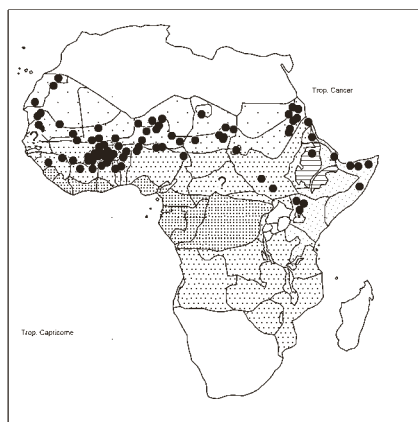
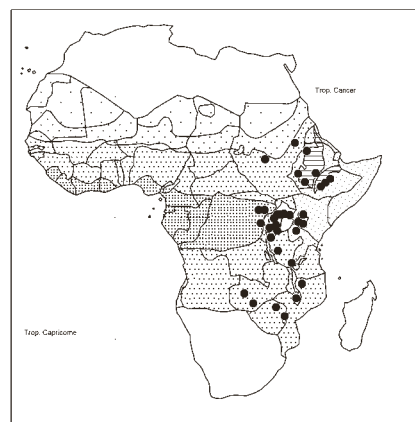
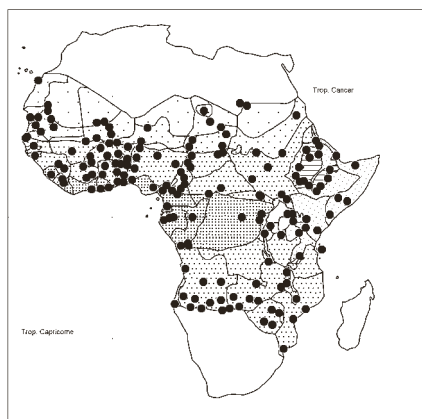
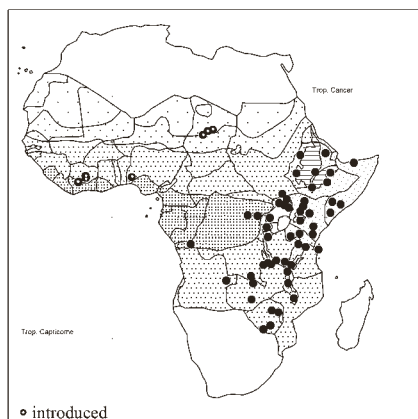
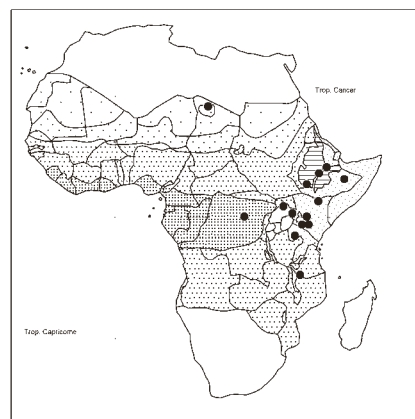
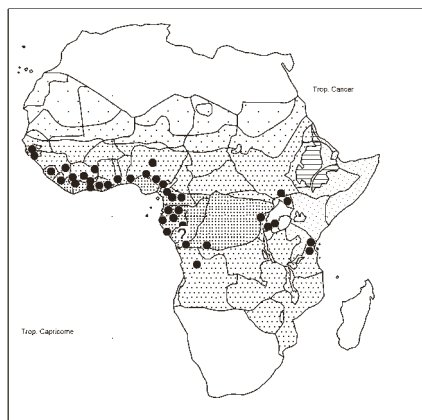
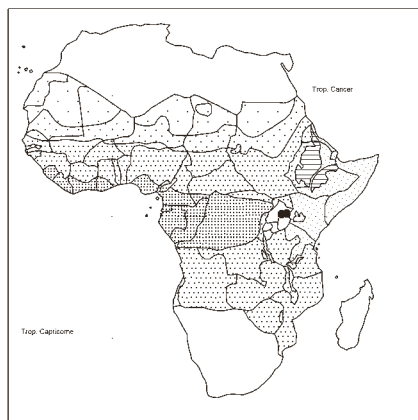
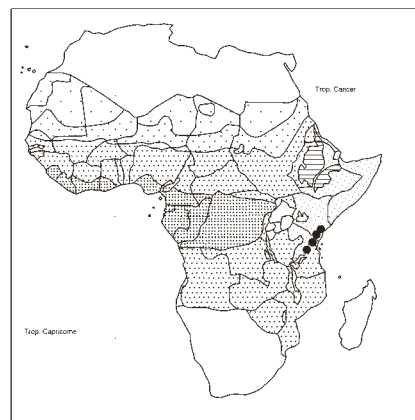
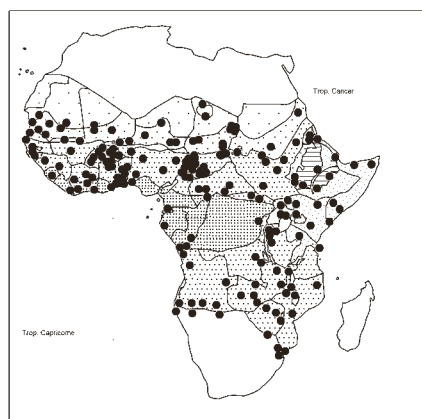
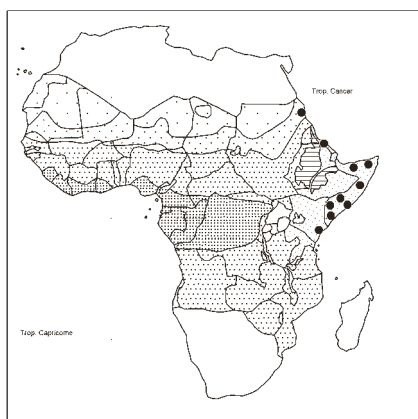
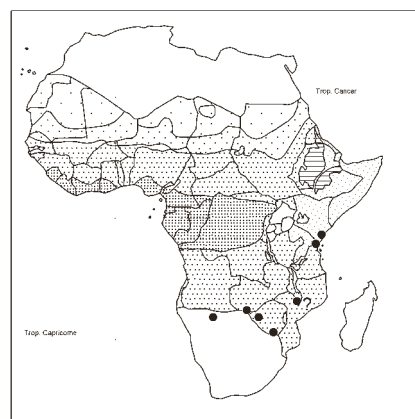
syn.: *D. mucronatum* var. *angustius* Andersson; *D. glaucophyllum* var. *somalicum* Chiov.; *D. bogdanii* S. M. Phillips

Perennial tough mat-forming with stolons (not rhizomes) with dense leafy tussocks along them; culms slender, wiry, 0,35–1,12 m long, ascending; leaf blades flat, glaucous, linear, 3,5–28 cm × 3–9 mm; inflorescence of 1–6 linear, *diverging*, often *slightly falcate* spikes 2–7 mm long; spikelets 3–7 mm long; grain c. 1 mm long, transversely rugose.

Dry open plains, especially in damp hollows on highly alkaline, alluvial or volcanic soils where it may be dominant; sandy soils of coastal bushland; especially common near the seashore; sand on mangrove margins; saline sandy clays on coastal plains; seasonally swampy floodplain grassland; sandy alluvial soils, along water-courses; cultivated fields; alkaline flats and limestone escarpments; 0–1700 m alt. – A sand binder.

S. Africa; Madagascar.

In Kenya and Tanzania this species shows a marked tendency towards differentiation into 2 taxa: *D. geminatum* s. str. with 2 racemes, and a segregate taxon, *D. bogdanii* with up to

*Cymbopogon pospischilii**Cymbopogon schoenanthus**Cynodon aethiopicus**Cynodon dactylon**Cynodon nlemfuensis**Cynodon plectostachyus**Cyrtococcum chaetophoron**Cyrtococcum multinode**Cyrtococcum trigonum**Dactyloctenium aegyptium**Dactyloctenium aristatum**Dactyloctenium australe*

DACTYLOCTENIUM GEMINATUM

6 racemes. In Somalia the distinguishing features break down (Thulin, Fl. Somalia 4: 190–191, 1995).

D. giganteum B. S. Fischer & Schweick; Agnew, Upl. Kenya wild flow., ed. 3: 423, 2013. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 100, 1990; Fl. Zambes. 10/2: 164, 1999; Müller, Grasses Namibia: 63, 2007; Pickering & Roe, Wild flowers Victoria Falls area: 95, 2009; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 230, 2012.

Annual tufted grass; culms 0,37–1,6 m long, erect or geniculate ascending, sometimes rooting at lower nodes; leaf blades flat, 11–45 × 0,5–1,2 cm, almost glabrous; inflorescence of 1–9 linear spikes 3,5–11 cm long, usually ascending to form a bush-like cluster at top of culm; spikelets elliptic, 4–6 mm long; lemmas awn-pointed; awn of upper glume 1,5–4 times as long as glume body, c. 1–2 mm long; grain c. 1 mm long, transversely rugose.

Disturbed areas on riverbanks or near water; riverbank sandy alluvium; roadsides; old cultivated fields; disturbed and trampled waste places; sometimes common; 20–2000 m alt.

NE Namibia, Caprivi Strip, Botswana, S. Africa; Madagascar.

Difficult to distinguish from *D. aegyptium*, but *D. giganteum* has a more robust habit, longer spikes (3,5–11 cm, not 1,2–6,5 cm) less widely spreading, upper glume with longer awn, lemma with awn-point, and longer anthers (1,3–2,1 mm, not 0,25–0,8 mm).

D. pilosum Stapf; Fl. Trop. E. Afr., Gramin. 2: 254, 1974. – Icon.: Kew Bull., Add. Ser. 7: 323, 1980.

Annual grass forming spreading leafy tufts; culms slender, 9–18 cm long, much branched, decumbent, rooting at lower nodes; leaf blades flat, 1,5–6,5 cm long, 2–4 mm wide, glabrous to softly pilose; inflorescence of 1–2 widely diverging spikes, often falcately recurved, 1,4–3,5 cm long; spikelets ovate, 2,3–4 mm long, very densely imbricate, subtended by conspicuous tufts of hairs c. 1,5 mm long; grain < 1 mm long, finely granular.

Coral rocks; sea-level.

Madagascar, Aldabra, Seychelles.

D. robecchii (Chiov.) Chiov.; Thulin, Fl. Somalia 4: 190, 1995. – Icon.: Annuario Reale Ist. Bot. Roma 6: pl. 19, 1896 (under *Eleusine*); Cope, Fl. Arab. Penins. 5/1: 158, 2007.

bas.: *Eleusine robecchii* Chiov.

Perennial, tough, mat-forming or subshrubby grass with scaly stolons, to 30 cm tall; leaves distichous, blades short, rigid, pungent; inflorescence of 2–5 oblong racemes 0,8–2 cm long, these forming a compact head; spikelets broadly ovate, c. 3–4 mm long; grain granular.

Alluvial plains; rocky slopes, especially on limestone; coral sands not inundated; 0–1400 m alt.

Socotra, Yemen, Oman.

D. scindicum Boiss.; Thulin, Fl. Somalia 4: 190, 1995; Cope, Fl. Arab. Penins. 5/1: 156–157, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 270, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Audru & al., Les plantes vascul. Rép. Djibouti, Fl. ill. 2: 864, 1994; Fl. Eth. & Eritrea 7: 136, 1995; Boulos, Fl. Egypt 4: 266, 2005.

syn.: *D. glaucophyllum* Courbon, incl. var. *elongatius* Courbon and var. *robustius* Courbon; *Eleusine scindica* (Boiss.) Duthie; *E. aristata* Ehrenb. ex Boiss. 1884, pro syn.

Perennial stoloniferous mat-forming grass recognised by its small tufts of often rather glaucous leaves on the spreading stolons;

DACTYLOCTENIUM SCINDICUM

culms slender, 7–45 cm tall, bases swollen; blades tough, flat or loosely folded, 1–11 cm × 1,5–3 mm, papillose-hispid on margins; inflorescence of 3–5 slightly falcate oblong spikes 0,8–2 cm long, forming a compact head; spikelets ovate, 4–8 mm long; grain transversely rugose.

Dry grassland; open bushland (often *Acacia*, *Commiphora*); usually damp hollows on sandy soils; shallow sandy or alluvial soils overlying limestone or gypsum; 50–1600 m alt.

Egypt; Gulf States, Saudi Arabia, Oman, Yemen; Afghanistan, NW India, W. Himalaya.

SYNONYMS:

Dactyloctenium aegyptiacum Willd., orth. var.

= **Dactyloctenium aegyptium**

aegyptium var. *aristatum* (Link) A. Chev. and subsp.

aristatum (Link) M. Sharma = **D. aristatum**

bogdanii S. M. Phillips = **D. geminatum**

ciliare Chiov. = **D. aegyptium**

figarei De Not. = **D. aegyptium**

glaucophyllum Courbon, incl. var. *elongatius* Courbon and var. *robustius* Courbon = **D. scindicum**

glaucophyllum var. *somalicum* Chiov. = **D. geminatum**

glaucophyllum var. *villosum* Mattei = **D. aristatum**

mpuetense De Wild. = **D. aegyptium**

mucronatum (Michx.) Willd. = **D. aegyptium**

mucronatum var. *angustius* Andersson = **D. geminatum**

prostratum Willd. = **D. aegyptium**

radulans sensu Chiov. 1932, non (R. Br.) P. Beauv.

= **D. aristatum**

semipunctatum Courbon = **D. aristatum**

DAKNOPHOLIS / 1

Monotypic genus, sometimes placed in synonymy under *Chloris* (Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 387, 2015).

Daknopholis boivinii (A. Camus) Clayton – Icon.: Fl. Trop. E. Afr. Gramin. 2: 322, 1974; Fl. Zambes. 10/2: 234, 1999.

bas.: *Chloris boivinii* A. Camus

syn.: *C. ramosissima* A. Camus; *C. perrieri* A. Camus, incl. var. *aristata* A. Camus

Annual prostrate herb with long slender stolons forming loose mats; flowering culms ascending 10–30 cm long; leaf blades linear, 1–3,5 cm × 2–5 mm, apex obtuse; ligule a line of hairs; inflorescence of 1–6 digitate one-sided racemes in a single whorl, 2,5–6 cm long; spikelets 1-flowered, laterally compressed, sessile, alternate in 2 rows; glumes 0,5–1,3 mm long; lemma acute, long-awned, awn 0,3–1,2 cm, rarely awnless.

Open places in coastal bushland near the seashore; weedy habitats near the sea.

Aldabra, Astove, Cosmoledo, Madagascar.

Easily mistaken for *Chloris pycnothrix* but spikelets different (*Daknopholis* has a pubescent lemma callus).

(DANTHONIA)

LINDER, H. P. & al. (2010). A generic classification of the Danthonioideae (Poaceae). *Ann. Missouri Bot. Gard.* 97: 306–364.

DANTHONIA

SYNONYMS:

Danthonia abyssinica Hochst. ex A. Rich.

= **Crinipes abyssinicus**

albida Hochst. ex Steud. = **Tenaxia subulata**

andongensis Rendle = **Alloochaete andongensis**

anomala Steud. = **Bromus pectinatus**

anthoxanthiformis Hochst., incl. var. *uberior* (Hochst.)

Engl. = **Pentameris pictigluma**

arundinacea (Delile) Steud., non (P. J. Bergius) Schweick.

= **Centropodia forsskalii**

borussica K. Schum. = **Pentameris borussica**

chrysurus K. Schum. = **P. chrysurus**

davyi C. E. Hubb. = **Merxmuellera davyi**

depressa Hochst. = **Pentameris pictigluma** var.

pictigluma

disticha Nees = **Tenaxia disticha**

elongata Hochst. ex A. Rich. = **Helictotrichon elongatum**

forsskalii (Vahl) Trin. 1827 = **Centropodia forsskalii**

forsskalii (Vahl) R. Br. 1826 = **C. forsskalii**

fragilis Guinet & Sauvage = **C. fragilis**

glaucia Nees, incl. var. *lasiophylla* Pilg. = **C. glauca**

grandiflora Hochst. ex A. Rich.

= **Merxmuellera grandiflora**

koestlinii Hochst. ex A. Rich.

= **Phaenanthoecium koestlinii**

longiaristata (A. Rich.) Engl.

= **Koordersiochloa longiaristata**

mossamedensis Rendle = **Centropodia mossamedensis**

nana Engl. = **Pentameris pictigluma** var. **pictigluma**

segetalis Hochst. = **P. trisetoides**

streblochaeta Steud. = **Koordersiochloa longiaristata**

subulata A. Rich. = **Tenaxia subulata**

suffrutescens Stapf = **Centropodia glauca**

tenuiglumis Steud. = **Crinipes abyssinicus**

trisetoides Hochst. ex Steud., incl. var. *tenuis* Engl.

= **Pentameris trisetoides**

trisetoides var. *expansa* Pilg. = **P. borussica**

trisetoides var. *hackelii* Engl. and var. *schimperi* Engl.

= **P. pictigluma** var. **pictigluma**

uberior Hochst. = **P. pictigluma** var. **pictigluma**

DANTHONIOPSIS / 11 + 1 ?

syn.: *Gazachloa* J. B. Phipps; *Jacquesfelixia* J. B. Phipps; *Petrina* J. B. Phipps; *Rattraya* J. B. Phipps; *Xerodanthia* J. B. Phipps; *Pleioneura* (C. E. Hubb.) J. B. Phipps 1872, nom. illeg.

Genus of 16 species in mainly C. & south. Africa, Sudan, Arabian Peninsula E-wards to Pakistan.

Leaf ligule a fringe of hairs. Inflorescence paniculate.

KIWAK, A. & P. DUVIGNEAUD (1952). Note sur la distribution au Congo Belge du genre *Danthoniopsis*. *Bull. Soc. Roy. Bot. Belg.* 85: 69–73.

PHIPPS, J. B. (1972). Studies in the Arundinelleae (Gramineae) – XVI *Danthoniopsis* – The middle way. *Bol. Soc. Brot., Sér.* 2, 46: 417–427.

Danthoniopsis acutigluma Chippind.; Kiwak & Duvigneaud 1952: 70 (map); Fl. Zambes. 10/3: 202, 1989. – Icon.: Blumea, Suppl. 3: 28, 1946.

Perennial tufted grass; culms 0.6–1.2 m tall; leaf blades to 26 cm long, 0.3–1.5 cm wide, 1 margin crinkly; panicle linear, contracted, 5–25 cm long, 1.5–2 cm Ø, branches pubescent to pilose; spikelets 10–12 mm long; lower glume $\frac{2}{3}$ length of spikelet, acuminate.

Rocky slopes; 600–1300 m alt.

DANTHONIOPSIS

D. aptera R. I. S. Correia & Phipps – Icon.: Bol. Soc. Brot., Sér. 2, 41: 193, 1967.

Perennial herb to 80 cm tall; culms simple, erect, shortly villous; leaf blades to 16 cm long, 1.2 cm wide, apex acuminate, 1 margin crinkly; sheaths villous; inflorescence to 9.5 cm long, 4 cm Ø, axis shortly villous; branches short, little branched, with spikelets laxly set on secondary branchlets; spikelets 9 mm long, 2-flowered, green, purplish tinged, lower glume 7 mm long, pubescent; awn 10–15 mm long, column chestnut brown.

Plateau border with *Brachystegia spiciformis* vegetation, rocky ground, between boulders.

Near *D. viridis*.

? Known only from the type collected in 1965.

D. barbata (Nees) C. E. Hubb.; Kiwak & Duvigneaud 1952: 70 (map); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 271, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Thulin, Fl. Somalia 4: 248, 1995; Fl. Eth. & Eritrea 7: 287, 1995; Boulos, Fl. Egypt 4: 322, 2005; Cope, Fl. Arab. Penins. 5/1: 260, 2007.

bas.: *Tristachya barbata* Nees

syn.: *T. somalensis* Franch., incl. var. *disticha* Franch. and var. *laxa* Franch.; *T. bricchetiana* Chiov.; *Sorghum barbatum* Hochst. ex Steud.; *Trichopteryx barbata* (Nees) Hack. ex T. Durand & Schinz; *T. somalensis* (Franch.) Engl.; *Xerodanthia barbata* (Nees) J. B. Phipps

Perennial tough glaucous perennial grass from a knotty rhizome; culms thin, hard, 0.4–1 m tall, fasciculate branched below, nodes woolly; leaves distichous; blades stiff, pungent, 3–11 × 0.4–1 cm, pilose, margins conspicuously white; panicle contracted, 8–15 cm long, with spikelets mostly in triads, borne at top of simple or sparsely branched, flexuous, usually paired branches; spikelets chartaceous, lower glume 4–7 mm long; upper lemma with awned lobes (3–5 mm), with tufts of hairs across the back; awn 1.5–2 cm long, rigidly falcate.

Crevice between volcanic boulders; stony slopes, rocky ledges; lava plains; coastal sands; semidesert plains; 0–1600 m alt.

Egypt, Sinai, Yemen, Saudi Arabia.

D. chevalieri A. Camus & C. E. Hubb.; Duarte & al. in Portugal. Acta Biol. 19: 434, 2000; Lisowski, Fl. Rép. Guinée 1: 454–455, 2009.

syn.: *Arundinella chevalieri* (A. Camus & C. E. Hubb.) Roberty

Perennial tufted grass 1.8–2.7(–4) m tall; lower leaf sheaths densely, shortly silky-villous at base; blades linear, rigid, pubescent, 20–60 × 1–2.2 cm, margins scabrous; panicle lax, 20–27 cm long, c. 12.5 cm Ø; spikelets c. 1 cm long, flushed with purple and brown; glumes glabrous, the lower 5–6 mm long, the upper 8–10 mm and sparsely pilose with transverse line of hairs below each lobe and narrowly winged keel; lemma with awn c. 1.5 cm long.

Grass and wooded savanna; open orchard bush, frequent; ferrolitic pans at edges of *Oxytenanthera abyssinica* formations; swampy riversides; marshy ricefields; 360–1400 m alt.

D. chimanimaniensis (J. B. Phipps) Clayton; Fl. Zambes. 10/3: 201, 1989; Darbyshire & al. in PhytoKeys 136: 78, 2019. – Icon.: Kirkia 4: pl. X/2 facing p. 124, 1964 (spikelet).

bas.: *Gazachloa chimanimaniensis* J. B. Phipps

Perennial densely tufted grass; culms erect, flexible, 0.6–1 m tall, nodes glabrous; leaf blades setaceous, densely puberulous above; panicle lax, 6–15 cm long; branches glabrous; spikelets

DANTHONIOPSIS CHIMANIMANIENSIS

8–10 mm long, ± glabrous, purplish; lower glume c. 6 mm long; upper lemma pilose with a row of 8 tufts of hairs across the back, setaceously 2-lobed (awn 1–2 mm long), and with a persistent awn 1,2–1,8 cm long.

On rock in middle of stream, rocky places along clear cool fast-flowing streams; 300–1600 m alt.

D. dinteri (Pilg.) C. E. Hubb.; Kiwak & Duvigneaud 1952: 70 (map). – Icon.: Hooker's Icon. Pl. 35: pl. 3447, 1943; Kirkia 4: pl. XIII/2 facing p. 125 (palea of upper floret); Fl. Zambes. 10/3: 203, 1989; Gibbs Russell & al., Grasses south. Afr.: 101, 1990; Müller, Grasses Namibia: 173, 2007.

bas.: *Trichopteryx dinteri* Pilg.

syn.: *Jacquesfelixia dinteri* (Pilg.) J. B. Phipps

Annual tufted grass; culms erect, unbranched, 0,5–3 m tall; leaf blades flat, 30–60 × 0,8–1,5 cm, with pronounced midrib, 1 margin *crinkly*; panicle open, 25–50 cm long; spikelets in lax triads, 1,4–2 cm long, light green flushed with purple; lower glume 5–7 mm long; upper lemma pilose with a row of 6–8 tufts on back; central awn 1–3,5 cm long.

Rocky slopes; 400–500 m alt.

Namibia, Botswana, S. Africa.

D. lignosa C. E. Hubb.; Gibbs Russell & al., Grasses south. Afr.: 102, 1990; Klaassen & Craven, Checklist grasses Namibia: 24, 2003; Fl. Zambes. 10/3: 201, 1989. – Icon.: Kirkia 4: pl. XIII/4 facing p. 125, 1964 (palea of upper floret).

syn.: *Petrina lignosa* (C. E. Hubb.) J. B. Phipps

Perennial tufted grass to c. 2 m tall; culms erect, rigid, very thick-walled, woody (as *D. pruinosa*), to 5 mm Ø, branched toward top; leaf blades linear, to 50 × 0,5 cm, tip setaceous-acute; panicle oblong, contracted, 10–16 cm long, 2,5–3 cm Ø, pale; branches clustered, filiform, to 4 cm long; spikelets 5–6 mm long, in pairs, straw-coloured; lower glume c. 3 mm long; upper lemma with 8 hair tufts, awn geniculate, 7–8 mm long.

Rocky streamsides, near water and in flowing water; 900 m alt. Namibia.

Resembling *D. pruinosa*.

D. petiolata (J. B. Phipps) Clayton; Fl. Zambes. 10/3: 202, 1989. – Icon.: Kirkia 4: pl. X facing p. 124, 1964 (under *Ratraya*).

bas.: *Ratraya petiolata* J. B. Phipps

syn.: *Pleioneura petiolata* (J. B. Phipps) J. B. Phipps

Perennial grass; culms 1–2,5 m tall; leaf blades to 30 cm long, 1–3,5 cm wide, 1 margin *crinkly*, at least the inferior leaf with a *false petiole* 1–15 cm long; panicle loose, 20–35 cm long; spikelets 0,9–1,3 cm long; lower glume 5–6 mm long, acuminate; *upper lemma pilose* but *hairs not in tufts*; awn 1–1,5 cm long.

Cliffs and shallow soils; 600–1100 m alt.

D. pruinosa C. E. Hubb., incl. var. *gracilis* C. E. Hubb.; Fl. Zambes. 10/3: 201, 1989; Gibbs Russell & al., Grasses south. Afr.: 102, 1990. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: 285, 1955; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 262, 2012 (inflorescence).

syn.: *Petrina pruinosa* (C. E. Hubb.) J. B. Phipps

Perennial tufted grass with swollen rootstock; culms brittle, often branched, woody, 0,6–1,5 m tall; leaf blades *glaucous*, 10–25 cm long, 0,4–1,2 cm wide, margins not *crinkly*; panicle 10–35 cm long; spikelets 5–9 mm long, brown; lower glume 3–7 mm long,

DANTHONIOPSIS PRUINOSA

acute to setaceously acuminate; lower lemma 3-nerved; upper lemma pilose and with 6 hair tufts across the back, setaceously 2-lobed; awn 0,6–1,2 cm long.

Rocky places in savanna woodland and thicket; 550–1600 m alt.

D. lignosa and also *D. parva* (J. B. Phipps) Clayton from S. Africa, Transvaal, are similar.

D. simulans (C. E. Hubb.) Clayton

bas.: *Loudetia simulans* C. E. Hubb

syn.: *Pleioneura simulans* (C. E. Hubb.) J. B. Phipps; *Ratraya simulans* (C. E. Hubb.) Butzin

Perennial densely tufted grass 1,5–2 m tall; culms erect, to 6 mm Ø, basal internodes silky villous; basal leaf sheaths to 20 cm long, densely villous; blades to 55 cm long, 6 mm wide; panicle loose, to 55 cm long, 15 cm Ø; rachis slender; branches 2 or 1, filiform, the lower to 30 cm long, pedicels 0,1–1 cm long; spikelets 0,7–1 cm long, pale and purple tinged; lower glume 4–6 mm long, upper 6–9 mm long; upper flower with *lemma* 5,5–8 mm long, *glabrous*, 9–11-nerved; awn 0,8–1,3 cm long.

Clefts in rock; sandstone; 1100 m alt.

Superficially markedly resembling *D. chevalieri* but readily distinguished by the absence of the traverse beard of long hairs on upper lemma.

D. viridis (Rendle) C. E. Hubb.; Rendle, Cat. Afr. pl. Welwitsch 2: 216, 1899 (under *Trichopteryx*); Fl. Zambes. 10/3: 201–202, 1989. – Icon.: Hooker's Icon. Pl. 31: pl. 3075 (as *D. gossweileri*); Bull. Misc. Inform. Kew 1927: 270, 1927 (as *D. minor*); Bull. Soc. Roy. Bot. Belg. 85: 71, 70 (map), 1952 (details).

bas.: *Trichopteryx viridis* Rendle

syn.: *Danthoniopsis gossweileri* Stapf, incl. var. *catangensis* Chiov.; *D. catangensis* (Chiov.) Kiwak & P. A. Duvign.; *D. minor* Stapf & C. E. Hubb.; *D. intermedia* C. E. Hubb.; *D. westii* J. B. Phipps

Perennial tufted grass; culms 0,3–1,4 m tall; leaf blades to 30 cm long or more, 0,2–1,5 cm wide, 1 margin *crinkly*; panicle 5–30 cm long, contracted, branches glabrous to villous; spikelets 0,7–1,4 cm long, *greenish*; lower glume 4–7 mm long, glabrous to pubescent, *obtuse to acute*; upper lemma pilose at base with a row of 8 tufts across the back, acutely 2-lobed; awn 0,7–1,5 cm long; palea keels winged to midway, the wing terminating in an auricle. – “With habit of *Avena*” (Rendle, l.c.).

Rocky places in *Brachystegia* woodland; rocky thicket-grown pastures round a great lake; open forests with *B. spiciformis*, *B. longifolia*, *Pseudoberlinia baumii*, *Marquesia macroura*; 1200–1600 m alt.

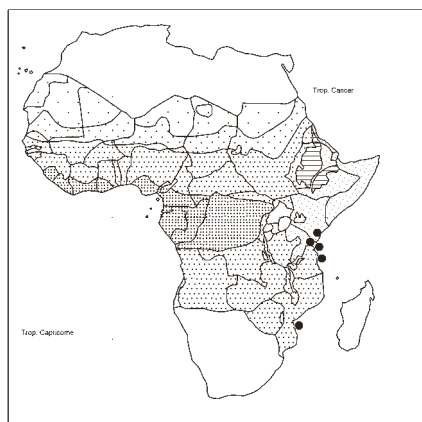
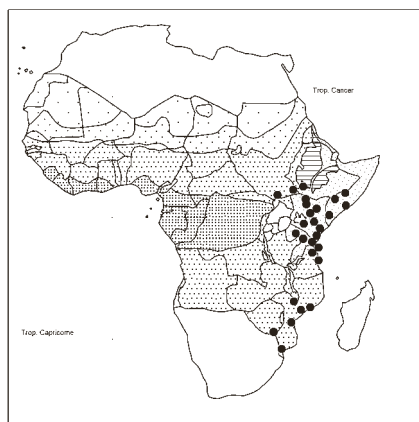
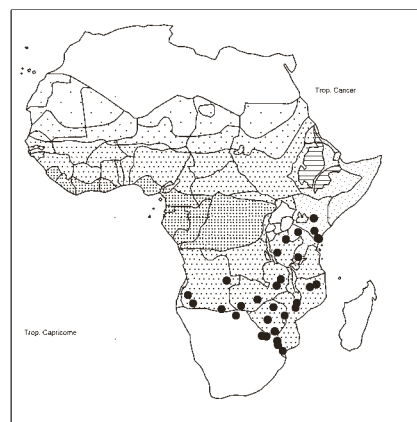
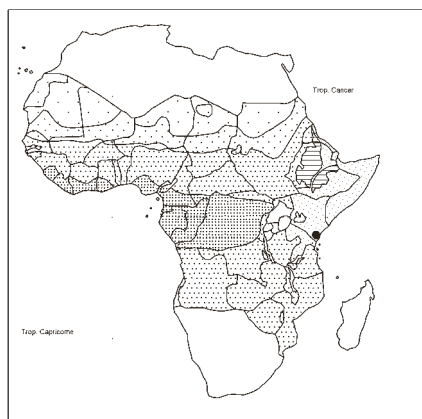
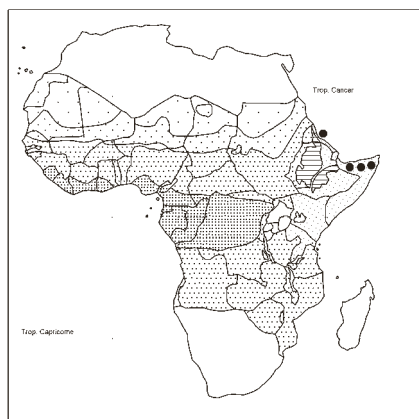
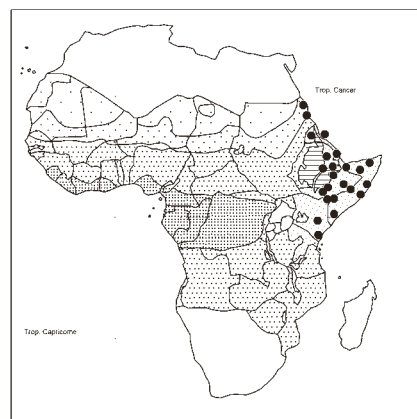
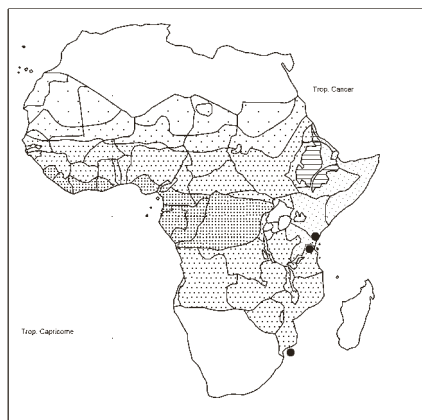
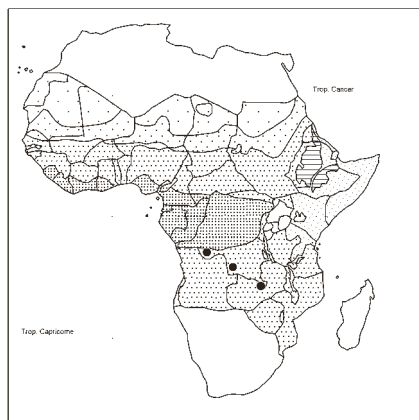
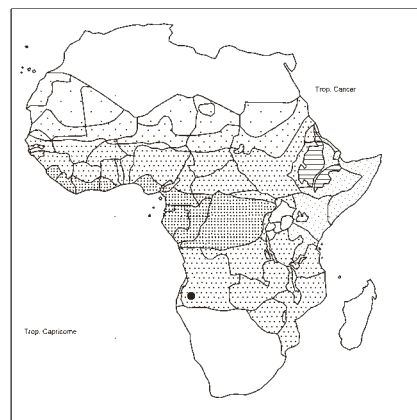
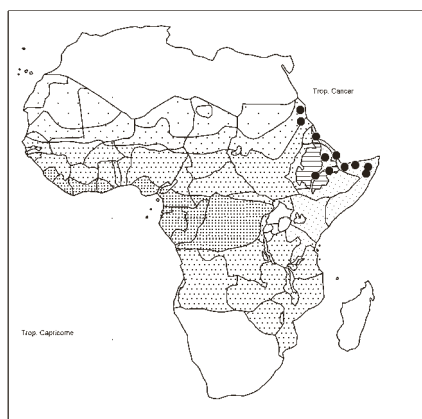
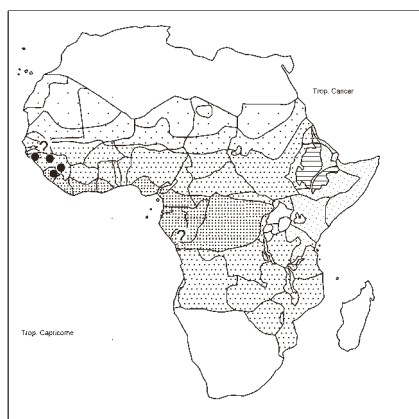
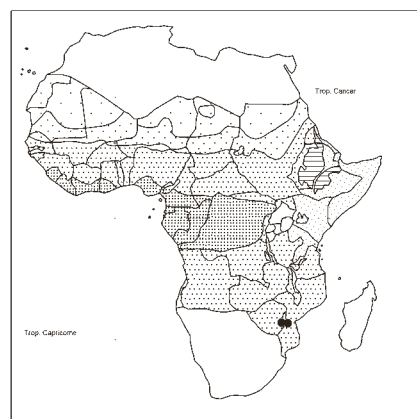
D. wasaensis is very similar, but in that species the superior floret has a palea with almost obsolete wings and no auricle.

(**D. wasaensis** C. E. Hubb.); Kiwak & Duvigneaud 1952: 70 (map).

syn.: *Trichopteryx wasaensis* Vanderyst 1920, nom. provis.

Described as similar to *D. minor* (= *D. viridis*), but culms glabrous below, nodes long-bearded, panicle wider (to 6,3 cm), spikelets larger (0,8–1 cm), lower glume narrowly ovate or ovate-oblong and acute, awn longer (1,1–1,4 cm); see also at end of *D. viridis* above.

D. wasaensis var. **pilosistigma** P. A. Duvign. & Kiwak was described (in a foot note) in Bull. Soc. Roy. Bot. Belg. 85: 72 (p. 71 drawing of glume), 1952. It differs from the typical *D.*

*Dactyloctenium ctenoides**Dactyloctenium geminatum**Dactyloctenium giganteum**Dactyloctenium pilosum**Dactyloctenium robecchii**Dactyloctenium scindicum**Daknopholis boivinii**Danthoniopsis acutigluma**Danthoniopsis aptera**Danthoniopsis barbata**Danthoniopsis chevalieri**Danthoniopsis chimanimaniensis*

DANTHONIOPSIS WASAENSIS

wasaensis in having a less acute lower glume that is entirely pilose. It was found on boulders of rocky slopes in open forest with *Combretum*, *Marquesia* and *Burkea*.

D. wasaensis and *D. wasaensis* var. *pilosistigma* are possibly synonyms of *D. viridis*.

SYNONYMS:

Danthoniopsis catangensis (Chiov.) Kiwak & P. A. Duvign.

= ***Danthoniopsis viridis***

gossweileri Stapf, incl. var. *catangensis* Chiov. = ***D. viridis***
intermedia C. E. Hubb. = ***D. viridis***

minor Stapf & C. E. Hubb. = ***D. viridis***

multinodis (C. E. Hubb.) Jacq.-Fél.

= ***Dilophotriche tristachyoides***

occidentalis Jacq.-Fél. = ***Di. occidentalis***

pobeguinii Jacq.-Fél. = ***Di. pobeguinii***

purpurea (C. E. Hubb.) Jacq.-Fél. = ***Di. tristachyoides***

tristachyoides (Trin.) Jacq.-Fél. = ***Di. tristachyoides***

tuberculata (Stapf) Jacq.-Fél. = ***Di. tristachyoides***

westii J. B. Phipps = ***Danthoniopsis viridis***

[DENDROCALAMUS]

Genus of 66 species of bamboos (Vorontsova & al., World checklist of bamboos...: 66, 2016; 41 species cited by Kellogg in Kubitzki, ed., Fam. & genera vascul. pl. 13: 182–183, 2015; 57 species according to Christenhusz & al., Plants of the world: 208, 2017), occurring in subtropical and tropical continental and SE Asia, one in the Pacific area; introduced (cultivated elsewhere). Culms arborescent, caespitose, with branches at each node. According to J.-B. Yang & al. (2010) the genus is not monophyletic but clustered with *Gigantochloa* and *Oxytenanthera*, and these genera would be better sub-summed within *Dendrocalamus*.

YANG, J.-B. & al. (2010). Phylogeny of Bambusa and its allies (Poaceae: Bambusoideae) inferred from nuclear GBSSI gene and plastid psbA-trnH, rpl32-trnL and rps16 intron DNA sequences. *Taxon* 59: 1102–1110.

[***Dendrocalamus strictus*** (Roxb.) Nees]; Renier, Fl. du Kwango 1: 63, 1948; Brunel & al., Fl. analyt. Togo in Englera 4: 597–598, 1984. – Icon.: Fl. China 22, Ill.: 35, 2007; Meredith, Pocket guide to Bamboos: 82, 2009 (branching node); Catasús Guerra in Rev. Jard. Bot. Nacl. 36: 124, 2015 (habit); Fl. Afr. Centr., Gramin., Introd. ...: 63, 2017.

bas.: *Bambos stricta* Roxb.

syn.: *Bambusa stricta* (Roxb.) Roxb.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Culms 7–20 m tall, 3–12 cm Ø, internodes 30–45 cm long, wall thick, culm often solid; branches several, main mid-culm ones 3; culm sheaths deciduous, orange-brown; leaf blades narrowly lanceolate, 5–30 × 1–3 cm; inflorescence generally unbranched, bearing clusters of pseudo spikelets (2.5–5 cm Ø) at nodes; spikelets 0.5–1.5 cm Ø, densely pubescent, with 2–4 fertile florets.

Inhabiting lowlands and drier regions (Meredith, o.c.: 77) and cultivated in semi-arid and humid areas up to 1000 m alt. Native in the Indian subcontinent and Indo-China. “The most common and the most useful bamboo in India” (Amer. Bamboo Soc., Bamboo species source list 17: 5, August 1977). In India cultivated for paper pulp.

In Africa cited from Togo and Zaire, Bas-Congo, Kisantu.

DESCHAMPSIA / 4

syn.: *Avenella* Bluff ex Drejer

Genus of some 40 species in temperate areas world-wide (Kellogg in K. Kubitzki, ed., Fam & genera vascul. pl. 13: 241, 2015; Christenhusz & al., Plants of the world: 208, 2017; Gonzáles & al. in Bot. J. Linn. Soc. 194: 326, 2020, give 37 species). S. America is an important centre of diversification with c. 15 spp. endemic to the continent (González & al. in System. Biodivers. 19: 454, 2021).

A recent study suggested the enlargement of *Deschampsia* by including the *Calamagrostis* Adans. subsect. *Stylagrostis* (Mez) Escalona [= *Deyeuxia* Clarion ex P. Beauv. sect. *Stylagrostis* (Mez) Rúgolo & Villav.] compromising c. 14 S. American species (González & al.: 326, 2020).

GONZÁLEZ, M. L. & al. (2020). Genomic differentiation of *Deschampsia* antarctica and *D. cespitosa* (Poaceae) based on satellite DNA. *Bot. J. Linn. Soc.* 194: 326–341.

SAARELA, J. M. & al. (2017). Molecular phylogenetics of cool-season grasses in the subtribes Agrostidinae, Anthoxanthinae, Aveninae, Brizinae, Calothecinae, Koeleriinae and Phalaridinae (Poaceae, Pooideae, Poaeae, Poaceae chloroplast group 1). *PhytoKeys* 87: 1–139 (Special Issue).

SORENG, R. J. (2019). A review of field guides to grasses of the western United States. *Plant Press N. S.* 22/4: 10.

SYLVESTER, S. P. & al. (2019). Páramo *Calamagrostis* s. l. (Poaceae): An updated list and key to the species known or likely to occur in páramos of NW South America and southern Central America including two new species, one new variety and five new records for Colombia; *PhytoKeys* 122: 29–78.

Deschampsia angusta Stapf & C. E. Hubb.; Agnew, Upl. Kenya wild flow., ed. 3: 412, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 93, 1970.

Perennial densely tufted grass; culms erect, to 75 cm tall; leaf blades flat, or rolled when dry, 10–30 cm × 3–5 mm, coarsely ridged above, ridges scabrid; panicle loose, oblong, c. 20 cm long, 5–6.2 cm Ø; spikelets 7–8 mm long, 2–3-flowered, green tinged with purple and with golden tips; lower glume linear – narrowly lanceolate; awn straight, capillary, to 5 mm long.

Marshy places near streamsides; lake margins in moor; 3600–4300 m alt.

Similar to *D. cespitosa* but spikelets longer.

Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 179–180, 1955 cite *D. angusta* auct. non Stapf & C. E. Hubb., sensu Hauman in Bull. Acad. Roy. Belg., Cl. Sci., Sér. 5, XIX: 703, 1933 and Le Ruwenzori: 253, 1937, as a synonym of *D. cespitosa* var. *oliveri* C. E. Hubb. (= *D. cespitosa* subsp. *cespitosa*).

D. cespitosa (L.) P. Beauv. subsp. ***cespitosa***, incl. many varieties, such as var. *setifolia* (W. D. J. Koch) Griseb., var. *setifolia* K. Schum., var. *oliveri* C. E. Hubb., var. *latifolia* (Hochst. ex A. Rich.) Hook. f., var. *mannii* C. E. Hubb., etc. (See World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew). – van der Zon, Gramin. Cameroun 2: 73, 1992; Puff & Sileshi, Pl. Simen: 246, 248, 2005; Agnew, Upl. Kenya wild flow., ed. 3: 412, 2013. – Icon.: Troupin, Fl. Rwanda 4: 229, 1988; Gibbs Russell & al., Grasses south. Afr.: 103, 1990; Fl. Eth. & Eritrea 7: 34, 1995 (spikelet); Velayos & al., Fl. Guinea Ecuat. 12: 180, 2015.

bas.: *Aira cespitosa* L.

syn.: *Agrostis cespitosa* (L.) Salisb.; *Aira cespitosa* var. *setifolia* W. D. J. Koch 1844; *A. latifolia* (Hochst. ex A. Rich.) Steud. 1854, nom. illeg., non Hook. 1840; *Deschampsia latifolia* Hochst. ex A. Rich.; etc. (See above).

Perennial densely tufted grass; culms erect, 0.3–1.6 m tall; leaves mostly basal; blades mostly 7–40 cm × 2–5 mm, flat or rolled

DESCHAMPSIA CESPITOSA

when dry, hard to the touch and cutting (coarsely ridged above, ridges scabrid); *ligule entire*, 5–11 mm long; panicle oblong, 10–30 × 3–7,5 cm, loose or rarely ± contracted; *spikelets* 2–6,5 mm long, 2(–3)-flowered, green or purple with a golden or silvery sheen; lower glume oblong-narrowly elliptic; *awn mostly straight*, capillary, 3–5 mm long.

Moorland in marshy places; clearings; waterlogged ground along stream banks; ± moist ground in grassland; 2900–4300 m alt.

Very variable. Cf. also J. Greimler & al. in Pl. Syst. Evol. 308/1: §9: 1–15 (2022); J. O. Chiapella & al. in PhytoKeys 181: 95–103 (2021).

Bioko/Fernando Poo; probably introduced in S. Africa, Lesotho (Chiapella in Novon 24: 343, 2016); subarctic and temperate regions of the world; tropical mountains; widespread in S. America together with *D. antarctica* E. Desv. (González & al., 2020: 326).

For new names and new combinations relating to other areas than tropical Africa Readers are invited to consult Chiapella (l. c.) and Vásquez & al. (Folia Bot. Extremadur. 13/2: 71, 2019).

D. flexuosa (L.) Trin. subsp. **afromontana** (C. E. Hubb.) J.-P. Lebrun & Stork [syn.: *Avenella flexuosa* (L.) Drejer subsp. *afromontana* (C. E. Hubb.) Veldk., Plant Divers. Evol. 131: 249, 2016; **bas.:** *Deschampsia flexuosa* (L.) Trin. var. *afromontana* C. E. Hubb. in D. Oliver & auct. suc., eds., Fl. Trop. Afr. 10/1: 93, 1937. Type: Volkens 1130 (B, holo-, lost; K), Tanzania, Mt Kilimanjaro above Marungu, 9000 ft.]. – Conert in G. Hegi, Ill. fl. Mitteleuropa, ed. 3, 1/3: 314, 1998 (map world, *D. flexuosa* incl. *D. antarctica*). – Icon.: Troupin, Fl. Rwanda 4: 229, 1988; Fl. Eth. & Eritrea 7: 34, 1995; Agnew, A field guide upl. Kenya grasses: pl. 1/16, 2006 (details); idem, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

[**bas.:** *Aira flexuosa* L.; **syn.:** *Avena flexuosa* (L.) Mert. & W. D. J. Koch; *Avenella flexuosa* (L.) Drejer]

syn.: *Deschampsia cespitosa* var. *setifolia* K. Schum. 1895, nom. illeg., non (W. D. J. Koch) Griseb. 1853 nec Fuss 1866; *D. ruwensorensis* Chiov.; and See above.

Perennial densely tufted grass, sometimes with slender wiry rhizomes; culms erect, 15–60 cm tall; leaves mostly basal; blades setaceous, 2–15 cm × < 1 mm, rolled, *stiffly flexuous*; ligule membranous deeply lobed, 1–3 mm long; panicle oblong, 5–15 cm long, loose, *flexuous*; spikelets 5–8 mm long, silvery, purplish or brownish, glistening; lemma apex notched, *awn* 4–10 mm long, *geniculate*.

Forests; rocky ledges; stony slopes or peaty soils in grassland and moor; grassy clearings; epiphytic on *Senecio* among mosses; lava pebbles; crevices in vertical rocks; steep slopes in *Erica* zone; 2280–4600 m alt.

Subsp. **flexuosa** occurs throughout the northern temperate zone; in NW Africa, in N. & S. America (map in Hegi, l. c.). – Icon.: Halvorsen in Listéra 36/1: 57–60, 2021.

Veldkamp divided his *Avenella flexuosa* into 8 subspecies, viz. subsp. *afromontana* (C. E. Hubb.) Veldk., subsp. *foliosa* (Hack.) Veldk., subsp. *iberica* (Rivas Mart.) García-Suárez & al., subsp. *ligulata* Stapf, subsp. *corsica* (Tausch) Veldk., subsp. *maderensis* (Hack. & Bornm.) Veldk., subsp. *mairei* (Sennen) Albers ex Veldk., and subsp. *stricta* (Willk. & Lange) Veldk.

D. mildbraedii Pilg.; Onana & Cheek, Red Data Book flow. pl. Cameroon: 377, 2011; Onana, Fl. Cameroun 40: 241–242, 2013. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 373, 1972; van der Zon, Gramin. Cameroun 2: 74, 1992; Velayos & al., Fl. Guinea Ecuat. 12: 181, 2015.

DESCHAMPSIA MILDBRAEDII

Perennial tufted grass 0,6–1 m tall; leaves mostly basal, in dense tufts, stiff, rush-like; blades junciform, pungent, convolute, 15–30 cm × < 1 mm; ligule hyaline, acute, 6–10 mm long; panicle loose or ± contracted, 10–25 cm long, to c. 10 cm Ø, branches undulate, filiform, fascicled, 4–7 cm long; spikelets 4–8 mm long, 2–3-flowered; lemma 4-dentate, awn 6–7 mm long, slightly *geniculate*.

Meadows; grassland; old lava flows; “can form waist-deep swards on volcanic ash deposits”; 2000–4000 m alt.

Bioko/Fernando Poo.

SYNONYMS:

Deschampsia cespitosa var. *latifolia* (Hochst. ex A. Rich.)

Hook. f. = **Deschampsia cespitosa** subsp. **cespitosa**

cespitosa var. *mannii* C. E. Hubb. = **D. cespitosa** subsp. **cespitosa**

cespitosa var. *oliveri* C. E. Hubb. = **D. cespitosa** subsp. **cespitosa**

cespitosa var. *setifolia* (W. D. J. Koch) Griseb.

= **D. cespitosa** subsp. **cespitosa**

cespitosa var. *setifolia* K. Schum. 1895, nom. illeg., non (W. D. J. Koch) Griseb. 1853 nec Fuss 1866

= **D. flexuosa** subsp. **afromontana**

flexuosa var. *afromontana* C. E. Hubb. = **D. flexuosa** subsp. **afromontana**

latifolia Hochst. ex A. Rich. = **D. cespitosa** subsp. **cespitosa**

ruwensorensis Chiov. = **D. flexuosa** subsp. **afromontana**

(DESMAZERIA)

Desmazeria unioides (C. Presl) Deflers

= **Halopyrum mucronatum**

DESMOSTACHYA / I

Monotypic genus.

Desmostachya bipinnata (L.) Stapf; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 220, 1994; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015; César & Chatelain, Fl. ill. Tchad: 201, 2019. – Icon.: Fl. Eth. & Eritrea 7: 132, 1995; Thulin, Fl. Somalia 4: 191, 1995; Poilecot, Boissiera 56: 234, 1999; Boulos, Fl. Egypt 4: 270, 2005; Cope, Fl. Arab. Penins. 5/1: 158, 2007.

bas.: *Briza bipinnata* L.

syn.: *Eragrostis bipinnata* (L.) K. Schum.; *Pogonarthria bipinnata* (L.) Chiov.; *Cynosurus durus* Forssk. 1775, nom. illeg., non L. 1753; *Desmostachya cynosuroides* (Retz.) Stapf ex Massey; *Eragrostis cynosuroides* (Retz.) P. Beauv.; *Poa cynosuroides* Retz.; *Megastachya bipinnata* (L.) P. Beauv.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Coarse perennial grass forming large tussocks with *widely spreading rhizomes*; culms 0,3–1,5 m tall; basal sheaths leathery, yellowish; blades linear, to 50 × 0,4–1,5 cm, margins scabrid, *tip sharply acute*; ligule a line of hairs; inflorescence linear, 20–60 cm long, with *numerous* spreading or ascending, crowded or spaced *spikes* to 4 cm long; spikelets laterally compressed, overlapping, 3–10 mm long, each with up to 18 flowers, falling entire.

Damp situations along banks of watercourses; coastal salt marshes; sandy soils; clay depression; sometimes abundant; 5–c. 1600 m alt.

DESMOSTACHYA BIPINNATA

N. Africa; Socotra; Saudi Arabia, Yemen, Oman, E-wards to Pakistan, SW Asia; Australia (Cocos Isl.).

SYNONYM:

Desmostachya cynosuroides (Retz.) Stapf ex Massey
= ***Desmostachya bipinnata***

(*DEYEUXIA*)

Deyeuxia mannii Hook. f. = ***Agrostis mannii***

(*DIANDROCHLOA*)

Diandrochloa diplachnoides (Steud.) A. N. Henry
= ***Eragrostis japonica***
japonica (Thunb.) A. N. Henry = ***E. japonica***
namaquensis (Nees ex Schrad.) De Winter = ***E. japonica***
pusilla (Hack.) De Winter = ***E. pusilla***

(*DIANDROSTACHYA*)

Diandrostachya chevalieri (Stapf) Jacq.-Fél.
= ***Loudetiopsis chevalieri***
chrysothrix (Nees) Jacq.-Fél. = ***L. chrysothrix***
fulva (C. E. Hubb.) Jacq.-Fél. = ***L. chrysothrix***
glabrinodis (C. E. Hubb.) Jacq.-Fél. = ***L. kerstingii***
kerstingii (Pilg.) Jacq.-Fél. = ***L. kerstingii***
scaettae (A. Camus) J. B. Phipps = ***L. scaettae***

(*DIASTEMANTHE*)

Diastemanthe platystachys Steud.
= ***Stenotaphrum secundatum***

DICHANTHIUM / 2

syn.: *Eremopogon* Stapf

Genus of some 20 species native to the Old World tropics, from Africa through India to SE Asia, Australia. Three species have been introduced into N. America as forage grasses, and they are established from Texas to Florida and in N Mexico, viz. *D. annulatum*, *D. aristatum*, and *D. sericeum* (Felger & al. in Sida 21: 1905, 2005).

Inflorescence of single or subdigitate racemes; spikelets conspicuously imbricate.

Similar to *Bothriochloa*, but the lowest (or only) raceme emerging from the topmost leaf sheath (Agnew, Upl. Kenya wild flow., ed. 3: 443, 2013). Intergeneric hybrids are known. Also closely resembling *Andropogon* in facies.

Dichanthium annulatum (Forssk.) Stapf; Rev. Bot. Appl. Agric. Trop. 13/148: 861, 1933; Thulin, Fl. Somalia 4: 255–256, 1995; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 273, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 248, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Bosser, Gramin. pâtur. cult. Madagascar: 238, 1969; Gibbs Russell & al., Grasses south. Afr.: 105, 1990 (var. *papillosum*); Fl. Eth. & Eritrea 7: 309, 1995; Poilecot, Boissiera 50: 495, 1995; idem, ibid. 56: 532, 1999 (var. *annulatum*); Fl. Zambes. 10/4: 39, 2002; Boulos, Fl. Egypt 4: 335, 2005; Cope, Fl. Arab. Peninsula 5/1: 280, 2007; Müller, Grasses Namibia: 65, 2007 (var. *papillosum*); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 209, 2012;

DICHANTHIUM ANNULATUM

Agnew, Upl. Kenya wild flow., ed. 3: pl. 191, 2013; Ibrahim & al., Grasses Mali: 53, 2018.

bas.: *Andropogon annulatus* Forssk.

syn.: *Sorghum annulatum* (Forssk.) Kuntze; *Dichanthium nodosum* Willemet 1796, nom. superfl.; see under the varieties below.

Perennial densely tufted grass; culms 0.2–1 m long, geniculately ascending, with conspicuously bearded nodes, glabrous below inflorescence; leaf blades 3–30 cm long, 2–7 mm wide; inflorescence of 1–15 subdigitate, shortly pedunculate racemes, each 3–7 cm long, peduncles glabrous; spikelets subimbricate with 0–6 smaller homogamous pairs at base; spikelets 2–6 mm long, hairy, one sessile with awn 0.8–2.5 cm long.

Dry open places subject to grazing or disturbance; swampy depressions, particularly on black clays; sandy riverbeds and river margins; lake shores; grassy floodplains; riverine forest margins; occasionally roadsides; cultivated ground; stony sands, close to gueltas with *Eragrostis barrelieri*, *E. cilianensis*, *E. pilosa*, *E. japonica*, *Cynodon dactylon*, *Panicum turgidum*; fallows; also ruderal with *Eleusine indica*, *Sporobolus pyramidalis*, *Dactyloctenium aegyptium*; thickets on gneiss cliff on river banks; sometimes very common; 0–2600 m alt.

Tropical & subtropical Old World, from N Africa, Senegal, Cape Verde Isl., Namibia, Botswana, Caprivi Strip, S. Africa, Swaziland; Madagascar, Mauritius, E-wards in Asia from the Arabian Peninsula to India, Indonesia, New Guinea, Australia. Introduced elsewhere (as forage grass), e. g. Canary Isl. (Bot. Macaron. 27: 137–140, 2008), Madeira; Italy, Sicily (Flora Mediter. 6: 197, 1996; Sida 21: 1905–1908, 2005); Pacific islands, tropical America. – Record from New Zealand erroneous according to Gardner in Auckland Bot. Soc. J. 75: 129, 2020.

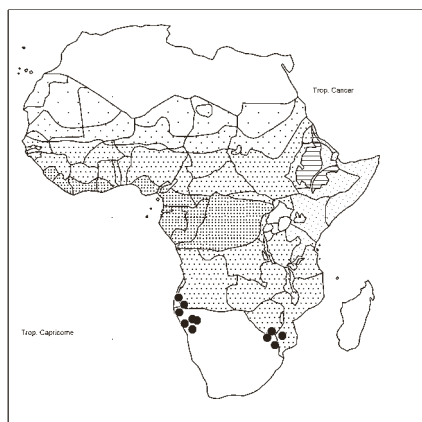
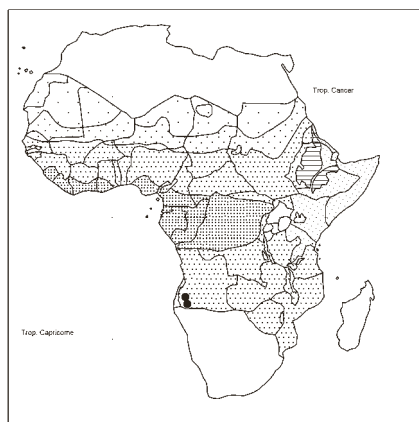
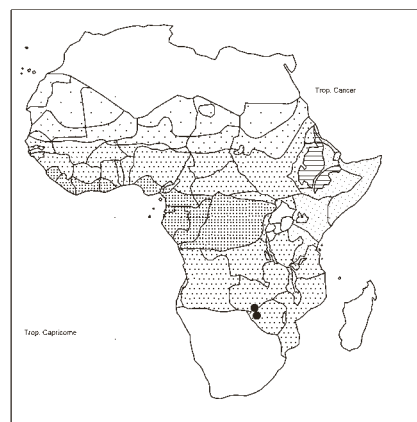
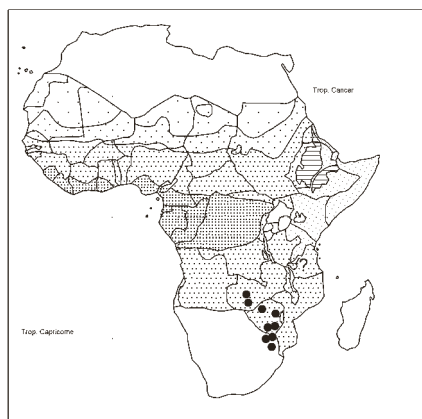
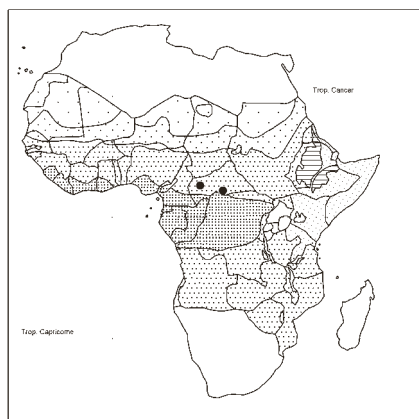
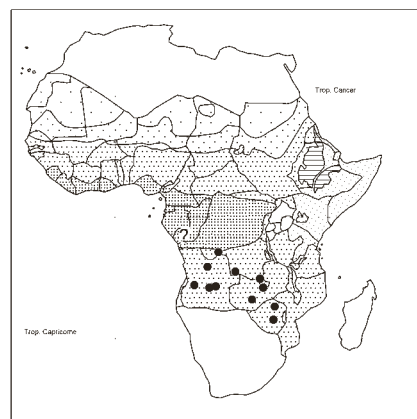
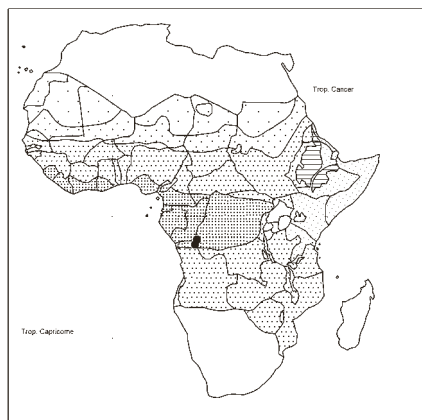
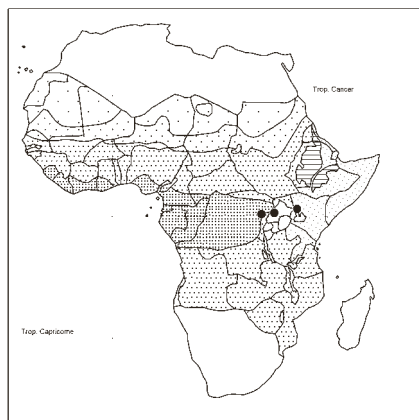
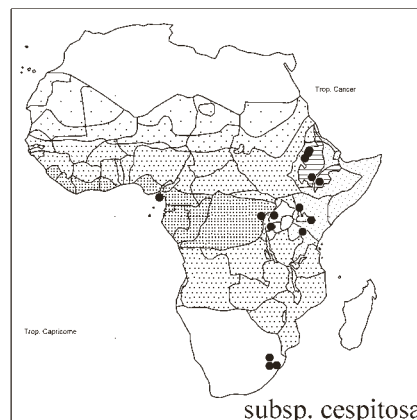
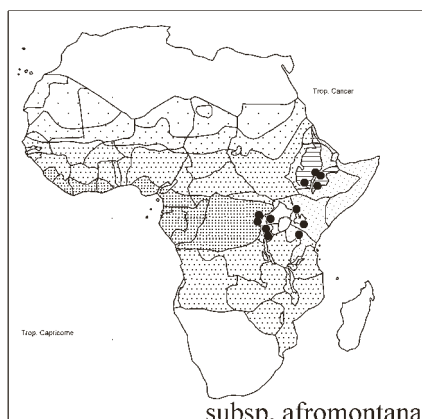
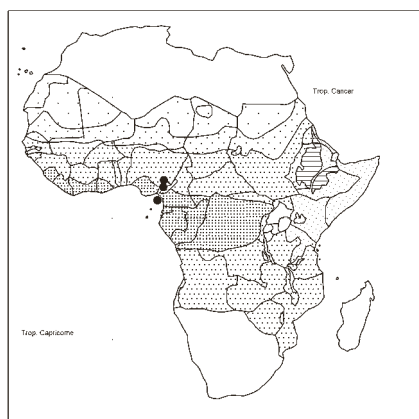
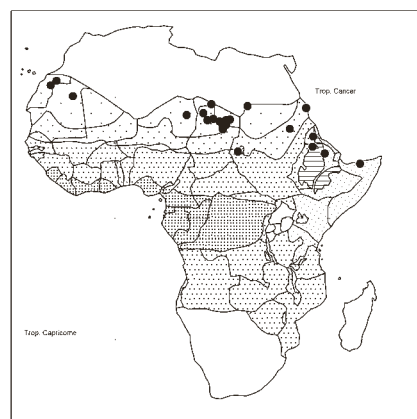
Comprises 2 vars., based on hairiness of the sessile spikelet, but there is some overlap: – var. ***annulatum*** diploid and tetraploid, with lower glume of sessile spikelet pubescent to pilose below middle, bulbous-based hairs mainly on margins [syn.: *Andropogon scandens* Roxb.; *A. comosus* Link 1827, nom. illeg.; *A. obtusus* Nees ex Hook. & Arn.; *A. annulatus* var. *decalvatus* Hack.; *Dichanthium annulatum* var. *decalvatum* (Hack.) Maire & Weiller; etc.]; – var. ***papillosum*** (Hochst. ex A. Rich.) de Wet & Harlan, an apomictic hexaploid (Bol. Soc. Argent. Bot. 12: 206–227, 1968) derivative of var. *annulatum*, tends to have a more robust habit and larger spikelets (c. 4 mm), with lower glume of sessile spikelet pilose to villous with a distinct fringe of bulbous-based hairs [bas.: *Andropogon papillosus* Hochst. ex A. Rich.; syn.: *A. annulatus* Forssk. var. *papillosus* (Hochst. ex A. Rich.) Hook. f.; *Dichanthium papillosum* (Hochst. ex A. Rich.) Stapf; *Sorghum papillosum* (Hochst. ex A. Rich.) Kuntze].

(***D. aristatum*** (Poir.) C. E. Hubb.); Fl. Trop. E. Afr., Gramin. 3: 723, 1982; Gibbs Russell & al., Grasses south. Afr.: 105, 1990; Bothalia 30: 201, 2000 (chromosome number); Fl. Zambes. 10/4: 40–41, 2002; Felger & al. in Sida 21: 1905 (2005); Cope, Fl. Arab. Penins. 5/1: 279, 2007. – Icon.: Fl. China 22, Illustr.: 846, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 267, 2012 (inflorescence); Shaikh & al. in Phytotaxa 530: 103–104, 2022 (typification).

bas.: *Andropogon aristatus* Poir.

syn.: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass of robust suberect stature; culms 0.2–1.1 m long, geniculately ascending, strongly pilose below inflorescence, nodes glabrous; leaf blades 3–25 cm long, 2–7 mm wide;

*Danthoniopsis dinteri**Danthoniopsis lignosa**Danthoniopsis petiolata**Danthoniopsis pruinosa**Danthoniopsis simulans**Danthoniopsis viridis**(Danthoniopsis) wasaensis**Deschampsia angusta**Deschampsia cespitosa*
subsp. *cespitosa**Deschampsia flexuosa*
subsp. *afromontana**Deschampsia mildbraedii**Desmostachya bipinnata*

DICHANTHIUM ARISTATUM

inflorescence of 1–6 subdigitate shortly pedunculate racemes, peduncles villous; racemes 2–8 cm long; spikelets imbricate, 2–5 mm long.

An introduced fodder grass. Damp places on disturbed ground; 100–500 m alt.

Native in S Asia from India to S China, Malesia. Introduced in E Africa from S Tanzania to S. Africa, Madagascar, W Indian Ocean Isl.; Oman, Yemen; New Guinea, Australia, Pacific islands; the Americas from Texas to Florida, N Mexico, C. & N S. America.

Very similar to *D. caricosum*, and sometimes regarded as conspecific, but genetically isolated from it (Fl. Trop. E. Afr., l. c.).

(**D. caricosum** (L.) A. Camus); Fl. Trop. E. Afr., Gramin. 3: 725, 1982; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 221, 1994; Cope, Fl. Arab. Penins. 5/1: 281, 2007. – Icon.: Fl. China 22, Ill.: 847, 2007; Mahesh & al. in Ind. J. Forestry 43: 135, 2020.

bas.: *Andropogon caricosus* L. 1763. – A. R. Chorghé & al., (2455) Proposal to conserve the name *Andropogon caricosus* (*Dichanthium caricosum*) (*Poaceae*) with a conserved type in Taxon 65: 885–886, 2016. Recommended, Taxon 66: 507–508, 2017.

syn.: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial creeping stoloniferous tufted grass; culms blue-tinged, 0,25–1 m long, geniculately ascending, nodes glabrous or bearded; leaf blades 3–20 cm long, 2–7 mm wide; inflorescence of 1–4 subdigitate shortly pedunculate racemes each 3–7,5 cm long, peduncles glabrous; spikelets imbricate, 3–4 mm long; upper glume with awn 1–2,5 cm long.

Disturbed places; 100–1000 m alt.

Introduced in Tanzania, also reported from N Nigeria; native in S & SE Asia from India, Sri Lanka E-wards to W Malesia; introduced in New Guinea, Australia, Pacific islands, tropical America. Helps in controlling soil erosion.

D. foveolatum (Delile) Roberty; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 221–222, 1994; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 274, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Thulin, Fl. Somal. 4: 255, 1995; Fl. Eth. & Eritrea 7: 309, 1995; Poilecot, Boissiera 56: 533, 1999; Boulos, Fl. Egypt 4: 335, 2005; Cope, Fl. Arab. Penins. 5/1: 280, 2007; Ibrahim & al., Grasses Mali : 54, 2018; César & Chatelain, Fl. ill. Tchad: 250, 2019.

bas.: *Andropogon foveolatus* Delile

syn.: *A. foveolatus* var. *plumosus* A. Terracc.; *Sorghum foveolatum* (Delile) Kuntze; *Eremopogon foveolatus* (Delile) Stapf; *E. strictus* (Roxb.) A. Camus; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial, densely tufted, slender grass with silky hairy basal leaf sheaths; culms ascending, 15–80 cm long, wiry, nodes bearded; leaf blades 1–15 cm long, 1–3 mm wide, densely papillose above; inflorescence a solitary raceme borne on a slender peduncle exerted from a tightly cylindrical spatheole; racemes axillary, single or in loose clusters, 1,5–4,5 cm long, with 0–2 basal pairs of homogamous spikelets, internodes and pedicels ciliate with long silky hairs; sessile spikelet 2,5–4 mm long; awn 1,2–1,8 cm long.

Semi-desert plains and grassland; thin dry bushland; on sandy or loose stony soils; open bushland on rocky hillsides; sandy coastal plains; steppe formations with *Panicum turgidum*, *Aristida funiculata*, *A. mutabilis*, *Cymbopogon schoenanthus*, *Tragus racemosus*, *Coelachyrum brevifolium*; also with *Dichanthium annulatum*,

DICHANTHIUM FOVEOLATUM

Stipagrostis acutiflora, *Aristida adscensionis*, *Chloris virgata*; 0–2700 m alt. – A pioneer of shallow sandy soils.

Macaronesia; Cape Verde Isl.; Morocco, Algeria, Egypt; Gulf States, Kuwait, Oman, Yemen; from Iran, Pakistan, India, Sri Lanka, W. Himalaya to Burma. – Not in Jebel Uweinat (Sudan, fide J. Léonard in Bull. Jard. Bot. Natl. Belg. 66: 287, 1997).

A valuable desert fodder for camels.

Confused with *Bothriochloa insculpta* but *D. foveolatum* lacks the pedicels and rachis-internodes with a median translucent line.

(**D. sericeum** (R. Br.) A. Camus subsp. **sericeum**); Fl. Zambes. 10/4: 41–42, 2002. – Icon.: Clarke, Name those grasses: pl. 22c–e, 2015.

bas.: *Andropogon sericeus* R. Br.

syn.: *Sorghum sericeum* (R. Br.) Kuntze; *Dichanthium sericeum* var. *molle* (F. M. Bailey) de Wet & Harlan; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass with short rhizomes; culms to 0,8–1 m tall, erect, robust, branching at base, nodes bearded; leaf sheaths glabrous to pilose; blades linear-lanceolate, to 15 cm long; inflorescence of 1–6–15 digitate, (sub-)sessile, white-villous racemes, each to 6 cm long; rachis breaking up at maturity, the spikelets falling in pairs; sessile spikelet with white silky hairs, c. 4 mm long, with tubercle-based cilia to 6 mm long along margins; awn c. 3 cm long.

Cultivated in tropical Africa, Zimbabwe; c. 1460 m alt.

Native to SE Asia, New Guinea, mainland Australia, Pacific islands. Introduced in S N. America (Felger & al. in Sida 21: 1905, 2005).

Subsp. **humilis** (J. M. Black) B. K. Symon is an annual with shorter racemes and shorter spikelets, described from Australia.

SYNONYMS:

Dichanthium annulatum (Forssk.) Stapf. var. *decalvatum* (Hack.) Maire & Weiller = **Dichanthium annulatum** var. **annulatum**

bladhii (Retz.) Clayton = **Bothriochloa bladhii**

condylotrichum (Hochst. ex Steud.) Roberty

= **Euclasta condylotricha**

insculptum (Hochst. ex A. Rich.) Clayton

= **Bothriochloa insculpta**

intermedium (R. Br.) de Wet & Harlan = **B. bladhii**

nodosum Willemet 1796 = **Dichanthium annulatum** var. **annulatum**

papillosum (Hochst. ex A. Rich.) Stapf = **D. annulatum** var. **papillosum**

radicans (Lehm.) Clayton = **Bothriochloa radicans**

sericeum (R. Br.) A. Camus var. *molle* (F. M. Bailey)

de Wet & Harlan = **Dichanthium sericeum**

(**DIECTOMIS**)

Diectomis fasciculata P. Beauv. = **Andropogon fastigiatus**
fastigiata (Sw.) P. Beauv. = **A. fastigiatus**

DIGITARIA / 92

Digitaria Haller 1768, nom. cons., non Heister ex Fabricius 1759, nom. rej.

Genus of some 261 species (Christenhusz & al., Plants of the World: 208, 2017), or 277 species (according to Kellogg in Kubitzki, ed., Families and genera of vascular plants: 277, 2015). According to Kellogg (l.c.) DNA sequence data suggest that *Digitaria* might be para- or polyphyletic. However, species sampling is insufficient.

In our area no ecology is recorded for 3 species, and in 2 species the fruit is not seen. As many as 16 species (= c. 18%) are known from the type only.

The genus *Digitaria* occurs in tropical and warm-temperate regions of the world; mostly in open habitats; many species are weeds (cf. H. Krähmer, ed., Atlas of weed mapping: 76, 78, 2016). *D. exilis* and *D. iburua* are grown for grain in parts of Africa. – Species are not easy to name.

Inflorescence of spike-like main branches. The grouping of the spikelets on the raceme is the more practical aid to identification; species with regularly paired spikelets present no difficulty; but for species with spikelets grouped in clusters of 3 or more, care must be taken, as often the longest pedicel of a group is possibly fused to the raceme so that spikelets appear alternately paired and single, or sometimes 1 spikelet may be vestigial and the spikelets may be paired toward the raceme tips.

Many species are very variable: spikelet pubescence (with hairs capitate, verrucose, clavate, with crooked tips, hairs extending beyond the tip of spikelet, etc.), lemma nervation, presence or absence of upper glume, inflorescence with only 1 raceme. There are also a number of complexes of intergrading species, e.g. *D. eriantha*, *D. swazilandensis*, *D. polyphylla*, *D. argyrogypsa*, *D. natalensis*, *D. megasthenes*, *D. milanijana* (Fl. Zambes. 10/3: 172–175, 1989). It is the same situation for *D. arushae*, *D. gazensis*, *D. leptorhachis*, *D. macroblephara*, *D. nodosa*, *D. pearsonii*, *D. rivae*, *D. rukwae* (Fl. Trop. E. Afr., Gramin. 3: 645, 1982).

Below we only give a brief description of each species.

BOONSUK, B. & al. (2016). A taxonomic revision of the genus *Digitaria* (Panicoideae: Poaceae) in mainland Southeast Asia. *Phytotaxa* 246: 248–280.

HENRARD, J. T. (1950). *Monograph of the genus Digitaria*. Universitaire Pers Leiden. XXI + 999 pp.

HILU, K. W. & al. (1997). Fonio millets: Ethnobotany, genetic diversity and evolution. *S. Afric. J. Bot.* 63: 185–190 [*D. exilis*, *D. iburua*, *D. longiflora*, *D. ternata*; Togo, Nigeria].

VEGA, A. S. & al. (2009). A morphology-based cladistic analysis of *Digitaria* (Poaceae, Panicoideae, Paniceae). *Syst. Bot.* 34: 312–323.

Digitaria abyssinica (Hochst. ex A. Rich.) Stapf, incl. var. *micrantha* Peter and var. *scalarum* (Schweinf.) Stapf, but excl. var. *velutina* (Chiov.) Henrard (= *D. pearsonii*); Burkill, Useful pl. W. Trop. Afr., ed. 2: 222, 1994; Ngumbau & al. in PhytoKeys 147: 150, 2020 (coastal Kenya). – Icon.: Henrard, o.c.: 1, 211, 308, 448, 668, 701, 727, 836, 1950; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 77, 1955 (as *D. scalarum*); Fl. Trop. E. Afr., 3: 642, 1982; Troupin, Fl. Rwanda 4: 232, 1988; Fl. Zambes. 10/3: 138 pl. 40/32, 1989 (spikelet); Fl. Eth. & Eritrea 7: 255, 1995; Cope, Fl. Arab. Penins. 5/1: 233, 2007 (inflor.); Agnew, Upl. Kenya wild flow., ed. 3: pl. 190, 2013.

bas.: *Panicum abyssinicum* Hochst. ex A. Rich.

syn.: *P. muticum* A. Rich. 1851, non Forssk. 1775, nom. illegit.; *P. scalarum* Schweinf., incl. var. *elatus* Chiov.; *P. kafuense* K. Schum.; *P. hackelii* Pilg. 1901, nom. illeg.; *Digitaria mutica* Rendle; *D. somalensis* Chiov.; *D. eichingeri* Mez; *D. merkeri* Mez; *D. ciliaris* Vanderyst 1925,

DIGITARIA ABYSSINICA

nom. prov. et illeg., non (Retz) Koeler 1802; *D. vestita* Fig. & De Not., incl. subvar. *elgonensis* (C. E. Hubb. & Snowden) Henrard and var. *scalarum* (Schweinf.) Henrard; *D. scalarum* (Schweinf.) Chiov., incl. var. *elgonensis* C. E. Hubb. & Snowden; *D. hackelii* (Pilg.) Stapf; *D. tangaensis* Henrard; *D. velutina* (Forssk.) P. Beauv. var. *glabrescens* Gilli; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Creeping mat-forming perennial with *extensive wiry* rhizomes; culms 5–60 cm tall, weak, decumbent below; basal sheaths usually glabrous, occasionally pubescent or villous; leaf blades linear-lanceolate, 2–12 × 0,3–1 cm; inflorescence of 2–25 racemes along a central axis 1–9 cm long; racemes 2–11 cm long; *spikelets paired, quite glabrous*, 1,5–2,5 mm long.

Ruderal species, widespread in moister districts; grassland, bushland, fallows; forest edges and clearings; riverbanks; disturbed damp grassland; along roadsides; garden edges; pioneer coloniser of disturbed land; serves as a soil-binder in anti-erosion work; a serious weed of *Sorghum*; sandy loam, black clay, often forming close swards; “this is one of the worst troublesome weeds in the farmland community, but it is a good indicator of soil fertility” (Lidia 5/1: 6, 2000); 0–3000 m alt.

Botswana, Namibia, S. Africa, Swaziland, Lesotho; Madagascar, Comoros, Seychelles; Saudi Arabia, Yemen; Sri Lanka; SE Asia (Boonsuk & al. 2016: 254); introduced in Hawaii, C. America.

D. scalarum is sometimes separated from *D. abyssinica*, in particular in shape and texture of lower glume, a very thin character.

Confused with *D. pearsonii* and *D. velutina*.

D. acuminatissima Stapf, incl. var. *conformis* Henrard, subvar. *grandiflora*, and subsp. *inermis* Goetgh.; Clayton in Kew Bull. 29: 517, 1974; Klaassen & Craven, Checklist grasses Namibia: 107, 2003; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015; César & Chatelain, Fl. ill. Tchad: 237, 2019. – Icon.: Henrard (1950): 6, 7; Fl. Zambes. 10/3: 139 pl. 41/47, 1989 (spikelet); Ibrahim & al., Grasses Mali: 55, 2018.

syn.: *D. ciliaris* sensu Wickens p.p., non (Retz.) Koeler

Annual; culms 0,3–1,2 m tall, rooting at lower nodes; leaf blades 3–25 × 0,3–1 cm; inflorescence of 4–20 racemes on an axis 1–10 cm long; racemes stiff, 7–25 cm long; spikelets *binate*, 2,5–4 mm long, *acuminate* (narrowly).

Riversides; damp rocks; floating aquatic in partial dry area; overgrazed land; wet grassland; flood plains; 50–900 m alt. – Nowhere common.

Botswana, Namibia.

Similar to *D. sanguinalis* (introduced) but distinguished from the latter by the narrow acuminate spikelets extending beyond the fruit, and to *D. milanijana* (perennial).

D. adamaouensis Zon; Onana & Cheek, Red Data Book flow. pl. Cameroon: 377, 2011; Onana, Fl. Cameroun 40: 242, 2013. – Icon.: van der Zon, Gramin. Cameroun 2: 328, 329, 1992.

Annual herb 0,8–1,1 m tall, culms branched at base; leaf blades linear, 8–12 cm × 3–4 mm, sheaths ± glabrous, auriculate; inflorescence a panicle of 6–8 pedunculate racemes on a common axis 8,5–11 cm long; *spikelets paired*, ellipsoid, c. 2 mm long, pedicels 1–3 mm long; outer glume reduced (0,7 mm long); upper lemma *greyish brown*.

Inundated grassland.

Near *D. leptorhachis* but whose lower glume is absent or very small (an obscure rim), and upper lemma dark, and its basal leaf sheaths are velutinous or hirsute.

DIGITARIA

D. angolensis Rendle – Henrard, o.c.: 783, 1950; Fl. Zambes. 10/3: 138 pl. 40/42, 1989 (spikelet); S. Afric. J. Bot. 72: 560–561, 2006. syn.: *D. yokoensis* Vandyerst; *D. verrucosa* C. E. Hubb.; *Panicum angolense* (Rendle) K. Schum.

Annual herb; culms 0,15–1,2 m tall, erect or straggling; leaf blades linear, 2–20 × 0,4–1 cm; inflorescence of 2–9 subdigitate racemes; these 3–20 cm long with spikelets in groups of 3–4 on a *triquetrous* rachis; spikelets c. 2 mm long; back of upper glume covered in soft shaggy *purplish verrucose* hairs extending very slightly beyond the tip.

Wooded grassland; weed of arable land and sandy roadsides; 850–2600 m alt.

S. Africa.

Spikelets pseudoviviparous (Vega & al. in S. Afric. J. Bot. 72: 559–564, 2006), already observed by Rendle (“often viviparous”), Cat. Welwitsch’s Afric. pl. 2/1: 165, 1989.

D. appropinquata Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 403, 1975 (spikelet); Fl. Zambes. 10/3: 138 pl. 40/33, 1989 (idem).

Annual herb, loosely caespitose or solitary growing; culms 15–30 cm tall, *strictly erect*, glabrous, nodes dark; leaf sheaths loosely hairy from minute tubercles; blades linear, 3–6 × 0,1–0,2 cm; inflorescence of 2–4 racemes, 1–4 cm long, erect, solitary along a short slender axis; spikelets 1,7–2 mm long, pedicels 2-nate.

Shallow soil over rocks; 1500 m alt.

Known only from the type collected in 1943.

Near *D. trinervis* (with creeping culms and spikelets 2,1–2,4 mm long).

D. argillacea (Hitchc. & Chase) Fernald, incl. fa. *asetosa* H. Scholz, and var. *nulliseta* Vega & Rúgolo; Clayton in Kew Bull. 29: 517, 1974. – Icon.: Henrard (1950): 45, 384 (as *D. lecardii*); Poilecot, Boissiera 50: 427, 1995; idem, ibid. 56: 460, 1999; Pl. Syst. Evol. 267: 172, 2007 (spikelet, *D. lecardii*); César & Chatelain, Fl. ill. Tchad: 236, 2019 (spikelet).

bas.: *Syntherisma argillacea* Hitchc. & Chase

syn.: *Digitaria lecardii* Mez 1921, nom. illeg., non (Pilg.) Stapf 1919; *D. lecardii* (Pilg.) Stapf 1919; *D. hirtigluma* Hitchc.; *Panicum sanguinale* L. var. *lecardii* Pilg.

Annual herb to 0,6–1,2 m tall; culms erect, simple, or ramose, glabrous; nodes with long erect hairs at top; leaf blades linear, 20–30 cm × 3–5 mm, flat, flaccid, glabrous or pilose near base; inflorescence 15–18 cm long, of 5–12 erect flexuose racemes 10–15 cm long; spikelets by 3, each c. 2 mm long, with hairs mixed with *stiff glistering bristles*; fruit *black*.

Open savannas; fallow; clayey soils in depressions; marigot sides; sandy ground; clearings in dry, low forests with *Pennisetum pedicellatum*, *Sporobolus festivus*, *Elionurus elegans*, *Schizachyrium exile*, *Rhytachne triaristata*, *Microchloa indica*, *Digitaria gayana*; waste places; weed of cultivations.

Disjunct distribution: from W Africa to Tchad/Central African Republic; S USA (Texas), C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. West Indies: 730, 2012).

Near *D. delicatula* (without stout bristles on the spikelets but with appressed-clavate short hairs).

D. argyrograpta (Nees) Stapf; Gibbs Russell & al., Grasses south. Afr.: 108, 1990. – Icon. Henrard (1950): 47; Chippindall, Grasses past. S. Africa: 416, 1955; Fl. Zambes. 10/3: 139 pl. 41/54, 1989 (spikelet); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 232, 2012.

DIGITARIA ARGYROGRAPTA

bas.: *Panicum argyrograptum* Nees

syn.: *P. commutatum* var. *argyrograptum* (Nees) Hack. ex T. Durand & Schinz

Perennial loosely tufted herb on a short rhizome; culms 20–60 cm long, ascending, glabrous, nodes dark; leaf sheaths glabrous to loosely hairy; blades 3–10 cm × 1–3 mm, flat; inflorescence 5–10 cm long of 2–3 *racemes* these 4–10 cm long, *stiffly erect, close together* and seldom of equal length, 1–2 subsessile, 1 pedunculate, often forming a *silvery pencil*; spikelets 2–4 mm long, lower lemma as long as spikelet.

Grassland clearings in open woodland.

S. Africa, Swaziland.

D. argyrotricha (Andersson) Chiov.; Fl. W. Trop. Afr., ed. 2, 3/2: 453, 1972; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 223, 1994; Sabonet News 7/3: 216, 2002; Poilecot, Guide Liberian grasses: 167, 2015. – Icon.: Henrard (1950): 49 (spikelet); Andrews, Flow. pl. Sudan 3: 436, 1956; Bosser, Gram. patur. cult. Madagascar: 388, 1969; Fl. Zambes. 10/3: 138 pl. 40/44, 1989 (spikelet).

bas.: *Panicum argyrotrichum* Andersson

syn.: *P. argyrotrichum* var. *tenue* Andersson

Annual herb tufted or with base of culms decumbent, and forming stolons; culms geniculately ascending, 30–70 cm long, nodes dark, glabrous; leaf blades linear, 2–9 × 0,2–1 cm; inflorescence of 2–5 digitate racemes on a short common axis; racemes 6–16 cm long; spikelets ternate on a ribbon-like *winged* rachis; spikelets 1,5–3 mm long; upper glume and lower lemma similar, obscured by copious soft *snow-white* (occasionally purplish) fluffy *verrucose* hairs extending 1 mm beyond the tip of the spikelet; fruit *golden brown*.

Sandy soils of seashores, coastal bushland; disturbed sandy soils; weed of fallow land of cultivation (tapioca); 0–1500 m alt. – Inland occurrences rare.

S. Africa. – Perhaps adventitious in W. Africa, Madagascar.

Near *D. gayana*, but in that species the hairs of the lower lemma extend to 2–4 mm beyond the tip of spikelet; also confused with *D. longiflora* but that species has light brown to light grey fruit.

D. aridicola Napper; Ngumbau & al. in PhytoKeys 147: 151, 2020.

Tufted perennial; culms 0,3–1 m tall, wiry, geniculately ascending (lower part sometimes forming stolons), bulbous and clad in tomentose scales at base; leaf blades 3–12 cm × 2–4 mm; inflorescence of 12–35 long *stiffly radiating* racemes, lower whorled, upper irregularly disposed upon a common axis to 6–18 cm long, *whole inflorescence breaking off at maturity* (as in *D. pennata*); racemes to 10–25 cm long; spikelets 1,1–1,3 mm long, *glabrous*.

Dry open deciduous bushland, typically with *Commiphora*, in shade; 200–600 m alt.

Near *D. pennata*.

D. aristulata (Steud.) Stapf – Icon.: Henrard (1950): 51; Ibrahim & al., Grasses Mali: 55, 2018.

bas.: *Panicum aristulatum* Steud.

Creeping *Cynodon*-like annual 5–30 cm tall; culms tufted, ascending, primary culms many, secondary, 4–6 noded, glabrous; lower leaf sheaths of primary culms usually slipping off the culms, softly hairy; sheaths longer than blades; blade flat, with sometimes slightly rounded base, tapering to an acute point, 1–3 × 0,2–0,3 cm, softly, loosely hairy; inflorescence of 3–5 sessile, *digitate*, sub-erect, rather stiff racemes 2–5 cm long; spikelets adpressed,

DIGITARIA ARISTULATA

densely crowded at base, 1,7 mm long, *obscurely* puberulous with *verrucose* hairs; upper lemma with an *awn-point* 1,3 mm long. Sandy river banks, forming swards on marigot sides.

D. arushae Clayton; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013.

Perennial herb with a knotty rootstock in *tomentose* scales; culms 0,5–1 m tall, hard, almost cane-like, geniculately ascending; leaf blades 3–15 cm × 3–9 mm; inflorescence lanceolate, 8–20 cm long, of numerous spreading racemes 2–6 cm long in *untidy whorls* on a long central axis; spikelets paired, c. 2 mm long, on a triquetrous rhachis sparsely adorned with *long glistening hairs* especially towards the base.

Open parts of *Lippia*, *Lantana*, *Aspilia* thicket on stony ridge; stream bank on rubble soil; flat ground by river on volcanic sand; open woodland on loose coarse grained grey alluvial sand; secondary grassland on escarpment foot detritus; 1000–2000 m alt. Closely resembling *annual D. perrottetii*; distinct from *D. rukwae* by the *absence of creeping rhizomes*; distinct from *D. rivae* by the *whorled* inflorescence, shorter blades (3–15 cm) with conspicuously crinkled margins.

D. asthenes Clayton

Weakly straggling annual herb; culms 30–40 cm long, very slender; leaf blades 2–6 cm × 1–2 mm; inflorescence of 2 racemes each 2–5 cm long; spikelets binate, 1,8–2,2 mm long; lower lemma as long as the spikelet, 5–7-nerved, lateral nerves contiguous and stiffly ciliate with *glossy bristles*, *white* or *brown*, to 1 mm long. Sandy grit at base of rock; damp soil in open places; 900 m alt. Not in Zambia (specimen 4613 = *D. sanguinalis*, “a delicate edaphic hunger form” according to Flora Zambes. 10/3: 168, 1989). Known only from the type collected in 1963.

D. atrofusca (Hack.) A. Camus; Clayton in Kew Bull; 29: 519, 1974; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire, 248, 2011. – Icon.: Henrard (1950): 59, 437, 677, 1950; Bosser, Gramin. patur. cult. Madag.: 384, 1969; Fl. Zambes. 10/3: 136 pl. 38/8, 1989; Poilecot, Boissiera 50: 429, 1995.

bas.: *Panicum atrofuscum* Hack.

syn.: *Digitaria seminuda* Stapf; *D. masembaensis* Vanderyst
Short lived perennial herb on a short weak rhizome; culms 0,6–1,5 m long, geniculately ascending or straggling; leaf blades linear, 15–45 × 0,2–1 cm; inflorescence of 3–11 subdigitate racemes, each 8–25 cm long, on a well-developed common axis 2–4 cm long; spikelets in groups of 2–3 on a ribbon-like winged rachis; spikelets 1,8–2,7 mm long, *glabrous to pubescent*; fruit *dorsally flattened*, dark brown to black (mature).

Swamps, marigot sides, inundated places, dambo; with *Paspalum scrobiculatum*, *Rhytachne rottioides*, *Echinochloa colona*, *Digitaria debilis*, *Panicum fluviicola*, *P. congoense*, *P. tenellum*; savannas near lagoon; inselbergs (Belg. J. Bot. 139: 74, 2006); also ruderal; near sea-level–1600 m alt.

Madagascar.

May be confused with *D. ternata* but it lacks the characteristic spikelet nervation, clavate hairs, pubescent pedicel-tips.

D. barbinodis Henrard – Icon.: Henrard (1950): 67 (spikelet); Ibrahim & al., Grasses Mali: 56, 2018.

Caespitose annual herb; culms 30–50 cm long, geniculately ascending, *nodes bearded*; leaves mostly cauline; basal sheaths

DIGITARIA BARBINODIS

densely appressed-hirsute, upper glabrescent or glabrous; blades linear, 5–10 × 0,3 cm; inflorescence of 4–5 digitately inserted glabrous racemes, each 5–10 cm long, unilateral; spikelets 5–10 cm long, in pairs; *fruit grey*.

Rice fields; formations with *Echinochloa pyramidalis* on flood plains.

“Appears to be occasionally grown” (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 223, 1994). “Harvested as a wild cereal... and occasionally grown in Nigeria” (Brink & Belay, Pl. Res. Trop. Afr. 1, Cereals & pulses: 55, 2006).

Most allied to *D. exilis* (white fonio) and *D. iburua* (black fonio), both with glabrous spikelets, too, and crop plants. *D. barbinodis* is probably a wild species, an ancestral form of the two other species.

[**D. bicornis** (Lam.) Roem. & Schult., incl. i.a. subsp. *gamblei* Henrard and subsp. *lamarckiana* Henrard]; Fl. Trop. E. Afr., Gramin. 3: 654, 1982 (under *D. ciliaris*); Bonsuk & al. in Phytotaxa 246: 254–255, 2016. – Icon.: Giraldo-Cañas in Caldasia 27: 46, 2005; Fl. China 22, Ill.: 758, 2007 [as *D. ciliaris* (Retz.) Koeler var. *chrysoblephara* (Fig. & De Not.) R. R. Stewart].

bas.: *Paspalum bicorne* Lam.

syn.: *Panicum bicorne* (Lam.) Kunth; *P. ciliare* A. Rich. 1850, nom. illeg.; *Digitaria nuda* Schumacher, subsp. *senegalensis* Henrard; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Annual herb; culms decumbent to ascending, 20–80–115 cm long, rooting at lower nodes; nodes glabrous; leaf blades linear, 12–25 × c. 1 cm, margins serrate, surfaces scaberulous; inflorescence of 4–7 stout, very stiff, divaricate racemes, each up to 13–16 cm long, (sub-)digitate; rachis winged; spikelets 2-nate, heteromorphous, c. 3 mm long, pubescent with sericeous hairs mixed with bristles; fruit c. 2 mm long, brownish.

Common and widespread throughout tropical and subtropical regions, introduced in America; W. Indian Ocean islands, tropical and subtropical Asia E-wards to N Australia. In Africa known in Libya, Mauritania, Cameroon.

D. bidactyla Van der Veken 1975, non *didactyla* Willd. 1809. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 414, 1975; Fl. Zambes. 10/3: 137 pl. 39/26, 1989.

Loosely caespitose or solitary growing annual; culms 10–20 cm tall, erect, glabrous; leaf sheaths glabrous; blades 3–5 × 0,2–0,4 cm, flat, glabrous; inflorescence of 1–2 racemes, 2–4 cm long, often patent, shortly peduncled; rhachis triquetrous, asymmetrically winged, undulating, to 0,5 mm wide; pedicels mostly *solitary* (sometimes 1 reduced subsessile spikelet present), 0,5–1 mm long; spikelets 2,3–2,5 mm long; lower lemma as long as spikelet with appressed hairs *overtopping* the spikelet for c. 1 mm.

Rocky outcrop; dambo edge; damp sand; infrequent in drier parts of dambo; 1600–1900 m alt.

Closely related to *D. melanotricha*.

D. brazzae (Franch.) Stapf; Renier, Fl. Kwango 1: 33, 1948; Gibbs Russell & al., Grasses south. Afr.: 108–109, 1990; Klaassen & Craven, Checklist grasses Namibia: 25, 2003. – Icon.: Henrard (1950): 88, 721; Fl. Zambes. 10/3: 137 pl. 39/20, 1989 (spikelet); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 267, 2017 (inflorescence).

bas.: *Panicum brazzae* Franch.

syn.: *P. moninense* (Rendle) K. Schum.; *Digitaria lomanensis* Mez; *D. moninensis* Rendle; *D. sulcigluma* Chiov.

DIGITARIA BRAZZAE

Densely tufted perennial herb; basal sheaths *silky pubescent to tomentose*, rarely becoming fibrous; culms 0,6–1,3 m tall, erect; leaf blades 6–10–30 × 0,3–1 cm; inflorescence of 2–12 digitate erect racemes 10–20 cm long; spikelets ternate on triquetrous *winged* rachis; spikelets 2–3 mm long, with hairs *extending 1–2 mm* beyond tip.

Open places in *Brachystegia* wooded grassland; disturbed sites in miombo woodland, floodplain grassland and dambo edges; sandy savannas; rich pastures; 700–1900 m alt.

Botswana, Namibia, S. Africa.

D. brunoana Raimondo – Icon.: Giorn. Bot. Ital. 122: 253, 1988; Thulin, Fl. Somal. 4: 241, 1995.

Perennial herb with thick *rhizome*; culms prostrate-ascending, 5–15 cm long; leaf blades narrowly triangular; inflorescence of 2–4 digitate racemes, each 0,6–2,7 cm long; spikelets in threes on a ribbon-like winged rachis, each c. 1 mm long.

Coastal sand; 10–30 m alt.

Known only from the type collected in 1982.

D. calcarata Clayton; Lock in Kew Bull. 70: §46: 3, 2015. – Icon.: Goetghebeur & Van der Veken in Misc. Papers Landb. Wageningen 19: 151, 1980; Fl. Zambes. 10/3: 137 pl. 39/27, 1989 (spikelet).

Annual slender herb growing fasciculate or solitary; culms 10–25 cm tall, erect, glabrous, nodes dark, hairy; leaf blades linear, 4–8 × 0,3 cm, flat, glabrous, scaberrulous; inflorescence of 2 racemes, each 3–6 cm long, 1 lateral, subsessile, the other terminal, erect, pedunculate; rachis triquetrous, winged; pedicels 2-nate, 0,5–3 mm long; spikelets 2,5–2,8 mm long; *upper glume with basal spur*.

Damp shallow lateritic soil overlying rocks.

Near *D. ventricosa* but upper glume with basal spur.

D. ciliaris (Retz.) Koeler, incl. several forms, varieties and subspecies, but excl. *fa. intercedens* Beck (= *D. sanguinalis*), and var. *rhachiseta* (Henrard) Vega & Rúgolo (= *D. nuda*); Brittonia 15: 241, 1963; Fl. W. Trop. Afr., ed. 2, 3/2: 453, 1972, excl. *specim. p. max. p.* (= *D. nuda*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 223, 1994; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 274, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 249, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015; Phytotaxa 246: 255–256, 2016. – Icon.: Henrard (1950): 126, 132, 430, 432; Bosser, Gramin. pâtur. cult. Madag.: 378, 389, 1969; Fl. Zambes. 10/3: 139 pl. 41/47, 1989 (spikelet); van der Zon, Gramin. Cameroun 2: 322, 1992; Poilecot, Boissiera 50: 449, 1995; idem, *ibid.* 56: 464, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 134, 2002; Boulos, Fl. Egypt 4: 309, 453, 2005; Pl. Syst. Evol. 267: 172, 2007 (spikelet); Fl. China 22, Ill.: 758 (var. *chrysoblephara*), 760 (var. *ciliaris*), 2007; Ibrahim & al., Grasses Mali: 56, 2018; César & Chatelain, Fl. ill. Tchad: 237, 238, 2019.

bas.: *Panicum ciliare* Retz.

syn.: *P. sanguinale* L. var. *biforme* (Willd.) T. Dur. & Schinz, var. *blepharanthum* T. Durand & Schinz, and var. *macrostachyum* T. Durand & Schinz; *Digitaria marginata* Link, incl. var. *fimbriata* (Link) Stapf, var. *linkii* Stapf 1919, nom. inval., and var. *nubica* Stapf; *D. adscendens* (Kunth) Henrard, incl. subsp. *chrysoblephara* (Fig. & De Not.) Henrard, subsp. *nubica* (Stapf) Henrard, subsp. *marginata* (Link) Henrard, var. *criniformis* Henrard, and var. *fimbriata* (Link) Cufod.; *D. chrysoblephara* Fig. & De Not.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard. Kew.

DIGITARIA CILIARIS

Annual straggling, loosely caespitose or solitary herb; culms 0,2–1 m long, decumbent at base, geniculately ascending; leaf blades broadly linear, 3–25 × 0,3–1 cm, apex acuminate; inflorescence (sub-)digitate of 2–12 unilateral racemes; these stiff, 6–22 cm long; axis to 5 cm long; spikelets 2–3,7 mm long, in pairs, dorsally compressed, overlapping by 2/3 their length on a winged rachis, at least the pedicellate beset with *stiff glossy yellowish bristles*.

Roadsides; weedy places; sandy degraded humid soils; fallows; cultivated places; ruderal with *Setaria pumila*, *Dactyloctenium aegyptium*, *Eleusine indica*, *Sporobolus pyramidalis*, *S. microprotus*; under light shade; 0–2300 m alt.

Extremely variable; the elaborate varietal nomenclature is principally based on 4 variable features: – the hairs on the rachis; – the ciliate frill around the spikelets; – the occurrence of glossy bristles on lower lemma; – the spacing of the nerves of the lower lemma.

Tropical and subtropical Old World; in N. Africa (Algeria, Libya, Egypt; recently introduced in Tunisia fide El Mokni & Verloove in Fl. Mediterr. 29: 47, 2019; and in Morocco fide Sukhorukov & al. in Bot. Letters 163: 422, 2016); Azores; Canary Isl.; Cape Verde Isl.; Botswana, S. Africa, Swaziland; Madagascar, Mascareignes; Arabian Peninsula, Palestine E-wards to Malaya (cf. Phytotaxa 246: 255–256, 2016); introduced in new Guinea, Australia, and C. & S. America, West Indies. In Europe from the Mediterranean area N-wards to S Sweden and Finland, Baltic States (map by Wilhalm in Willdenowia 39: 255, 2009).

Confused with *D. nuda* (with shorter spikelets, i.e. 0,2–0,4 mm long, not 2–3,7 mm, and lower glume obscure, not 0,2–0,4 mm long); also with *D. horizontalis* (cf. Willdenowia 39: 249–250, 2009).

Closely related to the Indian species *D. bicornis* (Lam.) Loudon.

D. comifera Pilg.; Lye & al. in Lidia 4: 162, 2000; Klaassen & Craven, Checklist grasses Namibia: 25, 2003. – Icon.: Henrard (1950): 414 (as *D. lunularis*; spikelet); Fl. Zambes. 10/3: 136 pl. 38/5, 1989 (spikelet).

syn.: *D. lunularis* Henrard

Annual tufted herb; culms 15–80 cm tall, glabrous; leaf blades linear, 2–15 × 0,1–0,6 cm; inflorescence of 2–7 subdigitate racemes, each 3–20 cm long; spikelets in clusters of 3–5 on a winged rachis, each 2–3 mm long; upper glume with rows of white *clavate hairs*.

Open (disturbed) sandy places by roadsides; riverbanks; miombo woodland; 450–2000 m alt.

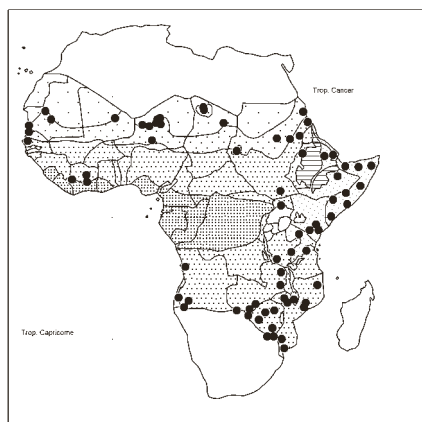
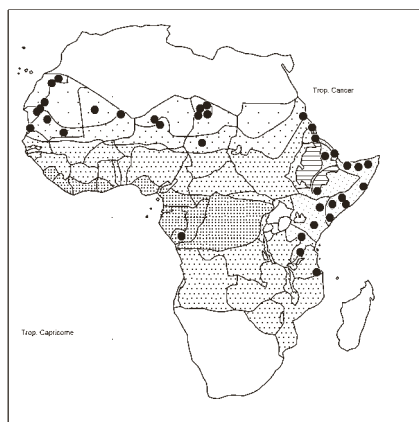
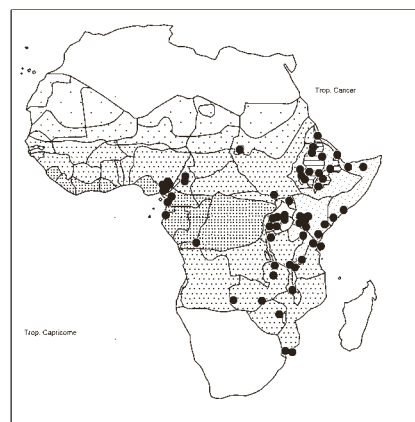
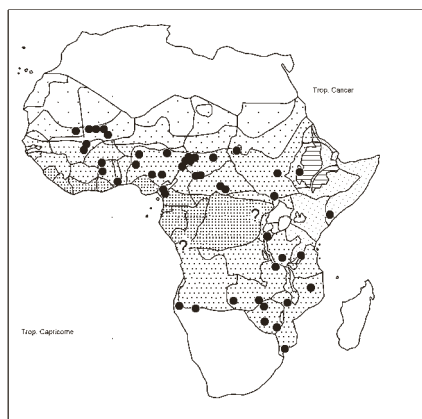
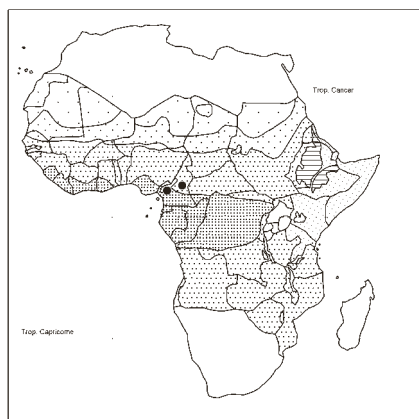
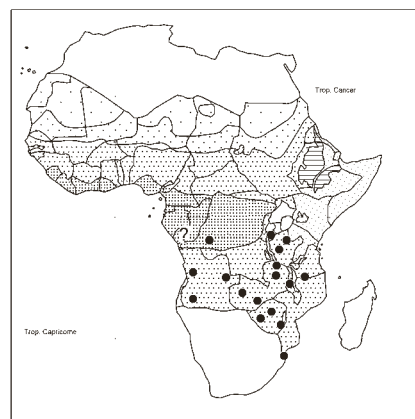
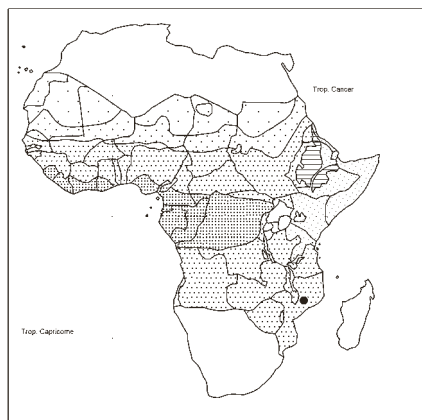
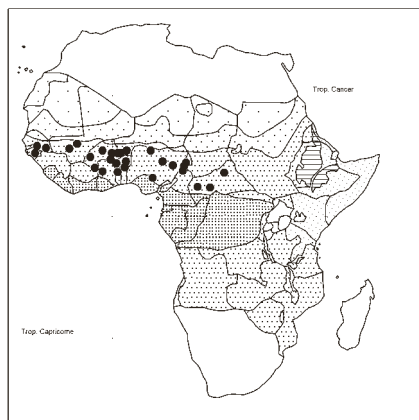
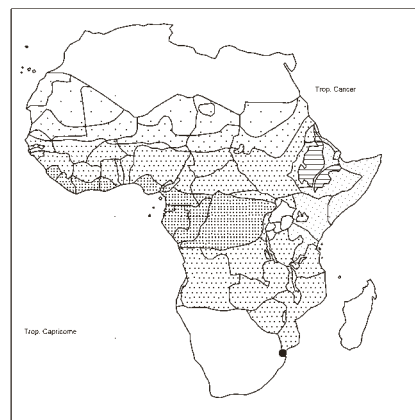
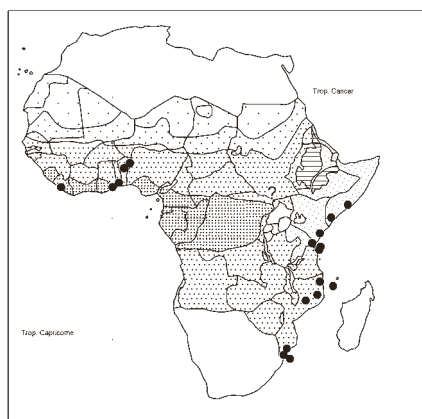
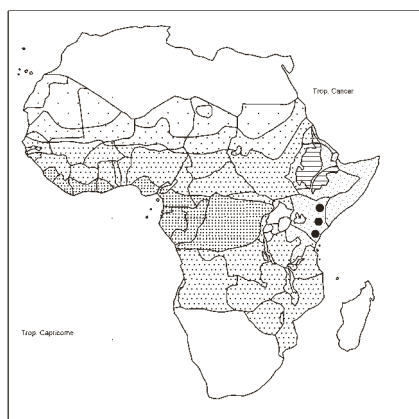
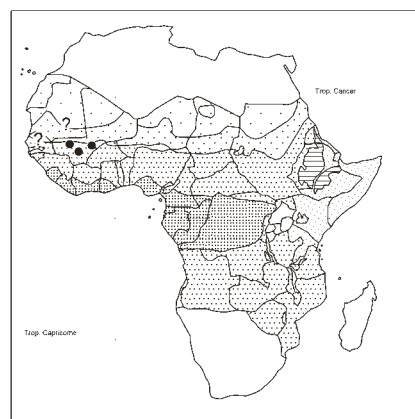
Namibia (map by Klaassen & Craven, l.c.). Zaire?

D. complanata Goetgh.; Lock in Kew Bull. 70/4: § 46: 3, 2015 (Robinson leg.). – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 412, 1975; Fl. Zambes. 10/3: 137 pl. 39/25, 1989 (spikelet).

Annual herb loosely caespitose or solitary growing; culms 10–20 cm tall, nodes dark, glabrous; leaf blades linear, 2–5 × c; 0,3 cm, flat, glabrous; inflorescence of 1–2 racemes, 2–4 cm long, often patent, rachis triquetrous, asymmetrically winged; *pedicels 2-nate*, solitary in the upper part where long-ciliate, and broadened at apex bearing a coronula; spikelets c. 2 mm long; upper glume *appressed hairy, hairs white, stiff, overtopping glume*.

Laterite pan; damp shallow soil over rocks; wet dambo near river.

D. compressa Stapf; Lebrun & Gaston, 2e suppl. Cat. pl. vascul. Tchad mérid. in Cairo Univ. Herbar. 7–8: 112, 1977; van der Zon, Gramin. Cameroun 2: 314, 1992. – Icon.: Henrard (1950): 114 (*D. capitipila*), 328 (*D. homblei*), 366 (*D. katangensis*), all = spikelets; Fl. Zambes. 10/3: 136 p. 38/10, 1989 (idem); Fl.

*Dichanthium annulatum**Dichanthium foveolatum**Digitaria abyssinica**Digitaria acuminatissima**Digitaria adamaouensis**Digitaria angolensis**Digitaria appropinquata**Digitaria argillacea**Digitaria argyrograpta**Digitaria argyrotricha**Digitaria aridicola**Digitaria aristulata*

DIGITARIA COMPRESSA

Eth. & Eritrea 7: 249, 1995; César & Chatelain, Fl. ill. Tchad: 236, 2019; Vollesen & Merrett, Field guide Zambian miombo woodland 1: 378, 2020.

syn.: *D. buchananii* Mez; *D. capitipila* Stapf; *D. homblei* Robyns; *D. katangensis* Robyns, incl. var. *hirta* Goetgh.

Perennial tightly caespitose grass, base surrounded by fibrous old leaf sheath remnants; culms 0.4–1 m tall, erect, glabrous to sparsely hairy, nodes dark, glabrous to hairy; leaf blades linear, flat, 5–20 × 0.2–0.7 cm, loosely hairy below; inflorescence fan-shaped, of 5–20 racemes, 5–18 cm long, sometimes branched, solitary along a short common axis; rachis triquetrous, scarcely winged; pedicels 2–3 nate, 0.5–4.5 mm long; spikelets 2, 6–3.5 mm long; upper glume glabrous or with hyaline-white undulating hairs.

Degraded *Brachystegia* woodland; dambos and vlei verges; grassland; dry schistose ground; savannas; 500–2400 m alt.

Closely related to *D. setifolia*, *D. phaeotricha*, *D. hyalina*, *D. eylesii*.

D. debilis (Desf.) Willd., incl. var. *gigantea* Rendle, and var. *reimarioides* (Andersson) Henrard; Renier, Fl. Kwango 1: 34, 1948; Klaassen & Craven, Checklist grasses Namibia: 26, 2003; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 274, 2010; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 125, 2015. – Icon.: Henrard (1950): 166, 169; Bosser, Gramin. pâtur. cult. Madag.: 370, 1969; Fl. Zambes. 10/3: 138 pl. 40/29, 1989 (spikelet); van der Zon, Gramin. Cameroun 2: 322, 1992; Poilecot, Boissiera 50: 443, 1995; idem, ibid. 56: 468, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 267, 2012 (inflorescence); Velayos & al., Fl. Guinea Ecuat. 12: 182, 2015; Ibrahim & al., Grasses Mali: 57, 2018.

bas.: *Panicum debile* Desf.

syn.: *P. reimarioides* Andersson; *P. debile* var. *reimarioides* (Andersson) T. Durand & Schinz; *Digitaria bangweolensis* Pilg.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual straggling grass; culms 20–60 cm long, ascending, rooting at nodes; leaf blades 3–13 × 0.2–0.6 cm; inflorescence 7–20 cm long, of 3–17 racemes, these subdigitate or borne on a short central axis to 6 cm long; racemes 3–16 cm long; spikelets 2–4.5 mm long, paired on a triquetrous rachis.

Along water courses and in shallow water, riverbeds; damp sites, damp grassland; roadsides; fallows; 0–2000 m alt.

Namibia, Botswana, S. Africa, Swaziland; Madagascar; Algeria, Tunisia (Le Floch & al., Catal. synon. commenté fl. Tunisie: 391, 2010); S Europe (W Mediterranean; Verloove in Candollea 63: 228, 2008).

Sometimes misidentified as *D. aequiglumis*.

D. delicata Goetgh., non *D. delicatula* Stapf; Schmidt & al. in Phytotaxa 304: 83, 2017. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 399, 1975 (spikelet); Ibrahim & al., Grasses Mali: 57, 2018; César & Chatelain, Fl. ill. Tchad: 237, 2019.

syn.: *D. delicatula* sensu J.-P. Lebrun & al., Cat. pl. vascul. Tchad mérid.: 231, 1972, non Stapf

Annual slender herb; culm solitary, erect or ± geniculate, 8–20–30 cm tall, glabrous; leaf blades linear, 3–10 cm × 2–4 mm, glabrous; inflorescence of 2–3 erect racemes, 3–6 cm long; rachis triquetrous; pedicels 2–3-nate, 0.2–2 mm long; spikelets c. 2 mm long; upper glume with rows of capitate hairs; described from N Togo.

Seasonally inundated soil; recent colluvial deposits; riversides; rice fields.

DIGITARIA DELICATA

Comprises 2 subspp.: – subspp. **delicata**; – subspp. **recedens** H. Scholz with narrower, club-like hairs on upper glume. Scholz suggests this subspecies as a connecting link between *D. delicata* and *D. delicatula*.

D. delicatula Stapf, non *D. delicata* Goetgh.; Schmidt & al., Phytotaxa 304: 84, 2017. – Icon.: Henrard (1950): 173; Poilecot, Boissiera 50: 425, 1995; Ibrahim & al., Grasses Mali: 58, 2018.

Annual herb; culms erect or slightly geniculate, forming scanty fascicles to 90 cm tall; leaf sheaths finely strigillose to hirsute; blades 5–15–20 cm × 3–5 mm, glabrous or pilose; inflorescences 12–15 cm long, with 2–3–10 subdigitate racemes, to 10–15 cm long, erect, ± flexuous; spikelets 3-nate, c. 2 mm long with appressed short clavate hairs with acute tip; fruit black. – Resprouting plants with short racemes (1–3 cm) at base.

Clearings in forest zones; sandy and gravelly soils; fallows; roadsides; cultivations; with other ruderal grasses: *Sporobolus pyramidalis*, *Eragrostis tremula*, *Brachiaria villosa*, *Digitaria horizontalis*, *D. longiflora*; in savannas, thalweg slopes, alluvial plains with *Microchloa indica*, *Brachiaria stigmatistata*, *Ctenium newtonii*, *Eragrostis turgida* (in overgrazed areas); indurate soils. Not in Chad (= *D. delicata*).

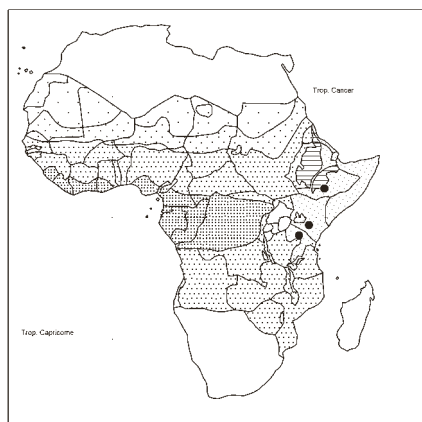
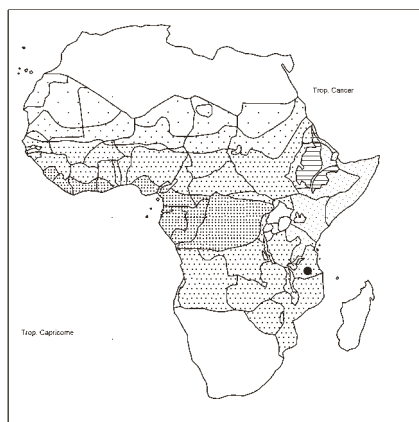
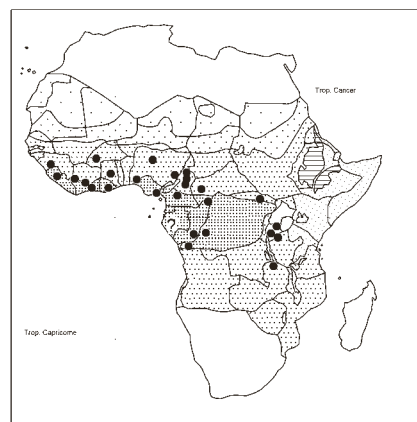
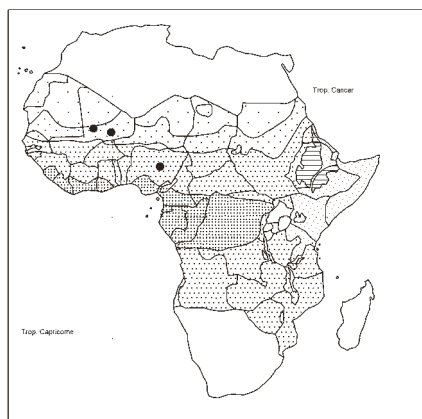
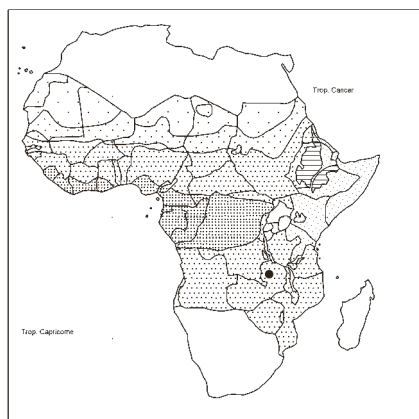
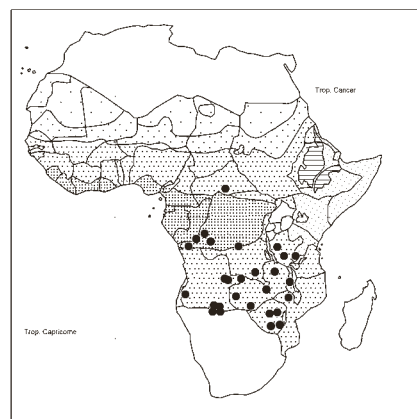
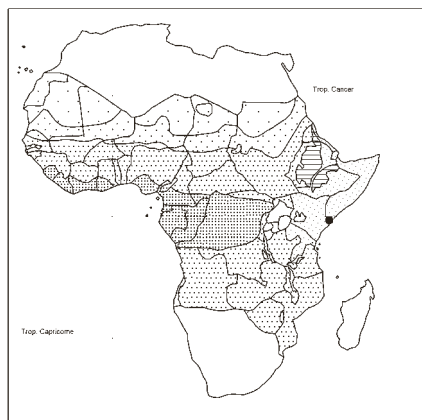
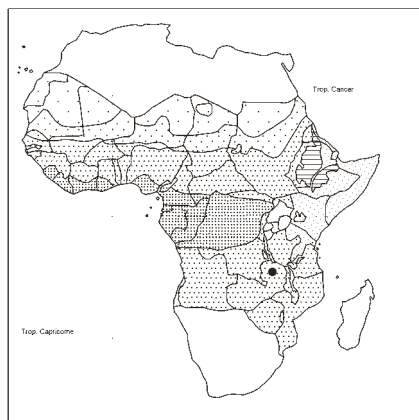
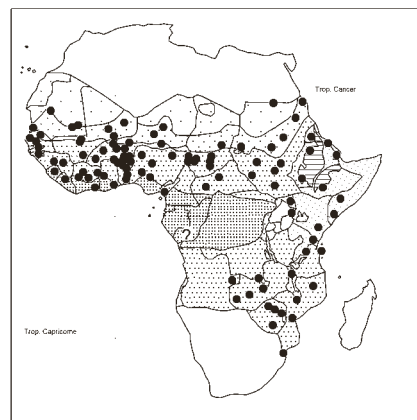
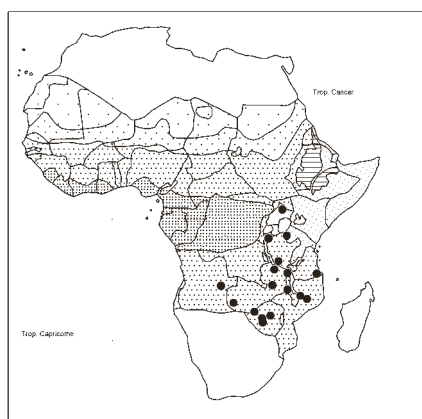
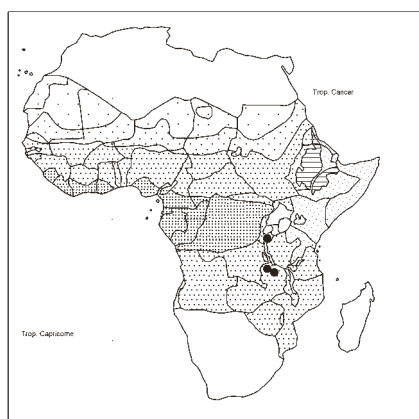
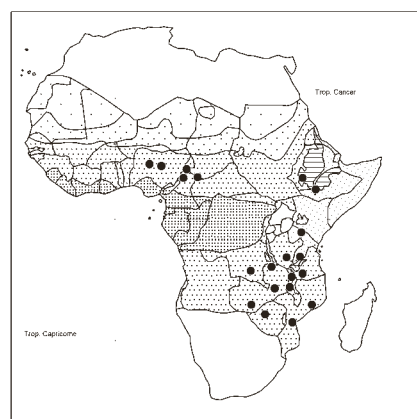
D. diagonalis (Nees) Stapf, incl. var. *glabrescens* (K. Schum.) Peter, var. *hirsuta* (De Wild. & T. Durand) Troupin, Kew Bull. 29: 527, 1974, var. *robustius* T. Durand & Schinz, nom. nud., and var. *uniglumis* (A. Rich.) Pilg.; Klaassen & Craven, Checklist grasses Namibia: 26, 2003; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 249, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 125–126, 2015; César & Chatelain, Fl. ill. Tchad: 236, 2019. – Icon.: Bull. Misc. Inform. Kew 1926: 248 fig. 2, 1926 (as *D. grantii*); ibid. 1927: 282, 1927 (as *D. uniglumis* var. *major*); Henrard (1950): 176, 301 (as *D. grantii*), 757 (as *D. trichopodia*), 767 (as *D. uniglumis*); Fl. Trop. E. Afr., Gramin. 3: 625, 1982; Fl. Zambes. 10/3: 136 pl. 38/1, 1989 (spikelets); Gibbs Russell & al., Grasses south. Afr.: 109, 1990; Poilecot, Boissiera 50: 423, 1995 (var. *hirsuta*); Burrows & Willis, Pl. Nyika Plateau: 343, 2005; Cope, Fl. Arab. Penins. 5/1: 233, 2007; Lisowski, Fl. Rép. Guinée 2: fig. 536, 2009; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 207, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 190, 2013; Vollesen & Merrett, Field guide Zambian Miombo woodland 1: 375, 2020.

bas.: *Panicum diagonale* Nees

syn.: *P. diagonale* var. *robustius* T. Durand & Schinz, nom. nud., var. *hirsutum* De Wild. & T. Durand, var. *hirsutius* T. Durand, var. *uniglume* (A. Rich.) Hack., and var. *glabrescens* K. Schum.; *P. uniglume* A. Rich.; *P. densiglume* Steud. 1853, orth. var.; *Digitaria trichopodia* Stent; *D. grantii* C. E. Hubb.; *D. lasiostachya* Peter; *D. uniglumis* (A. Rich.) Stapf, incl. var. *hirsuta* (De Wild. & T. Durand) Robyns, and var. *major* Stapf, nom. superfl.; *D. eriostachya* Peter 1931, nom. illeg.

Tufted perennial; basal leaf sheaths silky hairy, breaking up into fibres; culms 0.4–3 m tall, erect; leaf blades 10–60 × 0.1–1.2 cm, glabrous or hirsute; inflorescence “handsome, spreading”, 5–40 cm long, of 4–50 spreading or ascending racemes; longest raceme 3–25 cm long, rachis triquetrous, glabrous or setose; spikelets in groups of 2–6; pedicel-tips bearing several white setae overtopping the spikelets, these 1–2.5 mm long, glabrous.

Open grassy places in a wide range of habitats from waterlogged soils to rocky hill slopes; with *Panicum phragmitoides* in savannas; sandy soils; fallows in forest; roadsides; post-cultivation vegetation; common in many types of old grassland; 0–2600 m alt.

*Digitaria arushae**Digitaria asthenes**Digitaria atrofusca**Digitaria barbinodis**Digitaria bidactyla**Digitaria brazzae**Digitaria brunoana**Digitaria calcarata**Digitaria ciliaris**Digitaria comifera**Digitaria complanata**Digitaria compressa*

DIGITARIA DIAGONALIS

Exceedingly variable species divided into ill-defined varieties which intergrade completely.

N Namibia, Botswana, S. Africa, Swaziland; Yemen.

D. didactyla Willd., non *D. bidactyla* Van der Veken; Fl. Trop. E. Afr., Gramin. 3: 649, 1982 (in discussion under *D. milanjiniana*); Kok in S. Afric. J. Bot. 3: 184, 1984; Gibbs Russell & al., Grasses south. Afr.: 110, 1990; Siebert & al. in Bothalia 34: 71, 2004 (Maputo Bay, Moz.); Phytotaxa 246: 257, 2016. – Icon.: Henrard (1950): 180, 182 (var. *decalvata*; spikelets); Fl. Zambes. 10/3: 139 pl. 41/52, 1989 (as *D. zwazilandensis*; spikelets); Fl. Mascareignes 203: 189, 2019.

syn.: *D. didactyla* var. *decalvata* Henrard; *D. zwazilandensis* Stent; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial loosely tufted grass, or stoloniferous and mat-forming, with stolons and a knotty much-branched rhizome, 15–35 cm tall; leaf blades linear, 3–10 cm × 1–3–6 mm; inflorescence of 2–4 digitate racemes, each 3–7 cm long, rachis triquetrous, winged, smooth; pedicels 2-nate, 0,5–2,5 mm long; spikelets c. 2 mm long, hairy.

Grassland in open woodland clearings; on alluvial soil; disturbed areas, roadsides; lawns (grass introduced as a lawn grass “Blue Couch” to several tropical countries).

Considered to be indigenous in Malawi, Mozambique; Madagascar, Mascareignes; introduced in S. Africa, Swaziland. Cultivated worldwide as ornamental (lawn grass), and naturalised.

The spikelets are similar to those of *D. ciliaris*.

D. dunensis Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 417, 1975; Fl. Zambes. 10/3: 138 pl. 40/38, 1989 (spikelet).

Perennial (?) mat-forming grass; culms 20–40 cm long, base creeping, flowering culms erect, glabrous, nodes black; leaf sheaths glabrous; blades linear, 3–7 × 0,2–0,5 cm, glabrous; inflorescence of 3–13 racemes, these 2–4 cm long, erect, solitary along a common axis, mostly twice as long as the largest raceme; rachis triquetrous, not winged, ± smooth; pedicels 2-nate; spikelets c. 2,5 mm long. Sand dunes on lake shore.

Near *D. ciliaris* but racemes shorter (= 2–4 cm long, not 6–22 cm).

D. eriantha Steud., incl. subsp. *pentzii* (Stent) Kok, var. *stolonifera* Stapf, subsp. *stolonifera* (Stapf) Kok, and subsp. *transvaalensis* Kok – Kok in S. Afric. J. Bot. 3: 184–185, 1984; Klaassen & Craven, Checklist grasses Namibia: 26, 2003. – Icon.: Bothalia 1: 267, 1924 (*D. smutsii*); Henrard (1950): 172 (*D. decumbens*), 189 (*D. dinteri*), 228, 283 (*D. geniculata*), 294 (*D. glauca*), 295 (*D. glauca* var. *bechuanica*), 319 (*D. hiascens*), 407 (*D. livida*), 489 (*D. nemoralis*), 700 (*D. smutzii*); Fl. Zambes. 10/3: 139 pl. 41/51, 1989 (spikelets); Gibbs Russell & al., Grasses south. Afr.: 106, 1990; Giraldo-Cañas in Caldasia 27: 50, 2005; Müller, Grasses Namibia, rev. ed.: 67, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 215, 2012.

syn.: *D. pentzii* Stent, incl. var. *stolonifera* (Stapf) Henrard and var. *minor* Stent; *D. glauca* Stent 1930, non A. Camus 1927, nom. illeg., incl. var. *bechuanica* Stent; *D. valida* Stent, incl. var. *glauca* Stent; *D. dinteri* Henrard; *D. livida* Henrard; *D. nemoralis* Henrard; *D. umfolozi* D. W. Hall; *D. geniculata* Stent; *D. decumbens* Stent; *D. hiascens* Mez; *D. smutsii* Stent; *D. livida* Henrard; *D. nemoralis* Henrard; *D. stentiana* Henrard; *D. bechuanica* (Stent) Henrard; *D. commutata* Schult. subsp. *eriantha* (Steud.) Maire

DIGITARIA ERIANTHA

Perennial tightly tufted grass, often with well developed hairy runners; base surrounded by hairy cataphylls and old leaf sheath remnants; culms 0,4–1,2–1,8 m tall, ascending to erect, glabrous, nodes dark; leaf blades linear, 5–20 × 0,2–1,5 cm, glabrous to loosely hairy; inflorescence of 3–10 racemes, each 5–20 cm long, erect, 2–6 together in an inferior whorl, sometimes a few solitary along a short common axis, and mostly 2–4 together in a second, superior whorl; rachis triquetrous, narrowly winged; pedicels 2-nate, 0,5–2,5 mm long; spikelets 2–4 mm long.

Miombo woodland; degraded savanna; flood plains, saline marshes; c. 30–1110 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland; Mascareignes. – Introduced elsewhere, e.g., Cape Verde Isl., Asia, Pakistan E-wards to the Philippines, Hawaii, C. & S. America, West Indies (for Cuba, See Rev. Jard. Bot. Nacion. 36: 125–126, 2015).

A variable grass, consisting of a grouping of a number of species and varieties that were earlier acknowledged (van Oudtshoorn, l.c.).

D. evrardii Van der Veken

Annual slender herb; culms clustered, erect but geniculate at base, simple, 40–80 cm tall, nodes blackish, glabrous; leaf blades linear, 3–8 × 0,2–0,6 cm; racemes paired, one sessile, the other short-pedunculate, 3–18 cm long, simple; rachis triquetrous, glabrous; pedicels 3-nate, 0,4–4 mm long, white-bearded at apex; spikelets 2,5–2,8 mm long; sterile lemma with white hairs overtopping the spikelet; caryops unknown.

Lateritic pan.

Near *D. atrofusca* but rachis triquetrous (not winged), and spikelet larger (2,5–2,8 mm, not 1,8–2,7 mm); also near *D. siderograpta* but spikelets narrower, upper glume shorter and sterile lemma pilose.

? Known only from the type collected in 1957.

D. exilis (Kippist) Stapf, incl. var. *densa* Portères, var. *gracilis* Portères, var. *mixta* Portères, var. *rustica* Portères, and var. *stricta* Portères (cf. Brink & Belay 2006 cited below); van der Zon, Gramin. Cameroun 2: 318, 320, 324, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 225–227, 1994; Akpavi & al. in Acta Bot. Gall., Bot. Letters 159/4: 432, 2012. – Icon.: Henrard (1950): 238 (spikelet); J. Agric. Trop. Bot. Appl. 2: 368, 1955; Poilecot, Boissiera 50: 441, 1995; idem, ibid. 56: 466, 1999; Brink & Belay, eds., Plant Resources Trop. Afr. 1, Cereals & Pulses: 55, 2006; Ibrahim & al., Grasses Mali: 58, 2018; Markwirth in Eichhorn & Höhn, eds., Trees, grasses, crops: 280, 2019.

bas.: *Paspalum exile* Kippist

syn.: *Panicum exile* (Kippist) A. Chev. 1920, nom. illeg.

Annual grass 30–80 cm tall; culms slender, hollow, base geniculately ascending, simple or slightly ramose; leaf sheaths glabrous, ± keeled; blades glabrous, linear, 5–15 × 0,3–0,8 cm; inflorescence of 2–5 slender racemes, these 3–15 cm long, ± divergent; rachis flat, ribbon-like; spikelets imbricate, 1,5–2 mm long, glabrous; caryops bluish-grey, not exceeding the lower lemma.

Crop plant (white fonio) on sandy or gravelly soils; known only in cultivation. The grain is an extremely important cereal (Burkill, l.c.).

Closely resembling *D. longiflora*.

Landrace collecting areas shown in Pl. Syst. Evol. 267: 170, 2007. Also in Guinea Bissau (Duarte & al. in Portugal. Acta Biol. 19: 435, 2000).

DIGITARIA EXILIS

ADOUKONOU-SAGBADJA, H. & al. (2006). Indigenous knowledge and traditional conservation of fonio millet (*Digitaria exilis*, *Digitaria iburua*) in Togo. *Biodivers. Conserv.* 15: 2379–2395.

FULLER, D. Q. & al. (2019). Comparing the tempo of cereal dispersal and the agricultural transition: two African and one West Asian trajectory. In: EICH-HORN, B. & A. HÖHN, eds., *Trees, grasses and crops. People and plants in sub-Saharan Africa and beyond*: 119–140 (Frankfurter Archäologische Schriften 37).

HILU, K. W. & al. (1997). Fonio Millets: Ethnobotany, Genetic Diversity and Evolution. *S. African J. Bot.* 63: 185–190 [*D. exilis*, *iburua*, *longiflora*, *ternata*; Togo, Nigeria].

IRVING, D. W. & JIDEANI, I. A. (1997). Microstructure and composition of *Digitaria exilis* Stapf (acha): a potential crop. *Cereal Chemistry* 74: 224–228 [*Seed Abstr.* 21 (1): n° 9, 1998].

D. eylesii C. E. Hubb., incl. var. *hirta* Goetgh.; Gibbs Russell & al., Grasses south. Afr.: 110, 1990; Klaassen & Craven, Checklist grasses Namibia: 26, 2003. – Icon.: Bull. Misc. Inform. Kew 1926: 248 fig. 1, 1926; Henrard (1950): 242; Fl. Zambes. 10/3: 137 pl. 39/14, 1989; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 268, 2012 (inflorescence).

Perennial rhizomatous grass, base surrounded by cataphylls; culms 40–65 cm tall, erect, glabrous, nodes dark; leaf sheaths glabrous; blades linear, 5–10 cm × 2–4 mm, glabrous; inflorescence of 1–2(–3) racemes, each 8–20 cm long, erect, solitary along a short common axis; rachis triquetrous, narrowly winged; pedicels 3-nate, 0.5–2.5 mm long; spikelets 2.5–3 mm long.

Wet vlei grassland, floodplains, dambos; sometimes with *Brachiaria filiformis*; 1270–1300 m alt.

Namibia, Botswana, S. Africa.

D. flaccida Stapf; Gibbs Russell & al., Grasses south. Afr.: 110, 1990. – Icon.: Henrard (1950): 215 (as *D. elegans*), 257 (as *D. flaccida*), 497 (as *D. nitens*), 712 (as *D. stolzii*); Fl. Zambes. 10/3: 151 pl. 43, 1989 (as *D. nitens*); Vollesen & Merrett, Field guide Zambian miombo woodland 1: 380, 2020 (idem).

syn.: *D. nitens* Rendle; *D. elegans* Stapf; *D. melinoides* Mez; *D. stolzii* Mez; *Panicum nitens* (Rendle) K. Schum.

Perennial densely tufted grass with knotty rhizomes and fibrous, hairy base; culms erect, 0.3–1 m tall; leaf blades linear, 5–30 cm × 1–3 mm; inflorescence panicle-like, loose or contracted, of 5–30 delicate racemes arranged on a central axis 10–30 cm long, not whorled; racemes 5–10 cm long, rachis flexuous, filiform, naked for the lower 1/3–1/2 its length, bearing paired spikelets above; spikelets 2.5–4 mm long; upper glume and lower lemma with silky purplish hairs.

Brachystegia (dry) wooded grassland; miombo woodland often degraded; rocky outcrops; dambo; common in sandy clayey thickets; 400–2100 m alt.

S. Africa, Swaziland.

The silky hairy panicles resemble those in *Melinis* and *Brachiaria* species.

In Fl. Zambes. 10/3: 150–152, 1989, *D. nitens* and *D. flaccida* (S. African) are treated as 2 distinct species (*D. flaccida* “with strictly not woolly hairy basal cataphylls”). So also by Vollesen & Merrett, l.c.

D. fuscescens (J. Presl) Henrard; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 249, 2011; Phytotaxa 246: 257–258, 2016. – Icon.: Henrard (1950): 271; van der Zon, Gramin. Cameroun 2: 319, 1992; Poilecot, Boissiera 50: 439, 1995; idem, ibid. 56: 465, 1999. bas.: *Paspalum fuscescens* J. Presl

DIGITARIA FUSCESCENS

syn.: *Syntherisma fuscescens* (J. Presl) Scribn.; *Digitaria pseudoischaemum* Buse; *Panicum pseudoischaemum* (Buse) Boerl.; *Paspalum micranthum* Desv.

Annual stoloniferous grass, ascending from a creeping, decumbent base; culms 4–30 cm long; leaf blades linear, 1–5 cm × 1–4 mm; inflorescence of 2–4 digitate racemes, these 1–7 cm long; spikelets 3-nate on a ribbon-like winged rachis, 1.2–1.6 cm long, absolutely glabrous.

Weedy pathsides under dense forest; degraded savannas; sandy soils, or lagoon sides; with *Imperata cylindrica*, *Eragrostis domingensis*, *Antheophora cristata*, *Melinis repens*, *Perotis indica*, *Andropogon auriculatus*, *Pennisetum polystachion*, *Ctenium newtonii*; Guinean savanna zone on poor sandy soils; fallows with *Sporobolus pyramidalis*, *Eragrostis tremula*, *E. ciliaris*, *Digitaria gayana*; 0–900 m alt.

Tropical Old World; Madagascar, Mauritius, Réunion; S & SE Asia, Indonesia, Philippines, New Guinea. Introduced elsewhere: Fiji isl. to Hawaii, C. & S. America, West Indies (Acevedo-Rodríguez & Strong, Cat. seed pl. W. Indies: 730, 2012).

Often misidentified as *D. longiflora* (similar in habit and inflorescence, but with spikelets having whitish verrucose hairs). *D. fuscescens* is perhaps a glabrous variant of it?

D. fuscopilosa Goetgh. – Icon.: Misc. Pap. Landbouwhoogeschool 19: 146, 1980; Fl. Zambes. 10/3: 137 pl. 39/15, 1989 (spikelet).

Perennial, very loosely tufted, rhizomatous herb; culms 40–60 cm tall, erect, glabrous, nodes dark; leaf sheaths loosely hairy; blades linear, 7–10 cm × 2–4 mm, flat or mostly involute, scaberulous; inflorescence of 3–4 racemes 4–8 cm long, erect, solitary along a short common axis; rachis triquetrous, scarcely winged; pedicels 3–5-nate, 0.5–5 mm long; spikelets 2.3–2.5 mm long; upper glume ca 1/2 of the spikelet, glabrous or loosely white-hairy.

Humid savanna grassland near dense *Podocarpus* forest; 1800 m alt.

Known only from the type collected in 1966.

D. gayana (Kunth) A. Chev.; Renier, Fl. Kwango 1: 33, 1948; Gibbs Russell & al., Grasses south. Afr.: 110, 1990; Klaassen & Craven, Checklist grasses Namibia: 26, 2003; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015; Schmidt & al., Phytotaxa 304: 84, 2017; César & Chatelain, Fl. ill. Tchad: 238, 2019. – Icon.: Henrard (1950): 216 (as *D. elegantula*); Fl. Zambes. 10/3: 155, 1989; van der Zon, Gramin. Cameroun 2: 319, 1992; Poilecot, Boissiera 50: 431, 1995; idem, ibid. 56: 467, 1999 (map p. 456); Vollesen & Merrett, Field guide Zambian Miombo woodland 1: 376, 2020.

bas.: *Panicum gayanum* Kunth

syn.: *P. didymostachyum* Steud.; *Digitaria elegantula* Mez

Annual loosely tufted grass; culms 30–90 cm tall; leaf blades linear, 3–15 cm × 2–8 mm, scaberulous; inflorescence silky, of 1–6 digitate racemes, these 3–18 cm long; rachis broadly winged; pedicels 3–4-nate, 0.5–4 mm long; spikelets 2–3 mm long; upper glume with white to purplish hairs; lower lemma margins with stiff purplish to silvery hairs 2–4 mm long; seeds fluffy (used for stuffing cushions).

Farmland; weed of disturbed places, fallows; common on sandy soils; with *Perotis indica*, *Dactyloctenium aegyptium*, *Brachiaria villosa*, etc.; pebbly soils; disturbed miombo woodland; roadsides; spontaneously on impoverished soils; 0–2000 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa. – Not in Ethiopia (confused with *D. ciliaris*).

DIGITARIA

D. gazensis Rendle; Renier, Fl. Kwango 1: 33, 1948; Klaassen & Craven, Checklist grasses Namibia: 27, 2003; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013; César & Chatelain, Fl. ill. Tchad: 239, 2019. – Icon.: Henrard (1950): 41 (*D. antunesii*), 281 (*D. gazensis*), 502 (*D. nyassana*), 593 (*D. proxima*); Fl. Zambes. 10/3: 138 pl. 40/35, 1989 (spikelets); Vollesen & Merrett, Field guide Zambian miombo woodland 1: 381, 2020.

syn.: *D. antunesii* Mez; *D. herpoclados* Pilg.; *D. nyassana* Mez; *D. proxima* Henrard; *D. sanguinalis* (L.) Scop. var. *interrupta* Rendle; *D. usambarica* Mez; *D. villosissima* Chiov.; *D. parlatorei* (Steud.) Chiov. var. *microstachya* Chiov.; *D. spectabilis* Peter

Perennial densely tufted grass arising from a *short knotty rhizome*; basal sheaths *velvety hairy*; culms 0,3–2 m tall, erect, nodes villous; leaf blades linear, 3–30 × 0,2–1 cm; inflorescence of 6–20 racemes on a short axis 2–14 cm long; racemes 5–20 cm long; spikelets paired on triquetrous rachis or sometimes on short appressed secondary branches; spikelets 1,5–2,5 mm long, *purplish grey*; fruit *pale grey* or *yellowish to dark purplish grey*.

Grassland cleared from evergreen forest, descending to *Combretum* deciduous bushland and *Brachystegia* wooded grassland; degraded woodland; miombo woodland; dambos; vleis edges; salt marshes; fallows; sometimes abundant on sandy soils; 15–1000–2600 m alt.

Namibia; Madagascar.

Very variable. Confused with *D. leptorhachis*; intergrades with *D. rivae*, *D. rukwae* both of which have brown fruits; and with *D. abyssinica* which has glabrous spikelets.

D. gentilis Henrard – Icon.: Henrard (1950): 284 (spikelet).

Base unknown; culms dense (not hollow), ramose, erect? or decumbent, glabrous; leaf blades linear-lanceolate, 10–? cm × 2–3 mm, glabrous or nearly so; inflorescence paniculate, with common axis 3–4 cm long, strongly angled; racemes solitary or 2-nate at base of inflorescence, 6–10 cm long; *rachis 3-angled*; spikelets ± 4 mm long, *minutely pubescent*.

Marigot (de Hann), “Edge of Imperata”.

Known only from the type collected in 1930. The specimen was named *Digitaria horizontalis* on reception from A. Chevalier. The plant belongs to the *D. horizontalis* group according to Henrard, l.c.

D. gymnostachys Pilg.; Gibbs Russell & al., Grasses south. Afr.: 111, 1990; Bothalia 34: 71, 2004. – Icon.: Fl. Zambes. 10/3: 139 pl. 41/58, 1989.

Perennial loosely tufted grass; culms 0,6–1,2 m long, *robust*, geniculately ascending; leaf blades linear, 10–60 × 0,7–1,5 cm; inflorescence of 6–21 racemes stiffly radiating from a central axis 5–17 cm long, *lower racemes whorled*; racemes 10–25 cm long; rachis triquetrous bearing a distant pair of spikelets; these 3–4,5 mm long.

Wooded grassland; coastal open woodland and savannas; on sandy soil; 100–500 m alt.

S. Africa.

D. gymnotheca Clayton; Fl. Eth. & Eritrea 7: 251–252, 1995.

Perennial grass straggling or stoloniferous; culms *wiry*, branching, 30–60 cm tall, decumbent below; leaf blades ± linear, 5–20 × 0,3–0,7 cm, tip filiform, the old dead leaves tightly curling; inflorescence of 2–6 slender long stiff racemes, sub-digitate or borne on an axis to 2 cm long; rachis triquetrous bearing *contiguous pairs* of spikelets, these 2,7–3,8 mm long, glumes minutes.

DIGITARIA GYMNOTHECA

Acacia-Commiphora bushland, usually in shade of bushes or rocks on sandy soil; among granite rocks on shady mountain side; dense shady forest on brown sandy soil; among bushes and sand dunes; 0–1250 m alt.

Very closely allied to *D. gymnostachys* which has robust, not wiry culms, racemes (at least the lower) whorled, distant spikelets with nerves not prominently raised.

D. horizontalis Willd., incl. var. *porrantha* (Steud.) C. E. Hubb. & Vaughan; Renier, Fl. Kwango 1: 33, 1948; Fl. W. Trop. Afr., ed. 2, 3/2: 453, 1972, excl. specim. Pirie 8, Perrottet 909, Adam 18174, Ashrif 33, Pereira 3174 (all = *D. ciliaris*), excl. syn. *D. nuda* (cf. Clayton in Kew Bull. 29: 520, 1974). – César & Chatelain, Fl. ill. Tchad: 237, 2019. – Icon.: Robyns, Fl. agrost. Congo belge 2: 23, 1934; Henrard (1950): 332 (*D. horizontalis*), 333 (as *Panicum porranthum*), 622 (as *D. reflexa*); Bosser, Gramin. pâtur. cult. Madag.: 380, 1969; Poilecot, Boissiera 50: 447, 1995; idem, ibid. 56: 462, 1999; Giraldo-Cañas in Caldasia 27: 55, 2005; Lisowski, Fl. Rép. Guinée 2: fig. 537, 2009; Velayos & al., Fl. Guinea Ecuat. 12: 183, 2015; Vande weghe & al., Plantes à fleurs du Gabon: 177, 2016 (inflorescence).

syn.: *D. reflexa* Schumacher; *D. sanguinalis* var. *horizontalis* (Willd.) Rendle and fa. *umbraticola* Henrard; *Panicum horizontale* (Willd.) G. Mey.; *P. sanguinale* subsp. *horizontale* (Willd.) Hack. and var. *porranthum* (Steud.) Franch., and var. *filiforme* T. Durand & Schinz; *P. porranthum* Steud.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard. Kew.

Annual, creeping or ascending, loosely caespitose grass 0,2–1 m tall; culms slender, geniculate-ascending, simple or ramose, glabrous, straw-coloured; leaf sheaths flattened-keeled, glabrous to ± hirsute; blades lanceolate, 3–25 × 0,2–1,5 cm, glabrous to densely pilose, flat; inflorescence of 4–15 racemes, *subdigitate* on an axis 2–7 cm long; racemes 3–16 cm long, slender, loose, *erect or spreading*, ± curved; rachis 3-angled, winged, with long spreading hairs; spikelets 2–2,5 mm long, ± imbricate, with appressed hairs; pedicels 1,5–3 mm long.

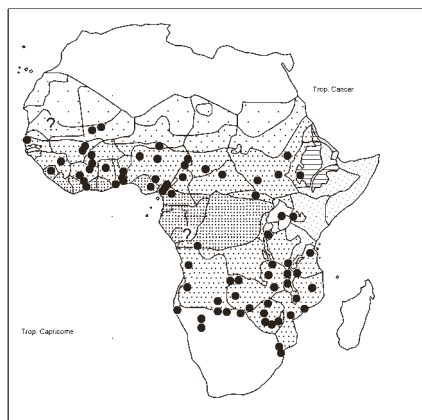
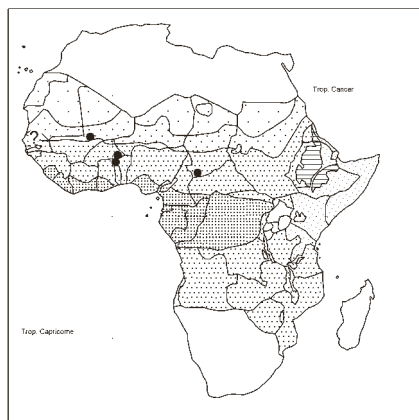
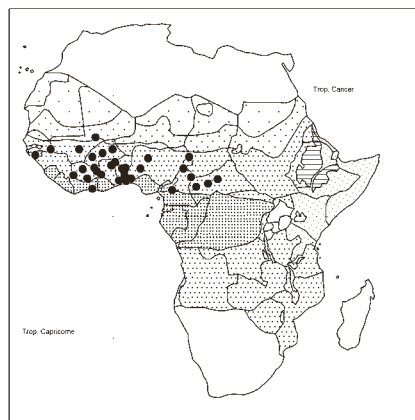
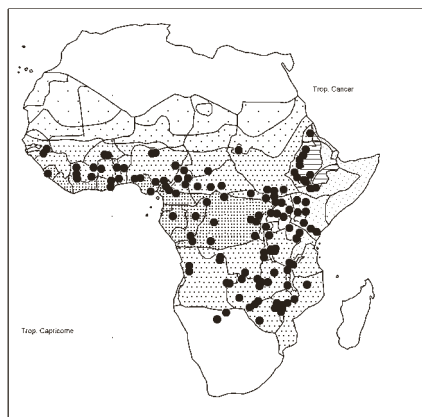
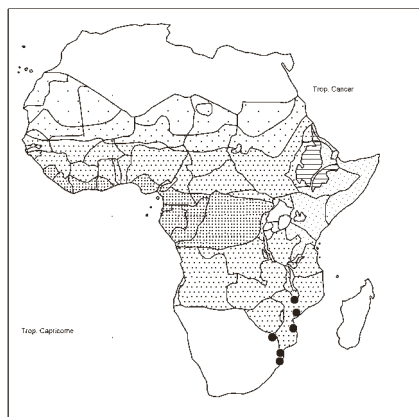
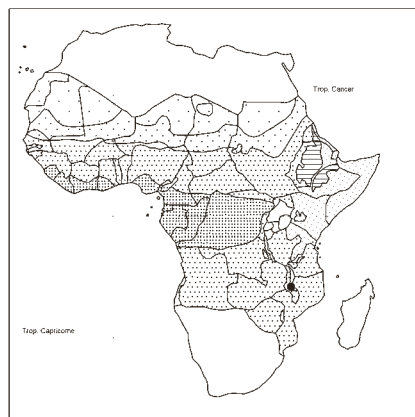
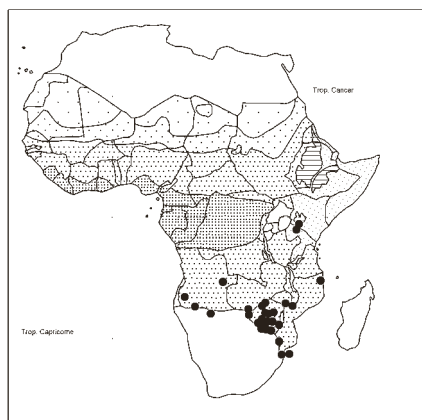
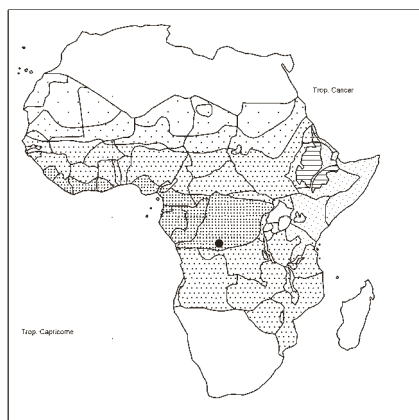
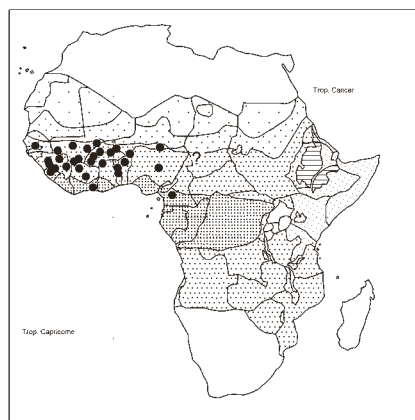
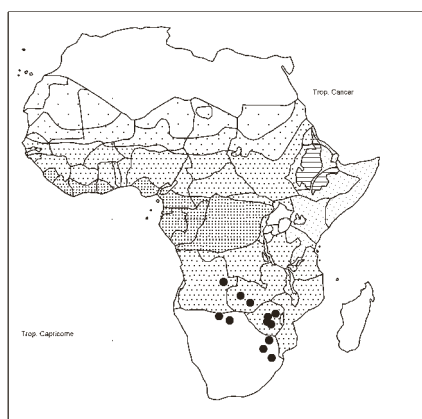
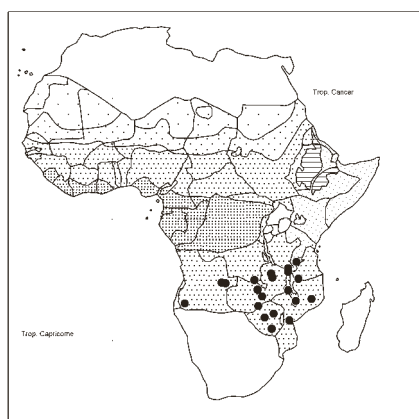
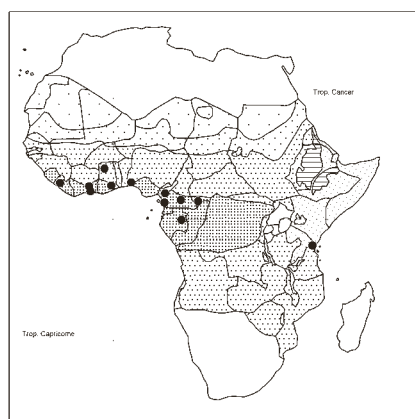
Thicket margins; frequent in woody meadows; clayey-muddy soil; waste places; ruderal; sandy heavy soils; fallows; along roads; with *Eleusine indica*, *Dactyloctenium aegyptium*, *Sporobolus pyramidalis*, *Bracharia villosa*; ± humid savannas; flooded hollows on pans with *Eragrostis atrovirens*, *Panicum laetum*, *Chloris virgata*; inselbergs in savanna (Bois Forêts Trop. 325/3: 26, 2015); element of the *Celosio trigynae-Digitarietum horizontalis* association (Wittig & al., Phytocoenologia 41: 126–127, 2011); 0–2000 m alt.

Cape Verde Isl.; Bioko/Fernando Poo, Annobón; subtropical and tropical America; introduced elsewhere.

A variable grass. Distinguished from *D. ciliaris* by slender, ± flexuous racemes arranged along a central axis to 6 cm long (not stiffly digitate, and upper glume 1/3–1/2 of spikelet length (not 1/2–3/4). Tends to merge with *D. setigera* with slightly stiffer racemes and shorter upper glume (1/2–3/4 of spikelet length, not 1/3–1/2). Also confused with *D. nuda*, *D. velutina*.

D. hyalina Robyns & Van der Veken – Icon.: Bull. Jard. Bot. Etat Bruxelles 22: 151, 1952; Fl. Zambes. 10/3: 137 pl. 39/13, 1989 (spikelets); Vollesen & Merrett, Field guide Zambian miombo woodland 1: 377, 2020.

Perennial robust rhizomatous grass; base surrounded by cataphylls and hairy leaf sheath remnants; culms 0,4–1 m tall, erect, glabrous or loosely appressed hairy, nodes dark; leaf blades linear, 5–20 × 0,3–0,4 cm, loosely hairy above, loosely to densely hairy below; inflorescence of 2–4 racemes, these 5–25 cm long,

*Digitaria debilis**Digitaria delicata**Digitaria delicatula**Digitaria diagonalis**Digitaria didactyla**Digitaria dunensis**Digitaria eriantha**Digitaria evrardii**Digitaria exilis**Digitaria eylesii**Digitaria flaccida**Digitaria fuscescens*

DIGITARIA HYALINA

erect, sometimes closely together; solitary on a short common axis; rachis triquetrous, narrowly winged, undulating; pedicels 3–4-nate, 0,5–3 mm long; spikelets 3–4 mm long.

Dambos, swamps, near waterfalls; embankments; 1400–1900 m alt; (Zambia).

D. hydrophila Van der Veken – Icon.: Bull. Jard. Bot. Etat Bruxelles 25/4: 329, 1955 (spikelet).

Annual caespitose *flaccid* herb; culms clustered, erect, simple; leaf blades lanceolate-linear, 5–15 × 0,4–0,8 cm; inflorescence ± paniculate, lax, common axis 1–3 cm long; racemes 6–9, solitary, 3–5 cm long, glabrous; rachis slender, 3-angled; pedicels 2-nate, 0,6–4 mm long; spikelets 2,4–2,8 mm long, glabrous, *lower glume absent*.

This grass covering the sides of a gorge.

? Known only from the type collected in 1939.

Resembling a *Panicum*. Near *Digitaria abyssinica*, *D. gazensis*.

[**D. iburua** Stapf] – Black fonio. – van der Zon, Gramin. Cameroun 2: 316, 1992; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 228–229, 1994; Brink & Belay, Pl. resources trop. Afr. 1, Cereals & pulses: 57–58, 2006; Biodiversity & Conservation 15: 2379–2395, 2006; Pl. Syst. Evol. 267: 170, 2007 (map); Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 249, 2011; Fuller & al. in Eichhorn & Höhn, eds., Trees, grasses & crops: 134, 2019. – Icon.: Poilecot, Boissiera 50: 435, 1995; idem, ibid. 56: 461, 1999.

A cultigen of uncertain provenance (cf. below). Annual loosely tufted, erect grass 0,5–0,8–1,4 m tall; culms simple, glabrous; leaf blades linear, 10–18 × 0,5–0,7 cm; inflorescence a terminal digitate panicle of 2–11 raceme-like primary branches 12–14 cm long, one of these situated lower down; rachis winged; *spikelets* c. 2 mm long, stalked, *glabrous*, green to dark brown, 2-flowered. Occurring in limited but disparate localities in W. Africa from Ivory Coast to N Nigeria – Cameroon, at 400–1300 m alt. (Burkill, l.c.).

Very variable. Differs from its possible ancestor *D. ternata* by its glabrous spikelets. A few glabrous specimens from Ethiopia and Sudan may have resulted from a chance introduction of *D. iburua* or may represent an independent loss of hairs in *D. ternata* [fa. *glabriuscula* (Fiori) Cufod.], fide Fl. Trop. E. Afr., Gramin. 3: 631, 1982. But it may be derived from *D. barbinodis*, a sub-Saharan species with which it is found growing admixed in a wild state in N Nigeria.

The (black) grain is edible but the integuments are not readily detached in threshing.

D. incisa Van der Veken – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 405, 1975 (spikelet).

Annual herb; culms solitary or clustered, base geniculate at base, or erect, simple, 0,7–1 m tall, rounded, glabrous; leaf blades linear, 7–15 × 0,3–0,5 cm, glabrous; inflorescence of 2–4 erect racemes 10–15 cm long; rachis 3-angled; pedicels 2-nate, 0,5–2,5 mm long; spikelets 2,7–3,1 mm long.

Ecology not recorded.

? Known only from the type collected in 1954.

Near *D. leptorhachis*?

(**D. intecta** Stapf)

In Flora Zambesiaca 10/3: 141–142, 1989, P. Goetghebeur & P. Van der Veken treat *D. intecta* Stapf as a synonym of *D. pseudodiagonalis* Chiov. In other floras and flora lists *D. intecta* is

DIGITARIA INTECTA

maintained as a distinct entity, such as Fl. Trop. E. Afr., Gramineae 3: 623, 1982, Flora of Ethiopia & Eritrea 7: 247, 1995, where S. Phillips notes that these two entities are distinct from each other: “The spikelet of *D. intecta* consists almost entirely of the dark brown fertile floret, the lower lemma being reduced to a small scale, leaving the upper lemma margins and palea clearly exposed”... and “*D. pseudodiagonalis* is very similar in facies to *D. intecta*, but has smaller spikelets, and is readily distinguished by its long lower lemma which covers the upper lemma margins and palea”. K. A. Lye & al. (Lidia 4: 162, 2000) distinguish the two species in Uganda, and so do I. Darbyshire & al. in The Plants of Sudan and South Sudan: 126, 2015.

In our compilation we have chosen to follow the treatment proposed by Flora Zambesiaca (l.c.), i. e. *D. intecta* Stapf considered a synonym of *D. pseudodiagonalis*.

D. intecta (s. str.) is reported from Eritrea, Ethiopia, Uganda, and Zambia. *D. pseudodiagonalis* occurs in W. Africa, C. Africa, and in E. Africa from Ethiopia S to Mozambique, and in Madagascar.

D. leptorhachis (Pilg.) Stapf; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015. – Icon.: Robyns, Fl. agrostol. Congo belge 2: 39, 1934; Henrard (1950): 120 (*D. chevalieri*), 495 (*D. nigritiana*), 581 (*D. polybotrya*); Bull. Jard. Bot. Etat Bruxelles 22: 147, 1952 (*D. bredoensis*); Bull. Jard. Bot. Natl. Belg. 45: 410, 1962 (*D. annua*); Fl. Gabon 5: 49, 1962 (*D. polybotrya*); Fl. Zambes. 10/3: 138 pl. 40/37, 1989; van der Zon, Gramin. Cameroun 2: 322, 1992; Poilecot, Boissiera 50: 445, 1995; idem, ibid. 56: 469, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 184, 2015; Ibrahim & al., Grasses Mali: 60, 2018; César & Chatelain, Fl. ill. Tchad: 239, 2019.

bas.: *Panicum leptorhachis* Pilg.

syn.: *P. nigritianum* Hack.; *P. stoloniferissimum* Vanderyst; *Digitaria nigritiana* (Hack.) Stapf; *D. chevalieri* Stapf; *D. polybotrya* Stapf; *D. richardsonii* Mez; *D. bredoensis* Robyns & Van der Veken; *D. annua* Van der Veken; *D. stoloniferissima* (Vanderyst) Vanderyst

Annual or perhaps short-lived perennial; culms 0,1–0,3–1–1,2 m long, wiry, ascending from a decumbent base, rooting at lower nodes, these villous, rarely glabrous; leaf blades lanceolate, 5–22 × 0,2–0,9 cm, pubescent with bulbous based bristles, rarely glabrous; inflorescence of 5–22 racemes, subdigitate or arranged on a common axis to 10 cm long; racemes 4–11 cm long, sometimes bare at base; spikelets paired on a slender triquetrous rachis; spikelets 1,4–2 mm long, *without bristles*.

Preferring moist sites; farmland; roadsides; weedy places; humid places on sandy soils; fallows; ricefield dams; with *Pennisetum polystachion*, *Brachiaria villosa*, *Eragrostis ciliaris*, *E. atrovirens*, etc.; sometimes abundant in grassy savannas on swampy soils on bowé with *Loudetia simplex*, *Parahyparrhenia annua*, *Panicum afzelii*, etc.; shallow soil overlying rocks; inselbergs (Candollea 50: 358, 1995); 0–1500 m alt.

Very variable; intergrades with *D. gazensis*. *D. annua* is an edaphic hunger-form of *D. leptorhachis*.

D. longiflora (Retz.) Pers., incl. var. *elatio*r Hack. ex Henrard and var. *proropens* Henrard; Renier, Fl. Kwango 1: 34, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 229–230, 1994; Germishuizen in Bothalia 27: 145, 1997; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 233, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015. – Icon.: Henrard (1950): 258 (as *D. flexilis*); Webbia 8: 63, 1952 (as *D. corradii*); Andrews, Flow. pl. Sudan 3: 436, 1956 (as *D. argyroticha*); Bosser, Gramin. pâtur. cult.

DIGITARIA LONGIFLORA

Madag.: 376, 1969; Fl. Zambes. 10/3: 138 pl. 40/43, 1989 (spikelet); van der Zon, Gramin. Cameroun 2: 319, 1992; Poilecot, Boissiera 50: 437, 1995; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 135, 2002; Fl. China 22, Ill.: 765, 2007; van Oudtshoorn, Grasses south. Afr., ed. 3: 238, 2012; Ibrahim & al., Grasses Mali: 60, 2018; César & Chatelain, Fl. ill. Tchad: 239, 2019; Vollesen & Merrett, Field guide Zambian miombo woodland 1: 379, 2020.

bas.: *Paspalum longiflorum* Retz.

syn.: *Digitaria flexilis* Henrard; *D. corradii* Chiov.; *D. friesii* Pilg.; *Paspalum argenteum* Vanderyst 1918, nom. provis.; *Digitaria argyrotrocha* sensu Andrews, Flow. pl. Sudan 3: 434, 436, 1956, non (Andersson) Chiov.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual or sometimes short-lived perennial, varying from a prostrate creeper to a leafy upright herb; culms 10–60 cm long, ascending from a stoloniferous base; leaf blades linear, 1–9 × 0,1–0,5 cm, glabrous, occasionally hirsute; inflorescence of 2–(4) digitate racemes, these 1–10 cm long with spikelets ternate on a ribbon-like winged rachis; spikelets 1–2 mm long; upper glume as long as spikelet, with short appressed verrucose hairs between the 5 nerves; fruit light brown to light grey.

Open places in deciduous bushland; disturbed (sandy) soils; old farmland; pathsides; fallows; with many ruderal grasses: *Digitaria delicatula*, *Sporobolus pyramidalis*, *Dactyloctenium aegyptium*; open dunes; grassy places between *Acacia* regrowth; a weed of cultivation; stream banks, river beds; an invasive ruderal plant, “everywhere a weed of cultivation”; 0–2300 m alt.

Tropical and subtropical Old World; San Tomé; Namibia, Botswana, S. Africa, Swaziland; Madagascar, Réunion; S Asia from India, Pakistan, Sri Lanka E-wards to New Guinea, Australia; introduced in the New World; Pacific islands, S USA, C. & S. America, West Indies.

D. macroblephara (Hack. ex Schinz) Paoli 1916; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015. – Icon.: Henrard (1950): 94 (as *D. brevipes*), 418 (*D. macroblephara*), spikelets; Agnew, Upl. Kenya wild flow., ed. 3: pl. 190, 2013.

bas.: *Panicum macroblepharum* Hack. ex Schinz

syn.: *Digitaria brevipes* Mez

Perennial forming open tufts from a knotty rootstock; basal sheaths ± silky pubescent; culms 0,15–1 m tall, wiry, ascending or arching down into creeping stolons; nodes shortly pilose to villous; leaf blades linear, 3–15 cm × 1–5 mm, tip filiform; inflorescence of 2–11 digitate or subdigitate racemes on an axis to 3 cm long; racemes 2–20 cm long; spikelets paired, rachis triquetrous; spikelets 2,2–3,5 mm long; upper glume villous; lower lemma softly villous with copious spreading white hairs, slightly exceeding spikelet tip.

Open deciduous bushland with *Acacia*, *Commiphora* or *Acacia drepanolobium*; grey or black clayey soils; rocky slopes; orange or white sand overlying limestone; 0–2000 m alt.

Some resemblance to *D. rivae* but spikelets longer (2,2–3,5 mm, not 1,7–2,5), habit more wiry, racemes digitate.

D. maitlandii Stapf & C. E. Hubb., incl. var. *glabra* Van der Veken; Gibbs Russell & al., Grasses south. Afr.: 111, 1990; Lidia 5/5: 129, 2001; Burrows & Willis, Pl. Nyika Plateau, Malawi: 342, 2005; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013. – Icon.: Bull. Misc. Inform. Kew 1927: 271, 1927; Henrard (1950): 367 (*D. keniensis*), 420 (*D. maitlandii*), spikelets; Troupin, Fl. Rwanda 4: 234, 1987; Fl. Zambes. 10/3: 136 pl. 38/9, 1989; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 267, 2012 (inflor).

DIGITARIA MAITLANDII

Tufted perennial; base stout, fibrous, tomentose; culms 0,2–1,25 m tall; leaf blades 5–30 cm × 2–5 mm, ± villous; inflorescence of 4–10 racemes on an axis 1–4 cm long; racemes 4–10 cm long; spikelets ternate, c. 2 mm long, on a triquetrous rachis; upper lemma dark red brown.

Grassy savanna with *Themeda*, *Hyparrhenia*; roadside; plains; wooded grassland and upper grassland; recently burnt grassland; rather frequent on clayey soils; 740–2700 m alt.

S. Africa, Swaziland. Expected in Ethiopia.

D. maniculata Stapf, Renier, Fl. Kwango 1: 34, 1948; Gibbs Russell & al., Grasses south. Afr.: 111, 1990; Klaassen & Craven, Checklist grasses Namibia: 27, 2003; César & Chatelain, Fl. ill. Tchad: 238, 2019. – Icon.: Henrard (1950): 426; Fl. Zambes. 10/3: 138 pl. 40/39, 1989 (spikelets).

syn.: *D. arenaria* Vanderyst 1919, pro syn.; *D. parodii* auct., non Jacq.-Fél.

Annual slender creeping grass, partially mat-forming, often stoloniferous; culms 8–30 cm long, ascending or erect, glabrous, rooting at lower nodes, nodes dark; leaf sheaths glabrous; blades ± lanceolate, 1–3 × c. 0,3 cm; inflorescence of 1–2 racemes 2–6 cm long, erect, 1 subsessile, the other pedicellate; rachis asymmetrically winged; pedicels binate, 0,5–2,5 mm long; spikelets 2,5–2,7 mm long; glumes and lemmas with long white finely papillose hairs.

Short open grassland on seasonally wet sandy soil; sand banks; dambo margins; 1000–1500 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa.

“When the cuff-like lower glume is blue or lilac the contrast between it and the snow-white fringe of hairs protruding from underneath is very pleasing and striking” (Fl. Trop. Afr. 9: 467, 1919).

D. megasthenes Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 417, 1975; Fl. Zambes. 10/3: 139 pl. 41/56 a & b, 1989 (spikelets).

Perennial tufted grass with a very short robust rhizome; base surrounded by cataphylls; culms 0,7–1,1 m long, erect or ascending, glabrous, nodes dark; leaf sheaths glabrous; blades linear, 4–15 × 0,2–0,7 cm, scabrous, glabrous; inflorescence of 5–11 racemes, 4–12 cm long, whorled or sometimes partly solitary on a short common axis; rachis triquetrous, winged; pedicels 2-nate, 0,2–1,5 mm long; spikelets 1,9–2,5 mm long.

Rocky outcrops of porphyritic granite; *Brachystegia* savanna on black clayey soil; 700–1300 m alt.

D. melanotricha Clayton

Delicate annual; culms 10–20 cm tall, erect; leaf blades involute, 2–6 cm × 1 mm; inflorescence of 1 raceme 2–4 cm long; spikelets paired on a winged rachis c. 0,5 mm wide with triquetrous midrib, margins ciliate; pedicels pubescent; spikelets hairy, white, 2–2,5 mm long; lower lemma flat on back.

In pockets between rock outcrops; 2300 m alt.

Closely related to a group of annual species from Zaire and Zambia: *D. bidactyla*, *D. complanata*, *D. ventricosa*, all with lower lemma ± flat on back.

D. milanijana (Rendle) Stapf, incl. var. *abscondita* Henrard and subsp. *eylesiana* Henrard; Thulin, Fl. Somalia 4: 241–242, 1995; Gibbs Russell & al., Grasses south. Afr.: 111, 1990; Klaassen & Craven, Checklist grasses Namibia: 27, 2003. – Icon.: Bull. Misc. Inform. Kew. 1926: 249, 1926 (*D. mombasana*); Peter in Repert. Spec. Nov. Regni Veget., Beih. XL, Lfg. 1, 2: fig. 18/4 (after text), 1930 (as *D. bulbosa*); Henrard (1950): 80 (*D. boivinii*),

DIGITARIA MILANJIANA

222 (*D. endlichii*), 224 (*D. endlichii* subsp. *meziana*), 236 (*D. exasperata*), 268 (*D. fusca*), 296 (*D. gracilentia*), 368 (*D. kilimandscharica*), 457 (*D. milanjiana*), 459 (*D. milanjiana* var. *abscondita*), 460 (*D. milanjiana* subsp. *eylesiana*), 466 (*D. mombasana*), 688 (*D. setivalva*), 706 (*D. stapfii*), 726 (*D. swynnertonii*); Fl. Zambes. 10/3: 139 pl. 41/57, 1989 (spikelets); Agnew, Upl. Kenya wild flow., ed. 3: pl. 190, 2013; Vollesen & Merrett, Field guide Zambian miombo woodland 1: 381, 2020.

bas.: *Panicum milanjanum* Rendle

syn.: *P. sanguinale* L. var. *scabriglume* Hack.; *Digitaria sanguinalis* var. *scabriglumis* Hack.; *D. boivinii* Henrard; *D. bulbosa* Peter; *D. endlichii* Mez, incl. subsp. *meziana* Henrard; *D. exasperata* Henrard; *D. fusca* Chiov.; *D. gallaensis* Chiov.; *D. gracilentia* Henrard; *D. kilimandscharica* Mez; *D. mombasana* C. E. Hubb.; *D. polevansii* Stent, incl. subsp. *peteriana* Henrard; *D. setivalva* Stent; *D. stapfii* Henrard; *D. swynnertonii* Rendle

Perennial loosely tufted, rhizomatous grass; basal sheaths glabrous or pubescent, rarely tomentose or bulbously swollen; culms 0,5–2,5 m tall, erect or geniculately ascending, sometimes rooting at lower nodes; leaf blades 15–30 × 0,3–1,3 cm; inflorescence of 2–18 digitate or subdigitate racemes on axis to 6 cm long; racemes 5–25 cm long, stiff, brownish or purplish; spikelets paired on a triquetrous winged rachis; spikelets 1,7–3,5 mm long, often stiffly hairy.

On a wide range of habitats (coastal soils, black clay, fire-swept hillsides, old cultivations, etc.); rapidly colonises open spaces and becomes a weed of cultivation and irrigated land (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 230, 1994); grassy glades among trees on sandy soils, mostly *Acacia-Commiphora* woodland & scrubland; 0–2000 m alt.

Variable species, from loosely tufted, – stoloniferous – erect – caespitose. A number of indistinct varieties may be recognized (cf. Fl. Trop. E. Afr., Gramin. 3: 648–649, 1982).

Namibia, Botswana, S. Africa. Introduced elsewhere in the tropics as a fodder grass. (e.g. Philippines, New Guinea, Australia, S USA, C. America.

D. minoriflora Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 399, 1975; Fl. Zambes. 10/3: 136 pl. 38/7, 1989 (spikelet).

Annual loosely caespitose grass; culms 10–40 cm, erect, glabrous, nodes dark, bearded to subglabrous; leaf sheaths loosely hairy with bulbous-based hairs; blades 5–15 × 0,2–0,5 cm, flat, often loosely hairy; inflorescence of 7–11 racemes, 3–7 cm long, erect, scattered on a common axis; rachis triquetrous narrowly winged; pedicels 3-nate, 0,5–2,5 mm long, triquetrous, with long cilia near apex; spikelets 1,5–1,7 mm long.

Peasant garden, sandy soil, crop maize.

Only known from the type collected in 1969.

D. monobotrys (Van der Veken) Clayton – Icon.: Bull. Jard. Bot. Etat Bruxelles 27: 730, 1957 (under *Digitariopsis*).

bas.: *Digitariopsis monobotrys* Van der Veken

Perennial densely caespitose grass; basal sheaths becoming fibrous, tomentose; culms 25–30 cm tall; leaf blades 2–3 cm × 2–3 mm; inflorescence of solitary (rarely paired) racemes, these 5–9 cm long; spikelets paired on a narrowly winged triquetrous rachis; pedicels glabrous; spikelets 2,5–2,7 mm long; upper glume 1/3–1/2 as long as spikelet, pilose, prolonged downwards into a spur 0,2 mm long, truncate or emarginate at tip.

Ecology unknown; 1500 m alt.

Only known from the type collected in 1947.

DIGITARIA

D. monodactyla (Nees) Stapf, incl. var. *explicata* Stapf; Gibbs Russell & al., Grasses south. Afr.: 111, 1990; Klaassen & Craven, Checklist grasses Namibia: 27, 2003. – Icon.: Henrard (1950): 469; Chippindall, Grasses past. S. Africa: 417, 1955; Fl. Zambes. 10/3: 137 pl. 39/23, 1989; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 67, 2012; Vollesen & Merrett, Field guide Zambian miombo woodland 1: 380, 2020.

bas.: *Panicum monodactylum* Nees

Perennial densely tufted grass; culms 0,2–1 m tall, on a very short rhizome; culms 0,2–1 m tall; leaf blades filiform, flat, 3–20 cm × 1–3 mm; inflorescence of 1 raceme 6–20 cm long; spikelets paired on a broadly winged rachis, conspicuously undulating, wings recurved; pedicels pubescent, 0,5–2,5 mm long; spikelets c. 3 mm long.

Seasonally flooded drainage lines in wooded grassland; dambos, wet grassland, vleis areas in open grassland on sandveld; sandy meadows; 1000–1600 m alt.

NE-most Namibia, S. Africa, Lesotho, Swaziland.

Near *D. ventricosa*, *D. flaccida*.

Sometimes confused with *Elionurus muticus* and *Microchloa caffra*.

D. monopholis Clayton

Perennial densely tufted grass; basal sheaths silky pubescent; culms 60 cm tall; blades filiform, 7–12 cm × 1–2 mm; inflorescence of 2 racemes 8–9 cm long; spikelets single on a winged rachis; pedicels 1 mm, pubescent; spikelets 5 mm long; upper glume 1/4 as long as the spikelet, prolonged downwards into a spur 0,2 mm long, truncate or emarginate at tip.

Open grassland; 1300 m alt.

Only known from the type collected in 1972.

D. myurus Stapf; Fl. Trop. E. Afr., Gramin. 3: 627, 1982, Gereau & al., Lake Nyasa florist. checklist: 87, 2012. – Icon.: Henrard (1950): 477 (spikelets).

Perennial tufted grass; basal sheaths silky hairy and breaking up into fibres; culms 20–80 cm tall, erect; leaf blades 10–30 cm × 2–3 mm, glabrous or hirsute; inflorescence 7–15 cm long, spike-like, with 3–7 racemes closely appressed to an elongated common axis; longest raceme 2–6 cm; rachis triquetrous, densely setose and bearing spikelets in groups of 2–6; pedicels with numerous white setae overlapping the spikelets; spikelets 1,8–2,3 mm long.

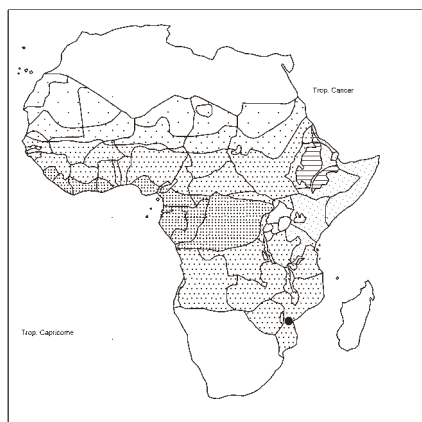
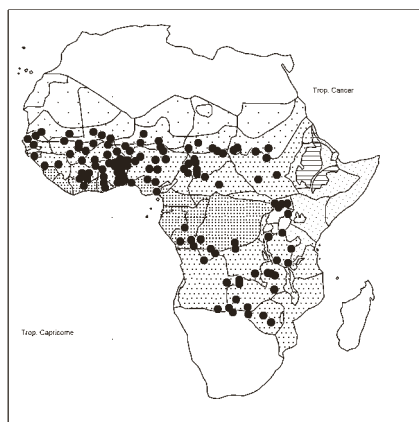
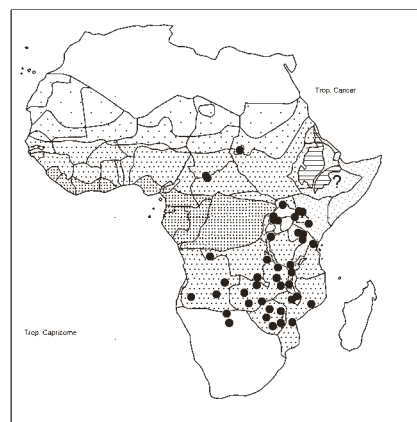
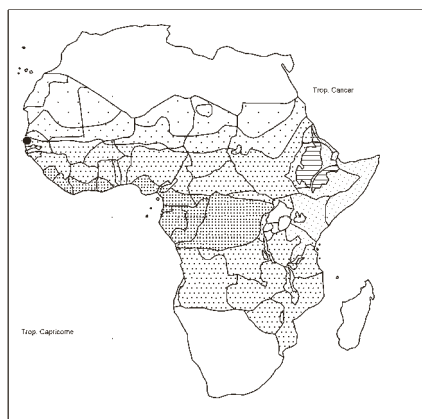
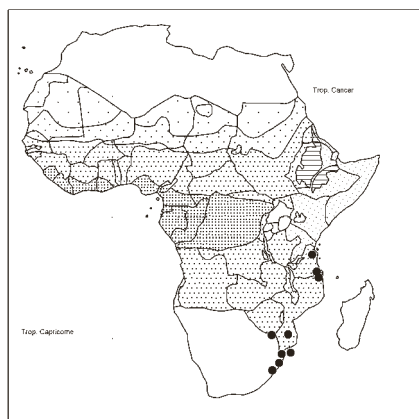
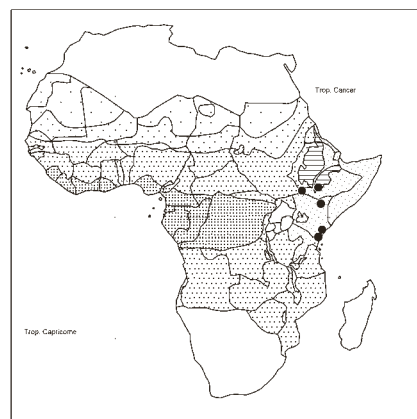
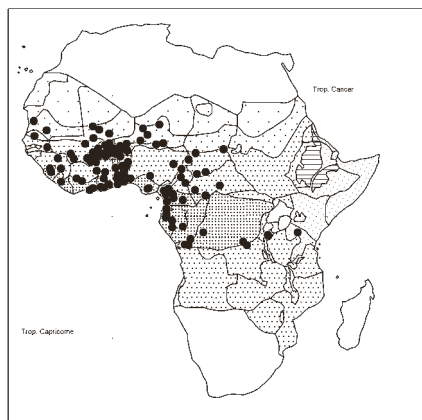
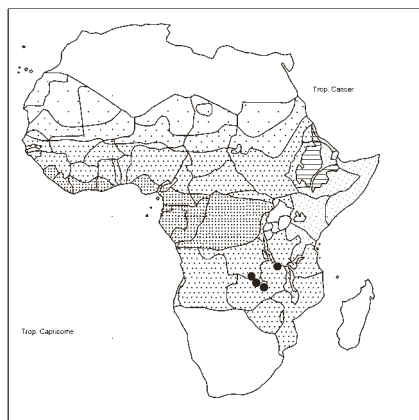
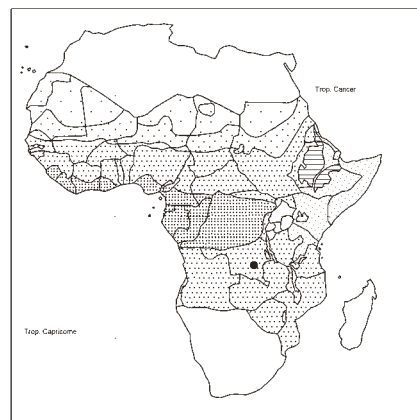
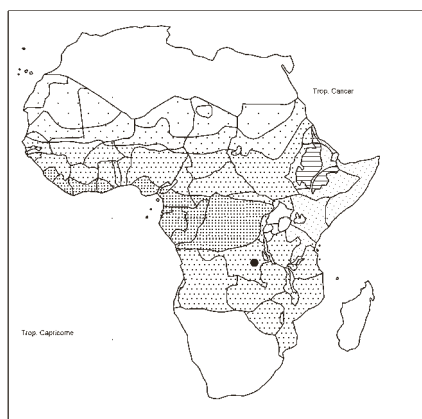
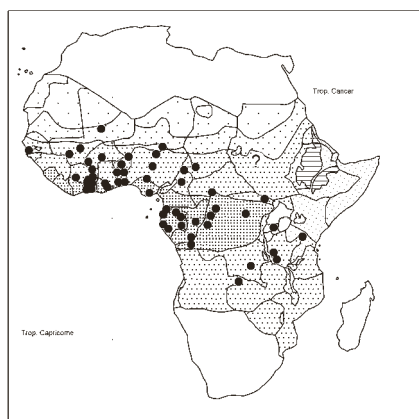
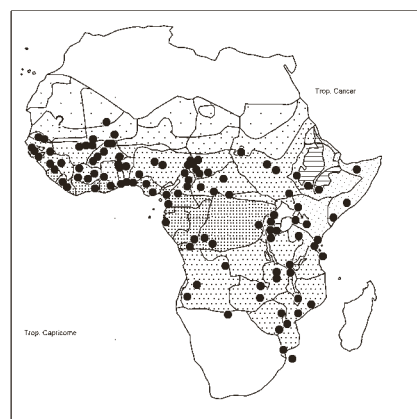
Grassland; 2100–3000 m alt.

A local variant of *D. diagonalis*, doubtfully accorded specific status (Fl. Trop. E. Afr., Gramin. 3: 627, 1982).

D. natalensis Stent, incl. subsp. *stentiana* Henrard [var. *stentiana*] and var. *paludicola* Henrard; Gibbs Russell & al., Grasses south. Afr.: 112, 1990. – Icon.: Henrard (1950): 480 (subsp. *stentiana* var. *stentiana*), 481 (subsp. *stentiana* var. *paludicola*); Fl. Zambes. 10/3: 139 pl. 41/55, 1989.

syn.: *D. littoralis* Stent 1930, nom. illegit., non Salisb., and var. *prostrata* Stent; *D. macroglossa* Henrard, incl. var. *prostrata* (Stent) Henrard; *D. rigida* Stent; *Panicum commutatum* var. *fluviale* Nees

Perennial grass, tightly caespitose with short, robust rhizome, base surrounded by conspicuously rusty brown, persistent leaf sheaths, sometimes also by a few densely hairy cataphylls; culms 0,7–1 m tall, erect to ascending, glabrous, nodes black; blades linear, 10–40 cm × 3–7 mm, flat, glabrous; inflorescence of 5–13 racemes, 15–20 cm long, erect, in 2 inferior whorls of

*Digitaria fuscopilosa**Digitaria gayana**Digitaria gazensis**Digitaria gentilis**Digitaria gymnostachys**Digitaria gymnotheca**Digitaria horizontalis**Digitaria hyalina**Digitaria hydrophila**Digitaria incisa**Digitaria leptorhachis**Digitaria longiflora*

DIGITARIA NATALENSIS

3–5 racemes, sometimes a few racemes solitary, and a terminal whorl of 3–5 racemes; rachis triquetrous, winged; pedicels 2-nate 0.5–3.5 mm long; spikelets 2.8–4.2 mm long; lower lemma densely beset with very fine spinules.

Littoral sand dunes; savanna grassland; weed of fallow land.

S. Africa, Swaziland.

D. neghellensis J.-P. Lebrun – Icon.: Bull. Mus. Natl. Hist. Nat. Paris, Sér. 4, Sect. B, Adansonia 10: 273, 1988 (herbar. specim.); Fl. Eth. & Eritrea 7: 249, 1995 (details); Cope, Fl. Arab. Penins. 5/1: 236, 2007 (inflor.); Ghazanfar, Fl. Oman 4: 122, 237 (map), 2018.

Perennial loosely tufted grass; culms 45–90 cm tall, branching above from an erect base; leaf blades lanceolate, 5–8 × 0.5–1 cm, densely grey-tomentose; sheaths pubescent, conspicuously hispid; inflorescence of 4–9 suberect racemes borne on an elongated central axis 3–13 cm long; racemes 3–12 cm long; spikelets mostly paired on a triquetrous rachis, lowermost pedicels often forked; spikelets 2.5–3 mm long; upper glume densely silky-villous with long silvery hairs extending 2–4 mm beyond tip of spikelet; fruit deep violet-brown.

Acacia bushland or woodland; 1000–1600 m alt.

S. Oman.

(**D. nitens** Rendle) – See under **D. flaccida** above.

D. nodosa Parl.; Hall & al. in Edinb. J. Bot. 65: 132, 2008; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 274, 2010; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013. – Icon.: Henrard (1950): 499, 611 (as *Panicum piriferum* Chiov.), spikelets; Boulos, Fl. Egypt 4: 309, 2005; Cope, Fl. Arab. Penins. 5/1: 236, 2007 (spikelet).

syn.: *D. parlatoarei* (Steud.) Chiov.; *D. commutata* subsp. *nodosa* (Parl.) Maire; *D. pirifera* (Chiov.) Henrard; *D. pyriformis* Chiov., orth. var. (as such in Henrard 150: 610); *Panicum parlatoarei* Steud.; *P. commutatum* Schultes var. *nodosum* (Parl.) T. Durand & Schinz; *P. pabulare* Aitch. & Hemsl.; *P. piriferum* Chiov.; *Paspalum sanguinale* var. *pabulare* (Aitch. & Hemsl.) Hook. f.; *Paspalum pabulare* (Aitch. & Hemsl.) Brühl; *Syntherisma nodosa* (Parl.) Newbould

Perennial tufted grass without rhizomes; basal sheaths silky pubescent-tomentose; culms erect, 0.15–1 m tall, often ± bulbous at base, nodes glabrous; leaf blades linear, 3–30 × 0.2–0.5 cm; inflorescence of 2–4–25 racemes, these digitate or borne along an axis to 10 cm long; racemes 3–15 cm long; spikelets paired on a triquetrous rachis; spikelets 2–3 mm long; fruit greyish to light brown.

Black clay and dry soils in deciduous bushland; gravelly soils; grassland on fixed dunes overlying limestone; bushland often on black clay soils; sumps in deciduous bushland; 0–1600 m alt.

Canary isl.; Cape Verde isl.; Morocco E-wards to Tunisia, SE Egypt; Arabian Peninsula, Afghanistan, NW India, Pakistan. – Doubtful in S Sudan (Equatoria).

Closely related to *D. eriantha* which often produces stolons and has spikelets with an upper glume ½–⅔ spikelet length; also confused with *D. gazensis*, a species with grey fruit and hairy nodes; differs from *D. rukwae* in harder culms and lack of stolons.

D. nuda Schumach., incl. subsp. *schumacheriana* Henrard 1950, nom. inval., but excl. subsp. *senegalensis* Henrard (= *D. bicornis*); Gibbs Russell & al., Grasses south. Afr.: 112, 1990; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015; César & Chatelain, Fl. ill. Tchad: 238, 2019. – Icon.: Henrard (1950): 178 (as

DIGITARIA NUDA

Digitaria diamesa, spikelet); Fl. Zambes. 10/3: 139 pl. 41/48, 1989 (idem); Poilecot, Boissiera 56: 463, 1999; Caldasia 27: 55, 2005 (S. America); Boonsuk & al. in Phytotaxa 246: 253, 2016 (spikelet; text p. 262); Ibrahim & al., Grasses Mali: 61, 2018.

syn.: *D. borbonica* Desv.; *D. diamesa* (Steud.) A. Chev.; *Panicum horizontale* (Willd.) G. Meyer var. *subcompositum* Nees; *P. diamesum* Steud.; *Digitaria horizontalis* sensu Andrews, Fl. Pl. Sudan 3: 436, 1956, non Willd.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass; culms decumbent at base, and geniculately ascending, 0.15–1 m long; leaf blades ± linear, 2–20 × 0.3–1 cm; inflorescence ± digitate, on common axis to 2 cm long, of 2–20 racemes, these slender, straight, 4–20 cm long, with or without sparse white hairs; spikelets 2-nate, overlapping, on a winged rachis; spikelets 1.7–2.5 mm long, sharply acute.

Open weedy places; between dunes with *Schoenefeldia gracilis*, *Cenchrus biflorus*, *Eragrostis tremula*, *Aristida mutabilis*, etc.; waste places, farmland; 0–1800 m alt.

Tropical and subtropical Old World; Cape Verde Isl.; Namibia, S. Africa, Swaziland; Madagascar, Comoros, Mauritius, Réunion; from Thailand E-wards to New Guinea (“one of the common species in Mainland SE Asia”). Introduced in S USA, C. & S. America, West Indies.

Very similar to *D. velutina* but distinguished by its ± digitate inflorescence of whorled racemes and overlapping spikelets. Confused with, and intergrading with *D. ciliaris*, but *D. nuda* has slender racemes, shorter spikelets (1.7–2.5 mm, not 2–3.7), obsolete lower glume.

D. parodii Jacq.-Fél. – Icon.: Bol. Soc. Argent. Bot. 12: 230, 232 (details), 1968; Bull. Jard. Bot. Natl. Belg. 45: 405, 408, 1975 (as *D. spirifera*); Fl. Zambes. 10/3: 138 pl. 40/40, 1989 (spikelet); César & Chatelain, Fl. ill. Tchad: 238, 2019 (details).

syn.: *D. kasamaensis* Van der Veken; *D. spirifera* Goetgh.

Annual slender creeping, mat-forming grass; the culms 10–20 cm tall, erect from a creeping base, glabrous, nodes dark; leaf sheaths loosely to densely hairy; blades lanceolate, 1–3 cm × 2–4 mm, flat, glabrous; inflorescence of 2–4 racemes, 3–7 cm long, one shortly, the other long pedicelled; rachis triquetrous, asymmetrically winged, undulating; pedicels 2-nate, 0.5–3 mm long; spikelets c. 2 mm long, lower glume rim-like; upper glume as long as spikelet, with appressed hairs white to purplish, papillose, with circinnately involute apex.

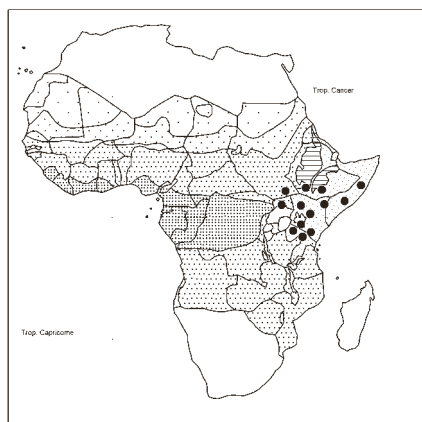
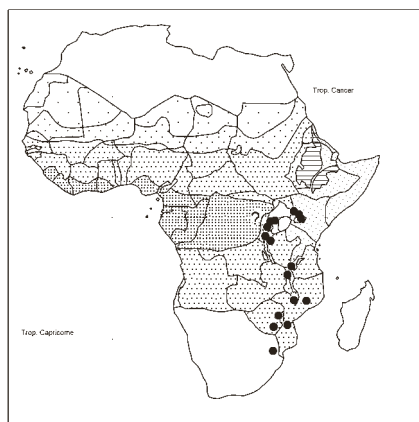
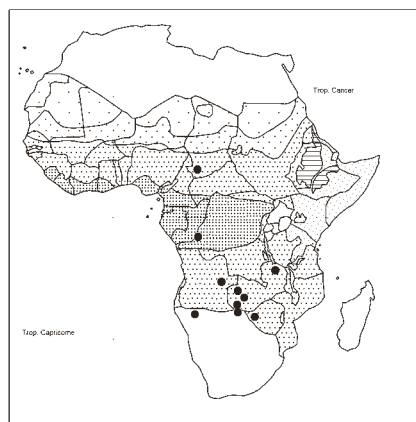
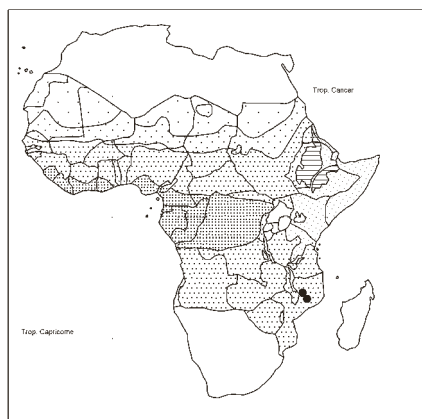
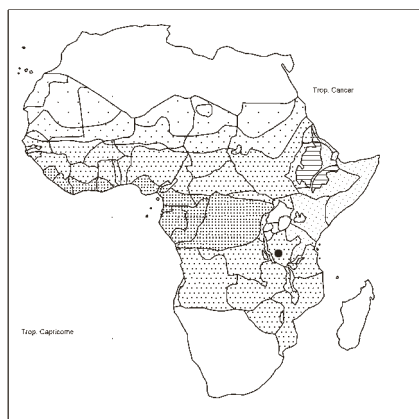
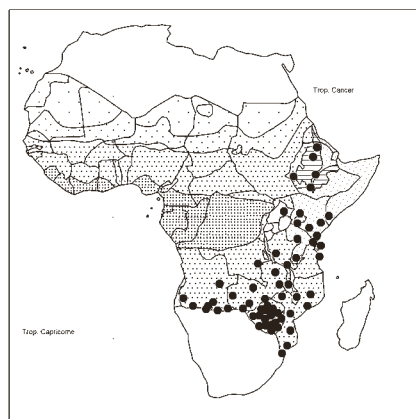
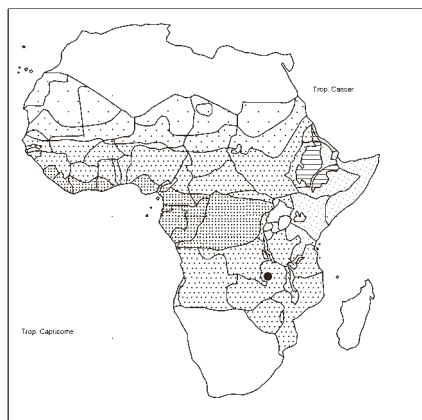
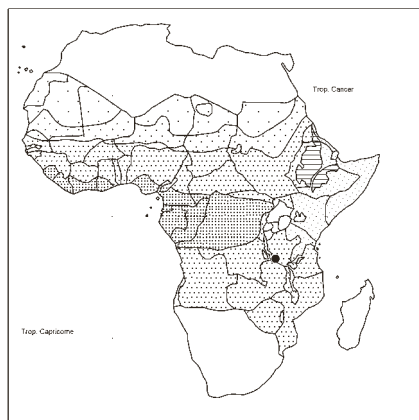
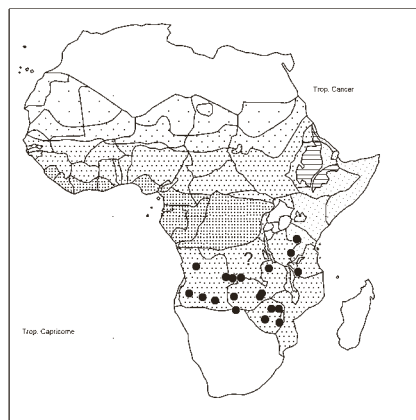
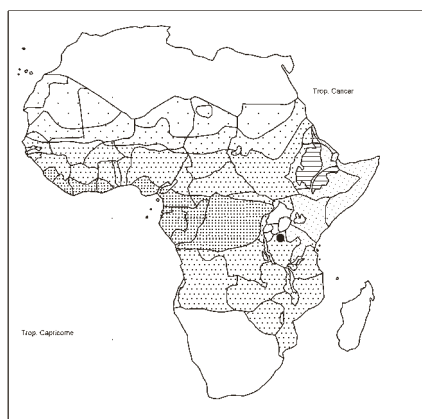
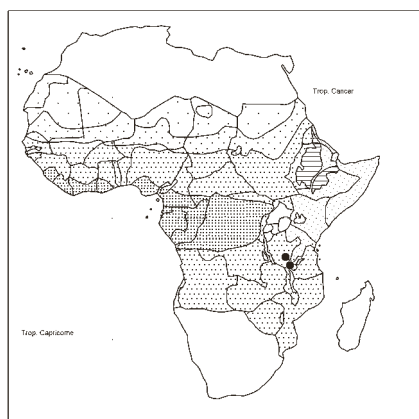
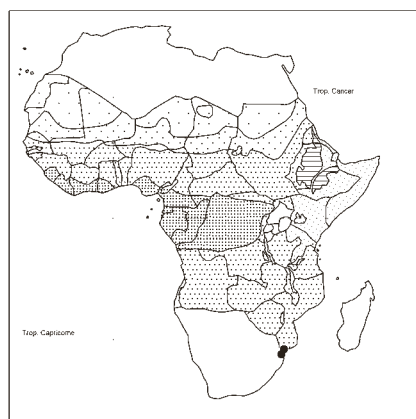
Gravelly to sandy river banks; damp shallow soil over rock; on isenga disturbed by removing gravel.

D. patagiata Henrard; Lisowski, Fl. Rép. Guinée 1: 456, 2009. – Icon.: Henrard (1950): 525 (spikelets).

Creeping annual grass, culms ramose, ascending, nodes villous; leaf blades linear, 2.5–3 cm × 1–2 mm, sheaths hirsute; inflorescence of 1 spiciform, slender raceme, rachis triquetrous, glabrous; spikelets to 2.5–3 mm long; lower glume reduced, scaly, ¼–⅓ the length of spikelet, with a snow-white fringe of hairs protruding from underneath; upper glume 5-nerved, appressed pubescent between nerves with verrucose hairs.

Humid places; weed of rice paddies.

D. pearsonii Stapf; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 79, 1955 (as *D. lancifolia*, possibly E Zaire); Harvey & al., Pl. Lebaleme Highl. Cameroon: 153, 2010. – Icon.: Henrard (1950): 372 (*D. lancifolia*), 531 (*D. pearsonii*), spikelets; Fl. Zambes; 10/3: 139 pl. 41/50, 1989, idem.

*Digitaria macroblephara**Digitaria maitlandii**Digitaria maniculata**Digitaria megasthenes**Digitaria melanotricha**Digitaria milanjana**Digitaria minoriflora**Digitaria monobotrys**Digitaria monodactyla**Digitaria monopholis**Digitaria myurus**Digitaria natalensis*

DIGITARIA PEARSONII

syn.: *D. lancifolia* Henrard; *D. abyssinica* var. *velutina* (Chiov.) Henrard; *Panicum abyssinicum* var. *velutinum* Chiov.

Perennial grass, straggling, with wiry rhizomes; culms geniculate-ascending from a decumbent base, rooting at lower nodes, 30–70 cm long; leaf blades ± lanceolate, 2,5–20 × 0,3–1,5 cm; inflorescence ovate, of 6–20 racemes laxly spreading on a central axis 2,5–15 cm long; racemes 3–17 cm long, simple or with numerous secondary branchlets 0,5–5 cm long; spikelets paired (on branchlets sometimes solitary) and openly spaced on a triquetrous rachis; spikelets 1,7–2,5 mm long.

Forest margins; open weedy places; woodland clearings; cultivations; savannas; banks of small streams in clearings of dense forest; scree slopes; 300–2600 m alt.

Confused with the annual *D. velutina* when basal parts are missing, but *D. pearsonii* is usually more robust, frequently with compound racemes, fruits uniformly clear mid-brown (in *D. velutina* most frequently grey); *D. velutina* often has slightly shorter, elliptic-oblong, more obviously silky-pilose spikelets. Specimens with unbranched racemes and without basal parts cannot be named with certainty. Also confused with *D. abyssinica* but this has plumper elliptic spikelets not usually exceeding 2 mm long and a bigger, 3–7-nerved upper glume.

D. pellita Stapf – Icon.: Henrard (1950): 537 (spikelets).

Perennial, compactly caespitose grass; culms erect, stiff, to 1,8 m tall, glabrous, simple; leaf sheaths densely, appressedly hirsute to tomentose all along or upwards only, the lowest crowded, hard and long-persistent; blades tapering to a fine point, > 30 × 0,4 cm, hard, densely appressedly greyish-tomentose below, less so to almost glabrous above; inflorescence of 3–4 racemes, sessile, subdigitate on an erect angular axis very villous at nodes, to 3,8 cm long; racemes erect, stiff, 15–17,5 cm long; pedicels scabrid, angular 2–4-nate, very unequal, 0,4 cm long; spikelets subappressed, (sub-)umbriate, to 3 mm long, silky on the side, the silk exceeding spikelet, hairs 4,5 mm long.

Woods.

? Only known from the type.

Near *D. phaeotricha*.

D. pennata (Hochst.) T. Cooke, incl. var. *pilosa* Chiov. and var. *shettyana* R. P. Pandey, Parmar & B. L. Vyas; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015; Ghazanfar, Fl. Oman 4: 122, fig. 208 (map), 2018. – Icon.: Engler & Prantl, Natürl. Pflanzenfam. 14c: 50, 1940; Henrard (1950): 540 (spikelets); Thulin, Fl. Somalia 4: 240, 1995; Fl. Eth. & Eritrea 7: 250, 1995; Cope, Fl. Arab. Penins. 5/1: 233, 2007 (inflor.).

bas.: *Panicum pennatum* Hochst.

syn.: *Paspalum pennatum* (Hochst.) Hook. f.

Perennial grass, tufted, bushy; culms 0,15–1 m long, wiry, woody, almost suffrutescent, base bulbous with silky pubescent scales; leaf blades ± lanceolate, 2–8 cm × 2–4 mm; inflorescence of 4–14 stiffly radiating racemes in 1–2 whorls, the whole inflorescence breaking off at maturity and shed as a tumbleweed dispersal unit; racemes 7–25 cm long, lower half without spikelets and with long spreading bristles; upper half of raceme with distant pairs of appressed spikelets; spikelets few, 2,5–3 mm long.

Dry open deciduous bushland, typically with *Commiphora*; open woodland; shady places on rocky hillsides, ledges, gullies, stony plains; *Acacia*, *Commiphora* bushland, usually growing under protection of bushes; 100–1500 m alt.

DIGITARIA PENNATA

S Oman, Saudi Arabia, Yemen; Pakistan, N India. – Uncertain in Sudan.

D. perrottetii (Kunth) Stapf, incl. var. *angustifolia* Henrard, nom. nud., and var. *gondaensis* Henrard; Gibbs Russell & al., Grasses south. Afr.: 112, 1990; Klaassen & Craven, Checklist grasses Namibia: 28, 2003. – Icon.: Henrard (1950): 547 (spikelets); Bosser, Gramin. patur. cult. Madag.: 374, 1969; Bull. Jard. Bot. Natl. Belg. 45: 417 1975; Fl. Zambes. 10/3: 139 pl. 41/59, 177, 1989; César & Chatelain, Fl. ill. Tchad: 240, 2019.

bas.: *Panicum perrottetii* Kunth

syn.: *P. cristatum* Andersson 1864, nom. nud.; *Digitaria floribunda* Goetgh.; *Milium minutiflorum* Trin.; *Paspalum perrottetii* (Kunth) Hook. f.; *Syntherisma perrottetii* (Kunth) Chase; *Panicum pseudoagrostis* Steud.

Coarse annual grass; culms 0,3–1 m tall, geniculate-ascending, often rooting at lower nodes; leaf blades lanceolate to linear, 3–35 × 0,3–2 cm, rounded or narrowed at base, often subamplexicaul; inflorescence a narrow spire 8–30 cm long, of numerous spreading racemes arranged in successive whorls (sometimes only lower branches whorled) on a central axis; racemes 2–11 cm long; spikelets paired on a triquetrous rachis usually with long glistening hairs; spikelets 1,2–2,3 mm long; upper glume pubescent.

Deciduous bushland, particularly on old farmland and disturbed places in miombo woodland; floodplains; weed on fallow land, roadsides; mopane woodland on sand; 0–1800 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa; Madagascar. Perhaps introduced in Senegal.

The inflorescence occasionally becomes straggling and less regular, imitating a strictly perennial *D. rukwae*.

D. phaeotricha (Chiov.) Robyns, incl. var. *paucipilosa* F. Ballard & C. E. Hubb., but excl. var. *patens* Clayton (= *D. setifolia*); Fl. W. Trop. Afr., ed. 2, 3/2: 452, 1972 (only name cited). – Icon.: Henrard (1950): 555 (spikelets); Fl. Zambes. 10/3: 136 pl. 38/12, 1989 (idem); Vollesen & Merrett, Field guide Zambian miombo woodland 1: 378, 2020.

bas.: *D. parlatoresii* (Steud.) Chiov. var. *phaeotricha* Chiov.

Perennial tightly caespitose grass; base surrounded by often densely hairy, pale greyish leaf sheath remnants; culms 0,6–1,2 m tall, erect, glabrous, nodes dark, (sub)glabrous; sheaths glabrous to loosely hairy; blades linear, 10–30 cm × 3–7 mm, densely hairy beneath, hairy along margins; inflorescence conspicuously linear of 5–20 racemes, 1–3 cm long (the terminal one to 10 cm), appressed, solitary along a common axis; rhachis triquetrous; pedicels 2–3-nate, 1–8 mm long; spikelets 3,5–4,3 mm long.

Damp dambos; seasonal bogs; vleis grassland; 1400–1800 m alt.

D. poggeana Mez; Henrard (1950): 578; Scholz in Willdenowia 8: 481, 1979. – Icon.: Misc. Pap. Landbouwhogeschool 19: 148, 1980; Fl. Zambes. 10/3: 137 pl. 39/18, 1989 (spikelets).

syn.: *Digitariopsis major* Van der Veken; *Digitaria major* (Van der Veken) Clayton

Annual herb; culms 0,2–1,5 m tall, erect, glabrous; leaf blades linear, 4–25 cm × 4–8 mm; inflorescence loose or contracted, of 40–100 delicate racemes on a central axis 15–35 cm long, branches often clustered (not whorled); racemes to 3–10 cm long, with a filiform rachis naked for the lower 1/3–1/2 its length and bearing paired spikelets above; pedicels with pubescent tip; spikelets 1,7–2,7 mm long.

Miombo woodland; *Brachystegia* woodland; dry savanna; sandy soil; grassy savanna edges; 980–1400 m alt.

DIGITARIA POGGEANA

Near *D. flaccida* (perennial with fibrous, tomentose base), *D. redheadii* (all racemes solitary along the axis).

The locality of the type (Pogge 5) reads Dibolela (Zaire). Pogge collected in the “phytogeographical territory IV” (See map at end of “Répertoire des lieux de récolte” by Bamps 1982), an area between 2°–10°S and 16°–23°E. He collected, e.g., at Dibaya (= Kingenge/Dschingenge) = 6°9'S × 22°27'E. We indicate this place on our map of the species.

[**D. polybotryoides** Robyns & Van der Veken, non *D. polybotrya* Stapf (= *D. leptorhachis*). – Icon.: Bull. Jard. Bot. Etat Bruxelles 22: 153, 1952 (spikelet).

Annual grass; 50–60 cm tall, with an inflorescence of (2–)4–6 racemes 4–9 cm long; on a common axis 2–4 cm long; pedicels 2–3-nate; spikelets 1,3–1,5 mm long.

Ecology and precise locality not recorded.

This grass was supposed to have been collected in Katanga/Zaire by the agronomist Henri Antoine Homblé who spent most of his career there. However, between November 1909 and 11 June 1911 he was stationed in Guilin, the then capital of Guangxi, China. Robbrecht & al. (Blumea 66: 82–92, 2021) have studied this herbarium collection held at Meise Botanic Garden, Belgium. They have concluded that this plant is **Digitaria abludens** (Roem. & Schult.) Veldkamp, formerly cited as a synonym under *D. granularis* (Trin.) Henrard.

D. polyphylla Henrard; Gibbs Russell & al., Grasses south. Afr.: 112, 1990. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: fig. 345, 1955; Fl. Zambes. 10/3: 139 pl. 41/53, 1989 (spikelet).

syn.: *D. foliosa* Stent 1930, nom. illeg., non Lagasca 1816.

Perennial grass, rhizomatous and stoloniferous, or (densely) tufted; rhizome branched, knotty, covered by hairy cataphylls; culms erect, 20–40 cm tall, lower nodes unbranched, middle and upper ones profusely branched, forming leafy tufts; lower leaves with reduced blade, soon withering, middle and upper ones crowded, 4–10 cm × 2–4 mm, flat, glabrous; sheaths glabrous; inflorescence of 3–4 racemes, digitate, erect, whorled, 2–10 cm long; rachis winged; pedicels 2-nate, 0,5–2,5 mm long; spikelets 2–3 mm long. Grassland on sandy soil in low rainfall areas.

S. Africa (locally common).

D. procurrens Goetgh. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 410, 1975; Fl. Zambes. 10/3: 137 pl. 39/21, 1989 (spikelets).

Perennial?, creeping grass, stoloniferous, mat-forming; culms 20–30 cm long, erect-ascending, from a creeping base, glabrous, nodes dark; leaf blades ± lanceolate, 2–3 × 0,4–0,7 cm, glabrous, margins crisped; inflorescence of 2 racemes, 7–11 cm long, erect to patent, 1 shortly, the other long pedicellate; rachis triquetrous, winged; pedicels 3-nate, 0,5–3,5 mm long; spikelets c. 3 mm long.

Mateshi thicket on roadside; 1200 m alt.

Known only from the type collected in 1961.

D. pseudodiagonalis Chiov. – Cf. also under (**D. intacta** Stapf) above. Here we include *D. intacta* as a synonym. – Fl. Trop. E. Afr., Gramin. 3: 623 (*D. intacta*), 624 (*D. pseudodiagonalis*), 1972; Fl. Eth. & Eritrea 7: 247–248, 1995 (idem); Lye & al. in Lidia 4: 162, 2000 (idem); Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015 (*D. intacta*). – Icon.: Henrard (1950): 209 (*D. eglumis*), 351 (*D. intacta*), 461 (*D. minutiflora*; all spikelets), 600–601 (text *D. pseudodiagonalis*); Bosser, Gramin. pâtur. cult. Madag.: 374, 1969; Fl. Zambes. 10/3: 136 pl. 38/2, 1989 (spikelets); Fl. Mascareignes 203, Gramin.: 186, 2018.

DIGITARIA PSEUDODIAGONALIS

syn.: *D. minutiflora* (Hochst. ex A. Rich.) Stapf; *D. eglumis* Peter, incl. var. *reducta* Goetgh.; *Panicum minutiflorum* Hochst. ex A. Rich., 1850, nom. illeg.; *Digitaria intacta* Stapf (See above).

Annual grass; culms erect or ascending, 10–85 cm tall; leaf blades 5–30 cm × 2–7 mm, glabrous, acuminate; inflorescence of 3–30 subfastigate racemes on a central axis 1–12 cm long; racemes 2–13 cm long with a triquetrous rachis bearing spikelets in groups of 2–6; pedicel tips with several white setae overtopping the spikelets; spikelets c. 1 mm long.

Weedy places beside path, old farmland; disturbed ground at side of road; shallow soil over rocks in miombo woodland, in dambos; plantations; grassland on black clay; volcanic ashes; doloritic steep slopes; 1000–2000 m alt.

Madagascar.

D. pulchra Van der Veken – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 403, 1975 (spikelets); Fl. Zambes. 10/3: 137 pl. 39/16, 1989 (idem).

Perennial loosely caespitose grass on short rhizome; base surrounded by hairy cataphylls and old leaf sheath remnants; culms 30–70 cm tall, erect, glabrous, nodes dark, hairy; leaf sheaths glabrous or loosely hairy with bulbous based bristles; blades linear, 2–6 cm × 1–3 mm, glabrous or with scattered bulbous based bristles along margins; inflorescence of 3–16 racemes, 4–8 cm long, sometimes branched at their base; racemes and branches conspicuously peduncled, erect to appressed, solitary along a common axis; rachis orange-yellow; pedicels 2-nate, 0,5–3,5 mm long; spikelets 2,2–2,6 mm long; upper lemma dark brown.

Dambos in drier part, or in wetter part of river dambo; grassy savanna; swamp with *Loudetia simplex*; 1700–2100 m alt.

[**D. radicata** (J. Presl) Miq.]; Fl. Trop. E. Afr., Gramin. 3: 651, 1982; van der Zon, Gramin. Cameroun 2: 324, 1992 (with map); Verloove in Acta Bot. Croat. 76: 122, 2017. – Icon.: Henrard (1950): 746 (as *D. timorensis*, spikelet); Fl. China 22, Ill.: 759, 2007; Verloove in Candollea 63: 230–231, 2008; Devi & al. in J. Bombay Nat. Hist. Soc. 111: 154, 2014; Phytotaxa 246: 249 (rachis), 265 (spikelets), 2016; Nozawa & al. in J. Bot. Res. Inst. Texas 11: 171, 2017; Fl. Mascareignes 203, Gramin.: 140, 2018.

bas.: *Panicum radicosum* J. Presl

syn.: *P. timorensis* Kunth; *Digitaria timorensis* (Kunth) Balansa; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual trailing grass; culms 20–40 cm long, very slender, glabrous, rooting at lower nodes; leaf blades linear, 2–7 cm × 2–5 mm, chartaceous; inflorescence digitate of 2–4 racemes; these 3–9 cm long; spikelets 2-nate, loosely overlapping; rachis triquetrous, narrowly winged, ribbon-like; spikelets 2,5–3 mm long.

Originating from tropical Asia and the Pacific Islands, introduced into Africa; in shady places along paths, roadsides; c. 700 m alt. (E. Africa).

Casual in the Canary Isl. (Verloove, 2017), probably introduced as an accidental impurity of bird-seed, fide Willdenowia 39: 332, 2009; SW Cameroon; NE Tanzania.

In S Europe recorded from Corsica.

Related to *D. ciliaris*.

D. redheadii (C. E. Hubb.) Clayton – Icon.: Hooker's Ic. Plant. 35: pl. 3420, 1940; Jacques-Félix, Gramin. Afr. trop. 1: 235, fig. 160, 1962 (under *Digitariopsis*); Fl. Zambes. 10/3: 137 pl. 39/19, 1989 (spikelet).

DIGITARIA REDHEADII

bas.: *Digitariopsis redheadii* C. E. Hubb.

Annual grass loosely caespitose or solitary growing; culms 10–60 cm tall, erect, glabrous, nodes dark; leaf sheaths glabrous; blades linear, 1–7 cm × 1–4 mm, glabrous, often dark reddish coloured; inflorescence of up to 30 racemes, 1–3 cm long, erect to patent, *solitary* on a tall common axis, distinctly peduncled; rachis subterete near base, triquetrous, winged; pedicels solitary, c. 1.5 mm long, with long cilia in upper part; spikelets 2.3–2.6 mm long, *solitary*; upper glume with a *basal acute spur* 0.6–0.8 mm long.

Miombo woodland; roadsides; c. 1400 m alt.

D. remotigluma (De Winter) Clayton; Fl. Trop. E. Afr., Gramin. 3: 638, 1982; Gibbs Russell & al., Grasses south. Afr.: 112, 1990; Klaassen & Craven, Checklist grasses Namibia: 28, 2003. – Icon.: Fl. Zambes. 10/3: 138 pl. 40/30, 1989 (spikelet).

bas.: *Digitariella remotigluma* De Winter

Annual loosely caespitose or creeping grass; culms 5–60 cm long, geniculately ascending, nodes dark, loosely to densely hairy; leaf sheaths subglabrous to partly densely hairy; blades linear, 2–16 cm × 2–4 mm; inflorescence of 1–7 (sub-) digitate racemes, 2–11 cm long, mostly in 1(–2) whorls; rachis triquetrous, winged; pedicels 2-nate, 0.5–2.5 mm long, ciliate; spikelets 0.6–1.5 cm long; *upper glume with an awn-like tip and a long internode separating the 2 glumes*.

Sandy river banks; damp soils bordering streams and water holes; dambos; 500–2000 m alt.

N-most Namibia, Botswana.

Allied to *D. debilis*.

D. rivae (Chiov.) Stapf; Thulin, Fl. Somalia 4: 241, 1995; Agnew, Upl. Kenya wild flow., ed. 3: 439, 2013. – Icon.: Henrard (1950): 85 (as *D. botryostachya*); 628 (*D. rivae*), spikelets; Audru & al., Plantes vascul. Rép. Djibouti 2/2: 922, 1994; Fl. Eth. & Eritrea 7: 255, 1995; Cope, Fl. Arab. Penins. 5/1: 236, 2007 (spikelets).

bas.: *Panicum rivae* Chiov.

syn.: *Digitaria botryostachya* Stapf

Densely tufted *perennial*, arising from a short *knotty rhizome* (this rarely slender, wiry); basal leaf sheaths silky tomentose; culms hard, 0.3–1 m tall, nodes usually glabrous, sometimes villous; blades 4–30 cm × 2–5 mm; inflorescence *linear to lanceolate* of 6–30 or more racemes spreading or appressed to an axis 4–30 cm long; racemes 1–11 cm long; spikelets paired on a triquetrous rachis; spikelets 1.7–2.5 mm long; upper glume *pubescent to pilose*; lower lemma *densely silky pilose or villous* with soft white smooth hairs *slightly exceeding* spikelet.

Deciduous bushland often with *Commiphora*; grassland on alluvial or sandy soils; often in shade of *Acacia*; weed of bananas, citrus; 0–2000 m alt.

Socotra.

Merges with *D. rukwae* which has soft culms, scaly rhizome, indistinctly hairy spikelets.

D. rukwae Clayton; Gibbs Russell & al., Grasses south. Afr.: 112, 1990. – Icon.: Fl. Zambes. 10/3: 138 pl. 40/36, 1989 (spikelet).

Caespitose *perennial* grass with a well grown *rhizome*, covered at base by cataphylls; culms 0.25–1.2 m tall, *erect*, glabrous, nodes dark; leaf sheaths glabrous; blades 5–30 cm × 2–7 mm, *glabrous*; inflorescence of 6–25 racemes, 2–11 cm long, borne irregularly or in untidy whorls on an axis 4–20 cm long – sometimes in an inferior whorl of 3–4 racemes, or all racemes solitary on a common

DIGITARIA RUKWAE

axis; rachis triquetrous; pedicels 2-nate, 0.5–2.5 mm long; spikelets 2–3 mm long, pairs imbricate, not patent; *fruit brown*.

Flood plain grassland on seasonally wet sandy soils; *Acacia* woodland on clay soil; *Commiphora* thicket; alluvial soil; heavy black clay soil; edges of cultivation in montane grassland; 0–2590 m alt. S. Africa.

Variable. Confused with *D. gazensis* from which it may be distinguished by the *brown* fruit, and this does not grow in flood plains. Merges with *D. rivae* and *D. arushae*. Allied to *D. nodosa*, a caespitose plant.

D. sacculata Clayton; Lock in Kew Bull. 70: § 46: 3, 2015 (Robinson coll.). – Icon.: Misc. Pap. Landbouwhoogeschool 19: 152, 1980; Fl. Zambes. 10/3: 138 pl. 40/28, 1989 (spikelet).

Annual, loosely caespitose or solitary growing; culms 10–25 cm tall, erect, glabrous, nodes dark; leaf sheaths glabrous; blades ± lanceolate, 2–5 cm × 2–4 mm, glabrous; basal leaves bright red (fresh), purple when dry; inflorescence of 2 racemes, 3–5 mm long; rachis triquetrous, scarcely winged; pedicels 2-nate at base, solitary in upper half, with *long cilia in superior upper half*; spikelets 3–3.5 mm long; upper glume with *short basal spur*, appressed hairy with hairs long, white to purplish, stiff, acute, *overtopping glume*.

Damp sand.

Only known from the type collected in 1961.

[**D. sanguinalis** (L.) Scop., including many forms, varieties and subspecies, for Africa, e.g., var. *aegyptiaca* (Willd.) Maire & Weiller, subsp. *aegyptiaca* (Willd.) Henrard, and var. *vulgaris* (Schrad.) Maire & Weiller, subsp. *vulgaris* (Schrad.) Henrard; – var. *ciliaris* (Retz.) Parl., and subsp. *ciliaris* (Retz.) Parl. belong to *D. ciliaris*]. – Rendle, Cat. Welwitsch's Afric. pl. 2/1: 163–164, 1899; Fl. Trop. E. Afr., Gramin. 3: 650, 1982; Verloove in Candollea 67: 232, 2008; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 274–275, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015. – Icon.: Fl. Zambes. 10/3: 139 pl. 41/45, 1989 (spikelet); Gibbs Russell & al., Grasses south. Afr.: 113, 1990; Boulos, Fl. Egypt 4: 369, 2005 (spikelet); Cope, Fl. Arab. Penins. 5/1: 236, 2007 (idem); Fl. China 22, Ill.: 758, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 221, 2012; Clarke, Name those grasses: 254–255, 2015.

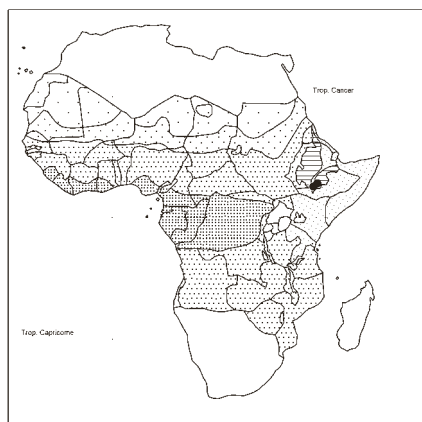
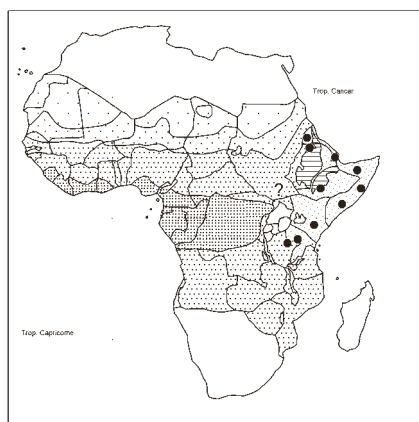
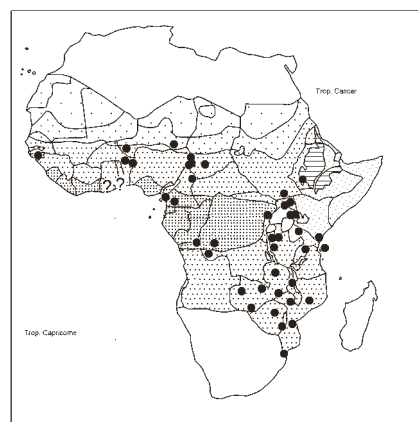
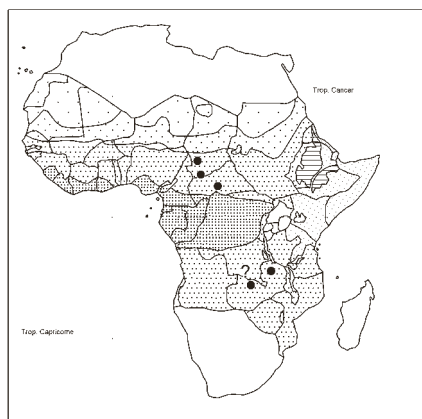
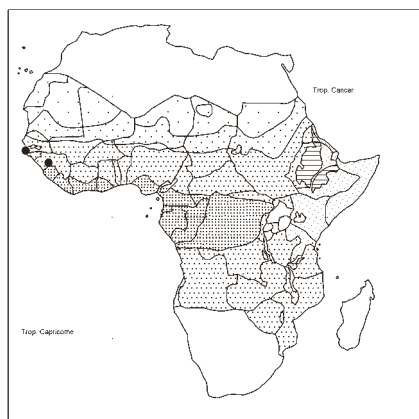
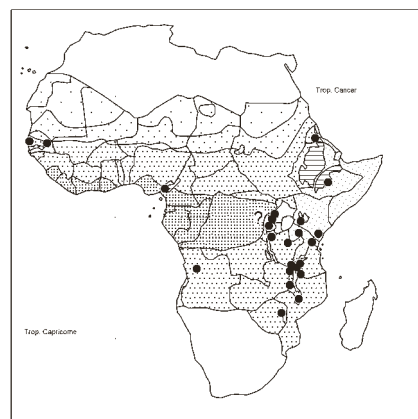
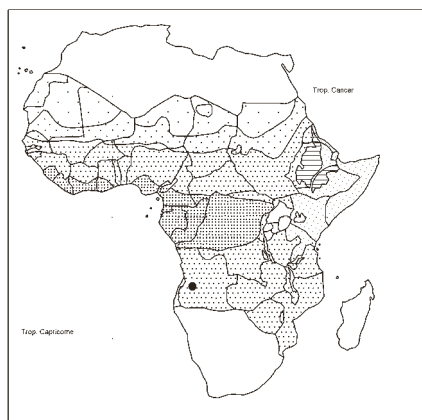
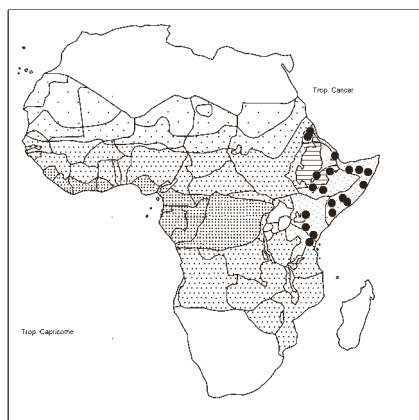
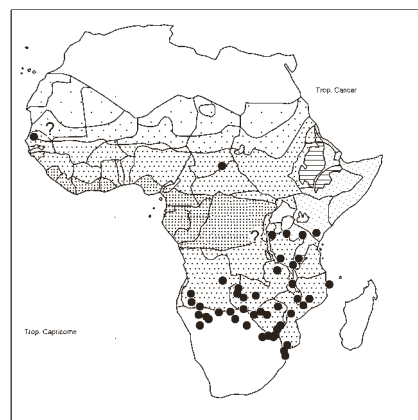
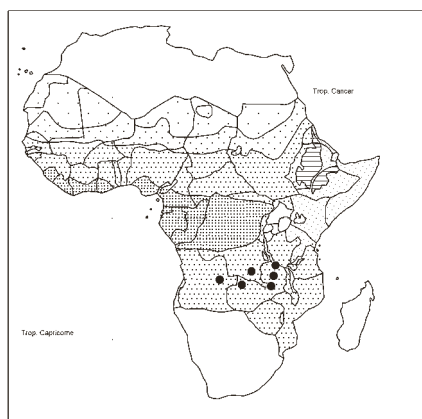
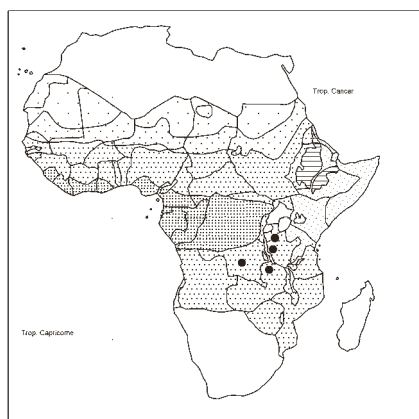
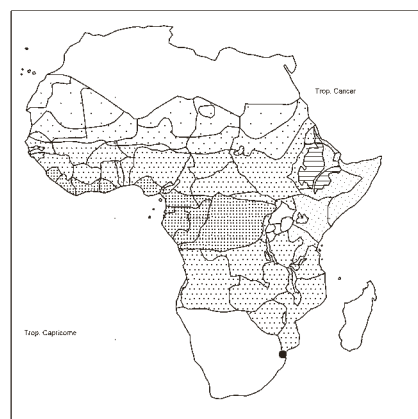
bas.: *Panicum sanguinale* L.

syn.: *P. aegyptiacum* Retz 1783, nom. illeg.; *P. aegyptium* J. F. Gmel. 1791, orth. var.; *Digitaria asthenes* Clayton p.p. (specimen from Zambia, included as a delicate edaphic hungerform, fide Fl. Zambes. 10/3: 168, 1989); World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted, straggling grass, often purplish, 20–60 cm tall; culms often branching and usually ascending from a geniculate base, rooting from lower nodes; leaf blades ± lanceolate, 2.7–17 × 0.3–1 cm; inflorescence (sub)digitate of 2–16 stiff racemes 3–20 cm long; spikelets paired, 2.3–3.5 mm long, overlapping by c. 2/3 of their length, rachis winged.

Introduced in Africa. Weed of cultivation, disturbed areas. – Mediterranean area E-wards to C. Asia, Malesia. – Azores, Canary Isl.; Cape Verde Isl.; N. Africa; Namibia (map, Klaassen & Craven, Checklist grasses Namibia: 28, 2003), Botswana, S. Africa; Madagascar. Introduced in the Americas.

Considered as part of the flora in SW-most Sweden (collected there since 1840; fide Svensk Bot. Tidskr. 113: 12, 2019). – In tropical Africa reported from Sudan, Burundi, Tanzania, Malawi, Mozambique, Zambia, Zimbabwe, Angola.

*Digitaria neghellensis**Digitaria nodosa**Digitaria nuda**Digitaria parodii**Digitaria patagiata**Digitaria pearsonii**Digitaria pellita**Digitaria pennata**Digitaria perrottetii**Digitaria phaeotricha**Digitaria poggeana**Digitaria polyphylla*

DIGITARIA SANGUINALIS

CÁMARA HERNÁNDEZ, J. (2001). Morfología de la inflorescencia de *Digitaria sanguinalis* (Poaceae). *Bol. Soc. Argent. Bot.* 36: 87–95.

Confused with, e.g., *D. velutina*.

D. schmitzii Van der Veken; *Fl. Trop. E. Afr.*, Gramin. 3: 633, 1982; *Fl. Zambes.* 10/3: 145, 1989 (under *D. siderograptia*); Lye & al. in *Lidia* 4: 162–163, 2000. – Icon.: *Bull. Jard. Bot. Etat, Bruxelles* 25: 327, 1955 (spikelet).

Annual grass; culms 30–50 cm tall, erect or ascending; leaf blades 10–25 cm × 1–7 mm; inflorescence of 2–6 subdigitate racemes, these 3–12 cm long; spikelets ternate on a winged rachis; spikelets 1,5–1,8 mm long; glumes 0 or the upper represented by a little hyaline cuff; lower lemma densely covered with short turgidly clavate hairs.

Temporary pond on ironstone outcrop, shallow soil over laterite; c. 1100 m alt.

Possibly confused with *D. siderograptia* which has: rachis wingless, spikelets c. 2,5 mm long (not 1,5–1,8 mm), hairs of lower lemma clavellate with a pointed tip.

“Could well occur in N Zambia”.

(**D. seriata** Stapf) – Icon.: Henrard (1950): 678 (spikelet); Müller, *Grasses Namibia*: 69, 2007.

In *Flora Zambesiaca* 10/3: 175, 1989, the specimens from Zimbabwe formerly identified as *D. seriata*, are included in *D. milanijana* (cf. also *Fl. Trop. E. Afr.*, Gramin. 3: 649, 1982). This plant is a variable member of a difficult complex.

On the other hand, *D. seriata* figures as such in Müller, *Grasses Namibia*, revised ed.: 67–68, 2007, with a distribution map showing occurrences in both Angola and Zambia on the border to Namibia (likewise in Klaassen & Craven, *Checklist grasses Namibia*: 28, 2003).

Comparing the drawings of spikelets (*D. milanijana*) in *Fl. Zambes.* 10/3: p. 139 pl. 41/51, 1989, and those by Henrard (1950): 678 (*D. seriata*), the spikelets seem very similar.

D. seriata is described as a “tufted perennial, with strongly branched rhizome and stolons...culms to 1,2 m tall, leaf sheaths of basal leaves keeled and densely covered with silky hairs, inflorescence digitate of 3–12 racemes, 10–23 cm long, spikelets conspicuously hairy, to 3,5 mm long. The long stolons (to 2 m long) and the knobby rhizome are characteristic.

D. setifolia Stapf; Clayton in *Kew Bull.* 29: 521, 1974. – Icon.: Henrard (1950): 683 (spikelet); Bosser, *Gramin. patur. cult.* Madagascar: 382, 1969; *Fl. Zambes.* 10/3: 136 pl. 38/11, 1989 (spikelet); van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 267, 2012 (inflor.); Boonsuk & al. in *Phytotaxa* 246: 265, 2016; Vollesen & Merrett, *Field guide Zambian Miombo woodland* 1: 376, 2020.

syn.: *D. bovonei* Chiov.; *D. fibrosa* (Hack.) Stapf ex Craib; *D. nardifolia* Stapf; *D. phaeotricha* var. *patens* Clayton; *Paspalum setifolium* (Stapf) A. Camus; *Panicum fibrosum* Hack.; *Digitaria yunnanensis* Henrard; *D. fibrosa* var. *yunnanensis* (Henrard) L. Liu; *Anthenantia asiatica* Hand.-Mazz.

Perennial densely tufted grass, base surrounded by glabrous fibrous, often partly burnt, pale to dark brown shining leaf sheath remnants; culms erect, 20–85 cm tall, glabrous, nodes dark, ± glabrous to bearded; leaf sheaths glabrous to loosely hairy; blades ± filiform, 5–15 cm × 1–3 mm, involute; inflorescence of 2–5 racemes, to 20 cm long, solitary along a short common axis, often branched at base; rachis triquetrous; pedicels 2–3-nate, 1–4 mm long; spikelets 3–3,8 mm long.

DIGITARIA SETIFOLIA

Grassland; damp areas in grassland, thalweg of a degraded forest gallery; on dolerite; c. 1300–2000 m alt.

E. S. Africa, Lesotho, ? Swaziland; Madagascar; S. China to Indo-China. – Disjunct species. – Introduced in Sierra Leone?

Digitaria fibrosa is sometimes considered as a different species: leaf blade flat, linear, and with an Asiatic distribution (*Fl. China* 22: 541, 2006).

D. phaeotricha is a close relative with a linear inflorescence (Zaire, Angola, Zambia).

D. setigera Roth var. **setigera**; Boonsuk & al. in *Phytotaxa* 246: 266–267, 2016. – Icon.: Henrard (1950): 455 (as *D. microstachya*); *Fl. China* 22, Ill.: fig. 756, 2007.

syn.: *D. sanguinalis* var. *extensa* (Hook. f.) Rendle, and fa. *extensa* (Hook. f.) Haines, and var. *pruriens* (Trin.) Prain; *World Checklist of Selected Plant Families*, Poaceae, Roy. Bot. Gard., Kew.

Annual grass; culms 20–80 cm tall, loosely tufted, geniculate-ly ascending from a decumbent base; leaf blades ± lanceolate, 3–25 × 0,3–1,2 cm; inflorescence of 3–15 racemes on a common axis 1–6 cm long, or digitate in smaller plants; racemes 4–15 cm long, stiff; spikelets binate and overlapping by c. ½ their length on a narrowly winged triquetrous rachis, this sometimes with a few long glistening hairs; spikelets 2–3 mm long; lower glume 0 or very obscure; upper ⅛–¼ as long as spikelet.

Roadside; 200 m alt

Madagascar, Seychelles; from India – Sri Lanka E-wards to New Guinea – Australia – Pacific Isl. (not in New Zealand: erroneous record according to Gardner in *Auckland Bot. Soc. J.* 75: 129, 2020). Widespread in warm parts of Asia. Introduced in the Americas. Record from the Canary Isl., Gran Canaria as a plantation weed (Verloove & al. in *Fl. Medit.* 28: 124, 2018). Record in Rendle, *Cat. Welwitch's Afric. Pl.* 2/1: 163, 1899, annotated “Pungo Andongo?”.

Similar to *D. ciliaris* but distinguished by the lower glume being absent. It merges into *D. horizontalis*.

D. siderograptia Chiov.; *Fl. Trop. E. Afr.*, Gramin. 3: 630, 1982. – Icon.: Henrard (1950): 694; *Fl. Zambes.* 10/3: 136 pl. 38/6, 1989 (spikelets).

Annual grass; culms erect, loosely tufted or solitary, 8–70 cm tall, nodes dark; leaf sheaths glabrous; blades linear, 5–15 cm × 1–3 mm; inflorescence of 2–4 racemes, 2–20 cm long, solitary on a well-developed common axis; rachis triquetrous, very narrowly winged, undulate; pedicels 3-nate, 0–2–1,5 mm long, bearing a coronula; spikelets 2,3–2,5 mm long.

Laterite outcrops in miombo woodland; roadsides; 1200 m alt.

Near *D. schmitzii* but that species has smaller spikelets (1,9–2 mm long), conspicuously capitate hairs, winged rachis.

D. subsulcata Robyns & Van der Veken – Icon.: *Bull. Jard. Bot. Etat Bruxelles* 22: 145, 1952 (spikelet).

Appears to be perennial with a short rhizome, ± tufted, with new shoots within the leaf sheaths; culms long-creeping at base and rooting at lower nodes, then ascending, with total length of 50–70 cm, often branched from nodes, glabrous, often ± purplish; leaf blades linear, 4–10 cm × 3–4 mm, long acuminate; inflorescence of paired racemes, 10–16 cm long, rachis ± triquetrous; pedicels mostly 3-nate, unequal, to 5 mm long, apex thickened, white-bearded; spikelets loosely imbricate, 3–3,5 mm long, with a pencil of long silvery hairs exceeding tips; lower glume 0; fruit unknown.

Lateritic places.

DIGITARIA SUBSULCATA

Near *D. xanthotricha*.

? Known only from the type collected in 1937.

(*D. swazilandensis* Stent) – See under *D. didactyla* above.

D. tenuifolia Goetgh.; Lock in Kew Bull. 70/4: § 46: 3, 2015 (Robinson coll.). – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 408, 1975; Fl. Zambes. 10/3: 138 pl. 40/41, 1989 (spikelet).

Slender *annual* loosely tufted grass; culms *erect*, to 20 cm tall, glabrous, nodes slightly hairy, dark; leaf sheaths glabrous to densely papillose; blades linear, 5–15 × 0,5–1 mm, densely papillose; inflorescence of 1 raceme, terminal, 3–5 cm long, erect; rachis triquetrous, narrowly winged; pedicels 2-nate, 1–3,5 mm long; spikelets 2,8–4 mm long.

Shallow depression in flat rocks; 1420 m alt.

D. ternata (A. Rich.) Stapf, incl. fa. *glabrispicula* (Fiori) Cufod.; Gibbs Russell & al., Grasses south. Afr.: 113, 1990; van der Zon, Gramin. Cameroun 2: 316, 1992; Thulin, Fl. Somal. 4: 240, 1995; Klaassen & Craven, Checklist grasses Namibia: 28, 2003; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 234, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015. – Icon.: Henrard (1950): 737; Fl. Trop. E. Afr., Gramin. 3: 632, 1982; Troupin, Fl. Rwanda 4: 232, 1988; Fl. Zambes. 10/3: 136 pl. 38/3, 143, 1989; Poilecot, Boissiera 50: 433, 1995; Fl. Eth. & Eritrea 7: 250, 1995; Cope, Fl. Arab. Penins. 5/1: 233, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 222, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 190, 2013; Boonsuk & al. in Phytotaxa 246: 265, 2016 (spikelet); Vollesen & Merrett, Field guide Zambian miombo woodland 1: 379, 2020.

bas.: *Cynodon ternatus* A. Rich.

syn.: *Panicum ternatum* (A. Rich.) Steud.; *P. phaeocarpum* Nees var. *gracile* Nees; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass; culms 0,2–1 m tall with knee-like bent lower nodes, with many leaves at base; leaf blades linear, 5–40 cm × 3–8 mm, glabrous; inflorescence of 2–11 subdigitate upright racemes, 3–23 cm long; spikelets ternate on a ribbon-like winged rachis; pedicels nearly always *with a corona of hairs* 0,2–1 mm long at tip; *spikelets 1,5–2,7 mm* long, with *clavate hairs* at apex.

Weed of old farmland, waste places, disturbed sites; open grassy places; roadsides; wooded savanna; shallow soil ± crusted; 500–2600 m alt.

Tropical & subtropical Old World. NC Namibia, S. Africa, Lesotho, Swaziland; Yemen, India, Sri Lanka E-wards to China, Indo-China, Indonesia, Philippines. Introduced in New Guinea, Australia, Tasmania, S N. America, West Indies, C. & N S. America.

Confused with *D. longiflora*. *D. thouarsiana* is closely related, but that species has smaller spikelets (1–1,7 mm long).

The crop plant *D. iburua* is a cultivated derivative differing mainly in its glabrous spikelets.

D. thouarsiana (Flüggé) A. Camus; in most floras and floralists under “thouarsiana”, sphalm.; Gibbs Russell & al., Grasses south. Afr.: 113–114, 1990; Lidia 5/5: 130, 2001. – Icon.: Henrard (1950): 447 (*D. melanochila*), 667 (*D. scaetiae*), 739 (*D. thoarsiana*, sic), 759 (*D. tricostrulata*), all spikelets; Bosser, Gramin. pâtur. cult. Madag.: 384, 1969; Fl. Zambes. 10/3: 136 pl. 38/4, 1989.

bas.: *Paspalum thouarsianum* Flüggé

syn.: *Panicum puberulum* Kunth var. *tricostrulatum* Hack.; *Digitaria tricostrulata* (Hack.) Henrard; *D. melanochila*

DIGITARIA THOUARSIANA

Stapf; *D. scaetiae* Robyns, incl. var. *glabra* Robyns & Van der Veken

Annual tufted grass; culms 0,2–1 m tall, ascending; leaf blades linear, 3–20 cm × 2–8 mm; inflorescence of 2–14 subdigitate racemes, 2–12 cm long, a few together or all solitary on a short common axis, often viviparous (spikelets replaced by plantlets); rachis triquetrous, broadly winged; pedicels 3-nate, 0,5–2,5 mm long; *spikelets 1–1,8 mm* long.

Marshy places; grassy swamps; moist forest; disturbed sites, fallows; savannas; clearings in montane forest; swampy *Miscanthus* community; 0–2400 m alt.

S. Africa; Madagascar.

Near *D. ternata* (See under that species above).

D. tisserantii Jacq.-Fél.; César & Chatelain, Fl. ill. Tchad: 239, 2019. – Icon.: J. Agric. Trop. Bot. Appl. 13: 41, 43, 1966.

Annual grass 0,6–1 m tall; culms glabrous; leaf blades linear-lanceolate, 4–10 × 0,5 cm, hirsute, base of hairs tuberculate; inflorescence 10–20 cm long, panicle-like, with 1 whorl of 3–7 racemes and 2–3 additional racemes on a common axis 2–4 cm long, and sometimes with some groups of pedicellate 2–3 spikelets added to the whorl; racemes 14–18 cm long; rachis rounded to triquetrous towards tip; spikelets in clusters of (3)–4(–6) on flexuous pedicels 0,2–1,8 cm long; spikelets 2 mm long, hairy.

On laterite; clayey-sandy riversides.

Near *D. xanthotricha*; resembling *D. brazzae*.

D. trinervis Van der Veken; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 146, 2006. – Icon.: Bull. Jard. Bot. Natl. Belg. 45: 403, 1975; Fl. Zambes. 10/3: 138 pl. 40/34, 1989 (spikelets).

Annual or short lived perennial mat-forming grass; culms 10–20 cm long, glabrous, nodes dark, hairy; leaf sheaths sometimes scaberulous, glabrous to loosely hairy; blades linear, 3–5 × 0,1–0,3 cm, flat, scaberulous; inflorescence of 3–8 racemes, 1–4 cm long, often branched, dispersed along a short common axis; rachis triquetrous, scarcely winged; pedicels 2-nate, 0,5–3 mm long, triquetrous; spikelets 2,1–2,4 mm long.

Grassland, pathside; rocky hillside; 1200–1950 m alt.

D. ursulae H. Scholz

Annual grass; culms clustered, erect, glabrous, to 60 cm tall, branching from lower nodes, nodes glabrous; leaf blades linear, 3–18 cm × 2–4,5 mm, scabrous above, ± glabrous beneath; inflorescence of 3–6 sparse racemes, 7–16 cm long; rachis triquetrous, slightly winged; pedicels (3)–4-nate, to 3 mm long; spikelets c. 2 mm long.

Depression.

Known only from the type collected in 1979.

D. velutina (Forssk.) P. Beauv. 1812, – non *D. velutina* (DC.) Hitchc. 1927, nom. illeg. – excl. var. *glabrescens* Gilli (= *D. abyssinica*); Lidia 5/5: 130, 2001; Cheek & al., Pl. Kupe...: 443, 2004; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 275, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 126, 2015. – Icon.: Henrard (1950): 196 (*D. divaricata*), 248 (*D. fenestrata*), 778 (*D. velutina*), 807 (*D. zeyheri*); Chippindall, Grasses past. S. Afr.: 401, 1955; Fl. Zambes. 10/3: 139 pl. 41/49, 1989 (spikelets); Fl. Eth. & Eritrea 7: 255, 1995; Cope, Fl. Arab. Penins. 5/1: 233, 2007 (spikelet); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 213, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 190, 2013; Nozawa & al. in J. Bot. Res. Inst. Texas 11: 172, 2017; César & Chatelain, Fl. ill. Tchad: 237, 2019 (presence to verify).

DIGITARIA VELUTINA

bas.: *Phalaris velutina* Forssk. 1775.

syn.: *Panicum forskalii* C. Chr.; *P. zeyheri* Nees; *P. fenestratum* Hochst. ex A. Rich.; *P. sanguinale* L. var. *fenestratum* (Hochst. ex A. Rich.) Schweinf. and var. *cognatum* Schweinf.; *P. psilostachyum* Th. Dur. & Schinz, nom. nud.; *P. abyssinicum* A. Rich. var. *setigerum* Chiov.; *P. velutinum* Steud. pro syn.; *P. redemptum* Chiov. in syn.; *Digitaria fenestrata* (Hochst. ex A. Rich.) Rendle; *D. divaricata* Henrard; *D. ulugurensis* Pilg.; *D. zeyheri* (Nees) Henrard; *D. horizontalis* auct., non Willd.

Annual straggling grass; culms 0.2–2 m long, geniculately ascending, often decumbent, rooting at lower nodes; leaf blades linear-lanceolate, 2–15 × 0.3–1.7 cm; inflorescence of 3–20 racemes, *diverging* from a common axis 1–7 cm long; racemes 3–13 cm long, the longer sometimes branched near base; spikelets 2-nate, 1.5–2.2 mm long, silky-pubescent, *loosely imbricate* on a narrowly winged rachis; fruit grey (sometimes dirty brown).

Weed of pathsides; farmland, open places; disturbed land; on light soils in shade; *Acacia*, *Commiphora* bushland; savanna; secondary growth in rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*; riverine bushland; garden edge; edge of swampy *Phragmites* community; 0–2300 m alt.

SE Egypt; Namibia, Botswana, S. Africa, Swaziland; Madagascar; Socotra, Saudi Arabia, Yemen, Oman. – Introduced in Australia, S USA, C. America.

Confused with *D. pearsonii* (rhizomatous perennial with straggling culms and pure brown fruit). *D. velutina*, *D. nuda*, *D. ciliaris* represent different facies of a single intergrading complex.

D. ventriosa Van der Veken (sometimes “ventricosa”, sphalm.); Clayton in Kew Bull. 29: 524, 1974. – Icon.: Fl. Zambes. 10/3: 137 pl. 39/24, 1989 (spikelet).

Slender *annual* loosely tufted or solitary growing grass; culms 10–30 cm tall, glabrous, so also nodes; leaf blades linear, 3–5 cm × 2–3 mm; inflorescence of a *single raceme*, 2–5 cm long, erect, terminal, rachis triquetrous, with *broad, undulating*, recurved *ciliate wings*; pedicels 2-nate, 0.5–2.5 mm long; spikelets 2–2.2 mm long.

On shallow soil overlying laterite; wet open sands; roadsides.

[**D. violascens** Link]; Fl. Trop. E. Afr., Gramin. 3: 635–636, 1982; Boulos, Fl. Egypt 4: 308, 2005; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 275, 2010. – Icon.: Fl. China 22, Ill.: 765, 2007; Verloove in Candollea 63: 230, 2008 (spikelet); Paul & Tison in Bull. Soc. Linn. Bordeaux 150, N. S. 43: 24–25, 2015; Boonsuk & al. in Phytotaxa 246: 265, 2016 (spikelet); Fl. Mascareignes 203, Gramin.: 186, 2018; Ramana & Swamy in Ind. J. Forestry 43: 237, 2021 (2020).

syn.: *D. ischaemum* var. *violascens* (Link) Radford; *D. chinensis* (Nees) A. Camus, non Hornem.; *Panicum violascens* (Link) Kunth; *Paspalum chinense* Nees; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual tufted grass; culms erect or ascending, rooting from lower nodes, 20–60 cm long; leaf blades linear, 3–25 cm × 2–7 mm, glabrous; inflorescence of 2–9 subdigitate racemes, 3–14 cm long; spikelets 3-nate on a ribbon-like winged rachis; spikelets 1.2–2 mm long, hairs verrucose; fruit dark brown to ± black.

Grassland. A weed. Introduced.

Native to tropical Asia, “and probably also tropical America from where the type was described...[it] has steadily expanded its distributional area to other tropical and warm-temperate areas in more recent times (Africa, Australia, N. America). It has

DIGITARIA VIOLASCENS

been declared a noxious weed in the subtropics” (Verloove, l.c.). In Africa present in N Egypt, NE Tanzania (T3), SE S. Africa. Also in SW Europe: recently introduced in S France, Italy.

Very similar to *D. longiflora*. They intergrade to some extent. For the distinction between *D. ischaemum*, *D. sanguinalis*, *D. radicata*, *D. violascens*, see key in Candollea 63: 232–233, 2008.

D. xanthotricha (Hack.) Stapf; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015. – Icon.: Henrard (1950): 32 (as *D. alba*; spikelet).

bas.: *Panicum xanthotrichum* Hack.

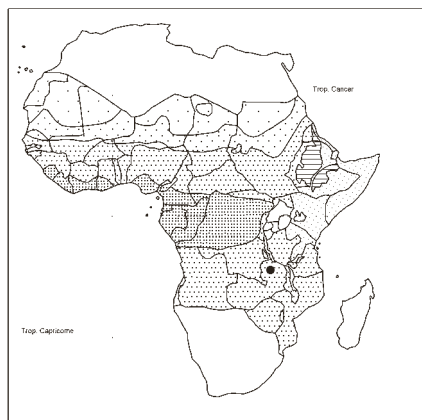
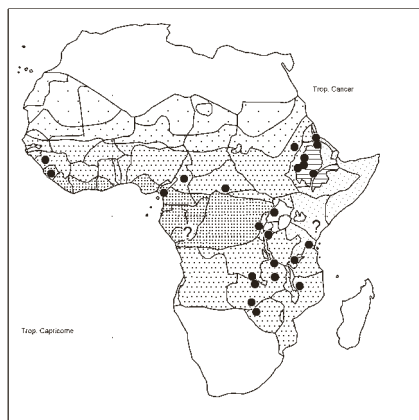
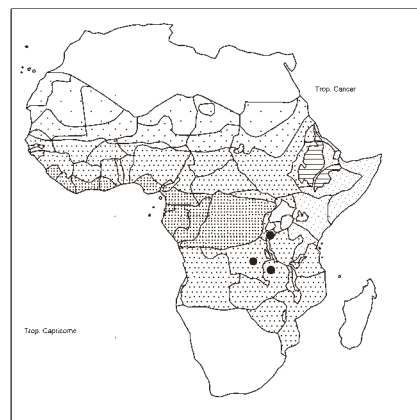
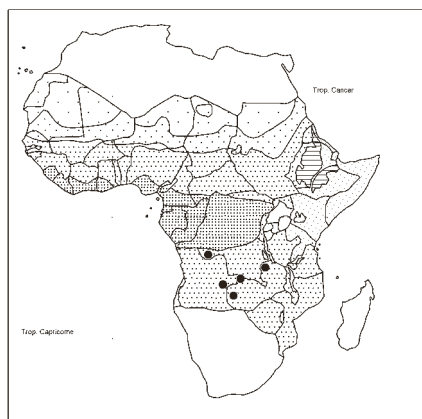
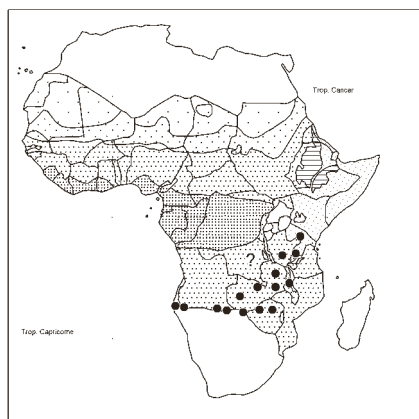
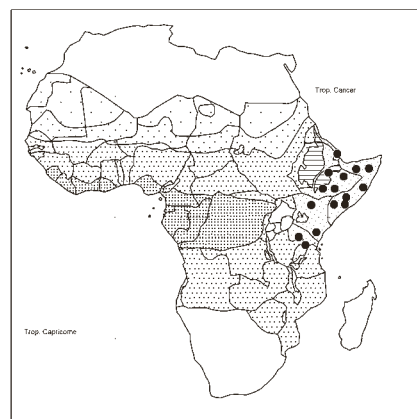
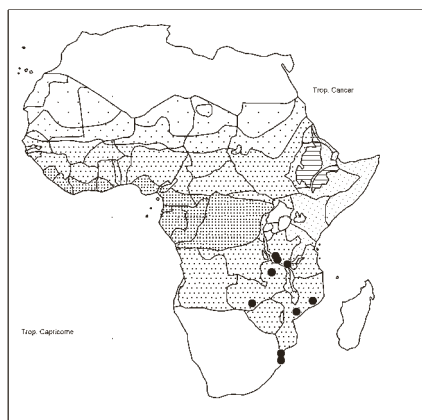
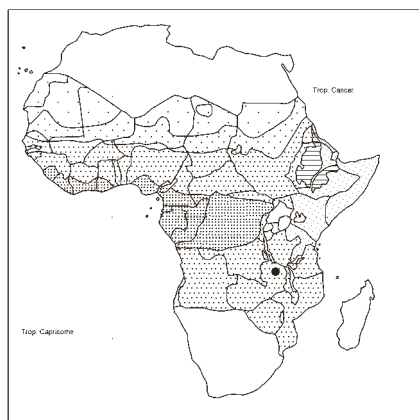
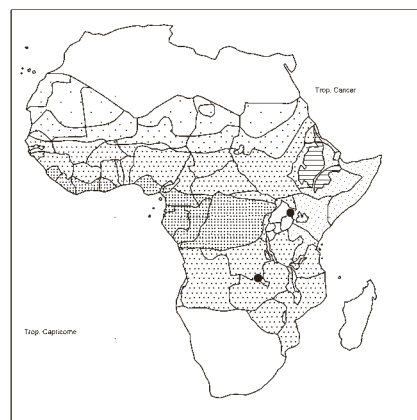
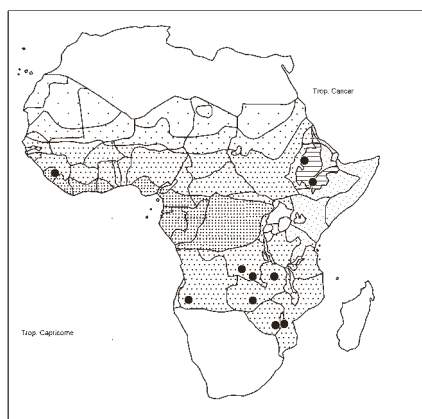
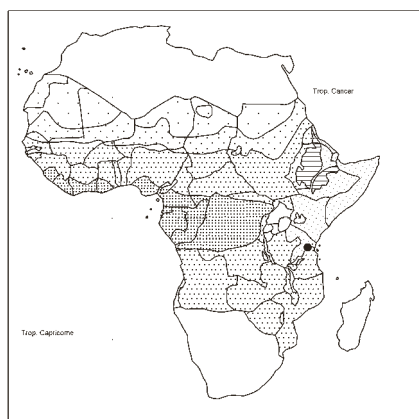
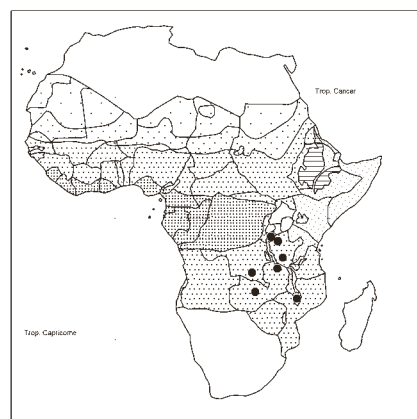
syn.: *P. crinitum* Hack. ex T. Durand & Schinz, nom. nud.; *P. schweinfurthii* Hack.; *Digitaria alba* Mez

Annual grass; culms 50–90 cm tall, erect or ascending, very slender, *glabrous*; leaf sheaths glabrous or ± hirsute with short tubercle-based hairs; blades linear, 4–10 × 0.3–0.5 cm, long tapering to an acute point, glabrous; inflorescence of 2 racemes: one sessile, the other pedunculate, or of 3–4 racemes, subdigitately arranged, slender, 7.5–17.5 cm long, ± dense; rachis thread-like, 3-angled; pedicels with a short beard of pale-green or at length yellowish hairs; spikelets ternate, subimbricate or in slightly distant clusters, 2.5 mm long, pale yellowish or tinged with purple, with bristle-like hairs (Cf. Henrard 1950: 801–802).

River banks; sometimes growing in dense masses; open wooded grassland; roadsides.

SYNONYMS:

Digitaria abyssinica var. *micrantha* Peter and var. *scalarum* (Schweinf.) Stapf = **Digitaria abyssinica**
abyssinica var. *velutina* (Chiov.) Henrard = **D. pearsonii**
acrotricha (Benth.) Roberty = **Eriochloa fatmensis**
adscendens (Kunth) Henrard, incl. subsp. *chrysoblephara* (Fig. & De Not.) Henrard, var. *criniformis* Henrard, var. *fimbriata* (Link) Cufod., subsp. *marginata* (Link) Henrard, and subsp. *nubica* (Stapf) Henrard = **Digitaria ciliaris**
alba Mez = **D. xanthotricha**
annua Van der Veken = **D. leptorhachis**
antunesii Mez = **D. gazensis**
apiculata Stent, incl. var. *hirta* Goetgh. = **D. maitlandii**
arenaria Vanderyst 1919, pro syn. = **D. maniculata**
argyrottricha sensu Andrews 1950, non (Andersson) Chiov. = **D. longiflora**
asthenes Clayton p.p. quoad specim. ex Zambia = **D. sanguinalis**
bechuanica (Stent) Henrard = **D. eriantha**
boivinii Henrard = **D. milanijana**
borbonica Desv. = **D. nuda**
botryostachya Stapf = **D. rivae**
bovonei Chiov. = **D. setifolia**
bredeensis Robyns & Van der Veken = **D. leptorhachis**
brevipes Mez = **D. macroblephara**
buchananii Mez = **D. compressa**
bulbosa Peter = **D. milanijana**
capitipila Stapf = **D. compressa**
chevalieri Stapf = **D. leptorhachis**
chinensis (Nees) A. Camus, non Hornem. = **D. violascens**
chrysoblephara Fig. & De Not. = **D. ciliaris**
ciliaris Vanderyst 1925, non (Retz.) Koeler 1802 = **D. abyssinica**
ciliaris sensu Wickens p.p. = **D. acuminatissima**
commutata Schult. subsp. *eriantha* (Steud.) Maire = **D. eriantha**
commutata subsp. *nodosa* (Parl.) Maire = **D. nodosa**

*Digitaria procurrens**Digitaria pseudodiagonalis**Digitaria pulchra**Digitaria redheadii**Digitaria remotigluma**Digitaria rivae**Digitaria rukwae**Digitaria sacculata**Digitaria schmitzii**Digitaria setifolia**Digitaria setigera**Digitaria siderograptia*

DIGITARIA

corradii Chiov. = **D. longiflora**
decumbens Stent = **D. eriantha**
delicatula sensu J.-P. Lebrun & al. 1972: 231, non Stapf
 = **D. delicata**
diagonalis (Nees) Stapf var. *glabrescens* (K. Schum.)
 Peter, var. *hirsuta* (De Wild. & T. Durand) Troupin, var.
major Stapf, var. *robustus* T. Durand & Schinz, and
 var. *uniglumis* (A. Rich.) Pilg. = **D. diagonalis**
diamesa (Steud.) A. Chev. = **D. nuda**
didactyla var. *decalvata* Henrard = **D. didactyla**
dinteri Henrard = **D. eriantha**
divaricata Henrard = **D. velutina**
eglumis Peter, incl. var. *reducta* Goetgh.
 = **D. pseudodiagonalis**
eichingeri Mez = **D. abyssinica**
elegans Stapf = **D. flaccida**
elegantula Mez = **D. gayana**
endlichii Mez, incl. subsp. *meziana* Henrard
 = **D. milanijana**
eristachya Peter 1931, nom. illeg. = **D. diagonalis**
exasperata Henrard = **D. milanijana**
fenestrata (Hochst. ex A. Rich.) Rendle = **D. velutina**
fibrosa (Hack.) Stapf ex Craib, incl. var. *yunnanensis*
 (Henrard) L. Liu = **D. setifolia**
flexilis Henrard = **D. longiflora**
flexuosa Peter = **Axonopus flexuosus**
floribunda Goetgh. = **Digitaria perrottetii**
foliosa Stent 1930, non Lag. 1816 = **D. polyphylla**
friesii Pilg. = **D. longiflora**
fusca Chiov. = **D. milanijana**
gallaensis Chiov. = **D. milanijana**
geniculata Stent = **D. eriantha**
glauca Stent 1930, nom. illeg., non A. Camus 1927
 = **D. eriantha**
glauca var. *bechuanica* Stent = **D. eriantha**
gracilentia Henrard = **D. milanijana**
grantii C. E. Hubb. = **D. diagonalis**
hackelii (Pilg.) Stapf = **D. abyssinica**
herpoclados Pilg. = **D. gazensis**
hiascens Mez = **D. eriantha**
hirtigluma Hitchc. = **D. argillacea**
hispida (Thunb.) Spreng. = **Arthraxon hispidus**
humblei Robyns = **Digitaria compressa**
horizontalis sensu Andrews 1956, non Willd. = **D. nuda**
horizontalis sensu auct., non Willd. = **D. velutina**
intecta Stapf = **D. pseudodiagonalis**
ischaemum var. *violascens* (Link) Radford = **D. violascens**
kasamaensis Van der Veken = **D. parodii**
katangensis Robyns, incl. var. *hirta* Goetgh.
 = **D. compressa**
keniensis Pilg. = **D. maitlandii**
kilimandscharica Mez = **D. milanijana**
lancifolia Henrard = **D. pearsonii**
lasistachya Peter = **D. diagonalis**
lecardii Mez 1921, nom. illeg. = **D. argillacea**
lecardii (Pilg.) Stapf 1919 = **D. argillacea**
littoralis Stent 1930, non Salisb. = **D. natalensis**
littoralis var. *prostrata* Stent = **D. natalensis**
livida Henrard = **D. eriantha**
lomanensis Mez = **D. brazzae**
lunularis Henrard = **D. comifera**
macroglossa Henrard, incl. var. *prostrata* (Stent) Henrard
 = **D. natalensis**
major (Van der Veken) Clayton = **D. poggeana**
marginata Link, incl. var. *fimbriata*, var. *linkii* Stapf 1919,
 and var. *nubica* Stapf = **D. ciliaris**

DIGITARIA

masembaensis Vanderyst = **D. atrofusca**
melanochila Stapf = **D. thouarsiana**
melinoides Mez = **D. flaccida**
merkeri Mez = **D. abyssinica**
milanijana (Rendle) Stapf var. *abscondita* Henrard
 and subsp. *eylesiana* Henrard = **D. milanijana**
minutiflora (Hochst. ex A. Rich.) Stapf
 = **D. pseudodiagonalis**
mombasana C. E. Hubb. = **D. milanijana**
moninensis Rendle = **D. brazzae**
monodactyla var. *explicata* Stapf = **D. monodactyla**
mutica Rendle = **D. abyssinica**
nardifolia Stapf = **D. setifolia**
memoralis Henrard = **D. eriantha**
nigritana (Hack.) Stapf = **D. leptorhachis**
nitens Rendle = **D. flaccida**
nuda Schumach. subsp. *schumacheriana* Henrard
 = **D. nuda**
nuda subsp. *senegalensis* Henrard = **D. bicornis**
nyassana Mez = **D. gazensis**
obtusifolia (Delile) Roem. & Schult.
 = **Paspalidium obtusifolium**
parlatorei (Steud.) Chiov. = **Digitaria nodosa**
parlatorei var. *microstachya* Chiov. = **D. gazensis**
parlatorei var. *phaeotricha* Chiov. = **D. phaeotricha**
parodii auct., non Jac.-Fél. = **D. maniculata**
pennata var. *pilosa* Chiov. and var. *shettyana* R. P. Pandey
 = **D. pennata**
pentzii Stent, incl. var. *minor* Stent and var. *stolonifera*
 (Stapf) Henrard = **D. eriantha**
perrottetii var. *angustifolia* Henrard and var. *gondaensis*
 Henrard = **D. perrottetii**
phaeotricha var. *patens* Clayton = **D. setifolia**
pirifera (Chiov.) Henrard = **D. nodosa**
polevansii Stent, incl. subsp. *peteriana* Henrard
 = **D. milanijana**
polybotrya Stapf = **D. leptorhachis**
proxima Henrard = **D. gazensis**
pseudoischaemum Buse = **D. fuscescens**
pyriformis Chiov., orth. var. = **D. nodosa**
reflexa Schumach. = **D. horizontalis**
richardsonii Mez = **D. leptorhachis**
rigida Stent = **D. natalensis**
sanguinalis var. *aegyptiaca* (Willd.) Maire & Weiller
 = **D. sanguinalis**
sanguinalis subsp. *ciliaris* (Retz.) Parl., and var. *ciliaris*
 (Retz.) Parlatore = **D. ciliaris**
sanguinalis var. *extensa* (Hook. f.) Rendle and fa. *extensa*
 (Hook. f.) Haines = **D. setigera**
sanguinalis var. *horizontalis* (Willd.) Rendle
 = **D. horizontalis**
sanguinalis var. *interrupta* Rendle = **D. gazensis**
sanguinalis var. *pruriens* (Trin.) Prain = **D. setigera** var.
setigera
sanguinalis var. *scabriglumis* Hack. = **D. milanijana**
sanguinalis fa. *umbraticola* Henrard = **D. horizontalis**
sanguinalis var. *vulgaris* (Schrud.) Maire & Weiller and
 subsp. *vulgaris* (Schrud.) Henrard = **D. sanguinalis**
scaetiae Robyns, incl. var. *glabra* Robyns & Van der Veken
 = **D. thouarsiana**
scalarum (Schweinf.) Chiov., incl. var. *elgonensis*
 C. E. Hubb. = **D. abyssinica**
seminuda Stapf = **D. atrofusca**
setivalva Stent = **D. milanijana**
smutsii Stent = **D. eriantha**
somalensis Chiov. = **D. abyssinica**

DIGITARIA

spectabilis Peter = **D. gazensis**
spirifera Goetgh. = **D. parodii**
stapfii Henrard = **D. milanjiana**
stentiana Henrard = **D. eriantha**
stoloniferissima (Vanderyst) Vanderyst = **D. leptorhachis**
stolzii Mez = **D. flaccida**
sulcigluma Chiov. = **D. brazzae**
swazilandensis Stent = **D. didactyla**
swynnertonii Rendle = **D. milanjiana**
tangaensis Henrard = **D. abyssinica**
ternata fa. *glabrispicula* (Fiori) Cufod. = **D. ternata**
timorensis (Kunth) Balansa = **D. radicata**
trichopodia Stent = **D. diagonalis**
tricotulata (Hack.) Henrard = **D. thouarsiana**
ulugurensis Pilg. = **D. velutina**
umfolozi D. W. Hall = **D. eriantha**
uniglumis (A. Rich.) Stapf, incl. var. *hirsuta* (De Wild. & T. Durand) Robyns and var. *major* Stapf = **D. diagonalis**
usambarica Mez = **D. gazensis**
valida Stent, incl. var. *glauca* Stent = **D. eriantha**
velutina (Forssk.) P. Beauv. var. *glabrescens* Gilli = **D. abyssinica**
verrucosa C. E. Hubb. = **D. angolensis**
vestita Fig. & De Not., incl. subvar. *elgonensis* (C. E. Hubb. & Snowden) Henrard and var. *scalarum* (Schweinf.) Henrard = **D. abyssinica**
villosissima Chiov. = **D. gazensis**
yokoensis Vanderyst = **D. angolensis**
yunnanensis Henrard = **D. setifolia**
zeyheri (Nees) Henrard = **D. velutina**

(DIGITARIELLA)

Digitariella remotigluma De Winter = **Digitaria remotifluma**

(DIGITARIOPSIS)

Digitariopsis major Van der Veken = **Digitaria poggeana**
monobotrys Van der Veken = **D. monobotrys**
redheadii C. E. Hubb. = **D. redheadii**

DIGNATHIA / 5

Genus of 5 species in NE – E Africa, Oman, Yemen, NW India.
 Description by Kellogg in Kubitzky, Fam. & genera vascul. pl. 13: 382, 2015: “Inflorescence branches unbranched, borne along a central axis, deciduous, curved, bearing 1 or 2 spikelets and a terminal one consisting only of glumes. Spikelets laterally compressed, with 1 or 3 flowers. Glumes longer than the flowers, *hard, gibbous, covered with prickles or long hairs*, their apices acuminate, muticous or awned. Lemma apex with a short awn or mucro.”

Dignathia aristata known only from the type.

Dignathia aristata Cope

Annual grass; culms erect, slender, to 18 cm tall; leaf blades linear, distichous, 1–3 cm × c. 2 mm, scaberulous beneath; *panicle spike-like*, dense, 2.5–3 × 1 cm, embraced below by the inflated uppermost sheath; *branches disarticulating from base, each with 3 spikelets*; these gaping, laterally compressed, awned; *glumes 10–12 mm long, long-awned*.

DIGNATHIA ARISTATA

In shallow soil over limestone with other grasses and sedges in *Acacia-Commiphora* woodland; 420 m alt.

Known only from the type collected in 1978.

D. ciliata C. E. Hubb.; Thulin, Fl. Somalia 4: 215, 1995; Fl. Eth. & Eritrea 7: 180, 1995.

syn.: *Dignathia pilosa* C. E. Hubb., orth. var.

Perennial subshrubby tufted grass; culms woody, much *branched*, wiry, naked below, 25–65 cm tall; inflorescence a dense narrowly oblong silky-hairy head 2–7 cm long, usually *exserted, sometimes partially embraced* by the slightly inflated upper-most sheath; racemelets of 1 fertile spikelet and a barren rudiment of 2 glumes; spikelets 4.5–7 mm long, paired on a long-ciliate axis c. 3 mm long; glumes densely silky long-ciliate.

Sand dunes with low shrubs; dry sandy open bushland; 230–1600 m alt.

D. gracilis Stapf – Icon.: Hooker’s Icon. Pl. 30: pl 2950, 1911; Fl. Trop. E. Afr., Gramin. 2: 405, 1974; Thulin, Fl. Somal. 4: 215, 1995; Fl. Zambes. 10/2: 250, 1999.

Annual loosely tufted grass; culms 20–50 cm tall, wiry, erect; leaf blades linear, 2–9 cm × 2–4 mm; inflorescence 3–8 cm long, exserted from the sheath; racemelets 3–6 mm long, contiguous to approximate, each comprising (1–)2 fertile spikelets and a reduced terminal spikelet of 2 gaping sterile glumes; *spikelets 2–3.5 mm long*, with rostrate apex; glumes ± spinously ciliate.

Sand-dunes with low shrubs; sandy soil in open bushland; coastal bushland; 0–170 m alt.

D. hirtella Stapf; Thulin, Fl. Somal. 4: 216, 1995. – Icon.: Hooker’s Icon. Pl. 30: pl. 2950, 1911; Fl. Eth. & Eritrea 7: 179, 1995; Cope, Fl. Arab. Penins. 5/1: 195, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013.

“An odd *annual*, often very small”, loosely tufted; culms 10–30 cm tall, wiry, erect; leaf blades filiform, linear, 1–6 cm × 1–3 mm; inflorescence 2–7 cm long, exserted from the sheath; racemelets of (1–)2 fertile spikelets and a reduced terminal spikelet of 2 gaping sterile glumes; spikelets ± globular, *4–7 mm long, tip rostrate*; glumes appressed-pubescent, margins ciliate.

Deciduous bushland on sandy soils; dense shrubland on sandy soils; areas of cultivation and heavy disturbance; open ground and among rocks; 50–1400 m alt.

Oman, Yemen; NW India.

Very near *D. gracilis* but glumes pubescent; intermediates unknown.

D. villosa C. E. Hubb.; Thulin, Fl. Somalia 4: 215, 1995; Fl. Eth. & Eritrea 7: 180, 1995.

Perennial tussocky subshrubby grass; culms woody, 12–30 cm tall, clothed with imbricate leaf sheaths, branching near tips, forming fascicles of shoots with the inflorescences protruding from the upper inflated leaf sheaths (often suffused with red); *inflorescence* oblong, *1.3–3 cm long*, villous; racemelets of 1 fertile spikelet and a *barren rudiment* of 2 glumes; spikelets in pairs on an axis 1.5–3 mm long, completely enveloped by copious spreading hairs to 2 mm long; spikelets c. 4 mm long; glumes densely long-ciliate with shaggy yellowish tubercle-based hairs.

Acacia-Commiphora bushland and shrubland on stony soil, and on red sand overlying limestone or gypsum; 100–1000 m alt.

SYNONYM:

Dignathia pilosa C. E. Hubb. = **Dignathia ciliata**

(DIGRAPHIS)

Digraphis arundinacea (L.) Trin. = **Phalaris arundinacea**

DIHETEROPOGON / 4

Four species in tropical and S. Africa, Madagascar. Inflorescences with 2 branches; pedicellate spikelet staminate or sterile.

One species known only from the type.

Diheteropogon amplexens (Nees) Clayton, Klaassen & Craven, Checklist grasses Namibia: 29, 2003; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 785, 1982; Gibbs Russell & al., Grasses south. Afr.: 115, 1990; van der Zon, Gramin. Cameroun 2: 467, 1992; Fl. Eth. & Eritrea 7: 318, 1995; idem 1: 270, 2009; Poilecot, Boissiera 50: 583, 1995; idem, ibid. 56: 601, 1999; Oyen & Lemmens, eds., Ressources végét. Afr. trop., précurseur: 75, 2002; Fl. Zambes. 10/4: 94, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 343, 2005; van Oudtshoorn Grasses south. Afr., ed. 3: 235, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013; César & Chatelain, Fl. ill. Tchad: 258, 2019.

bas.: *Andropogon amplexens* Nees

syn.: *Sorghum amplexens* (Nees) Kuntze; *Cymbachne amplexens* (Nees) Roberty

Perennial tufted grass often flushed purple, with short scaly rhizome; culms erect, branched, 0.3–2(–3) m tall; leaf blades $\pm$ lanceolate, 15–30 cm $\times$ 2–7 mm, with wide rounded cordate base clasping the stem; inflorescence of 2 erect racemes 4–9 cm long; spikelets 7–13 mm long, the sessile spikelet smaller than the pedicelled, awn 2.5–8 cm long.

Rocky wooded places; on poor sandy soil in deciduous or coastal bushland; wooded grassland; secondary forest; clay soils; savannas; lateritic pans; stony slopes; sandy soils with *Parahyparrhenia annua*, *Andropogon curvifolius*, *A. chinensis*, *Loudetia simplex*, *Schizachyrium schweinfurthii*, *Monocymbium cerasiiforme*; *Combretum* and *Brachystegia* woodland, especially pathsides; marshy areas in rocky, sandy and clay soils; 0–2000 m alt.

(NE-most) Namibia, Botswana, S. Africa, Swaziland; Madagascar.

Comprises 2 vars.: – var. **amplexens** (syn.: *Andropogon amplexens* var. *natalensis* Hack.) with leaves mostly basal, cauline leaves linear, not in W. Africa; – var. **catangensis** (Chiov.) Clayton [bas.: *Andropogon amplexens* var. *catangensis* Chiov.; syn.: *A. amplexens* var. *hirsutus* Pilg. and var. *diversifolius* (Rendle) Stapf; *A. diversifolius* Rendle; *A. subcordatifolius* De Wild., pro syn.; *A. subamplexens* Berhaut 1954, nom. inval. (no Latin descr.); *Cymbachne amplexens* subvar. *heteropogonoides* Roberty; *Cymbopogon subcordatifolius* De Wild.] with basal and upper leaves different; cordate leaf base 7–25 mm wide.

Cymbopogon excavatus has similar leaf blades, but is aromatic and its inflorescence a dense false panicle.

An important forage grass.

D. filifolius (Nees) Clayton; Renier, Fl. Kwango 1: 28, 1948 (as *D. emarginatus*); Gibbs Russell & al., Grasses south. Afr.: 115, 1990; Klaassen & Craven, Checklist grasses Namibia: 29, 2003. – Icon.: Bull. Jard. Bot. Etat Bruxelles 6: pl. 31/17–26, 1919 (as *Andropogon emarginatus*); Hooker's Icon. Pl. 31: pl. 3093, 1922 (as *Diheteropogon grandiflorus*, *D. buchneri*); Fl. Gabon 5: 153, 1962 (as *D. grandiflorus*); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 234, 2012; Malaisse & al., Copper-cobalt flora Upper Katanga...: 384, 2016 (inflorescence).

DIHETEROPOGON FILIFOLIUS

bas.: *Heteropogon filifolius* Nees

syn.: *H. grandiflorus* (Hack.) Rendle; *H. buchneri* (Hack.) Roberty; *Andropogon filifolius* (Nees) Steud.; *A. grandiflorus* Hack.; *A. emarginatus* De Wild.; *A. buchneri* Hack.; *A. kindunduensis* Vanderyst 1918, nom. provis.; *A. homblei* De Wild.; *Sorghum filifolium* (Nees) Kuntze; *S. grandiflorum* (Hack.) Kuntze; *S. buchneri* (Hack.) Kuntze; *Cymbachne filifolia* (Nees) Roberty; *Diheteropogon grandiflorus* (Hack.) Stapf; *D. buchneri* (Hack.) Stapf; *D. emarginatus* (De Wild.) Robyns; *D. kindunduensis* Lebrun; *D. maximus* C. E. Hubb.

Perennial densely tufted grass; culms unbranched, 0.6–2.3 m tall, c. 7 mm $\varnothing$, often glaucous; leaf sheaths glabrous, old ones breaking up into fibres; blades 8–55 cm $\times$ 1–3 mm, inrolled, $\pm$ glabrous, not cordate, apex tapering into a very fine point; inflorescence a scanty false panicle of up to 4 raceme-pairs, clearly exerted from the spatheoles; racemes 7.5–18 $\times$ 1.5 cm; internodes and pedicels with silvery-white appressed hairs; sessile spikelet 6.5–9 mm long (excluding the pungent callus) with silvery-white appressed hairs at base, awn 5–15 cm long; pedicellate spikelet male, 1.4–2.5 cm long, laterally winged, awn to 8 mm long.

Dambos, swamps, sour and damp grassland; poor sandy soils in drainage hollows or near streams; copper steppe savannas; 1000 (and less ?) – 2300 m alt.

C Namibia, S. Africa, Lesotho, Swaziland.

Sometimes confused with *Andropogon schirensis* (but with open leaves and shorter callus).

D. grandiflorus is only a form of *D. filifolius* with well developed leaves.

D. hagerupii Hitchc.; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 249, 2011; César & Chatelain, Fl. ill. Tchad: 258–259, 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 467, 1992; Poilecot, Boissiera 50: 585, 1995; idem, ibid. 56: 602, 1999; Ibrahim & al., Grasses Mali: 62, 2018.

syn.: *Heteropogon hagerupii* (Hitchc.) Roberty

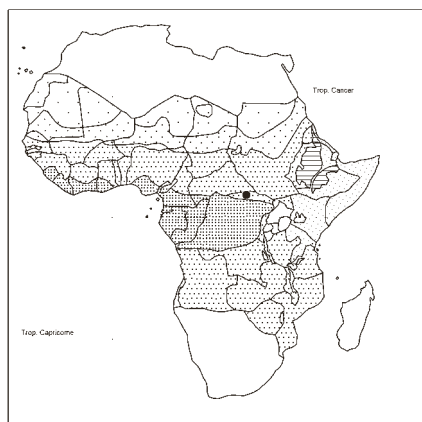
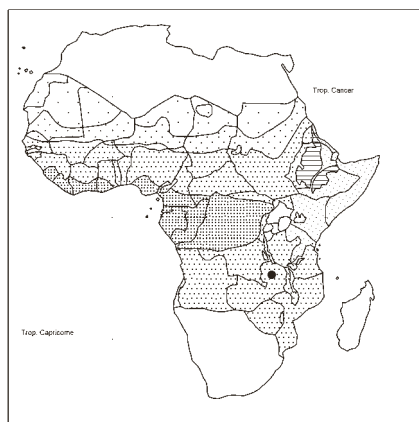
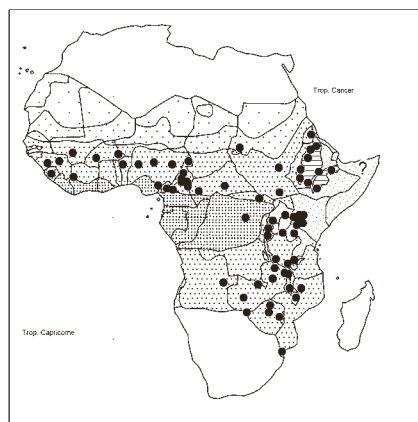
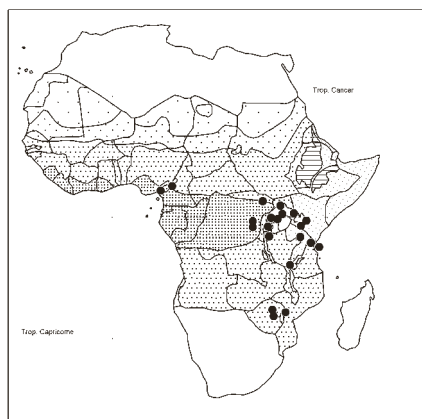
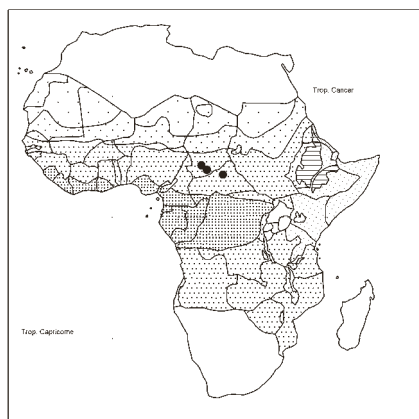
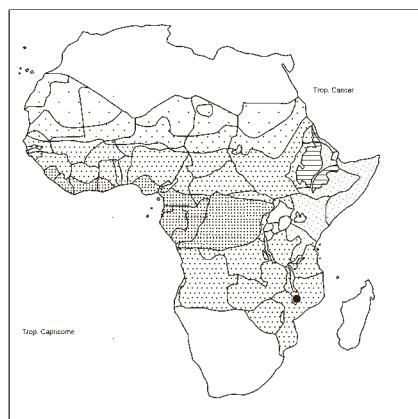
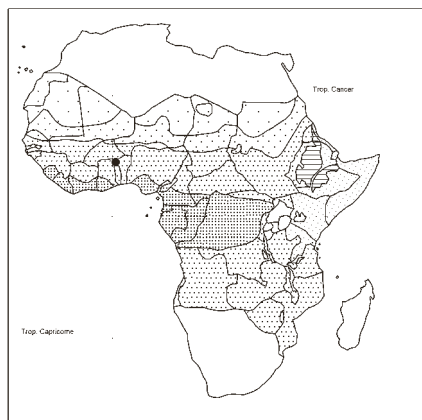
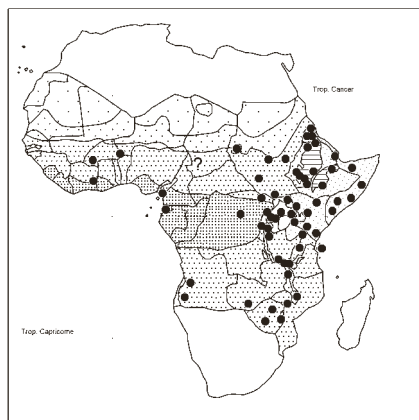
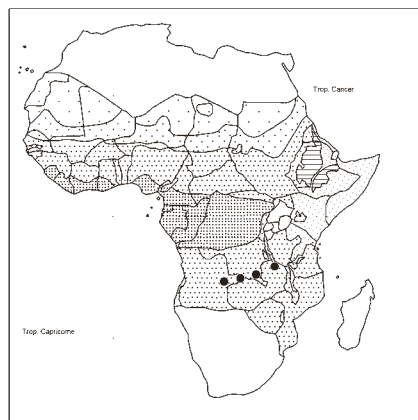
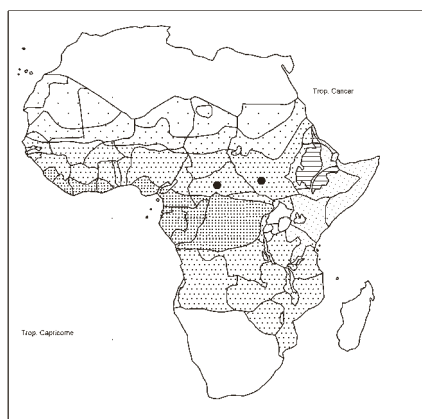
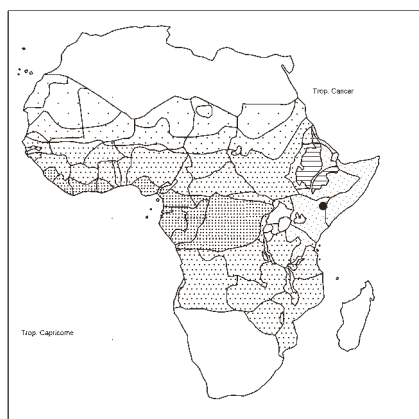
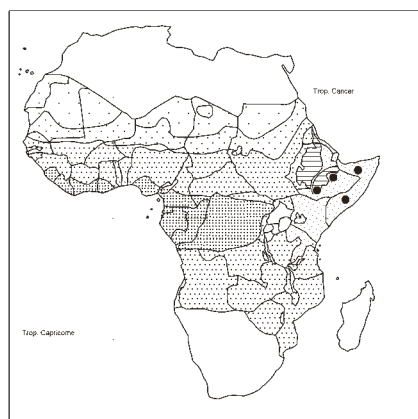
Annual solitary or tufted grass 0.5–2 m tall; culms erect, slender, glossy yellow, branching sparse from lower nodes; leaves mostly cauline; sheaths open, keeled; blades lanceolate, cordate at base and semi-amplexicaule, 5–20 $\times$ 1–5 cm, glabrous; inflorescence a false panicle of paired racemes, these 5–7 cm long, exerted from linear spatheoles; spikelets paired, the pedicellate 9–13 mm long, wingless; the sessile 6–7 mm long, with an acute to pungent callus 1–3 mm long; awn 4–8 cm long, geniculate, hirsute.

Dry sandy or gravelly soils; clayey-sour-lime sites with ferralitic pans; dry forests on lateritic plateau, thickly wooded banded vegetation; with *Ctenium elegans*, *Andropogon fastigiatus*, *A. pseudapricus*, *Loudetia togoensis*, *Rhytachne rottoellioides*, *Tripogon minimus*, *Aristida adscensionis*; dunes with *Angropogon gayanus*, *Cymbopogon giganteus*, *Aristida sieberiana*, *A. mutabilis*, *Hyperthelia dissoluta*, *Schizachyrium exile* (for further details, see Boissiera 56: 600, 1999); near sea-level–?

Nearly a west Sudanian species.

D. microterus Clayton; Fl. Zambes. 10/4: 95, 2002. – Icon.: Kew Bull. 21: 486, 1968.

Annual caespitose grass; culms 30–45 cm tall, tinged with red; leaf blades 7.5–13 cm $\times$ 1–2 mm, inrolled, apex tapering to a fine point; racemes paired (occasionally 1), 4–5 cm long, internodes and pedicels with short, dense, silvery-white hairs, clavate; sessile spikelet 4.3–5.5 mm long, very pointed, with long appressed

*Digitaria subsulcata**Digitaria tenuifolia**Digitaria ternata**Digitaria thouarsiana**Digitaria tisserantii**Digitaria trinervis**Digitaria ursulae**Digitaria velutina**Digitaria ventriosa**Digitaria xanthotricha**Dignathia aristata**Dignathia ciliata*

DIHETEROPOGON MICROTERUS

hairs at base; awn 3,5–4,5 cm long; pedicellate spikelet *sterile*, 5,5–6,5 mm long.

Lateritic outcrop between pans.

Only known from the type collected in 1963.

SYNONYMS:

Diheteropogon buchneri (Hack.) Stapf

= ***Diheteropogon filifolius***

emarginatus (De Wild.) Robyns = ***D. filifolius***

grandiflorus (Hack.) Stapf = ***D. filifolius***

kindunduensis Lebrun = ***D. filifolius***

maximus C. E. Hubb. = ***D. filifolius***

DILOPHOTRICHE / 3

Genus of 3 species in W tropical Africa. Treated as a synonym under *Tristachya* Nees by Kellogg & al. in Kubitzky, ed., Fam. & genera vascul. pl. 13: 283–284, 2015. But Christenhusz & al., Plants of the World: 208, 2017, recognise the genus. In Flora of West Tropical Africa 3/2, 1972, the species figure under *Loudetiopsis* (p. 414–416).

Dilophotriche occidentalis Jacq.-Fél.; Lisowski, Fl. Rép. Guinée 1: 465, 2009 (under *Loudetiopsis*). – Icon.: Rev. Int. Bot. Appl. Agric. Trop. 30: 419, 421, 1950 (spikelet).

syn.: *Loudetiopsis occidentalis* (Jacq.-Fél.) Clayton; *Danthoniopsis occidentalis* Jacq.-Fél. 1950, nom. inval. (no Latin description).

Perennial, caespitose, erect grass 0,6–1 m tall; culms stiff, 3 mm Ø; basal leaf sheaths velvety; blade erect, stiff, often inrolled, 20 × 0,5 cm; panicle to 25 cm long with *loose groups of 2–3 spikelets* 0,6–1 cm long (without awn); *pedicels* 0,5–2,5 cm long; glumes glabrous, pink, 3-nerved; upper lemma pubescent and with *a tuft of hairs below each subulate lobe*; awn flat, spirally twisted.

Savanna; on sandstone (fide typus).

D. pobeguinii Jacq.-Fél.; Lisowski, Fl. Rép. Guinée 1: 465–466, 2009 (under *Loudetiopsis*); Schmidt & al., Phytotaxa 304: 139, 2017 (idem). – Icon.: Rev. Int. Bot. Appl. Agric. Trop. 30: 423, 1950 (glume).

syn.: *Loudetiopsis pobeguinii* (Jacq.-Fél.) Clayton; *Danthoniopsis pobeguinii* Jacq.-Fél. 1950, nom. inval. (no Latin description).

Annual caespitose grass 0,6–0,8 m tall, glabrous; leaf blades linear-lanceolate, up to 5 cm long, 3–5 mm wide; inflorescence a *panicle*, dense, of 40 or more triads; pedicels 0,5–1 mm long; spikelets 5–6 mm long (without awn) in dense clusters; lower glume long-ciliate, c. 3 mm long.

Grassy humid situations.

D. tristachyoides (Trin.) Jacq.-Fél.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 281, 1994; Lisowski, Fl. Rép. Guinée 1: 466, 2009 (under *Loudetiopsis*). – Icon.: Rev. Int. Bot. Appl. Agric. Trop. 30: 423, 1950 (spikelet); Jacques-Félix, Gramin. Afr. trop. 1: 162, 1962 (idem); Ibrahim & al., Grasses Mali: 63, 2018.

bas.: *Panicum tristachyoides* Trin.

syn.: *Danthoniopsis tristachyoides* (Trin.) Jacq.-Fél.; *D. tuberculata* (Stapf) Jacq.-Fél.; *D. multinodis* (C. E. Hubb.) Jacq.-Fél.; *D. purpurea* (C. E. Hubb.) Jacq.-Fél.; *Dilophotriche purpurea* (C. E. Hubb.) Jacq.-Fél.; *Di. tuberculata* (Stapf)

DILOPHOTRICHE TRISTACHYOIDES

Jacq.-Fél.; *Loudetiopsis purpurea* (C. E. Hubb.) Conert; *L. tristachyoides* (Trin.) Conert; *Tristachya tristachyoides* (Trin.) C. E. Hubb.; *T. microstachya* Nees ex Steud.; *T. tuberculata* Stapf; *T. minuta* A. Chev.; *T. multinodis* C. E. Hubb.; *T. purpurea* C. E. Hubb.; *Arundinella tristachyoides* (Trin.) Roberty

Perennial mat-forming tussocky grass; culms solitary, erect, 1–1,25 m tall; leaves mostly cauline; sheaths longer than blades, keeled; blades linear, 3–20 × 0,4–0,9 cm; inflorescence a *loose* panicle 5–12 cm long, open; spikelets in 4–35 triads, 0,6–1,2 cm long; lemma awns 1,5–3 cm long, geniculate with twisted column.

Damp pockets on rock outcrops; muddy soils; wooded savanna; sometimes in pure stands.

SYNONYMS:

Dilophotriche purpurea (C. E. Hubb.) Jacq.-Fél.

= ***Dilophotriche tristachyoides***

tuberculata (Stapf) Jacq.-Fél. = ***D. tristachyoides***

DINEBRA / 4

syn.: *Drake-brockmania* Stapf; *Heterocarpha* Stapf & C. E. Hubb.

Genus of 5 species in tropical Africa, Madagascar, S Asia E-wards to India, Pakistan, Andaman & Nicobar Isl., S Pacific.

Kellogg in K. Kubitzky, ed., Fam. & genera vascul. pl. 13, Poaceae: 387–388, 2015, indicates 24 species, including *Leptochloa*.

“With long tailed glumes on 2–3-flowered spikelets closely overlapping along the spike, which therefore can resemble a spikelet” (Agnew, Upl. Kenya wild flow., ed. 3: 417–418, 2013).

Dinebra haareri (Stapf & C. E. Hubb.) P. M. Peterson & N. Snow, Fl. Trop. E. Afr., Gramin. 1: 184, 186, 1974 (under *Drake-brockmania*); Agnew, Upl. Kenya wild flow., ed. 3: 418, 2013 (idem). – Icon.: Hooker’s Icon. Pl. 35: pl. 3456, 1947 (under *Heterocarpha*).

bas.: *Heterocarpha haareri* Stapf & C. E. Hubb.

syn.: *Drake-brockmania haareri* (Stapf & C. E. Hubb.) S. M. Phillips; *Eleusine conglomerata* Peter, incl. fa. *littoralis* Peter, and var. *littoralis* (Peter) Peter

Perennial mat-forming tussock grass; culms 15–63 cm high, ascending from a prostrate base, rooting and branching at lower nodes; leaf blades 3–18 × 0,4–1 cm, rather glaucous, acuminate, usually glabrous; inflorescence open to ± compact, of 5–10 spikes on an axis 3,5–11 cm long; spikes 1,2–3,5 cm, becoming reflexed; spikelets 8–18-flowered, 0,6–1,4 cm long; lemmas 3-nerved.

Damp situations in *Acacia* bushland; dryland bare soil; uncommon; 500–1200 m alt.

Very local grass; stunted specimens approach *D. somalensis*.

D. polycarpha S. M. Phillips; Fl. Trop. E. Afr., Gramin. 1: 274, 276, 1974; Lye & al. in Lidia 4: 163, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 418, 2013. – Icon.: Kew Bull. 28: 417, 1973.

Loosely tufted *annual* grass; culms 0,38–1,2 m tall, slender, erect or ascending; leaf blades 5–16 cm × 4–10 mm, soft, finely pointed; sheaths scattered pilose; inflorescence 13–30 cm long, open, with 10–32 widely spreading *linear* spikes 2,5–7 cm long *spaced* along the central axis; *lower spikelets often replaced by short lateral tardily deciduous branchlets* to 1,3 cm long; spikelets

DINEBRA POLYCARPHA

2–3-flowered, 3,2–5 mm long, wedge-shaped, closely overlapping on the triquetrous rachis; lemma *sericeous* along the midnerve, 2-lobed.

Grassland, bushland, often on damp heavy soils, especially black cotton soil; open places in *Acacia* bushland; 880–1500 m alt.

Confused with *Leptochloa uniflora* but they can be distinguished by the *acuminate-aristate* glumes far exceeding the florets (feature typical of *Dinebra*).

Very closely related to *D. retroflexa*.

D. retroflexa (Vahl) Panz.; Lye & al. in Lidia 4: 163, 2000; Klaassen & Craven, Checklist grasses Namibia: 29, 2003; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 275, 2010; Schmidt & al., Phytotaxa 304: 85, 2017; César & Chatelain, Fl. ill. Tchad: 201, 2019. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 275, 1974 (var. *condensata*); Gibbs Russell & al., Grasses south. Afr.: 116, 1990; van der Zon, Gramin. Cameroun 2: 109, 1992; Fl. Eth. & Eritrea 7: 197, 1995; Thulin, Fl. Somalia 4: 176, 1995; Poilecot, Boissiera 56: 225, 1999; Fl. Zambes. 10/2: 46, 1999 (var. *condensata*); Boulos, Fl. Egypt 4: 251, 448, 2005; Cope, Fl. Arab. Penins. 5/1: 129, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 206, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013.

bas.: *Cynosurus retroflexus* Vahl

syn.: *Dactylis paspaloides* Willd., nom. superfl.; *Dinebra paspaloides* P. Beauv. 1812, nom. illeg.; *D. aegyptiaca* Delile, nom. superfl.

Annual loosely tufted grass; culms 0,1–1,12 m long, straggling, ascending from a decumbent base, infrequently erect, much branched, often rooting at lower nodes; leaves glandular, especially on the sheaths; blades 4,5–28 × 0,4–0,8 cm, finely pointed; inflorescence 8–34 cm long, linear, with *oblong to wedge-shaped densely crowded* spikes; these 0,6–7 cm long, stiff, turning downwards when reaching maturity; spikelets 1–3-flowered, 6–9 mm long.

Grassland, open woodland in seasonally wet areas on heavy soils, especially black cotton soil; sometimes on saline soil; temporary flooded clay; ruderal of open and disturbed places in *Acacia* bushland; sometimes an arable weed; road sides; cultured fields; sandy dry soils with *Aristida mutabilis*, *A. funiculata*, *Eragrostis tremula*, *Cenchrus biflorus*; silted up valley with *Aristida hordeacea*, *Panicum turgidum*, *Cymbopogon schoenanthus*, *Sehima ischaemoides*, *Dactyloctenium aegyptium*; river sides; pan margins; *Adansonia* groves; a common weed of cultivated land and irrigated crops; 0–2300 alt.

Libya, Egypt; N Namibia, Caprivi Strip, Botswana, Swaziland, S. Africa; Madagascar; SW Asia E-wards to Pakistan, India, Andaman & Nicobar isl.

Inflorescence structure very variable, but 2 types can be distinguished: – var. **condensata** S. M. Phillips, with dense linear inflorescence with short crowded spikes, in E part of range; – var. **retroflexa** [syn.: *D. arabica* Jacq.; *D. retroflexa* var. *brevifolia* (Steud.) T. Durand & Schinz; *Leptochloa arabica* (Jacq.) Steud.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew] with open inflorescence with long distant spikes. Intermediates can be found.

D. somalensis (Stapf) P. M. Peterson & N. Snow; Darbyshire & al., Pl. Sudan & Sudan: 127, 2015 (under *Drake-brockmania*). – Icon.: Fl. Trop. E. Afr., Gramin. 2: 185, 1974; Thulin, Fl. Somalia 4: 177, 1995; Fl. Eth. & Eritrea 7: 109, 1995 (under *Drake-brockmania*); Cope, Fl. Arab. Penins. 5/1: 129, 2007 (idem); Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013 (idem).

DINEBRA SOMALENSIS

bas.: *Drake-brockmania somalensis* Stapf

syn.: *Eleusine somalensis* Hack.

Annual mat-forming grass; culms *prostrate, spreading*, sometimes rooting at nodes, much branched, flowering on ascending lateral branches 5–15 cm high; leaf sheaths and blades papillose-hispid; blades 1,5–9,5 cm × 2,5–4,5 mm, acute; inflorescence subcapitate of 2–6 racemes on a central axis 0,3–3 cm long; racemes 0,7–1,7 cm long, spreading, becoming reflexed; spikelets 5–9-flowered, 0,6–1,1 cm long; palea keels gibbous, broadly winged.

Pioneer grass of bare gorund on saline or silty (often alluvial), seasonally flooded soils; sometimes locally dominant, forming a thin open cover; dry bushland, especially along drainage lines; 0–1700 m alt.

Saudi Arabia (Farasan Island).

SYNONYMS:

Dinebra aegyptiaca Delile = **Dinebra retroflexa**

arabica Jacq. = **D. retroflexa** var. **retroflexa**

caudata (K. Schum.) P. M. Peterson & N. Snow

= **Leptochloa caudata**

chinensis (L.) P. M. Peterson & N. Snow = **L. chinensis**

coerulescens (Steud.) P. M. Peterson & N. Snow

= **L. coerulescens**

guineensis Franch. = **Heteranthoecia guineensis**

panicea (Retz.) P. M. Peterson & N. Snow

= **Leptochloa panicea**

panicea subsp. *mucronata* (Michx.) P. M. Peterson &

N. Snow = **L. mucronata**

panicea var. *mucronata* (Michx.) P. M. Peterson &

N. Snow = **L. mucronata**

paspaloides P. Beauv. 1812 = **Dinebra retroflexa**

pubescens K. Schum. = **Brachypodium flexum**

retroflexa var. *brevifolia* (Steud.) T. Durand & Schinz

= **Dinebra retroflexa** var. **retroflexa**

squarrosa (Pilg.) P. M. Peterson & N. Snow

= **Leptochloa squarrosa**

tuaensis Vanderyst = **Heteranthoecia guineensis**

DIPLACHNE / 2

Genus “of 2 species in its newer restricted sense”, fide Snow & al. in PhytoKeys 93: 1, 2018, widespread in temperate to tropical areas throughout the world. Kellogg indicates 4 species. Inflorescence with unbranched branches that are spread along a central axis (Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13, Poaceae: 388, 2015). – Sometimes included in *Leptochloa*. The spikelets are dorsally compressed in *Diplachne*, laterally compressed in *Leptochloa*.

MUCHUT, S. E. & al. (2020). Uncovering the inflorescence evolution of Eleusininae (Cynodonteae: Chloridoideae: Poaceae). *Bot. J. Linn. Soc.* 192: 208–223.

PETERSON, P. M. & al. (2012). A molecular phylogeny and classification of Leptochloa (Poaceae: Chloridoideae: Chlorideae) sensu lato and related genera. *Ann. Bot.* 109: 1317–1329.

PETERSON, P. M. & al. (2015). A molecular phylogeny and classification of the Eleusininae with a new genus, Micrachne (Poaceae: Chloridoideae: Cynodonteae). *Taxon* 64: 445–467.

SNOW, N. & al. (2018). Monograph of Diplachne (Poaceae, Chloridoideae, Cynodonteae). *PhytoKeys* 93: 1–102.

Diplachne fusca (L.) P. Beauv. ex Roem. & Schult. subsp. **fusca**; van der Zon, Gramin. Cameroun 2: 107, 1992 (as *Leptochloa malabarica*); Müller, Grasses Namibia: 223, 2007 (as *Leptochloa fusca*); Patzelt & al. in Edinb. J. Bot. 77: 425, 2020 (N Oman).

DIPLACHNE FUSCA

– Icon.: Fl. Trop. E. Afr., Gramin. 2: 283, 1974; Gibbs Russell & al., Grasses south. Afr.: 117, 1990; Poilecot, Boissiera 56: 250, 1999 (under *Leptochloa*); Cook, Aquat. & wetland pl. south. Afr.: 208, 2004 (under *Leptochloa*); OT Sistemati Botani Dergisi 10/1: 25 (2004); Boulos, Fl. Egypt 4: 246, 2005 (spikelet); Cope, Fl. Arab. Penins. 5/1: 116, 2007; Snow & al. (2018): 20; César & Chatelain, Fl. ill. Tchad: 202, 2019 (under *Leptochloa*).

bas.: *Festuca fusca* L.

syn.: *Bromus polystachios* Forssk.; *B. polystachyus* Kunth, non DC.; *Leptochloa fusca* (L.) Kunth; *Poa fusca* (L.) Desf.; *Diplachne polystachia* Backer; *Poa senegalensis* Desf. 1829, nom. nud., non Desv.; *Tridens capensis* Nees; *Uralespis capensis* (Nees) Kunth; *U. alba* Steud.; *U. livida* (Nees) Steud.; *U. fusca* (L.) Steud.; *Diplachne capensis* (Nees) Nees; *D. livida* Nees; *D. fusca* var. *alba* (Steud.) Chiov.; *D. alba* Hochst. ex Steud. 1854, pro syn.; *D. pallida* Hack.; *Triodia livida* (Nees) T. Durand & Schinz; *T. capensis* (Nees) T. Dur. & Schinz; *Leptochloa neuroglossa* Peter; *L. ginae* Maire; *L. malabarica* (L.) Veldkamp; *Poa malabarica* L.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial aquatic or semi-aquatic rhizomatous grass; culms erect, (0,3–)0,6–1,5(–2) m tall, rooting and branching from lower nodes; leaf blades linear, 25–55 × 0,2–0,5 cm, tough, finely tapered, with greyish-green bloom, central nerve broad, white; inflorescence (10–)20–35 cm long, grey-green, compact at first, later open; racemes 10–30, 7–15 cm long, straight; spikelets 6–11-flowered, 0,6–1,5 cm long, slightly overlapping; *lemma 2-toothed at tip* with a short awn between the teeth.

Along shallow margins of lakes and rivers; seasonally flooded mud flats, alluvial plains; often the dominant grass in alkaline waters or on soda-rich soils, forming extensive pure stands; clayey to clayey-sandy soils in shallow waters; guelta margins often with *Eragrostis japonica*, *Phragmites australis*; dried up river bed with *Sporobolus spicatus*, *Paspalidium geminatum*, *Cynodon dactylon*, *Panicum repens*, *Imperata cylindrica*; 0–1800 m alt.

Size and habit very variable; when growing in water the culms are spongy and may float.

Tropical and subtropical Old World; Canary Isl., Morocco, Algeria, Egypt; Namibia, Botswana, S. Africa, Swaziland; Madagascar; S Asia from NW Turkey E-wards to China, Japan; Philippines, New Guinea, Australia. – Record from Somalia needs confirmation. Rarely introduced in Europe. Introduced in S USA (grown in experimental gardens in the early 20th century in California), Argentina.

Subsp. **fusca** is “the most widely distributed taxon in the complex”. Snow & al. (2018) enumerate 4 subspecies: – subsp. **fusca**; – subsp. **uninervia** (J. Presl) P. M. Peterson & N. Snow mostly in the New World tropics; – subsp. **muelleri** (Benth.) P. M. Peterson & S. N. Snow, in the Australian interior; – subsp. **fascicularis** (Lam.) P. M. Peterson & N. Snow mostly in the New World.

D. gigantea Launert; Gibbs Russell & al., Grasses south. Afr.: 118, 1990. – Icon.: Bol. Soc. Brot., Ser. 2, 47: pl. II, 1973; Fl. Zambes. 10/2: 27, 1999; Cook, Aquat. & wetland pl. south. Afr.: 208, 2004 (details); Snow & al. (2018): 86–87.

syn.: *Leptochloa gigantea* (Launert) Cope & N. Snow

Perennial aquatic rhizomatous grass; culms stout, erect, 1,6–2,7 m tall, branching; leaf sheaths mostly longer than internodes; blades tough, filiform, 30–65 cm × 4–6 mm, scabrid, grey-green with broad midrib; inflorescence 23–40 cm long, open, of 20–50 slender slightly flexuous racemes, these 12–20 cm long, loosely ascending to widely spreading; spikelets 8–15-flowered, 1–1,4 cm long; *tip of lemma entire*.

DIPLACHNE GIGANTEA

Wetlands, in fresh and brackish water, often in deep water; along rivers; irrigation ditches; wet grassland; (600–)1250–2000 m alt. – Rare.

Botswana. Cultivated in Zimbabwe.

Resembling a robust *D. fusca* but lemma entire.

SYNONYMS:

Diplachne alba Hochst. ex Steud. = **Diplachne fusca** subsp.

fusca

alopecuroides (Hochst. ex Steud.) Eyles

= **Leptocarydion vulpiastrum**

arenaria (Steud.) Hochst. = **Trichoneura mollis**

biflora Hack., incl. var. *buchananii* Stapf = **Bewsia biflora**

capensis (Nees) Nees = **Diplachne fusca** subsp. **fusca**

caudata K. Schum. = **Leptochloa caudata**

cinerea Hack. = **Odysea paucinervis**

dummeri Stapf & C. E. Hubb. = **Leptochloa caudata**

eleusine Nees = **Disakisperma eleusine**

fleckii Hack. = **Pogonarthria fleckii**

fusca var. *alba* (Steud.) Chiov. = **Diplachne fusca** subsp.

fusca

grandiglumis (Nees) Hack. = **Trichoneura grandiglumis**

hackeliana Thell. = **Eragrostis plana**

jaegeri Pilg. = **Psilolemma jaegeri**

livida Nees = **Diplachne fusca** subsp. **fusca**

malabarica (L.) Merr. = **D. fusca** subsp. **fusca**

menyharthii Hack. = **Pogonarthria squarrosa**

mucronata (Forssk.) Hack. ex Schinz

= **Odysea mucronata**

nana Nees = **Triraphis pumilio**

pallida Hack. = **Diplachne fusca** subsp. **fusca**

paucinervis Hack. = **Odysea paucinervis**

polystachia Backer = **Diplachne fusca**

pungens Hack. = **Odysea paucinervis**

vulpiastrum (De Not.) Schweinf.

= **Leptocarydion vulpiastrum**

DISAKISPERMA / 3

Genus of 4 species (3 according to Christenhusz & al., Plants of the World: 208, 2017): 1 in America [*D. dubium* (Kunth) P. M. Peterson & N. Snow], 3 in Tropical and S. Africa, two of which extending to the Arabian Peninsula. Its species were previously treated in *Eleusine*, *Eragrostis*, *Coelachyrium*, *Cypholepis*, *Leptochloa* or *Diplachne*.

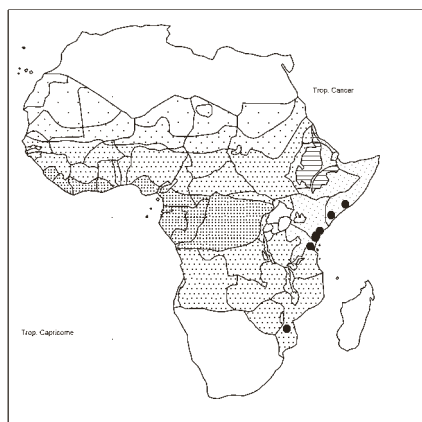
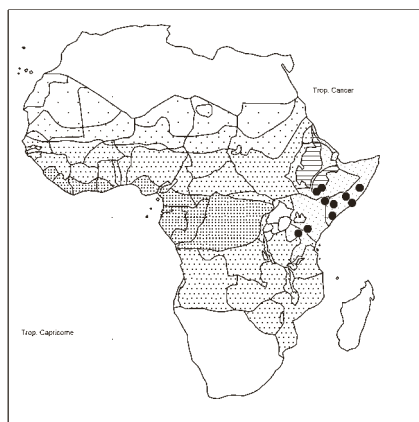
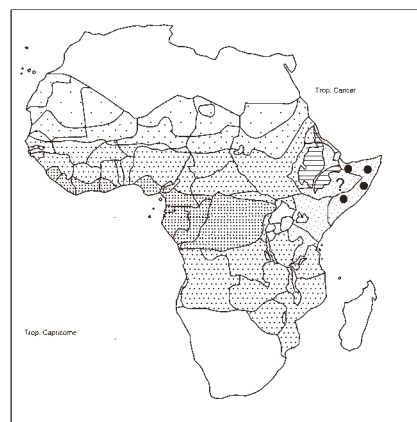
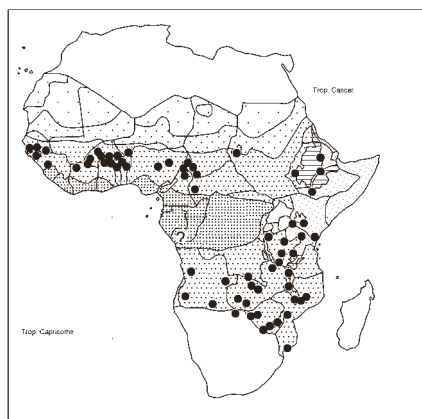
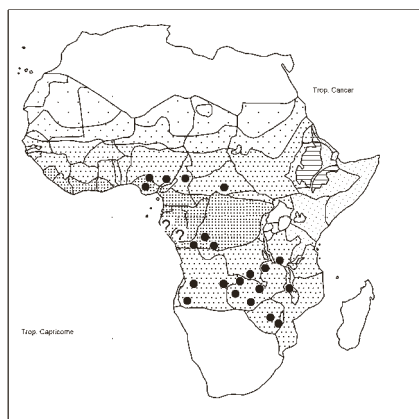
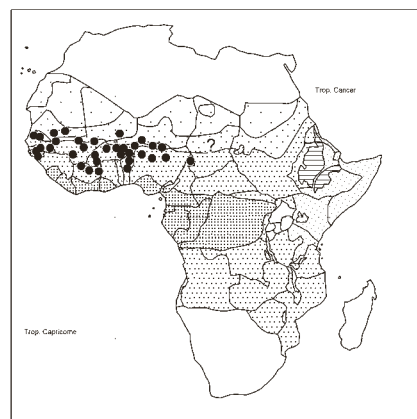
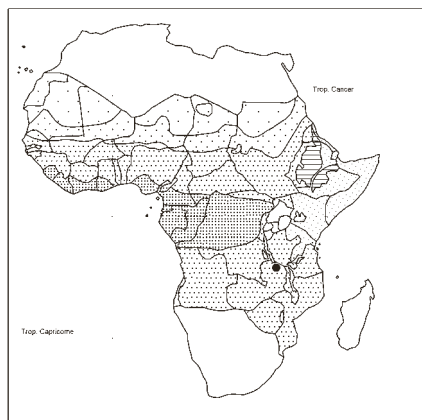
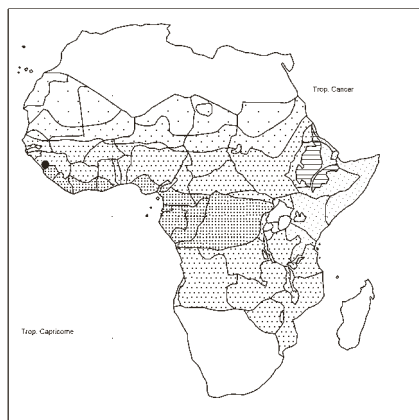
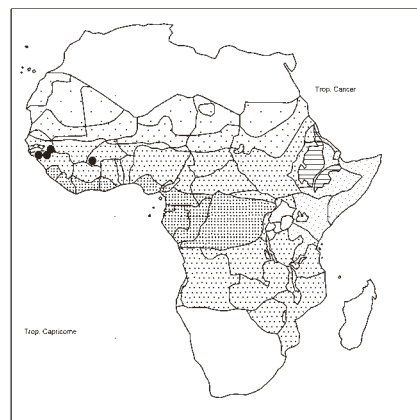
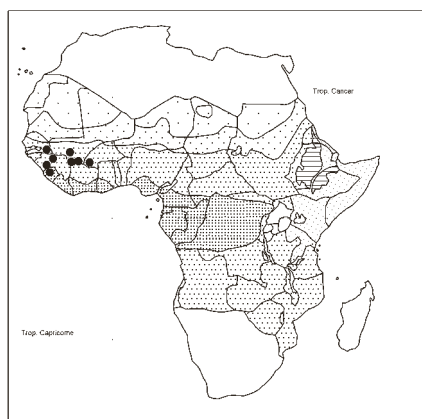
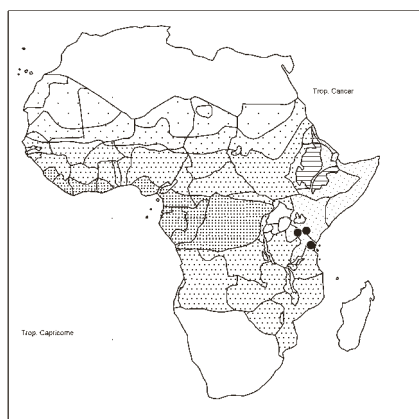
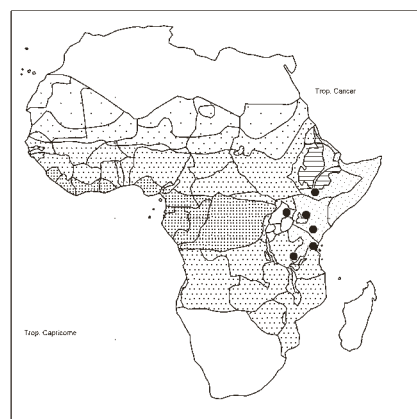
PETERSON, P. M. & al. (2012). A molecular phylogeny and classification of *Leptochloa* (Poaceae: Chloridoideae: Chlorideae) sensu lato and related genera. *Ann. Bot.* 109: 1317–1327.

SNOW, N. & al. (2013). Systematics of *Disakisperma* (Poaceae, Chloridoideae, Chlorideae). *PhytoKeys* 26: 21–70.

Disakisperma eleusine (Nees) P. M. Peterson & N. Snow; Gibbs Russell & al., Grasses south. Afr.: 117, 1990 (under *Diplachne*); Fl. Zambes. 10/2: 26, 1999 (under *Leptochloa*); Klaassen & Craven, Checklist grasses Namibia: 53, 2003 (idem). – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: 121, fig. 91, 1955; Snow & al. (2013): 56; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 266, 2012 (under *Leptochloa*).

bas.: *Diplachne eleusine* Nees

syn.: *Leptochloa eleusine* (Nees) Cope & N. Snow; *Triodia eleusine* (Nees) T. Durand & Schinz; *Uralespis eleusine* (Nees) Steud.

*Dignathia gracilis**Dignathia hirtella**Dignathia villosa**Diheteropogon amplexens**Diheteropogon filifolius**Diheteropogon hagerupii**Diheteropogon microterus**Dilophotriche occidentalis**Dilophotriche pobeguinii**Dilophotriche tristachyoides**Dinebra haareri**Dinebra polycarpha*

DISAKISPERMA ELEUSINE

Perennial tufted grass; culms 0,5–1,3 m tall, erect or geniculately ascending, branching or not; leaf blades linear, 12–30 cm × 2–7 mm, midrib prominent; inflorescence a panicle 10–20(–65) cm long, of 2–8 distant rigid racemes each 3–12 cm long, alternate along rachis, usually *ascending*; spikelets 4,5–11 mm long, overlapping, 5–10-flowered.

Thickets on black peaty soil; in heavy clays to sandy soils, rocky open sites; c. 300–2000 m alt. (S. Africa).

NW Namibia, Botswana, S. Africa, Swaziland, Lesotho.

Resembling *D. yemenicum* (partially sympatric).

D. obtusiflorum (Hochst.) P. M. Peterson & N. Snow – Figuring under *Leptochloa* in the floras cited here. – Cope, Fl. Arab. Penins. 5/1: 118–119, 2007; Darbyshire & al., Pl. Sudan & S. Sudan: 136, 2015. – Icon.: Thulin, Fl. Somalia 4: 171, 1995; Fl. Eth. & Eritrea 7: 103, 1995; Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013; Snow & al. (2013): 60.

bas.: *Leptochloa obtusiflora* Hochst.

syn.: *L. yemensis* Schweinf. ex Penz. 1893, nom. nud.; *Eleusine obtusiflora* (Hochst.) Blatt.; *Poa maysorensis* Rottler ex Hook. f. 1896, pro syn.

Tufted *perennial* grass; culms 0,4–2 m tall × 1,2–5 mm wide at base, erect or geniculately ascending; leaf blades linear, 10–35 × 0,25–1,4 cm, long-attenuate, flat, scabrid; inflorescence 10–30 cm long, with up to 20 spike-like racemes clustered towards the main axis top; racemes 5–16 cm long, usually *ascending*, *occasionally spreading*; spikelets 4–7 mm long, 5–14-flowered, overlapping.

Common in deciduous bushland, grassland, on dry or periodically waterlogged soils, by roadsides, waste ground; often scrambling through bushes; sandy grassy places; *Acacia* bushland; clayey denuded area, between xerophyllous thickets; cultivations; rocky area; may occur in nearly pure stands; 0–1900 m alt.

Saudi Arabia, Yemen; India (introduced).

D. yemenicum (Schweinf.) P. M. Peterson & N. Snow – Most often figuring under *Coelachyrum* in floras and flora lists cited here. – Klaassen & Craven, Checklist grasses Namibia: 22, 2003; Cope, Fl. Arab. Penins. 5/1: 152, 2007; Agnew, Upl. Kenya wild flow., ed. 3: 422, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 249, 1974 (under *Cypholepis*); Gibbs Russell & al., Grasses south. Afr.: 87, 1990; Audru & al., Pl. vascul. Rép. Djibouti 2/2: 860, 1994; Thulin, Fl. Somalia 4: 187, 1995; Fl. Eth. & Eritrea 7: 134, 1995; Fl. Zambes. 10/2: pl. 45, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 269, 2012; Snow & al. (2013): 64.

bas.: *Eragrostis yemenica* Schweinf.

syn.: *E. yemensis* Schweinf. 1894, pro syn.; *E. diplostachya* Peter; *Cypholepis yemenica* (Schweinf.) Chiov.; *Eleusine yemensis* (Schweinf.) Chiov. (cited in text under *Eleusine poaeiflora* Chiov.); *Coelachyrum yemenicum* (Schweinf.) S. M. Phillips; *Leptochloa appletonii* Stapf

Densely tufted perennial grass; culms erect or ascending, 0,3–1 m tall; leaf blades linear, 7–32 cm × 2,5–5,5 mm; inflorescence narrow, 3,5–19 cm long, with 2–8 *distant*, erect, linear *racemes* 2–6 cm long lying close to main axis; spikelets imbricate, 7–12-flowered, 0,5–1 cm long.

Grassland; open *Acacia* bushland; dry, often stony soil among rocks; rocky slopes of limestone, gypsum, sandstone, gneiss; often in disturbed habitats; 250–2070 m alt.

NE Namibia, SW Botswana, S. Africa; Saudi Arabia, Yemen, Oman.

(DISTICHLIS)

Distichlis sudanensis Beetle = **Aeluropus lagopoides**

(DOLICHOCHAETE)

Dolichochaete bequaertii (De Wild.) J. B. Phipps

= **Tristachya bequaertii**

bicrinita J. B. Phipps = **T. bicrinata**

longispiculata (C. E. Hubb.) J. B. Phipps = **T. nodiglumis**

nodiglumis (K. Schum.) J. B. Phipps = **T. nodiglumis**

rehmannii (Hack.) J. B. Phipps, incl. var. *helenae* (Buscal.

& Muschl.) J. B. Phipps, subsp. *mosambicensis*

J. B. Phipps, and var. *pilosa* (C. E. Hubb.) J. B. Phipps

= **T. rehmannii**

(DONAX)

Donax arundinaceus P. Beauv. = **Arundo donax**

australis Steud. 1840, nom. inval. = **Phragmites australis**

versicolor (Mill.) P. Beauv. = **Arundo donax**

(DRAKE-BROCKMANIA)

Drake-brockmania haareri (Stapf & C. E. Hubb.)

S. M. Phillips = **Dinebra haareri**

somalensis Stapf = **D. somalensis**

(DYBOWSKIA)

Dybowskia dybowskii (Franch.) Dandy

= **Hyparrhenia dybowskii**

seretii (De Wild.) Stapf = **H. dybowskii**

ECCOPTOCARPHA / 1

Eccoptocarpha obconiciventris Launert; Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13, Poaceae: 338, 2015. – Icon.: Senckenb. Biol. 46: 125, 127, 128, 1965; Fl. Trop. E. Afr., Gramin. 3: 576, 1982; Fl. Zambes. 10/3: 80, 1989.

Annual grass; culms 40–75 cm tall; leaf blades linear, 2–10 cm × 3–9 mm; inflorescence of 2–7 racemes on an axis 4–7 cm long; racemes 1–5 cm long, rachis sparsely long-ciliate; spikelets 3–4 mm long; upper glume with *cross-veins numerous*, *prominent*, *resembling woven fabric*.

Wooded grassland; open places; 1000–1500 m alt.

(ECHINALYSIUM)

Echinalysium articulatum (P. Beauv.) Kunth

= **Elytrophorus spicatus**

strictum Trin. = **E. spicatus**

ECHINOCHLOA / 13

Genus of 30–40 often poorly defined species (34 species according to Christenhusz & al., Plants of the World: 208, 2017) with worldwide distribution in tropical and warm temperate regions of the world (according to Cook, Aquat. & wetland pl. south. Afr.: 199, 2004, probably introduced into America). Some species are among the most troublesome weeds in rice cultivations worldwide, and have caused significant yield losses. They show multiple resistance to several groups of herbicides (Zhang & Kim in Plant Protect. Sci. 54: 194, 2018). But some are cultivated for grain or forage.

A taxonomically difficult genus, “many species are variable and several species hybridize resulting in intermediate plants with many intergrading forms and local interbreeding races” (Cook, l. c.). “There is much uncertainty as to the most appropriate treatment...it seems better to treat species in a wide sense” (Fl. Zambes. 10/3: 50, 1989).

Plants very variable in size. Inflorescence of 1-sided spike-like racemes along a central axis; spikelets arranged in 2 or 4 rows, 2-flowered.

In our area 1 species (*E. pithopus*) is poorly known: no base of plant known, and known only from the type.

BANFI, E. & G. GALASSO (2021). Old and new nomenclatural combinations for *Echinochloa esculenta* (Japanese millet) and *E. frumentacea* (Indian millet) (Poaceae). *Atti Soc. Ital. Sci. Nat. Museo Civ. Stor. Nat. Milano* 8: 71–72.

SINGH, A. K. & al. (2015). On the seedling morphology of some grass weeds – *Echinochloa* P. Beauv. (Poaceae). *Indian J. Forestry* 38: 47–50.

Echinochloa brevipedicellata (Peter) Clayton; Agnew, Upl. Kenya wild flow., ed. 3: 432, 2013. – Icon.: Peter in Feddes Repert. Spec. Nov. Regni Veg., Beih. 40/1: Anh. 33: pl. 23/1, 1930 (under *Panicum*).

bas.: *Panicum brevipedicellatum* Peter

Tufted hairless annual grass; culms 0,3–2 m tall; leaf blades 10–30 × 0,4–1 cm; inflorescence lanceolate, 8–25 cm long, dense; racemes several-rowed with crowded spikelets, 1–4 cm long, closely spaced, overlapping; spikelets 1,5–3 mm long, purple, pubescent to hispid, awnless.

Waterlogged clays; 800–1300 m alt.

Near *E. frumentacea* but with ciliate ligule and purple inflorescence. It intergrades with *E. haploclada* and may be a local form of that species with annual habit and dense awnless inflorescence.

E. callopus (Pilg.) Clayton; Fl. Trop. E. Afr., Gramin. 3: 555–556, 1982; Darbyshire & al., Pl. Sudan & S. Sudan: 27, 2015; César & Chatelain, Fl. ill. Tchad: 230, 2019 (under *Brachiaria*). – Icon.: Poilecot, Boissiera 50: 361, 1995; idem, ibid. 56: 408, 1999; Ibrahim & al., Grasses Mali: 64, 2018.

bas.: *Panicum callopus* Pilg.

syn.: *Brachiaria callopus* (Pilg.) Stapf; *B. verdickii* Robyns; *B. stipitata* C. E. Hubb.

Annual tufted grass; culms spongy, 0,2–1,2 m tall, erect or geniculately ascending; leaf blades linear, 5–30 × 0,4–1 cm, folded, glaucous; inflorescence oblong to linear, 2–20 cm long, with numerous racemes along a central axis 11–20 cm long; racemes 1–6 cm long; spikelets 3–4 mm long, borne singly in 2 rows, scabrous to spinulose, awnless; basal callus produced into a globular wrinkled stipe c. 0,5 mm long.

Swampy places; heliophyte; temporary ponds, torrents on sandstone pans with *Oryza brachyantha*, *Elytrophorus spicatus*, *Sacciolepis ciliocincta*; shallow pools; rice fields; ?–1300 m alt.

ECHINOCHLOA CALLOPUS

Echinochloetalia callopi, *Echinochloion callopi*; and *Echinochloetum callopi* Vanden Berghen 1990 (Phytocoenologia 35: 357, 2005), a pioneer community, on clay soils and in ditches inundated during a short period.

Related to 2 other stipitate species, viz. *E. obtusiflora*, *E. rotundiflora*.

E. colona (L.) Link – “Jungle Rice” – incl. var. *equitans* (Hochst. ex A. Rich.) Cufod., var. *glaucua* (Sickenb.) N. D. Simpson, var. *leiantha* Boiss., var. *repens* (Sickenb.) N. D. Simpson, etc., but excl. var. *frumentacea* (Link) Ridl. (= *E. frumentacea*) and var. *arabica* (Nees ex Steud.) A. Chev. (= *Paspalidium desertorum*); Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 233–234, 1994; Klaassen & Craven, Checklist grasses Namibia: 30, 2003; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 275, 2010; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 249, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015. – Icon.: F. Busson, Pl. aliment. Ouest afric.: 462, 1965; Fl. Trop. E. Afr., Gramin. 3: 558, 1982; Fl. Zambes. 10/3: 54, 1989; van der Zon, Gramin. Cameroun 2: 250, 1992; Thulin, Fl. Somalia 4: 223, 1995; Fl. Eth. 7: 214, 1995; Poilecot, Boissiera 50: 371, 1995; idem, ibid. 56: 412, 1999; Fl. Gabon 5b: 23, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 145, 2002; Cook, Aquat. & wetland pl. south. Afr.: 201, 2004; Boulos, Fl. Egypt 4: 293, 451, 2005; Cope, Fl. Arab. Penins. 5/1: 199, 2007; Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 813, 2010; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 205, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 185, 2015; Catasús Guerra in Rev. Jard. Bot. Nacl. Cuba 36: 127, 2015; Ibrahim & al., Grasses Mali: 64, 2018; César & Chatelain, Fl. ill. Tchad: 229, 2019.

bas.: *Panicum colonum* L.

syn.: *P. equitans* Hochst. ex A. Rich.; *P. brachiariiforme* Steud.; *P. colonum* var. *equitans* (Hochst. ex A. Rich.) T. Durand & Schinz, var. *atroviolaceum* Hack., var. *angustatum* Peter; *P. echinochloa* T. Durand & Schinz; *Echinochloa crus-galli* (L.) P. Beauv. subsp. *colona* (L.) Honda; *E. divaricata* Andersson; *E. equitans* (Hochst. ex A. Rich.) C. E. Hubb.; *Brachiaria longifolia* Gilli; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass; culms (0,1)0,5–1,5 m tall, erect or ascending; leaf blades linear, 5–30 × 0,2–0,8 cm, occasionally marked with purple bars; ligule absent; inflorescence typically linear, 1–15(–20) cm long; racemes 3–10, neatly 4-rowed, 1–3(–5) cm long, simple, spaced or overlapping by half of their length, appressed to the axis, sometimes subverticillate and spreading, rarely forming a lanceolate head with spikelets purplish; spikelets usually in pairs, 1,5–3 mm long, pubescent, awnless.

Weedy plant of muddy or swampy places; around gueltas with *Eragrostis barrelieri*, *E. pilosa*, *Cynodon dactylon*; sandy soils or slightly clayey; sometimes in pure stands with *Paspalum scrobiculatum*, *Oryza barthii*, *Leptochloa coerulescens*, *Eragrostis gangetica*, *E. atrovirens*, *Sacciolepis africana*; inundated grasslands; inselbergs (Candollea 50: 358, 1995; Bois For. Trop. 325/3: 26, 2015); common weed in irrigated cultivation and after the rains; irrigation ditches; floodplains, marshes, riverbanks, damp or shady depressions; coastal dunes; sometimes very abundant, forming extensive prairies on flood plains; aquatic pasturage; 0–2400 m alt.

For the new vegetation class *Echinochloetia colona*, and its associations, see Etudes flor. vég. Burkina Faso 9: 11–18, 2005, and Belg. J. Bot. 139: 203–219, 2006 (2007).

Tropical & subtropical Old World. – N. Africa; N. Namibia, Botswana, S. Africa, Lesotho, Swaziland; Madagascar, Comoros, Réunion, Seychelles; Madeira, Canary Isl.; Cape Verde Isl.;

ECHINOCHLOA COLONA

S. Tomé; Arabian Peninsula, S Asia E-wards to Philippines, New Guinea; introduced in S Europe, Australia, Pacific Isl., N., C. & S. America.

Variable plant. Confused with *E. crus-galli*, *E. frumentacea*, *E. haploclada*; *E. colona* is best recognised by its weedy annual habit, short distant neatly 4-rowed racemes. Less constant characters are: the small awn-less spikelets with soft indumentum.

The confusion about the correct spelling of the specific epithet “*colona*” or “*colonom*” is resolved in favor of *colona*; see P. W. Michael, *Taxon* 58: 1366–1368, 2009; D. B. Ward, *Sida* 21: 2171–2183, 2005.

E. crus-galli (L.) P. Beauv., nom. cons. prop. (many subsp., vars., and forms have been described, some of those are synonyms under other species); Willdenowia 8: 375, 1978; Fl. Zambes. 10/3: 52–53, 1989; Burkill, *Useful pl. W. Trop. Afr.*, ed. 2, 2: 234, 1994; Kew Bull. 62: 397, 2007 (synopsis J. Raddi, Brazil); Dobignard & Chatelain, *Index synon. fl. Afr. N.* 1: 276, 2010; Darbyshire & al., *Pl. Sudan & S. Sudan*: 127, 2015. – Icon.: Gibbs Russell & al., *Grasses south. Afr.*: 119, pl. 64, 1990; Poilecot, *Boissiera* 50: 369, 1995; Cook, *Aquat. & wetland pl. S. Afr.*: 201, 2004; Boulos, *Fl. Egypt* 4: 293, 2005; Clarke, *Name those grasses*: 256–257, 2015; Fl. Mascareignes 203, *Gramin.*: 137, 2018.

bas.: *Panicum crus-galli* (*crusgalli*) L.

syn.: *Echinochloa glabrescens* Kossenko (specimens with *indurated* lower lemma); World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual coarse tufted, very polymorphic grass; culms erect or ascending (0,15–)0,25–1(–1,5) m tall; leaf blades linear, 5–35 × 0,4–2 cm, *ligule absent*; inflorescence linear to ovate or pyramidal, 6–25 cm long; racemes stiffly ascending, *untidily 2- to several-rowed*, the *longest 2–10 cm long often with some short secondary branchlets at base*; *spikelets* c. 3–5 mm long, *hispid*; *awn of lemmas to 5 cm long* (awns and bristles can vary considerably in length).

Weed of moist sandy ground, often in wet or marshy places; rice fields; swamp sides; a common troublesome weed in irrigated fields; ± 0–1300 m alt. – A weed of global impacts on many crops around the world, notably *Zea mays*, *Gossypium* spp., *Glycine max*, *Oryza sativa*, *Medicago sativa*, to which it causes millions of euros in losses every year (Crespo & al. in *Taxon* 69: 820, 2020).

Polymorphic (autogamous or even cleistogamous) with numerous intergrading races, and numerous segregates have been described. Also near the introduced *E. oryzoides* (see this entry below).

In tropical Africa with scattered localities – introduced ?; N Africa; N Namibia, Botswana, S. Africa, Lesotho, Swaziland; Madagascar, Réunion; Açores, Canary Isl., Madeira; S & E Europe, S Asia E-wards to New Guinea (in many parts of the Asian tropics); introduced in C. Europe, New Zealand, Pacific Islands, N., C. & S. America (has invaded rice fields in California).

As pointed out by Crespo & al. (*Taxon* 69: 820–822, 2020) Linnaeus adopted a broad concept for his *Panicum* “*Crus-galli*”. It included European and North American plants belonging to 3 different, currently accepted species in *Echinochloa*. To conclude, Crespo & al. propose (2750) to conserve *Panicum crus-galli* with a conserved type based on the well-conserved specimen Herb. Burser I: 103 (UPS), an entire plant with mature spikelets.

E. crus-pavonis (Kunth) Schult.; Darbyshire & al., *Pl. Sudan & S. Sudan*: 127, 2015. – Icon.: Troupin, *Fl. Rwanda* 4: 239, 1987; Fl. Eth. & Eritrea 7: 214, 1995; Poilecot, *Boissiera* 50: 367, 1995; idem, *ibid.* 56: 413, 1999; Cook, *Aquat. & wetland*

ECHINOCHLOA CRUS-PAVONIS

pl. south. Afr.: 201, 2004 (inflor.); Agnew, *Upl. Kenya wild flow.*, ed. 3: pl. 189, 2013.

Perennial (rarely annual) grass; culms 0,5–2(–? 4) m tall, often decumbent, rooting at lower nodes; leaf blades 15–60 × 0,5–2 cm, often lush, *ligule absent*; inflorescence *loose, untidily ovate*, 10–30 cm long; racemes *mostly compound with short secondary branchlets*; lowest racemes 3–15 cm long; spikelets elliptic, 2–3,5 mm long, hispid, lower floret male or barren, acute or with a *curved awn 1–7 mm long*.

Shallow water or swamps; streamsides; marshy grassland; ditches; fallows; rice-fields; forest gallery edges; sometimes in water; with *Sacciolepis africana*, *S. cymbiandra*, *Leptochloa coerulea*, *Panicum subalbidum*, *Echinochloa colona*, *E. pyramidalis*, *Oryza barteri*, *Digitaria debilis*; near 0–c. 2100 m alt.

N Botswana, S. Africa (along the E coast); Assam to S China, Indo-China; introduced in New Zealand, N., C. & S. America.

A segregate from and resembling *E. crus-galli* but it has smaller spikelets and a large loose inflorescence whose racemes bear copious secondary branches. However, the boundary between the two species is very indistinct.

[**E. esculenta** (A. Braun) H. Scholz]; Fl. Trop. E. Afr., *Gramin.* 3: 560, 1982 (under *E. frumentacea*); Fl. Zambes. 10/3: 53, 1989 (as *E. utilis* Ohwi & Yabuno); Fl. China 22, *Texts*: 516, 2006; Banfi & Galasso in (*Nat. Hist. Sci.*) *Atti Soc. Ital. Sci. Nat. Mus. Civ. Stor. Nat. Milano* 8: 71–72, 2021.

bas.: *Panicum esculentum* A. Braun

syn.: *Echinochloa utilis* Ohwi & Yabuno; *E. crus-galli* var. *utilis* (Ohwi & Yabuno) Kit. and subsp. *utilis* (Ohwi & Yabuno) T. Koyama; *E. frumentacea* subsp. *utilis* (Ohwi & Yabuno) Tzvelev

Annual grass; culms robust, erect, 1–1,5 m tall; leaf blades linear, 20–50 × 1,2–2,5 cm; inflorescence erect, lanceolate, 10–30 cm long; racemes 2–6 cm long, usually branched, closely spaced and overlapping; spikelets purplish, 3,5–4 mm long; awn 0,5–2 cm long.

A domesticated derivative of *E. crus-galli*; adventive in the Flora Zambesiaca area: N Zimbabwe.

Russian Far East, China, Korea, Japan.

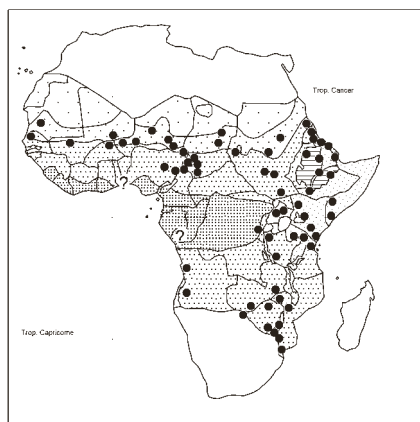
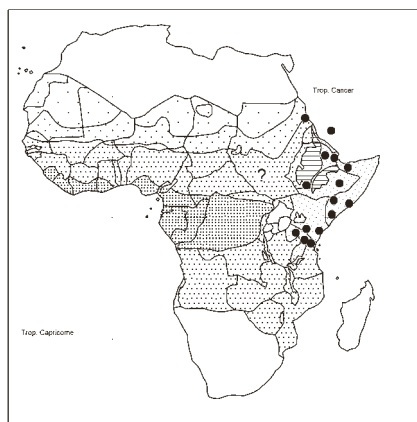
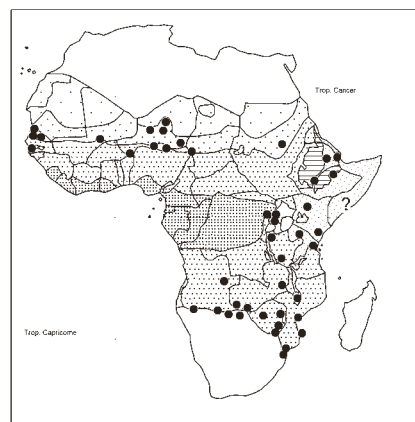
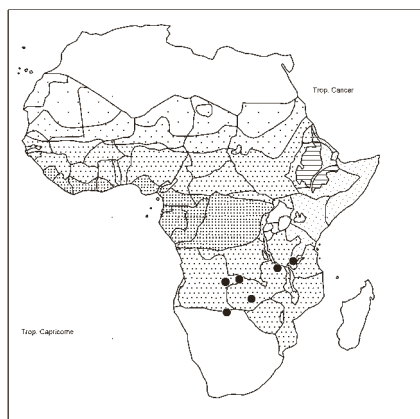
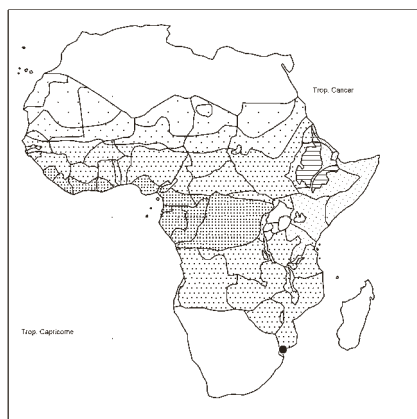
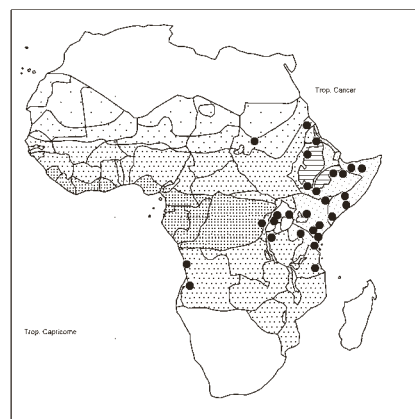
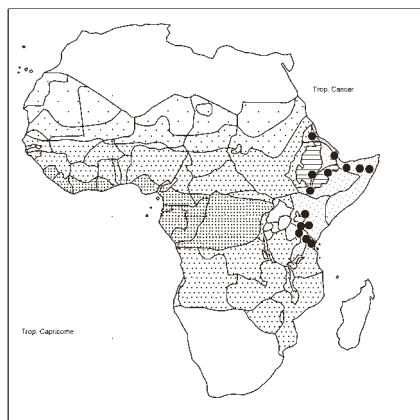
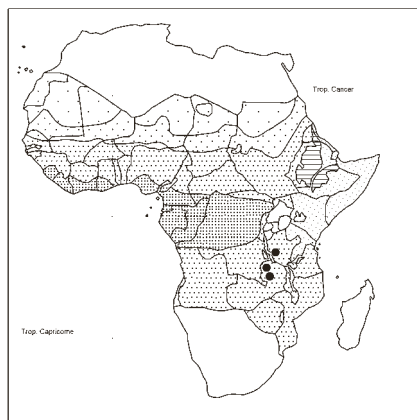
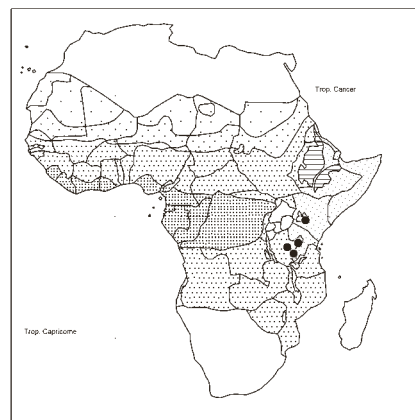
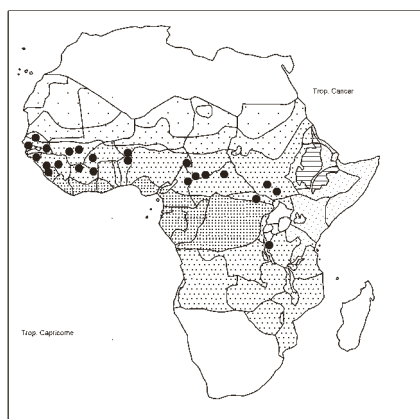
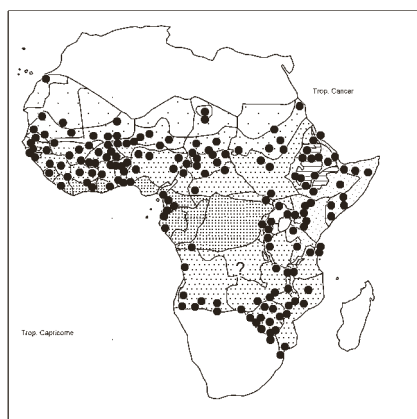
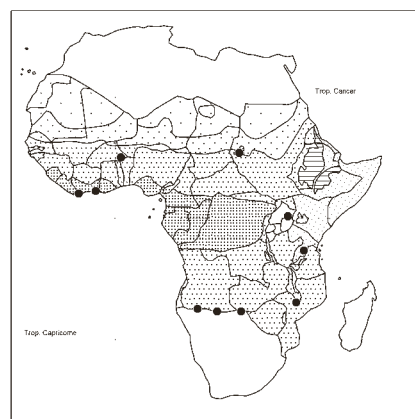
[**E. frumentacea** Link 1827]; – Banyard Millet – Fl. Trop. E. Afr., *Gramin.* 3: 559–560, 1982; Fl. Zambes. 10/3: 55, 1989; Fl. China 22, *Texts*: 516, 2006; Cope, *Fl. Arab. Penins.* 5/1: 206–207, 2007; Sharma & al in *Plant Foods Hum. Nutr.* 71: 231–238, 2016; Banfin & Galasso (2021): l.c.

syn.: *E. colona* (L.) Link var. *frumentacea* (Link) Ridl. and subsp. *edulis* (Honda) Banfi & Galasso; *Panicum frumentaceum* Roxb. 1820, nom. illeg.; *Echinochloa crus-galli* var. *frumentacea* (Link) W. F. Wright; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Robust annual grass; culms 0,3–1,5 m tall, erect; leaf blades linear, 15–40 × 1–2,4 cm, glabrous; *ligule absent*; inflorescence 6–20 cm long, lanceolate, congested; racemes 1–3 cm long, several-rowed with crowded spikelets, simple, densely overlapping; spikelets plump, 2,5–3,5 mm long, pubescent to hispid, ± yellowish, awn-less, tardily deciduous.

Cultivated as a minor grain crop, or occurring as an escape in weedy places; 0–1000 m alt. Thought to be a derivative (cultigen) of *E. colona* that arose in India and perhaps in Africa.

Cultivated in Africa (Tanzania, T1, T8; N Zambia, Zimbabwe, N & C Mozambique), and tropical Asia, Australia.

*Dinebra retroflexa**Dinebra somalensis**Diplachne fusca* subsp. *fusca**Diplachne gigantea**Disakisperma eleusine**Disakisperma obtusiflorum**Disakisperma yemenicum**Echinochloa crus-galli**Echinochloa crus-galli**Echinochloa crus-galli**Echinochloa crus-galli**Echinochloa crus-galli*

ECHINOCHLOA

E. haploclada (Stapf) Stapf, incl. var. *stenostachya* Chiov.; Cytologia 38: 131, 1973; Gibbs Russell & al., Grasses south. Afr.: 120, 1990; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015. – Icon.: Repert. Spec. Nov. Regni Veg., Beih. 40/1, Lieferung 3 (Fl. Deutsch-Ostafri.): pl. XXII, 1931 (as *Panicum aristiferum*); Cook, Aquat. & wetland pl. south. Afr.: 201, 2004 (spikelet); Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013.

bas.: *Panicum haplocladum* Stapf

syn.: *P. aristiferum* Peter; *Echinochloa artistifera* (Peter) Robyns & Tournay

Perennial tussocky grass from a short oblique rhizome; culms 0,3–3 m tall; leaf blades linear, 5–30 × 0,3–2 cm, sometimes with purple bars; *ligule absent* or a *fringe of hairs*; inflorescence (linear to) *lanceolate*, 7–25 cm long; *racemes* 1–5 cm long, *densely crowded*; spikelets *plump*, in congested clusters, 1,5–3 mm long, ± hispid, *often with an awn* 0,5–1,5 cm long.

Stream banks; dry river beds; alluvial flood plains; black clays; *Acacia*, *Commiphora* bushland; lake sides; paddy fields; swampy places in *Acacia*, *Combretum* woodland; 0–1900 m alt.

Plant with considerable variation, not easily separated from *E. colona* with which it hybridises. Similar to *E. jubata* and *E. pyramidalis*.

Botswana, S. Africa, Swaziland.

E. jubata Stapf; Gibbs Russell & al., Grasses south. Afr.: 120, 1990. – Icon.: Cook, Aquat. & wetland pl. south. Afr.: 202, 2004; Burrows & Willis, Pl. Nyika Plateau, Malawi: 343, 2005.

Perennial grass; culms 0,5–2 m tall, rambling or ascending; leaf blades 10–25 × 0,3–1,5 cm; ligule a line of hairs; inflorescence linear to lanceolate 8–20 cm long, typically *dense* with racemes overlapping *to form a head* sometimes interrupted; racemes simple, 2–4 cm long; spikelets *closely packed*, narrowly elliptic, 3–4 mm long, hispid; awn 3–25 mm long.

In or floating in water; stream sides, lake shores; 0–1700 m alt. Namibia, Botswana, S. Africa, Lesotho.

May be a southern variant of *E. stagnina*, but differs from that species in having racemes congested into a head, and smaller and densely packed and slenderly awned spikelets.

E. obtusiflora Stapf; Brink & Belay, Pl. Res. Trop. Afr. 1, Cereals & pulses: 58–59, 2006; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015; César & Chatelain, Fl. ill. Tchad: 229–230, 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 250, 1992.

Annual sometimes perennial, tufted grass 0,3–1 m tall; culms erect or ascending; leaf blades linear, 5–20 cm × 2–5 mm; ligule a line of hairs; inflorescence of 2–12 racemes each 1–4 cm long on a central axis 5–17 cm long; spikelets in 4 rows on a triquetrous rachis; axis and rachis sometimes with long hairs; spikelets *rounded*, 3–3,5 mm long with a *stipitate* base.

Shallow pools; wet and swampy places; weed of rice.

Other species with stipitate spikelets: *E. rotundiflora*, *E. callopus*, *E. pithopus*.

[**E. oryzoides** (Ard.) Fritsch, non *E. oryzetorum* (A. Chev.) A. Chev. (= *E. stagnina*); Fl. Trop. E. Afr., Gramin. 3: 557, 1982; Fl. Zambes. 10/3: 53, 1989; Fl. China 22, Texts: 516–517, 2006; Crespo & al. in Phytotaxa 454: 246–247, 2020 (cf. also Phytotaxa 212: 137, 2015).

bas.: *Panicum oryzoides* Ard.

syn.: *P. oryzinum* J. F. Gmel.; *P. crus-galli* var. *oryzoides* (Ard.) Fiori; *Echinochloa crus-galli* var. *oryzoides* (Ard.) Lindm.;

ECHINOCHLOA ORYZOIDES

E. phyllopogon (Stapf) Stapf ex (emend.) Kossenko; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual grass; culms erect, 0,25–1,5 m tall; inflorescence 6–25 cm long; longest racemes 2–5 cm, usually simple; spikelets 3,8–6,5 mm long in 2 irregular rows on each raceme, hispid, acuminate to awned (to 2 cm long) (Fl. Europaea 5: 262, 1980).

Weed of rice fields reported from W Zimbabwe, adapted to rice which it resembles in habit.

Type from Italy. A close relative of *E. crus-galli* but racemes simple.

Apparently originating in the Mediterranean region and Middle East, but now widespread in Asia from Caucasus E-wards to Japan and Philippines.

E. pithopus Clayton, Kew Bull. 36: 234, 1981; Fl. Trop. E. Afr., Gramin 3: 536, 1982.

Base of plant unknown; culms 80 cm tall; leaf blades 10–20 cm × 4–5 mm, folded; ligule a line of hairs; inflorescence oblong to linear, 5–8 cm long; racemes appressed, 1–3,5 cm long; *spikelets* single or in pairs in 2–4 rows, 4–4,5 mm long, scaberulous to spinulose, with a *cylindrical swelling (stipe)* at base 1 mm long.

Swampy places; 1300 m alt.

Known only from the type collected in 1964.

Poorly known plant very near *E. callopus* which has smaller spikelets (3–4 mm long) with a *globular* swelling (0,3–0,6 mm long) at base.

E. pyramidalis (Lam.) Hitchc. & Chase, incl. var. *violacea* Vanderyst and fa. *decomposita* Chiov.; Renier, Fl. Kwango 1: 40, 1948; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 235–236, 1994; Boulos, Fl. Egypt 4: 291, 2005; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 276, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015. – Icon.: Robyns, Fl. agrost. Congo belge 2: 143, 1934; Bosser, Gramin. pâtur. cult. Madagascar: 358, 360, 1969; van der Zon, Gramin. Cameroun 2: 253, 1992; Fl. Eth. & Eritrea 7: 214, 1995; Poilecot, Boissiera 50: 363, 1995; idem, ibid. 56: 410, 1999; Fl. Gabon 5b: 23, 1999; Cook, Aquat. & wetland pl. south. Afr.: 202, 2004; Lisowski, Fl. Rép. Guinée 2: fig. 538, 2009; Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 815, 2010; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 204, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 189, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 186, 2015; Ibrahim & al., Grasses Mali: 65, 2018; César & Chatelain, Fl. ill. Tchad: 229, 2019.

bas.: *Panicum pyramidale* Lam.

syn.: *P. quadrifarium* Hochst. ex A. Rich.; *P. atrovioleaceum* A. Rich.; *P. crus-galli* L. var. *polystachyum* Asch. & Schweinf. and var. *molle* Peter; *P. holubii* Stapf; *P. pyramidale* var. *spadiceum* Peter, var. *quadrifarium* (Hochst. ex A. Rich.) Chiov., and var. *hebetatum* Stapf; *P. spadiciferum* Peter 1937, pro syn.; *P. spadiciferum* Peter 1928, nom. nud.; *P. hildebrandtii* Hack. ex T. Durand & Schinz 1894, nom. nud.; *P. crus-galli* var. *polystachyum* Asch. & Schweinf. fa. *aristatum* Chiov. and fa. *muticum* Chiov.; *P. frumentaceum* var. *cuspidatum* Nees; *Echinochloa senegalensis* Mez; *E. quadrifaria* (Hochst. ex A. Rich.) Chiov., incl. var. *atroviolacea* (A. Rich.) Chiov.; *E. frumentacea* sensu Wickens, non Link; *E. frumentacea* var. *violacea* Vanderyst 1919, nom. provis.; *E. kimpokoensis* Vanderyst 1919, nom. inval.; *E. verticillata* Berhaut; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

ECHINOCHLOA PYRAMIDALIS

Perennial reed-like rhizomatous grass; culms *unbranched*, spongy below, 1–4 m tall, erect, stout, hard, rooting below; leaf blades stiff, linear, 8–60 × 2–2.5 cm, glaucous; ligule a line of stiff hairs; inflorescence ovate to narrowly lanceolate, 8–40 cm long, with 5–15 racemes; racemes overlapping, ± erect, 3–20 cm long, simple or compound; spikelets *plump*, 2.5–4 mm long, awn-less (rarely with a subulate point to 3 mm long).

Marshland; shallow water of ditches, pools, pond; occasional arable weed; alluvial clay; swamps; riversides; usually standing in water; sometimes forming extensive meadows on flood plains; with *Brachiaria mutica*, *Seteria sphacelata*, *Sacciolepis africana*, *Vetiveria nigritana*; seasonally flooded alluvial clay; forming great prairies in the floodplains of rivers (especially along the Senegal and Niger Rivers, and of the inundated area of Lake Chad); a major constituent of sudd in the Niger and Nile Rivers; weed of cultivation (e.g. sorghum and rice); 0–2400 m alt.

For the *Oryza longistaminata*-*Echinochloa pyramidalis* community, see Phytocoenologia 35: 365, 2005.

Egypt; Bioko/Fernando Poo; N-most Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland; Madagascar; Oman, Saudi Arabia; introduced in Nepal, Vietnam, C. America.

Though variable, can be recognised by its robust stature with stout erect culms, firm leaves, and plump awn-less spikelets. – Partially self-incompatible. Shows some tendency to intergrade with adjacent species (*E. haploclada*, *E. stagnina*).

Also cultivated on a small scale (for hay, silage).

E. rotundiflora Clayton, Kew Bull. 34: 560, 1980; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015. – Icon.: van der Zon, Gramin. Cameroun 2: 250, 1992; Fl. Eth. & Eritrea 7: 214, 1995.

syn.: *Panicum obtusiflorum* Hochst. ex A. Rich.; *Brachiaria obtusiflora* (Hochst. ex A. Rich.) Stapf 1919, non *Echinochloa obtusiflora* Stapf 1920.

Annual grass; culms solitary or tufted, stout, 0.45–1.3 m tall; leaf sheaths loose, papery; blades 15–30 × 0.5–1 cm, margins cartilaginous, serrate, tip acute; ligule *absent*; inflorescence yellow-green, 9–30 cm long, contracted; racemes loosely erect, overlapping by much of their length, the lower somewhat spreading; racemes 3–12 cm long, compound, scabrid-hispid; spikelets borne loosely on secondary branches at least near the base; spikelets *plumply* elliptic or obovate, 3.5–4.5 mm long, *smooth*, *glabrous*, *obtuse*, with a *cylindrical basal stipe* 0.5 mm long.

Marshy grassland; *Acacia seyal* woodland; occasional weed of road sides and arable land; clay soils; 1000 (? and less)–2000 m alt.

E. stagnina (Retz.) P. Beauv.; Renier, Fl. Kwango 1: 40, 1948; Genetica 40: 427, 1965; *ibid.* 41: 311–315, 1970; Cytologia 43: 101, 1978; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 236–237, 1994; Brink & Belay, eds., Pl. Res. Trop. Afr. 1, Cereals & pulses: 59–60, 2006; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 276, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 127, 2015; César & Chatelain, Fl. ill. Tchad: 229, 2019. – Icon.: Bosser, Gramin. patur. cult. Madag.: 356, 1969; Troupin, Fl. Rwanda 4: 241, 1988; van der Zon, Gramin. Cameroun 2: 253, 1992 (spikelet); Fl. Eth. & Eritrea 7: 214, 1995; Poilecot, Boissiera 50: 365, 1995; *idem*, *ibid.* 56: 411, 1999; Cook, Aquat. & wetland pl. south. Afr.: 203, 2004; Boulos, Fl. Egypt 4: 293, 452, 2005; Singh & al. in J. Econ. Taxon. Bot. 39: 111, 2015; Vande weghe & al., Pl. à fleurs Gabon: 178, 2016; Ibrahim & al., Grasses Mali: 65, 2018.

bas.: *Panicum stagninum* Retz.

syn.: *P. scabrum* Lam., incl. subsp. *stagninum* (Retz.) A. Chev.; *P. galli* Thunb.; *P. crus-galli* L. var. *maximum* Franch., var. *submuticum* Franch., var. *leiostachyum* Franch., var.

ECHINOCHLOA STAGNINA

stoloniferum Schweinf. & Muschl., var. *sieberianum* Aschers. & Schweinf.; *P. burgu* A. Chev.; *P. sieberianum* (Aschers. & Schweinf.) Sickenb.; *P. subaristatum* Peter; *P. scabrum* Lam. subsp. *lelievrei* A. Chev., subsp. *oryzetorum* A. Chev., subsp. *burgu* (A. Chev.) A. Chev., var. *leiostachyum* (Franch.) A. Chev., var. *franchetii* A. Chev., nom. superfl., var. *submuticum* (Franch.) A. Chev.; *P. oryzetorum* A. Chev. 1901, nom. illeg.; *P. lelievrei* A. Chev.; *P. oryzetum* A. Chev. 1920, nom. nud.; *Echinochloa crus-galli* var. *stolonifera* (Schweinf. & Muschl.) A. Chev. and var. *sieberiana* (Asch. & Schweinf.) A. Chev.; *E. malakuensis* Vanderyst 1919, nom. prov.; *E. barbata* Vanderyst; *E. scabra* (Lam.) Roem. & Schult.; *E. oryzetorum* (A. Chev.) A. Chev.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial rhizomatous grass, sometimes behaving as an annual; rhizomes creeping (often floating), stoloniferous, spongy when in water; culms 0.3–2.5 m long, spongy below, decumbent, rooting at nodes, sometimes bearded; leaf blades 10–45 × 0.3–2 cm, margins rough; ligule a line of hairs; inflorescence narrowly lanceolate (to ovate), 6–25 cm long, *typically open with racemes secund*, flexuous, ± nodding; racemes simple, 2–8 cm long; spikelets in pairs, 3.5–6 mm long, with soft or bristly hairs, awned at tip.

Streamsides; pond margins; in water, sometimes floating in 0.5–1 m deep water, or collapsed in a tangle on mud after recession of flood; forming vast aquatic meadows, with *Oryza longistaminata*, *Brachiaria mutica*, *Paspalidium geminatum*, *Vossia cuspidata*; temporary pools with *Oryza barthii*, *Paspalidium geminatum*, *Panicum repens*, *Brachiaria mutica* and sometimes *Vossia cuspidata*; irrigation ditches; a major component of sudd in several rivers; rice fields; 0–2300 m alt.

“A transgressive species to the *Brachiaria mutica* – *Cynodontion dactyli* community” (Syst. Geogr. Pl. 75: 244, 2005).

Egypt; Namibia, Botswana, Lesotho, S. Africa; Madagascar; tropical regions of Asia from NE India to Indo-China, New Guinea.

“A useful multipurpose plant in semi-arid regions of W. Africa, especially in the central delta of the Niger Riv.”. Produces rich fodder.

E. ugandensis Snowden & C. E. Hubb.; Gibbs Russell & al., Grasses south. Afr.: 121, 1990; Lye in Lidia 4: 163, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 432, 2013. – Icon.: Cook, Aquat. & wetland pl. south. Afr.: 204, 2004.

Annual loosely tufted or creeping grass; culms 25–80 cm long, often rooting below; leaf blades linear, 7–20 × 0.3–0.6 cm; ligule a line of hairs; inflorescence loose, *linear*, 5–20 cm long; racemes to 3 cm long, appressed to the axis or rarely spreading and whorl-like; *spikelets neatly 4-rowed*, c. 3 mm long, hairy, sometimes shortly awned, awn-point 2–6 mm long.

In or near shallow pools and other wet places, swamp; 0–2600 m alt.

N Botswana, S. Africa, Swaziland.

Closely resembling *E. colona* but ligule hairy, spikelets awned. Can be confused with depauperate or short-awned forms of *E. stagnina* but spikelets shorter.

SYNONYMS:

Echinochloa aristifera (Peter) Robyns & Tournay
= *Echinochloa haploclada*
barbata Vanderyst = **E. stagnina**
colona var. *arabica* (Nees ex Steud.) A. Chev.
= **Paspalidium desertorum**

ECHINOCHLOA

- colona* var. *glauca* (Sickenb.) N. D. Simpson, var. *leiantha* Boiss. and var. *repens* (Sickenb.) N. D. Simpson
= **Echinochloa colona**
- colona* subsp. *edulis* (Honda) Banfi & Galasso
= **E. frumentacea**
- compressa* (P. Beauv.) Roberty = **Axonopus compressus**
- crus-galli* subsp. *colona* (L.) Honda = **Echinochloa colona**
- crus-galli* var. *crus-pavonis* (Kunth) Hitchc.
= **E. crus-pavonis**
- crus-galli* subsp. *hispidula* (Retz.) Honda = **E. oryzoides**
- crus-galli* var. *oryzoides* (Ard.) Lindm. = **E. oryzoides**
- crus-galli* var. *sieberiana* (Asch. & Schweinf.) A. Chev.
= **E. stagnina**
- crus-galli* var. *stolonifera* (Schweinf. & Muschl.) A. Chev.
= **E. stagnina**
- crus-galli* var. *utilis* (Ohwi & Yabuno) Kit. and subsp. *utilis* (Ohwi & Yabuno) T. Koyama = **E. esculenta**
- divaricata* Andersson = **E. colona**
- equitans* (Hochst. ex A. Rich.) C. E. Hubb. = **E. colona**
- eruciformis* (Sm.) Rchb. = **Brachiaria eruciformis**
- frumentacea* Link subsp. *utilis* (Ohwi & Yabuno) Tzvelev
= **Echinochloa esculenta**
- frumentacea* var. *violacea* Vanderyst = **E. pyramidalis**
- frumentacea* sensu Wickens, non Link = **E. pyramidalis**
- geminata* (Forssk.) Roberty = **Paspalidium geminatum**
- glabrescens* Kossenko = **Echinochloa crus-galli**
- kimalayalaensis* Vanderyst = **E. crus-pavonis**
- kimpokoensis* Vanderyst = **E. pyramidalis**
- malakuensis* Vanderyst = **E. stagnina**
- nervosa* (Stapf) Roberty = **Acroceras gabunense**
- oryzetorum* (A. Chev.) A. Chev. = **Echinochloa stagnina**
- paniculata* (Benth.) Roberty = **Alloteropsis paniculata**
- phyllopogon* (Stapf) Stapf ex Kossenko
= **Echinochloa oryzoides**
- polystachya* (Kunth) Roberty
= **Pseudechinolaena polystachya**
- quadrifaria* (Hochst. ex A. Rich.) Chiov.,
incl. var. *atroviolacea* (A. Rich.) Chiov.
= **Echinochloa pyramidalis**
- ramosa* (L.) Roberty = **Brachiaria ramosa**
- reptans* (L.) Roberty = **B. reptans**
- scabra* (Lam.) Roem. & Schult. = **Echinochloa stagnina**
- senegalensis* Mez = **E. pyramidalis**
- subverticillata* Pilg. = **E. colona**
- utilis* Ohwi & Yabuno = **E. esculenta**
- verticillata* Berhaut = **E. pyramidalis**
- zizanioides* (Kunth) Roberty = **Acroceras zizanioides**

(ECHINOLAENA)

- Echinolaena polystachya* Kunth
= **Pseudechinolaena polystachya**

EHRHARTA / I

Ehrharta s. lat. [incl. 3 genera formerly recognized, i.e. *Microlaena* R. Br., *Tetrarrhena* R. Br. and *Zotovia* Edgar & Connor (= *Petriella* Zotov)] comprises c. 37 species of which some 23 are native to the Cape winter rainfall area of Africa (map by Verboom & al. in *Evolution* 57: 1009, 2003; cf. also Verboom & al. in *Amer. J. Bot.* 91: 1364–1370, 2004). The other species are native to SE Asia and New Zealand (*Phytotaxa* 407: 45, 2019).

Ehrharta erecta Lam., incl. var. *abyssinica* (Hochst.) Pilg. and var. *natalensis* Stapf; Dobignard & Chatelain, *Index synonym. fl. Afr. N.* 1: 276, 2010; Darbyshire & al., *Pl. Sudan & S. Sudan*: 127, 2015. – *Icon.*: *Fl. Trop. E. Afr.*, *Gramin.* 1: 39, 1970; *Fl. Zambes.* 10/1: 40, 1971; *Fl. Eth. & Eritrea* 7: 12, 1995; Thulin, *Fl. Somalia* 4: 152, 1995; Burrows & Willis, *Pl. Nyika Plateau, Malawi*: 344, 2005; Cope, *Fl. Arab. Penins.* 5/1: 5, 2007; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 120, 2012; Agnew, *Upl. Kenya wild flow.*, ed. 3: pl. 184, 2013; Kellogg in K. Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 146, 2015; Clarke, *Name those grasses*: 200–201, 2015; *Fl. Afr. Centr.*, *Gramin.*: 27, 2017; Weber, *Invasive pl. species of the world*, ed. 2: 165, 2017 (with map); Sánchez-Ken in *Phytotaxa* 402: 47, 49, 2019 (var. *erecta*).
syn.: *E. abyssinica* Hochst.; *E. paniciformis* Nees; *E. panicea* Sm., incl. var. *cuspidata* Nees and var. *mucronata* Nees; *E. deflexa* Pignatti; *Trochera panicea* (Sm.) Kuntze; *T. paniciformis* (Nees) Kuntze; *Panicum deflexum* Guss. ex Ten.

Perennial grass loosely tufted or rambling; culms 0.3–1 m long from a decumbent base; leaf blades 5–18 cm long, 2–10 mm wide, flat, base with scattered long hairs, extending into short auricles; inflorescence an open or contracted narrow panicle, 3–21 cm long, with thin (hanging) branches 2–5 cm long; spikelets 3–7 mm long.

Podocarpus latifolius forest; rain-forest with *Podocarpus latifolius*, *Olea capensis* subsp. *hochstetteri*, *Syzygium guineense* subsp. *afromontanum*, *Dombeya torrida*; with *Arundinaria alpina*; forest glades, margins and shade; shade of scrubland; plantation margins; grassy slopes; disturbed areas; clearings; occasionally on coastal sands; 0–3070 m alt.

Botswana, S. Africa, Swaziland; Mascarene Isl.; Saudi Arabia, Yemen; introduced in S Europe, Morocco, Israel, S India, SW China, S Australia, New Zealand, Hawaii, N. America (California, cf. Sigg in *Fremontia* 31/4: 25–27, 2003; Mexico cf. *Phytotaxa* 402: 45–51, 2019).

A highly invasive grass, spreading rapidly and building an extremely dense turf. Able to invade undisturbed vegetation but establishes best in open sites. It flowers and fruits throughout the year. May flower and set seeds within a few weeks if rainfall is sufficient. Reproduces mostly by seeds but also vegetatively (rooting at culm nodes).

It is parasitized by ergot, *Claviceps purpurea* s. lat. (van der Linde in *Fungal Biol.* 120: 917, 928, 2016).

SYNONYMS:

- Ehrharta abyssinica* Hochst. = **Ehrharta erecta**
deflexa Pignatti = **E. erecta**
panicea Sm., incl. var. *cuspidata* Nees and var. *mucronata* Nees = **E. erecta**
paniciformis Nees = **E. erecta**
uniglumis Fenzl ex T. Durand & Schinz = **Melinis repens** subsp. **grandiflora**

ELEUSINE / 8

Genus of 10 species in tropical Africa, S. America, and 1 (one) a widespread weed (Kellogg in K. Kubitzki, ed., *Fam. & genera flow. pl.* 13: 392, 2015). Except *E. coracana* (cultivated as a cereal), *E. indica* and *E. tristachya*, all other species are limited in distribution (Prabhukumar & al. in *Nelumbo* 59: 25–28, 2017). East Africa is considered the centre of diversity for the genus (Bisht & Mukai in *Pl. Syst. Evol.* 233: 243–258, 2002). The genus is distributed throughout the tropics, extending into warm temperate regions. Introgression is fairly frequent, especially among annual species; intermediate specimens are difficult to name.

The genus comprises both diploid and tetraploid species, and has been a matter of considerable interest for plant breeders whose major objective was to attain genetic improvement. Cf. e. g. Hilu & Johnson in *Ann. Missouri Bot. Gard.* 84: 841–847, 1997; Mysore & Baird in *Pl. Syst. Evol.* 207: 1–11, 1997; Mallikharjun & al. in *Caryologia* 58: 300–307, 2005; Peterson & al. in *Taxon* 64: (445–) 453 (–467), 2015; Chiavegatto & al. in *Bot. J. Linn. Soc.* 193: (402–) 414 (–418), 2020.

One species (*E. semisterilis*) in our area is known from the type gathering only.

Eleusine africana Kenn.-O'Byrne; Dobignard & Chatelain, *Index synon. fl. Afr. N.* 1: 276, 2010; Darbyshire & al., *Pl. Sudan & S. Sudan*: 127, 2015. – Icon.: Kenn.-O'Byrne in *Kew Bull.* 12: 70, 1957 (details); S. M. Phillips in *Kew Bull.* 27: 260, and plate facing p. 264, 1972 (as *E. indica* subsp. *africana*); Bosser, *Gramin. patur. cult. Madag.*: 84, 1969; van der Zon, *Gramin. Cameroun* 2: 141, 1992 (as *E. indica* subsp. *africana*); Fl. Eth. & Eritrea 7: 140, 1995 (partial); Thulin, *Fl. Somalia* 4: 188, 1995; Boulos, *Fl. Egypt* 4: 264, 2005; Ibrahim & al., *Grasses Mali*: 66, 2018.

syn.: *E. indica* subsp. *africana* (Kenn.-O'Byrne) S. M. Phillips; *E. coracana* subsp. *africana* (Kenn.-O'Byrne) Hilu & de Wet; *E. indica* sensu auctt., non L.

Tufted annual; culms moderately robust 0,15–1 m tall, erect or geniculately ascending; leaf blades 5–35 cm × 3–6 mm; ligule a definitive ciliate fringe; inflorescence digitate of 1–17 ascending racemes each 3,5–15,5 cm × 4–7 mm; spikelets disarticulating, 4,6–7,8 mm long, elliptic; grain 1,2–1,6 mm long, oblong to broadly oblong, surface uniformly granular, obliquely ridged.

Disturbed weedy places; weed in crops, often in *E. coracana* fields; usually in damp sandy soils beside rivers and dams; eroded limestone slopes; around villages, roadsides; 0–2400 m alt.

Egypt, Namibia, Botswana, S. Africa, Lesotho, Swaziland; Madagascar, Comoros; Saudi Arabia, Oman, Yemen; introduced in S England, SW France, Dept. Gironde (*Bull. Soc. Linn. Bordeaux* 154, N. S. 47: 121–129, 2019, with illustrations and map p. 123, 128, 129); Canary Islands (2011, fide Willdenowia 42: 284, 2012).

A robust tetraploid (2n = 36) related to the pantropical weed *E. indica* (2n = 18); hybridises readily with the tetraploid *E. coracana*, giving rise to a range of intermediates with longer and narrower spikes than the true *E. coracana*. *E. africana* is considered to be the wild progenitor of *E. coracana*.

E. africana occurs in certain seasons in great abundance in *E. coracana* fields and seriously reduces the yield of this cereal crop (*Kew. Bull.* 12: 71, 1957).

[**E. coracana** (L.) Gaertn.] – African or Finger Millet – Burkill, *Useful pl. W. Trop. Afr.*, ed. 2, 2: 238–239, 1994 (s. lat.); Dobignard & Chatelain, *Index synon. fl. Afr. N.* 1: 276, 2010; Darbyshire & al., *Pl. Sudan & S. Sudan*: 128, 2015. – Icon.: Fl. Gabon 5: 233, 1962; Troupin, *Fl. Rwanda* 4: 248, 1988; Poilecot, *Boissiera* 50: 151, 1995; Fl. Zambes. 10/2: 157, 1999; Boulos, *Fl.*

ELEUSINE CORACANA

Egypt 4: 264, 2005 (inflor.); Brink & Belay, eds., *Pl. Res. Trop. Afr.* 1, *Cereals & pulses*: 62, 2006; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 214, 2012. – Recent work has shown... that the cultivated cereal (= *E. coracana*) is derived from what had until now been called *E. indica* subsp. *africana* (= *E. africana*), cited from Fl. Zambes. 10/2: 159, 1999. In certain floras “as a matter of convenience, the cultivated cereal, *E. coracana*, and its wild relatives are recognised at species level”.

bas.: *Cynosurus coracan* L. (1759) and *C. coracanus* L. (1762). Cf. Lye in *Lidia* 4/5: 150, 1999.

syn.: *Eleusine cerealis* Salisb. 1796, nom. superfl.; *E. sphaeroperma* Stokes 1812, nom. superfl.; *E. indica* var. *coracana* (L.) Fiori, and subsp. *coracana* (L.) Lye; *E. pilosa* Gilli; *World Checklist of Selected Plant Families*, Poaceae, Roy. Bot. Gard., Kew.

Annual robust tufted grass 0,2–1,7 m tall; culms erect or geniculately ascending, glabrous; leaves distichous, ligule fimbriate; blades to 75 × 2 cm; inflorescence of 2–7(–20) linear-oblong subdigitate, congested, 1-sided racemes each 4–14 cm long, c. 1–1,5 cm wide, curving inwards at maturity; spikelets ovate, 5–9 mm long, 6–9-flowered, non-shattering at maturity; grain round, finely striate-punctate, brown, exposed between the gaping lemma and palea.

Cultivated in low rainfall zone across Africa from Senegal to E Africa (especially in Niger and N Nigeria, Jos Plateau, N Cameroun, Lake Chad area) and S-wards to Zaire (Bas-Congo, Ubangi-Uele, Lac Albert, Haut Katanga), C Angola, Namibia, Botswana, Zimbabwe, Mozambique; c. 730–1740 m alt. It frequently occurs as an escape, especially along roadsides (such plants are often small & slender, c. 20 cm tall, with only 1–3 racemes; *E. pilosa* Gilli is based on such a depauperate escape).

Cultivated in the tropics & subtropics of the Old World for food (porridge flour) and making beer. N Africa (Tunisia, Libya, Egypt), Arabian Penins., Madagascar, Comoros, India, Nepal, SE Asia. – It is the third most important cereal crop in semi-arid regions of the world (Lin & al. in *Turkish J. Bot.* 38: 1, 2014).

In e. g. Uganda hybrid swarms between *E. africana* and *E. coracana* often occur (Lye in *Lidia* 4/5: 151, 1999).

MUELLER, N. G. & al. (2022). Variability and preservation biases in the archaeological record of *Eleusine coracana* (finger millet): evidence from Iron Age Kenya. *Veget. Hist. Archaeobot.* 31: 279–290.

E. floccifolia (Forssk.) Spreng.; Thulin, *Fl. Somalia* 4: 188, 1995. – Icon.: *Kew Bull.* 27: pl. 4 facing p. 265, 1972 (grain); Fl. Eth. & Eritrea 7: 140, 1995; Boulos, *Fl. Egypt* 4: 264, 2005; Devarumath & al. in *Cytologia* 70: 430, 2005 (inflor.); Cope, *Fl. Arab. Penins.* 5/1: 150, 2007 (idem); Agnew, *Upl. Kenya wild flow.*, ed. 3: pl. 187, 2013.

bas.: *Cynosurus floccifolius* Forssk.

syn.: *Chloris floccifolia* (Forssk.) Poir.

Compactly tufted perennial from a tough branching rhizome; culms 20–70 cm tall, ascending, branching only at lowest nodes; leaf blades tough, 8–55 cm × 2,5–5 mm with tufts of soft white hairs scattered along margins; ligule a ciliate membrane; inflorescence of 2–10 racemes clustered at culm-apex, 1–2 often set below the rest; racemes 2,5–12 cm long, ascending or spreading; spikelets 4–7-flowered, ± elliptic, 3,3–6,8 mm long, closely overlapping; grain elliptic-(broadly) oblong, 0,9–1,4 mm long, minutely, closely rugulose.

Field margins; roadsides; damp pastures and grassy glades amongst junipers, especially on limestone; heavy clay soils; 1350–3200 m alt.

A diploid (2n = 18) wild taxon. Yemen; introduced in Kenya (around Nairobi), Egypt, SW Arabian Peninsula.

Distinguished from *E. jaegeri* by its less robust habit, elliptic spikelets.

ELEUSINE

E. indica (L.) Gaertn., incl. var. *major* E. Fourn., var. *monostachya* F. M. Bailey, var. *oligostachya* Honda, and var. *sandaensis* Vanderyst, but excl. subsp. *africana* (Kenn.-O'Byrne) S. M. Phillips (= *E. africana*), var. *coracana* (L.) Fiori (= *E. coracana*), subsp. *coracana* (L.) Lye (= *E. coracana*), var. *intermedia* Chiov. (= *E. intermedia*), and var. *stricta* (Roxb.) Chiov. (= *E. coracana*). – Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 239–240, 1994, p.p.; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 277, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015; Schmidt & al., Phytotaxa 304: 90, 2017; César & Chatelain, Fl. ill. Tchad: 199, 2019. – Icon.: Kew Bull. 27: pl. facing p. 264 (grain), p. 260 (ligule), 1972; van der Zon, Gramin. Cameroun 2: 141, 1992; Poilecot, Boissiera 50: 149, 1995; idem, ibid. 56: 237, 1999; Fl. Zambes. 10/2: 157, 1999; Ravi & Mohanan, Common trop. & sub-trop. sedges & grasses: 147, 2002; Agnew, Upl. Kenya wild flow., ed. 3: pl. 187, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 187, 2015; Vande weghe & al., Pl. à fleurs Gabon: 187, 2016; Ibrahim & al., Grasses Mali: 66, 2018.

bas.: *Cynosurus indicus* L.

syn.: *Eleusine glabra* Schumach.; *Chloris repens* Steud.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual tufted grass; culms slender, 10–85 cm tall, erect to geniculately ascending, often branching at base; leaf blades linear, 5–35 cm × 3–6 mm; ligule *sparsely and minutely ciliate*; inflorescence digitate, of 1–17 ascending racemes each 2,5–15,5 cm × 3–5,5 mm; spikelets elliptic, 4,6–7,8 mm long, *breaking up at maturity*; grain elliptic, 1–1,3 mm long, *obliquely striate with very fine lines running vertically between the striae*.

Weed (nitrophile) of waste ground, roadsides, cultivated fields, gardens, fallows; an aggressive weed of maize and millet; damp sandy soils on river banks; 0–2800 m alt.

Element of the *Celosio-trigynae* – *Digitarietum horizontalis* association and sub-associations (Wittig & al. in Phytocoenologia 41: 126, 2011).

A wild diploid taxon in the tropical and subtropical Old World; throughout trop. Africa, but mainly in the E & south. Uplands, rare in W Africa, Arabia. – Bioko/Fernando Poo, Annobón; Cape Verde Isl.; Namibia, S. Africa, Botswana, Swaziland; Madagascar, Indian Ocean Islands; Saudi Arabia, Oman, S Asia E-wards to China, Japan; a pantropical weed introduced in S & Middle Europe (for Slovakia: Thaiszia 29: 77–84, 2019; Austria: Ann. Naturhist. Mus. Wien, B 116: 181–190, 2014), Madeira, Azores, Canary Isl., N. Africa (for Tunisia: El Mokni & Verloove in Fl. Medit. 29: 47–48, 2019); Australia, New Zealand, N., C. & S. America.

Eleusine indica collected in “Katanga” by Homblé is based on material from China (Robbrecht & al. in Blumea 66: 84, 2021).

E. intermedia (Chiov.) S. M. Phillips – Icon.: Kew. Bull. 27: pl. 4 facing p. 265, 1972 (grain).

bas.: *E. indica* var. *intermedia* Chiov.

Tufted perennial from a stout rhizome; culms 0,6–1,2 m tall, erect or ascending, branched at lower nodes; leaf blades 15–50 cm × 4–7 mm, pilose above; ligule a *ciliolate membrane*; inflorescence of 4–15 racemes clustered towards top of culm, upper racemes subdigitate; racemes to 12 cm long, slender, ascending or occasionally widely spreading; spikelets *elliptic*, 5–10-flowered, 5–8,3 mm long; grain broadly elliptic, 1,2–1,3 mm long, *finely striate*.

Deciduous bushland; 1200–c. 1800 m alt.

ELEUSINE

E. jaegeri Pilg., incl. var. *maxima* Peter – Icon.: Kew Bull. 27: pl. 4 facing p. 265, 1972; Fl. Trop. E. Afr., Gramin. 2: 265, 1974; Agnew, Upl. Kenya wild flow., ed. 3: pl. 187, 2013.

Coarse perennial tussock grass from a short ascending rhizome; culms 0,4–1,3 m tall, erect, fasciculately branching to form thick bunches of whitish overlapping sheaths at lower nodes; leaf blades tightly folded, 20–45 cm × 4–7 mm, tip fine, margins firm, *conspicuously scabrid*; ligule a *yellow-brown* rim with a *white ciliate* fringe; inflorescence of 2–13 racemes clustered towards top of culms; upper racemes often subdigitate; racemes 4–17 cm long, slender, loosely ascending to horizontally spreading; spikelets 3–9-flowered, 0,6–1 cm long, *narrowly oblong*; grain elliptic-oblong 1,6–1,7 mm long, *minutely, closely rugulose*.

Path in grassland; in short turf following cultivation; grassy sward; roadside; frequent and often dominant in degraded places in grassland, often on red soils; open sites in forest; 1800–3300 m alt. – At high altitudes forming dense tussocks of tough pale green saw-edged leaves.

Ethiopia?

E. kigeziensis S. M. Phillips; Lye & al. in Lidia 4: 164, 2000. – Icon.: Troupin, Fl. Rwanda 4: 245, 1988.

Tufted *perennial* grass from a short ascending rhizome; culms 34–60 cm tall, erect, branched at lower nodes; leaf blades 11–31 cm × 4–6 mm, scattered pilose above, glabrous below; ligule membranous, ciliate; inflorescence *digitate* of 2–6 racemes, *one often set below the main apical cluster*; racemes 7,5–14 cm long, loosely ascending to widely spreading; spikelets 3–5-flowered, narrowly oblong, 6–7,4 mm long; lower glume *with winged keel*; grain elliptic, 1,7–2 mm long, finely striate.

Grassland, pathsides; secondary formations; damp ground; 1760–2700 m alt.

A local species, distinguished from *E. jaegeri* by its digitate inflorescence and softer leaves without scabrid margins; from *E. indica* by its perennial habit.

E. multiflora Hochst. ex A. Rich.; Gibbs Russell & al., Grasses south. Afr.: 130, 1990; Cope, Fl. Arab. Penins. 5/1: 153, 2007; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015. – Icon.: Kew Bull. 27: pl. 4 facing p. 265, 1972 (grain); Fl. Eth. & Eritrea 7: 140, 1995; Agnew, Upl. Kenya wild flow., ed. 3: pl. 187, 2013; Nelumbo 59: 26–27, 2017.

syn.: *Eragrostis kwaiensis* Peter

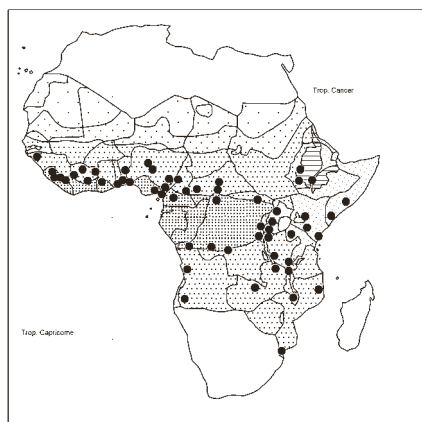
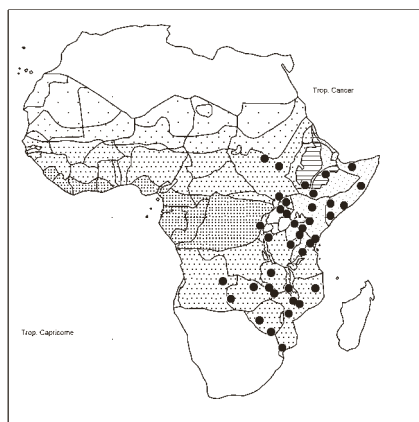
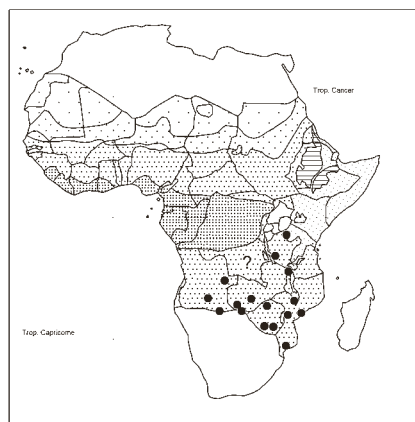
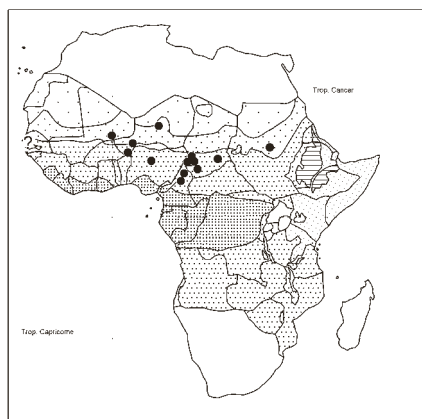
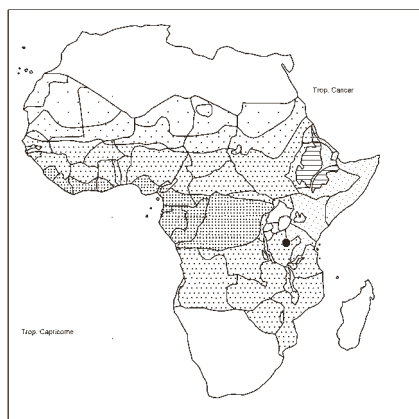
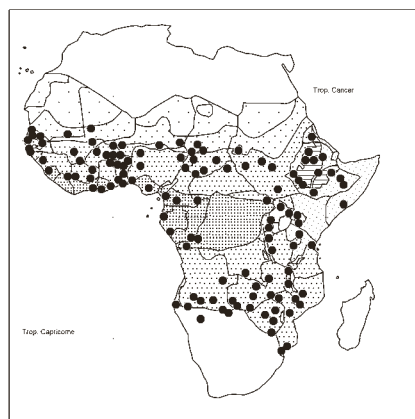
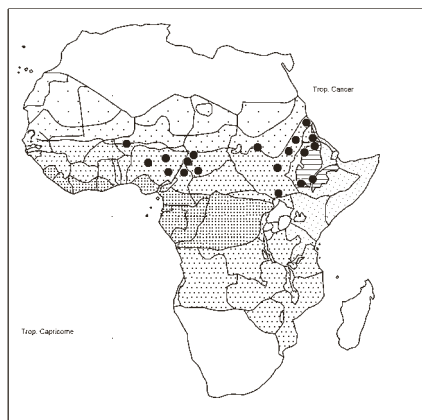
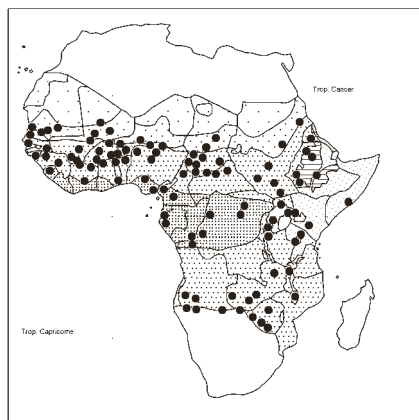
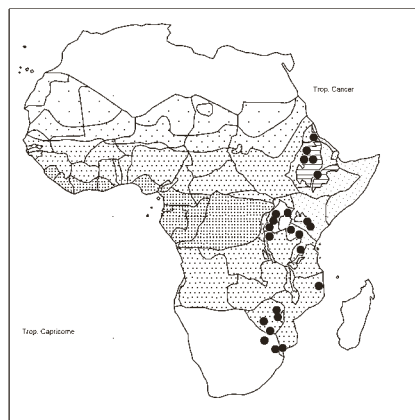
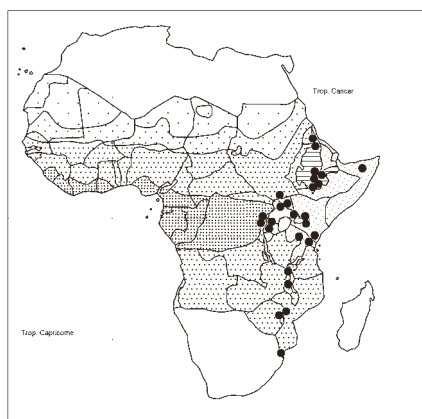
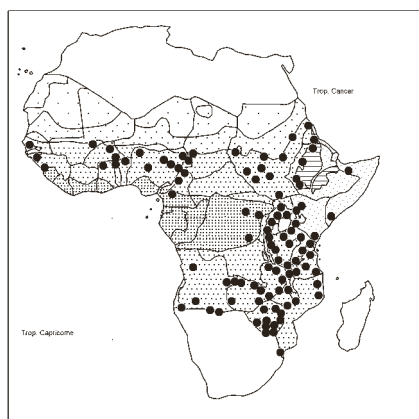
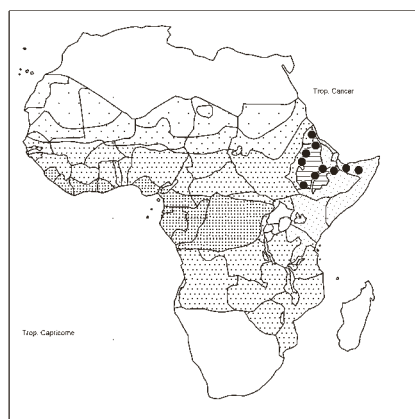
Annual tufted grass; culms geniculate, ascending, 16–45 cm long; leaf blades linear, 6–26 cm × 3–6 mm, sparsely pilose, apex abruptly pointed; ligule a ciliate membrane; inflorescence of 2–8 short broad racemes 1,5–3 cm long arranged alternately on a short axis, often forming a compact cluster; spikelets ovate, 5–15-flowered, 5–11 mm long, laterally compressed, closely overlapping on the *narrowly winged rachis*, disarticulating between the florets.

Deciduous bushland, grassland; often on disturbed ground; weed of cultivations; 1500–2700 m alt.

Saudi Arabia, Yemen; introduced in S. Africa, Lesotho, India (Nelumbo 59: l. c., 2017), C. America.

E. semisterilis S. M. Phillips; PhytoKeys 147: 152, 2020. – Icon.: Kew Bull. 27: 264, 1972.

? Perennial grass; culms 1,45 m tall, erect; leaf blades linear, 19–30 cm × 4–6 mm; ligule a minute membranous ciliolate rim; inflorescence subdigitate of c. 9 loosely ascending racemes 5–15 cm long, clustered towards top of culms; spikelets *4–6-flowered*, elliptic, 5–6 mm long, *laxly* arranged, *slightly overlapping*,

*Echinochloa crus-galonis**Echinochloa haploclada**Echinochloa jubata**Echinochloa obtusiflora**Echinochloa pithopus**Echinochloa pyramidalis**Echinochloa rotundiflora**Echinochloa stagnina**Echinochloa ugandensis**Ehrharta erecta**Eleusine africana**Eleusine floccifolia*

ELEUSINE SEMISTERILIS

those at base and apex of spikes abortive; grain obovate, 1–1.2 mm long, conspicuously granular-striate, reniform in cross-section.

Dry open ground; c. 300 m alt.

Only known from the type collected in 1948.

SYNONYMS:

- Eleusine aegyptia* (L.) Desf. = **Dactyloctenium aegyptium**
arabica Hochst. ex Steud. = **Ochthocloa compressa**
aristata Enrenb. ex Boiss. 1884
 = **Dactyloctenium scindicum**
brevifolia (Hochst. & Nees) Hochst. & Steud., non R. Br.
 ex Hook. f. = **Coelachyrum brevifolium**
caespitosa A. Rich. = **Ochthocloa compressa**
cerealis Salisb. = **Eleusine coracana**
compressa (Forssk.) Asch. & Schweinf. ex C. Chr.
 = **Ochthocloa compressa**
conglomerata Peter, incl. fa. *littoralis* Peter and var.
littoralis (Peter) Peter = **Dinebra haareri**
coracana subsp. *africana* (Kenn.-O'Byrne) Hilu & de Wet
 = **Eleusine africana**
flagellifera Nees = **Ochthocloa compressa**
glabra Schumach. = **Eleusine indica**
glaucophylla (Courbon) Munro ex Benth.
 = **Dactyloctenium scindicum**
indica subsp. *africana* (Kenn.-O'Byrne) S.M. Phillips
 = **Eleusine africana**
indica var. *coracana* (L.) Fiori and subsp. *coracana* (L.)
 Lye = **E. coracana**
indica var. *intermedia* Chiov. = **E. intermedia**
indica var. *major* E. Fourn., var. *monostachya* F. M. Bailey,
 var. *oligostachya* Honda, var. *sandaensis* Vanderyst
 = **E. indica**
indica var. *stricta* (Roxb.) Chiov. = **E. coracana**
obtusiflora (Hochst.) Blatt. = **Disakisperma obtusiflorum**
pilosa Gilli = **Eleusine coracana**
poiflora (Chiov.) Chiov. = **Coelachyrum poiflorum**
racemosa B. Heyne ex Roth = **Acrachne racemosa**
robecchii Chiov. = **Dactyloctenium robecchii**
scindica (Boiss.) Duthie = **D. scindicum**
somalensis Hack. = **Dinebra somalensis**
sphaerosperma Stokes = **Eleusine coracana**
verticillata (Roxb.) Lindl. ex Chiov. = **Acrachne racemosa**
wallichii Munro ex Hook. f. 1896
 = **Coelachyrum brevifolium**
yemensis (Schweinf.) Chiov. = **Disakisperma yemenicum**

ELIONURUS / 9

Elionurus Humb. & Bonpl. ex Willd. 1806, nom. & orth. cons. (cf. Taxon 47: 737–738, 1998; Taxon 49: 273, 2000).

Elyonurus Humb. & Bonpl. ex Willd. 1806, orth. var. (“linguistically incorrect”).

Genus of 16 species (Barrett & Handasyde in Nuytsia 30: 177, 2019) in tropical Africa, Arabian Peninsula, India and the Americas, with 2 disjunct species [*E. citreus* (R. Br.) Benth. and *E. purpureus* E. J. Thoms., occurring in Papua New Guinea and Australia]. The genus is absent from SE Asia.

The spikelets are paired (pedicellate = staminate, sessile = fertile), and lack lemma awns; rachis disarticulating.

Elionurus ciliaris Kunth 1816, non Nees 1829 (= *E. muticus*); Schmidt in Phytotaxa 304: 90, 2017; César & Chatelain, Fl. ill. Tchad: 264, 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 519, 1992; Poilecot, Boissiera 50: 657, 1995.

syn.: *E. pobeguini* Stapf 1905 and Stapf 1906 (nom. illeg.); *E. tenax* Stapf; *E. tripsacoides* var. *ciliaris* (Kunth) Hack., and subvar. *ciliaris* (Kunth) Roberty; *Andropogon ciliaris* (Kunth) Trin.; *Tripsacum ciliare* (Kunth) Raspail

Perennial tufted glaucous grass; culms branched above, 0.8–2 m tall, base violaceous; leaves mostly cauline, aromatic, linear, 10–40 cm × 2–5 mm, glabrous to quite villous; inflorescence a spatulate false panicle with spiciform racemes, these 4–6 cm long, silvery hairy (hairs 3 mm long), sometimes on peduncles 10–20 cm long; spikelets sessile, 4–7 mm long.

Sometimes abundant with *Eragrostis egregia*, *Sporobolus pyramidalis*, *Hyperthelia dissoluta*, *Panicum phragmitoides*, *Andropogon chinensis*, *Hyparrhenia subplumosa*, *Ctenium newtonii*; on impoverished soils; savannas on sandy soils; savanna in forest; stony places; fallows; gravelly soils; ? to 1400 m alt.

America: from Mexico to N Argentina.

Intergrades with *E. muticus*. Species boundaries need investigation.

E. elegans Kunth; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 241, 1994; Schmidt & al., Phytotaxa 304: 90, 2017. – Icon.: Poilecot, Boissiera 50: 649, 1995; idem, ibid. 56: 641, 1999; Ibrahim & al., Grasses Mali: 90, 2017.

Annual; culms erect, 30–80 cm tall; leaf blades thin, glabrescent or with few sparse hairs, 5–15 cm × 2 mm, linear; inflorescence with distant racemes, long-exserted from the uppermost sheaths, each 5–7 cm long, straw-coloured, sometimes tinged purple; sessile spikelets 5–6 mm long, villous; glumes subequal: lower produced into 2 straight bristles to 0.22 cm long, penicillate-ciliate from the base upwards, with about 10–12 tufts of hairs, each tuft carried on a stout laterally projecting process, appressedly hairy at base.

Wooded savannas; open forest; fine gravel and dry soils; lateritic crusts; with *Microchloa indica*, *Schizachyrium nodulosum*, *Brachyachne obtusiflora*, *Sporobolus festivus*; also with *Microchloa indica*, *Loudetia togoensis*, *Tripogon minimus*, *Pennisetum pedicellatum*, *Andropogon fastigiatus*, *Schizachyrium exile*; inselbergs (Bois Forêts Trop. 325/3: 26, 2015). – An early grass after annual burning. Parasitised by *Striga*.

E. euchaetus Adjan. & Clayton; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 250, 2011; Schmidt & al., Phytotaxa 304: 91, 2017. – Icon.: Adansonia, Sér. 2, 4: 200, 1964 (partial); Poilecot, Boissiera 50: 651, 1995.

Perennial grass to 1–1.5 m tall; culms erect, nodes pubescent, ramose upwards; basal sheaths imbricate, pubescent-silky, upper sheaths densely pilose; plant base woolly-cottony; leaves to 40–50 × 1 cm, densely pilose; inflorescence a false panicle with spathes and solitary racemes 10–15 cm long, flexuous, erect, spiciform; spikelets geminate: sessile straw-yellow 7–9 mm long; lower glume with two keels with awns 2–4 cm long.

Savannas on drained, sandy soils; with *Panicum phragmitoides*, *Ctenium canescens*, *Urelytrum muricatum*, *Hyparrhenia subplumosa*, *Andropogon shirensis*.

E. hensii K. Schum.; Sosef & al. in Pl. Ecol. Evol. 152: 101, 2019. – Icon.: ? Fl. Gabon 5: 131, 1962 (as *E. argenteus* Nees), cf. Sosef & al.: l. c.

syn.: *E. argenteus* Durand & Schinz, non Nees (= *E. muticus*); *E. argenteus* var. *kindunduensis* Vanderyst

ELIONURUS HENSII

Annual delicate grass 50–60 cm tall; leaf sheaths 6–12 cm long, glabrous, with a few hairs at top; blades 8–20 cm long, 1–2 mm wide; inflorescence of 3–7 racemes along the culm, each 4–8 cm long; spikelets 3–4 mm long (excl. apical teeth); lower glume glabrous on back.

Savanna, annually burnt; palm plantations; dry sandy, lateritic or clayey soils; up to 600 m alt. (Gabon).

Confused with *E. muticus*. Our map is tentative.

E. hirtifolius Hack.; Walters & al. in Edinb. J. Bot. 68: 432, 2011; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015. – Icon.: van der Zon, Gramin. Cameroun 2: 519, 1992; Poilecot, Boissiera 50: 647, 1995; César & Chatelain, Fl. ill. Tchad: 264, 2019 (details).

Tufted wiry *perennial* grass 20–80 cm tall; culms erect, simple, glabrous, straw-yellow often tinged violet, nodes ciliate; basal sheaths villous to tomentose, upper glabrous, ciliate at top; leaf blades to 10–15 cm × 2 mm, pilose above; inflorescence of terminal, spatheate erect racemes 5–7 cm long, silky-silvery; spikelets geminate; sessile with lower glume with 12–15 pairs of tufts of hairs, each tuft carried on a stout laterally projecting process.

Savannas with *Panicum phragmitoides*, *Hyparrhenia smithiana*, *H. subplumosa*, *Andropogon shirensis*, *Hyperthelia dissoluta*; gallery; hollows on indurate soils; with *Loudetia simplex* on clayey alluvium; sandy soils; grassland amongst rocks; woodland; plantations; ? to 1770 m alt. – Flowering after fire.

E. muticus (Spreng.) Kuntze (in some floras cited as *E. argenteus* Nees), incl. var. *calvescens* (Hack.) Kuntze and var. *gracilescens* (Hack.) Kuntze; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015. – Icon.: Fl. Gabon 5: 131, 1962 (*E. muticus* or *E. hensii*?, see under *E. hensii*); Fl. Trop. E. Afr., Gramin. 3: 838, 1982; Thulin, Fl. Somalia 4: 267, 1995; Poilecot, Boissiera 50: 659, 1995; Fl. Zambes. 10/4: 157, 2002; Burrows & Willis, Pl. Nyika Plateau Malawi: 344, 2005; Müller, Grasses Namibia, rev. ed.: 27, 2007; Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 819, 2010; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 77, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 10/9, 2013; Vande weghe & al., Pl. à fleurs Gabon: 177, 2016 (with *E. hensii* in synonymy).

bas.: *Lycurus muticus* Spreng.

syn.: *Elionurus argenteus* Nees, incl. var. *thymiodorus* (Nees) Stapf and var. *caespitosus* (A. Rich.) Hack.; *E. thymiodorus* Nees; *E. chevalieri* Stapf; *E. gobariensis* Vanderyst; *E. glaber* E. Phillips, incl. var. *villosus* E. Phillips; *E. pretoriensis* E. Phillips; *E. ciliaris* Nees 1829, nom. illeg., non Kunth; *E. marunguensis* J. Duvign.; *Andropogon caespitosus* A. Rich.; *A. thymiodorus* (Nees) Steud.; *A. dubius* Kunth; World Checklist of Selected Plant Families, Roy. Bot. Gard., Kew.

Perennial densely tufted grass, forming tufts up to 0,6 m Ø; culms unbranched, 0,15–1 m tall; leaves mostly basal, forming a dense tussock, aromatic; blades setaceous, 5–30 cm × 1–2 mm, hairy at base; sheaths papery, sometimes becoming fibrous or horny; inflorescence a single spike 2–12 cm long, silvery-white hairy, sickle-shaped when dry, breaking into pieces and shedding spikelets when ripe, composed of 1–2(–3) racemes along the culm each 4–14 cm long, sometimes with 1–2 axillary racemes, internodes villous; spikelets 4–6 mm long, sessile one villous on back and with 2 awn-like tips.

Open deciduous bushland on dry sandy and stony soils; *Hyparrhenia* – *Exothea* grassland; open woodland on dry sandy soils; quartz rocks; dambos; 100–2800 m alt.

Namibia, Botswana, S. Africa, Lesotho, Swaziland; Yemen; tropical and subtropical America (from Mexico Swards).

ELIONURUS MUTICUS

Very variable; intergrading with *E. ciliaris* and further investigation needed: *E. ciliaris* is taller with cauline leaves and axillary racemes. – Confused with *E. hensii* (annual, delicate; spikelets shorter; glumes glabrous; cf. *E. hensii* above).

Very quick to come into flower after bush-fires (Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 241–242, 1994).

E. platypus (Trin.) Hack.; Renier, Fl. Kwango 1: 23, 1948; Lisowski, Fl. Rép. Guinée 1: 457, 2009; Sosef & al. in Pl. Ecol. Evol. 152: 101, 2019. – Icon.: Robyns, Fl. Agrost. Congo Belge 1: 75, 1929 (as *E. brazzae*); Poilecot, Boissiera 50: 655, 1995.

bas.: *Andropogon platypus* Trin.

syn.: *A. donianus* Benth.; *Elionurus brazzae* Franch., incl. (?) fa. *villosa* Robyns (See below); *E. pallidus* K. Schum.; *E. wombaliensis* Vanderyst 1918, nom. provis.

Perennial densely caespitose grass; culms to 0,6–2 m tall, branched in upper part; leaves mainly cauline, blades 5–20 cm × 3–6 mm, flat; inflorescence a lax false panicle, of solitary racemes these 6–8 cm long, the branched culms bearing 3–20 axillary racemes; rachis internodes spreading-pilose (hairs > 2 mm long); sessile spikelets 6–9 mm long, lower glume glabrous to thinly pilose on the back, with a conspicuous brown oil-streak bordering each keel, apex bidentate (teeth to 2 mm long).

Dry savannas on ± gravelly soils, or on compact soils; clearing in teak forest; secondary vegetation; near river; sometimes invading cultivated soils; sandy or sandy-clayey soils; ?–1100 m alt.

Disjunct distribution.

Close to *E. ciliaris*.

Fa. **villosa** Robyns was described by Robyns in Flore Agrostologique du Congo belge ..., I. Maydées & Andropogonées: 76, 1929. The specimen referred to was collected in 1911 by Bovone in Haut-Katanga, near the river Kulueshi; it has villous cauline sheaths (the typical form with glabrous cauline sheaths). Robyns published a Latin diagnosis in Bull. Jard. Bot. Etat, Bruxelles 813: 216, 1930: “foliorum vaginis villosis a typo differt”, citing his Flore agrostologique (1929: 76), and giving as a synonym “*Elyonurus tripsacoides* Chiov. non H. B. K. Nuov. Giorn. Bot. Ital., XXVI, p. 73, 1919”. Collected by Bovone (I. 43. Herb. Mus. Bot. Taur.) on the banks of the River Kulueshi and in the surrounding pastures on poor soil.

This form is also mentioned in De Wildeman, Contrib. Flore du Katanga Suppl. 3: p. 57, 1930.

E. royleanus Nees ex A. Rich., incl. var. *albiflorus* A. Terracc., var. *insularis* A. Terracc., var. *niveus* Chiov., and fa. *pygmaeus* A. Terracc.; Lebrun in Boissiera 24: 96, 1975 (map); Lye & al. in Lidia 4: 164, 2000; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 277, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015. – Icon.: Audru & al., Les plantes vascul. Rép. Djibouti 2: 953, 1994; Fl. Eth. & Eritrea 7: 358, 1995; Boulos, Fl. Egypt 4: 342, 2005; Cope, Fl. Arab. Penins. 5/1: 315, 2007; César & Chatelain, Fl. ill. Tchad: 264, 2019.

syn.: *E. grisebachii* J. A. Schmidt; *Andropogon grisebachii* (J. A. Schmidt) Steud.; *A. elegantissimus* Steud. (non *A. royleanus* Steud.), incl. var. *abyssinicus* Steud., var. *arabicus* Steud.; *Ratzeburgia schimperii* Steud. 1841, nom. nud.; *Rottboellia elegantissima* Hochst. & Steud. 1841, nom. nud.

Annual tufted grass fastigiately branched; culms brief, 5–15 cm long; leaf blades filiform, 1–15 cm × 1–2 mm, long hairy above; racemes 2–6 cm long, solitary or gathered into fascicles, embraced below by a reddish spathe 3–6 cm long; sessile spikelet 1–1,4 cm

ELIONURUS ROYLEANUS

long; keel of lower glume body provided with a row of coarse warts, each *wart* bearing a *tuft of long hairs*, tip deeply bifid, each tooth extended into a long ciliate tail 4–6 mm long; pedicellate spikelet 0.6–2 cm long.

Open places on dry, stony or sandy soils or eroded soils; grassy places in open scrub on silty soil; screes; torrent beds; 0–1500 m alt.

Egypt, Morocco ?, Cape Verde Isl.; Canary Isl., Arabian Penins., Iran, Pakistan, NW India.

E. tripsacoides Humb. & Bonpl. ex Willd., incl. var. *genuinus* Hack. 1889, nom. inval., var. *brevidentatus* Hack., var. *sericeus* Hack., var. *subcandidus* Kuntze, subvar. *sericeus* (Hack.) Roberty, subvar. *ambiguus* Henrard and subvar. *brevidentatus* (Hack.) Roberty, but exclud. var. *ciliaris* (Kunth) Hack. and subvar. *ciliaris* (Kunth) Roberty (both = *E. ciliaris*) and excl. subvar. *rostratus* (Nees) Roberty (= *E. muticus*); Fl. Zambes. 10/4: 158–159, 2002; Klaassen & Craven, Checklist grasses Namibia: 53, 2003; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 250, 2011; Marshall & Hawthorne, Checklist N Namibia County Liberia: 434, 2013; Poilecot, Guide Liber. grasses: 78, 2015. – Icon.: Poilecot, Boissiera 50: 653, 1995.

syn.: *E. welwitschii* Rendle; *E. trapnellii* C. E. Hubb.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial loosely tufted grass; culms 0.6–1.5 m tall; leaves *mainly cauline*; blades linear, 20–35 cm × 1–3 mm, tip filiform to subulate; racemes 3–12 cm long, the *branched culms* bearing 3–20 axillary racemes gathered into a lax spathate false panicle; sessile spikelet lanceolate, with lower glume 4–6 mm long, *glabrous on back*, with a conspicuous brown oil-streak bordering each keel; pedicellate spikelet 4–5 mm long.

Open places in wooded grassland; wet grassland; low-lying grassland liable to flooding; seasonal swamp grassland; 250–1460 m alt. Namibia, N Botswana, Caprivi Strip, S. Africa; tropical and subtropical America from S USA S-wards through Mexico, C. America to Argentina.

Occasionally intergrades with *E. muticus*. Plants with sparingly branched culms and slightly hairy spikelets are a particular problem (Fl. Zambes. 10/4: 159, 2002). Also difficult to distinguish from *E. platypus*.

SYNONYMS:

Elionurus argenteus Nees, incl. var. *caespitosus* (A. Rich.) Hack. and var. *thymiodorus* (Nees) Stapf = **Elionurus muticus**
argenteus var. *kinduensis* Vanderyst = **E. hensii**
argenteus Durand & Schinz = **E. hensii**
brazzae Franch., incl. (?) fa. *villosa* Robyns = **E. platypus**
chevalieri Stapf = **E. muticus**
ciliaris Nees 1829, non Kunth = **E. muticus**
gabonensis (Steud.) Roberty = **Phacelurus gabonensis**
glaber E. Phillips, incl. var. *villosus* E. Phillips = **Elionurus muticus**
gobariensis Vanderyst = **E. muticus**
grisebachii J. A. Schmidt = **E. royleanus**
ledermannii Pilg. = **Loxodera ledermannii**
marunguensis J. Duvign. = **Elionurus muticus**
pallidus K. Schum. = **E. platypus**
pobeguini Stapf 1905 and Stapf 1906 = **E. ciliaris**
pretoriensis E. Phillips = **E. muticus**
tenax Stapf = **E. ciliaris**
thymiodorus Nees = **E. muticus**
trapnellii C. E. Hubb. = **E. tripsacoides**

ELIONURUS

tripsacoides var. *ciliaris* (Kunth) Hack. and subvar. *ciliaris* (Kunth) Roberty = **E. ciliaris**
welwitschii Rendle = **E. tripsacoides**
wombaliensis Vanderyst = **E. platypus**

ELYMANDRA / 6

syn.: *Pleiadelphia* Stapf (cf. Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 308–309, 2015).

Genus of 6 species, all African except one also in SE Brazil (*E. lithophila*).

“Inflorescences unbranched or with 2 branches with up to 18 spikelet pairs. Lower 1–10 sessile spikelets staminate... Pedicellate spikelet with a stipe-like callus” (Kellogg, l. c.).

Elymandra androphila (Stapf) Stapf; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 250, 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 501, 1992; Poilecot, Boissiera 50: 617, 1995; Ibrahim & al., Grasses Mali: 67, 2018.

bas.: *Andropogon androphilus* Stapf

syn.: *Heteropogon androphilus* (Stapf) Roberty

Perennial caespitose glabrous grass; culms erect, 1–2.5 m tall, to 5 mm Ø, branched in upper part; leaves mostly basal; blades linear, 30–60–100 × 0.4–1 cm, glaucous, scabrous with conspicuous white-hyaline midribs, apex a fine point; inflorescence lax, narrow, to 60 cm long, of paired racemes with 2 awns per pair; racemes 2–3 cm long, bearing few fertile spikelets subtended by a spatheole; spatheoles linear, 5–10 cm long; spikelets 6–8 mm long, paired, *glabrous*.

Poor sandy soils in savanna; also on sandy-clayey or rocky soils; more frequent in rather dense formations, e. g. wooded savanna with *Lophira lanceolata*; associated with *Hyparrhenia subplumosa*, *H. smithiana*, *Andropogon shirensis*, *A. canaliculatus*, *Panicum phragmitoides*, *Schizachyrium sanguineum*; lateritic crust; red-orange muddy soil; savanna with *Euphorbia unispina*; fallows; ?–450–1650 m alt.

E. archaelymandra (Jacq.-Fél.) Clayton; Lebrun in Bull. Soc. Bot. France 116: 259, 1969; Lisowski, Fl. Rép. Guinée 1: 458, 2009. – Icon.: Jacques-Félix in J. Agric. Trop. Bot. Appl. 1: 49, 1954 (under *Hyparrhenia*).

bas.: *Hyparrhenia archaelymandra* Jacq.-Fél.

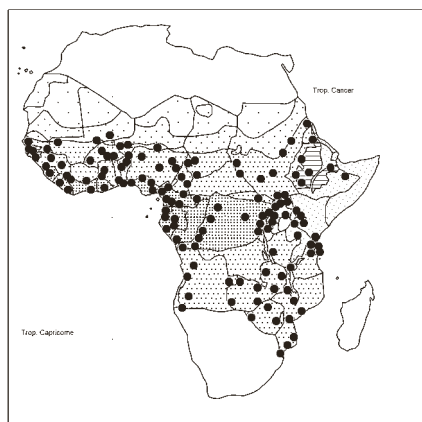
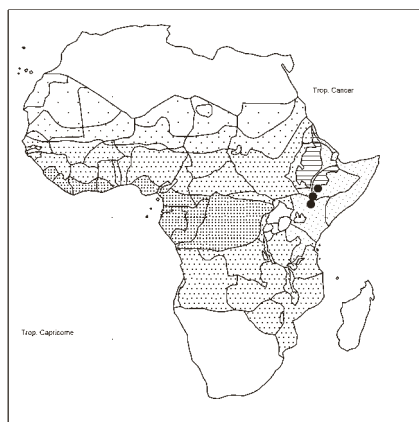
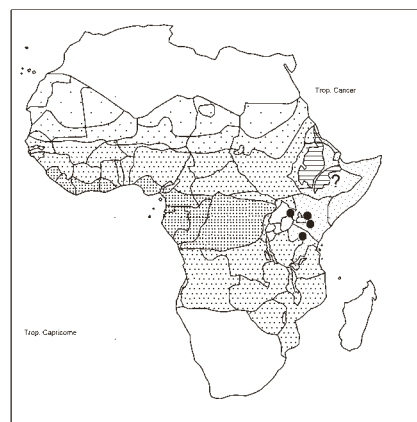
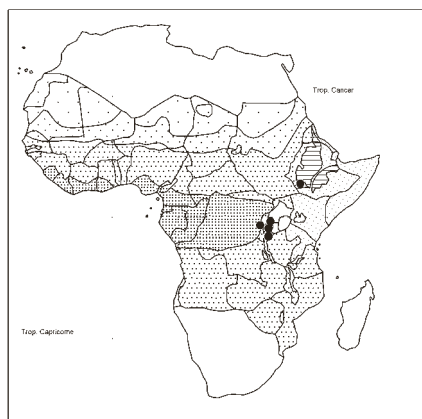
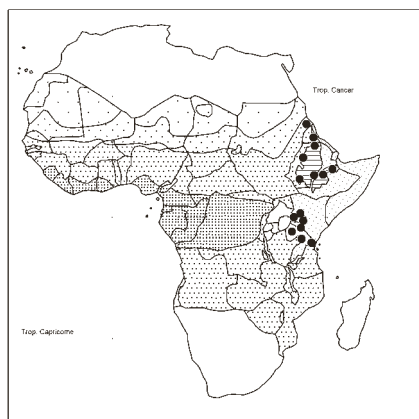
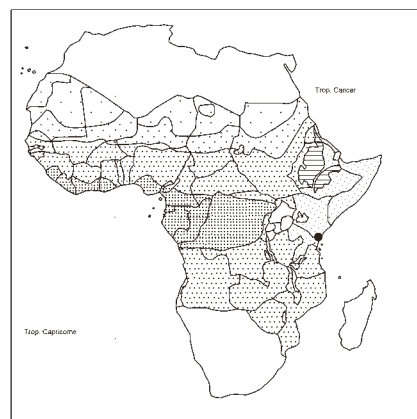
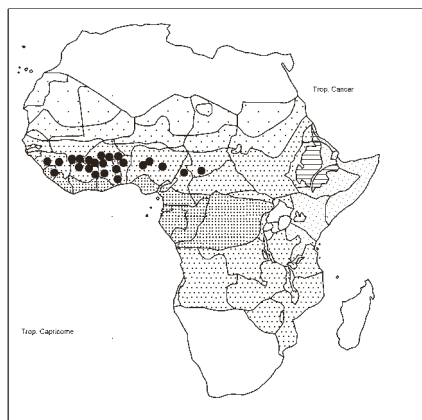
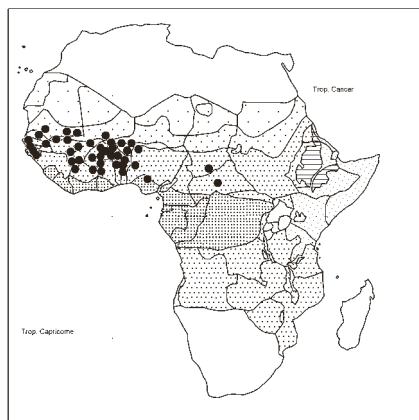
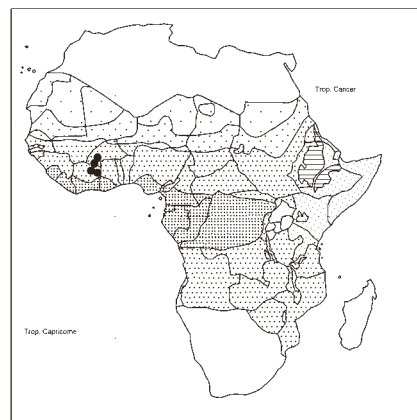
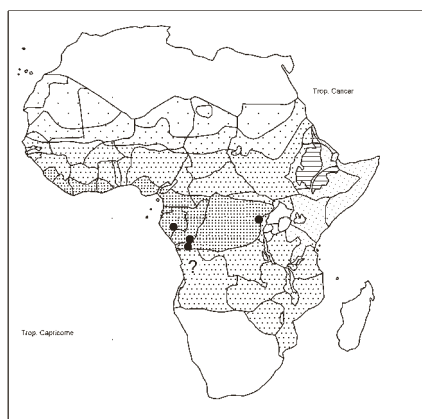
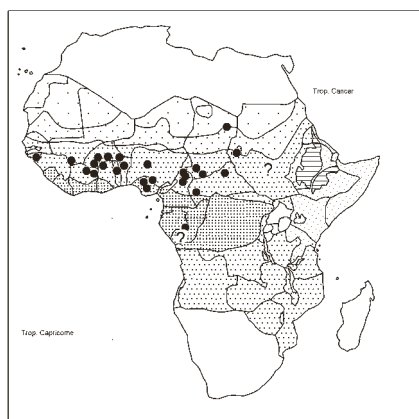
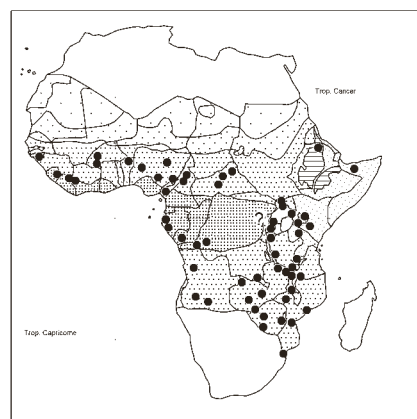
Annual erect grass 1.5–2 m tall; culms to 5 mm Ø; leaf blades linear, to 30 × 0.6–1.2 cm, gradually attenuate from the base to the filiform tip, glabrous above, base hirsute; inflorescence a false panicle, lax, 40–60 cm long, with linear spatheoles 7–8 cm long; racemes paired, to 4 cm long, *4-awned per pair*, their bases fulvously bearded in the fork only; spikelets *1–1.2 cm long*, *homogamous pairs 2 at base of each raceme*; awns 5–7.5 cm long, geniculate.

Shallow sandy soils in savanna woodland; fallows.

Readily distinguished by the deflexed racemes with 2 homogamous pairs of spikelets at base of each. Very similar in other respects to *E. subulata*.

E. gossweileri (Stapf) Clayton; Lisowski, Fl. Rép. Guinée 1: 458, 2009; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006. – Icon.: Hooker's Icon. Pl. 32: pl. 3121, 1927 (under *Pleiadelphia*); Poilecot, Boissiera 50: 615, 1995.

bas.: *Pleiadelphia gossweileri* Stapf

*Eleusine indica**Eleusine intermedia**Eleusine jaegeri**Eleusine kigeziensis**Eleusine multiflora**Eleusine semisterilis**Elionurus ciliaris**Elionurus elegans**Elionurus euchaetus**Elionurus hensii**Elionurus hirtifolius**Elionurus muticus*

ELYMANDRA GOSSWEILERI

syn.: *Themeda gossweileri* (Stapf) Roberty; *Elymandra monostachya* Jacq.-Fél.

Annual erect grass 0.7–2 m tall; culms to 4 mm Ø at base; leaf sheaths glabrous; blades linear, 18–20 cm × 2–3 mm, glabrous, tip filiform; inflorescence a lax narrow false panicle 30–60 cm long of *solitary racemes*, 1-awned; spatheoles narrow, 6–7 cm long; homogamous spikelet pairs 1–7 at *raceme base*, spikelets 5–8 mm long, glabrous; *callus of sessile spikelet fulvously bearded*; awn 8–9 cm long, geniculate.

Shallow sandy soils; 120 m alt. (Gabon).

Near *E. androphila* but that has 2-awned racemes.

E. grallata (Stapf) Clayton – Icon.: Fl. Trop. E. Afr., Gramin. 3: 822, 1982; Gibbs Russell & al., Grasses south. Afr.: 131, 1990; Poilecot, Boissiera 50: 621, 1995; Fl. Zambes. 10/4: 139, 2002.

bas.: *Hyparrhenia grallata* Stapf

syn.: *H. eylesii* C. E. Hubb.; *H. baddadae* Chiov. (teratological specimen; cf. Thulin, Fl. Somalia 4: 264, 1995); *Andropogon baddadae* Chiov. pro syn.

Perennial densely tufted grass; culms 0.5–2 m tall, to 4 mm Ø; leaf blades to 30 cm long, 6 mm wide, rigid, glaucous, glabrescent; inflorescence a false panicle, scanty, narrow, rarely reduced to a single pair of racemes; spatheoles linear, 7.5–10 cm long, ± glabrous; *racemes* paired, 4–6 cm long, *c. 12–18-awned per pair*; *homogamous pairs 1* at base of the lower raceme (rarely of both), 7 mm long; sessile spikelet 0.6–1.2 cm long, *incl. callus 2–4.5 mm long*, upper glume with a slender awn 6–16 mm long; upper lemma 2-lobed, with an *awn 3–5 cm long*.

Sandy soils in savanna woodland; 0–1460 m alt.

Namibia, Botswana, S. Africa.

Very similar to *E. lithophila*, which “differs a little more than the shorter awns and pedicelled spikelet callus” (Fl. Trop. E. Afr., Gramin. 3: 823, 1982).

E. lithophila (Trin.) Clayton: Fl. Trop. E. Afr., Gramin. 3: 823, 1982; Fl. Zambes. 10/4: 140, 2002.

bas.: *Andropogon lithophilus* Trin.

syn.: *Hyparrhenia lithophila* (Trin.) Pilg.; *Sorghum lithophilum* (Trin.) Kuntze; *Andropogon bovonei* Chiov.

Perennial caespitose grass; culms 0.3–1 m tall, erect; leaf sheaths glabrous or puberulous, with a tuft of long hairs at mouth; blades 3–20 cm long, 2–6 mm wide, stiff, glabrous or puberulent; inflorescence a false panicle, scanty, narrow, of 1–3 pairs of racemes; spatheoles linear, 5–15 cm long; racemes 2.5–7 cm long, 6– to 16-awned per pair, slender, loose; homogamous spikelet pairs 1 at base of the inferior raceme, *c. 6 mm long*, similar to the pedicellate spikelets; sessile spikelets *c. 7 mm long*, *incl. callus 1–1.5 mm long*, white-pubescent, upper lemma 4–4.5 mm long with *awn 1.2–2.1 cm long*; pedicellate spikelets *c. 6 mm long*, white-villous.

Among rocks in mountains (Zimbabwe); savanna woodland (Zaire); ?–1600–1700 m alt.

SE Brazil. Angola (Lunda) according to Turk. J. Bot. 38: 667, 2014.

Very closely related to *E. grallata*, “differing only in such minor characters as lengths of awns, spikelets and callus.” Specimens from Zaire are more robust (to 1 m tall), specimens from Zimbabwe are dwarfed plants to 40 cm tall.

ELYMANDRA

E. subulata Jacq.-Fél.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 243, 1994; Lisowski, Fl. Rép. Guinée 1: 458, 2009. – Icon.: Jacques-Félix, Les Gramin. Afr. Trop. 1: 302, 1962 (Inst. Rech. Agron. Trop., Bull. Sci. 8); Poilecot, Boissiera 50: 619, 1995.

Erect tufted annual grass to 2 m tall; culms to 5 mm Ø; leaf sheaths glabrous; blades to 40 cm × 8 mm, glabrous, rarely weakly pilose below, base sometimes subpetiolate, tip acuminate; inflorescence a spatheate false panicle, very lax, scanty, *c. 30 cm long*; spatheoles linear, 8–12 cm long, glabrous or weakly ciliate at margins; peduncle glabrous, typically exerted by 1–2 cm; racemes paired, 3.5–5 cm long, *3–5-awned per pair*, densely spiculate; homogamous spikelet pairs *7–10 at base of each raceme*; racemes 3–5-awned, per pair; spikelets *7–9 mm long*, sparsely hirsute; sessile spikelet 9–10 mm long (incl. callus 2–3 mm long); fertile lemma 4 mm long, *bifid* almost to the middle.

Tree savanna, often on poorly drained soils, flooded sites, roadside waste places; wooded grassland on sandy soils; 0–990 m alt.

Near *E. androphila* but distinguished by: scanty hairs on homogamous and pedicellate spikelets, and awns 3–5 per raceme pair.

SYNONYM:

Elymandra monostachya Jacq.-Fél. = **Elymandra gossweileri**

ELYMUS / I

syn.: *Hystrix* Moench; *Elytrigia* Desv.; *Roegneria* K. Koch; etc. (cf. Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13, Poaceae: 225–226, 2015).

“*Elymus* is defined by its genomic constitution as including only polyploids... No comprehensive taxonomic treatment exists for this genus” (Kellogg, l. c.; cf. also Sun 2014: 706).

Kellogg cites 150 species, in north temperate regions worldwide, but mainly in Asia. Christenhusz & al., Plants of the World: 208, 2017, indicate 191 species.

BANFI, E. (2018). A survey of the *Elymus* L. s. l. species complex (Triticeae, Poaceae) in Italy: taxa and nothotaxa, new combinations and identification key. *Nat. Hist. Sci. Atti Soc. Ital. Sci. Nat. Museo Civ. Stor. Nat. Milano* 5/2: 57–64.

FRAWLEY, E. S. & al. (2020). An ethnobotanical study of the genus *Elymus*. *Econ. Bot.* 74: 159–177.

LEI, XING-XIA & al. (2018). Phylogeny and molecular evolution of the DMC1 gene in the polyploid genus *Roegneria* and its affinitive genera (Poaceae: Triticeae). *Bot. J. Linn. Soc.* 186: 129–142.

LUCÍA, V. & al. (2019). Discovery of the genus *Pseudoreegneria* (Triticeae, Poaceae) in the western Mediterranean on exploring the generic boundaries of *Elymus*. *J. Syst. Evol.* 57: 23–41.

SUN, G. (2014). Molecular phylogeny revealed complex evolutionary process in *Elymus* species. *J. Syst. Evol.* 52: 706–711.

TAN, LU & al. (2021). Genome composition and taxonomic revision of *Elymus purpuraristatus* and *Roegneria calcicola* (Poaceae: Triticeae) based on cytogenetic and phylogenetic analyses. *Bot. J. Linn. Soc.* 196: 242–255.

WANG, R. R. C. & B. LU (2014). Biosystematics and evolutionary relationships of perennial Triticeae species revealed by generic analyses. *J. Syst. Evol.* 52: 697–705.

YANG, Y. & al. (2016). Karyomorphological studies of 12 species in *Elytrigia* Desv. sensu lato (Poaceae: Triticeae). *Caryologia* 69: 315–324.

Elymus africanus Á. Löve 1984, nom. nov. – Icon.: Fl. Eth. & Eritrea 7: 60, 1995.

syn.: *Triticum elymoides* Hochst. ex A. Rich. 1850, nom. illegit., non Hornem. 1813, nec *Elymus elymoides* Sweetz 1891; *Agropyron elymoides* (Hochst. ex A. Rich.) P. Candargy 1901, nom. illeg.; *Anthosachne elymoides* (Hochst. ex A. Rich.) Newski 1934.

ELYMUS AFRICANUS

Perennial tufted grass; culms slender, 60–90 cm tall; leaf blades linear, 2.5 mm wide, glabrous, acute; inflorescence a slender flexuous loose spike 13 cm long; spikelets inserted singly about their own length apart on a brief pubescent pedicel; *spikelets* loosely 5–6-flowered, *disarticulating above the glumes and between the florets*; glumes subequal, 9.5–12.5 mm long, prominently 7-nerved, dorsally flattened, obtuse and apiculate; lemmas 9–10.5 mm long, 5-nerved; awn 2.5–3 cm long, stout, recurving.

Ecology not recorded.

Known only from the type collected ante 1850 (Schimper 1764; cf. S. M. Phillips in Symb. Bot. Upsal. 35/2: 138, 2011).

[**E. repens** (L.) Gould subsp. **repens**] – Boulos, Fl. Egypt 4: 202–203, 2005; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 278–279, 2010 (under *Elytrigia*). – Icon.: Gibbs Russell & al., Grasses south. Afr.: 132, 1990 (idem); Weber, Invasive plant species of the world, ed. 2: 171, 2017 (with map).

bas.: *Triticum repens* L.

syn.: *Agropyron repens* (L.) P. Beauv.; *Elytrigia repens* (L.) Nevski; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial rhizomatous grass; rhizomes long, branching; culms 0.3–1.2 m long, slender, geniculately ascending; leaf blades flat, 15–24 cm long, 5–12 mm wide; inflorescence an erect false spike 10–20–30 cm long, rachis not breaking up; spikelets 1–2 cm long, alternately arranged, usually overlapping, 3–8-flowered; lemmas 0.8–1.3 cm long, awn-less or with a tip to 6 mm long.

Agricultural weed, gardens. Naturalised from Europe.

Indigenous in temperate Eurasia, to Japan, NW Africa. Introduced in Egypt, S. Africa, Cameroon (according to the World Checklist but indicated for Nigeria by Weber, l.c.); Australia, N. & S. America.

A strong competitor with cultivated crops and native grasses. Control is difficult because even small rhizome fragments can resprout. “Any mechanical control... therefore promotes spread of this grass”.

Highly polymorphic taxon that encompasses numerous infrataxa described at subspecies, variety and form rank (Banfi, o.c.: 59).

SYNONYM:

Elymus caput-medusae Forssk. 1775, non L. 1753
= **Cenchrus biflorus**

(ELYTRIGIA)

Elytrigia repens (L.) Nevski = **Elymus repens**

ELYTROPHORUS / 2

Genus of 2 annual species, 1 in tropical Africa, and 1 in tropical and subtropical Old World. Inflorescence of dense ± spherical clusters of spikelets on a central axis; spikelets compressed laterally, *disarticulating above the glumes*.

Elytrophorus globularis Hack.; Klaassen & Craven, Checklist grasses Namibia: 33, 2003. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 133, 1990; Fl. Zambes. 10/2: 3, 1999; Cook, Aquat. & wetland pl. south. Afr.: 204, 2004.

syn.: *E. interruptus* Pilg.; *E. africanus* Schweick.

Annual hydrophyte; culms 5–60 cm tall, erect; leaf blades 3–25 cm × 3–8 mm; inflorescence a false panicle, narrow, interrupted, 3–20 cm long; spikelets in dense *globose aggregations*

ELYTROPHORUS GLOBULARIS

0.5–1.2 cm Ø and spread at intervals of 1–2.5 cm along axis, scarcely confluent; clusters subtended by 2-many *bracts*, each to 1.2 cm long, acicular; lemmas 3–5 mm long, incl. *stiff awn*.

Wet depressions; streamsides; damp places; seasonally submerged; 1040–1900 m alt.

Namibia, Botswana, S. Africa.

E. spicatus (Willd.) A. Camus; Klaassen & Craven, Checklist grasses Namibia: 34, 2003; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 136, 1970; Fl. W. Trop. Afr., ed. 2, 3/2: 375, 1972; van der Zon, Gramin. Cameroun 2: 89, 1992; Fl. Eth. & Eritrea 7: 67, 1995; Poilecot, Boissiera 50: 95, 1995; idem, ibid. 56: 139, 1999; Fl. Zambes. 10/2: 3, 1999; Cook, Aquat. & wetland pl. south. Afr.: 204, 2004; Ibrahim & al., Grasses Mali: 68, 2018; César & Chatelain, Fl. ill. Tchad: 185, 2019. – Pl. 28.

bas.: *Dactylis spicata* Willd., non Brot. ex Spreng.

syn.: *Elytrophorus articulatus* P. Beauv.; *Lesleria spicata* (Willd.) Spreng.; *Echinalysium strictum* Trin.; *Ech. articulatum* (P. Beauv.) Kunth; *Phleum glomeruliflorum* Steud.

Annual grass, hydrophyte; culms 5–60 cm tall, erect; leaves mostly basal; blades 5–25 cm × 2–4 mm; inflorescence narrow, 2–30 cm long; *glomerules* 5–7 mm Ø, *often confluent*, subtended by bracts scarcely exceeding the spikelets; *spikelets* 2–3.5 mm long incl. *awn*; glumes c. 2 mm long; lemma 1-awned.

Wet depressions; pond margins; rice fields; water holes, ditches; deciduous woodland; usually in black clay soil of dry seasonal pans; seasonally swampy places in grassland; muddy-clayey soil; sandy or sandy-clayey soil under shade; 400–1500 m alt.

N Namibia, Botswana; India, Sri Lanka, Indo-China, Australia.

SYNONYMS:

Elytrophorus africanus Schweick. = **Elytrophorus globularis**
articulatus P. Beauv. = **E. spicatus**
interruptus Pilg. = **E. globularis**

ENNEAPOGON / 6

Genus of ± 30 species throughout the world; most diverse in the warm and dry regions (tropics and subtropics), especially Australia and Africa extending to temperate E Asia, with a secondary centre of diversity in southern Africa (Mashau & Coetzee in Kew Bull. 74/1: § 4: 1–4, 2019).

Spikelets with only 1 fertile flower with additional reduced flowers distally. Upper flowers reduced and internodes contracted so the assembled lemmas look like a brush. Lemmas with 9 veins, each ending in an awn (Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13, Poaceae: 364, 2015).

Enneapogon cenchroides (Licht.) C. E. Hubb.; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015; César & Chatelain, Fl. ill. Tchad: 192–193, 2019. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 168, 1970; Fl. Zambes. 10/1: 146, 1971; Thulin, Fl. Somalia 4: 167, 1995; Fl. Eth. & Eritrea 7: 90, 1995; Poilecot, Boissiera 56: 179, 1999; Cope, Fl. Arab. Penins. 5/1: 110, 2007; Müller, Grasses Namibia: 127, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 114, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013. – Pl. 29.

bas.: *Pappophorum cenchroides* Licht.

syn.: *P. senegalense* Steud.; *P. abyssinicum* Hochst.; *P. cenchroides* var. *albescens* Schweinf.; *P. robustum* Hook.

ENNEAPOGON CENCHROIDES

f.; *P. molle* (Lehm.) Kunth; *Enneapogon mollis* Lehm.; *E. abyssinicus* (Hochst.) Rendle

Tufted *annual* grass often *assuming* a *perennial appearance*; culms *wiry below*, 0,15–1 m tall, usually shortly, densely *glandular pilose*; basal leaf sheaths remaining intact (not fibrous); blades 3–25 cm × 1–10 mm, ascending, *involute or flat*; inflorescence a contracted or spike-like panicle 3–20 cm long; spikelets 3–5 mm long, usually crowded; awns 3–4 mm long, plumose below.

Widely distributed in: woodland, open grassland, cultivated and disturbed areas; dried up streams; poor sandy soils, rocky hillsides; *Acacia*, *Commiphora* deciduous bushland; black cotton soil; overgrazed dry areas; 450 (? and less)–2000 m alt.

Namibia, Botswana, S. Africa, Swaziland; Ascension Isl.; Madagascar; Oman, Yemen, Saudi Arabia; India, Pakistan; introduced in S USA, C. America.

Related to and confused with *E. scoparius*.

E. desvauxii P. Beauv., here including *E. lophotrichus* Chiov. ex H. Scholz & P. König (treated in some floras and flora lists as a separate entity); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 279, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015; Mashau in Kew Bull. 72/3: § 39: 4, 2017. – Icon.: Fl. Zambes. 10/1: 146, 1971 (details); Naegelé, Les Gramin. pâtur. Mauritanie: 133, 1977 (FAO, Rome); Willdenowia 13: 370, 1983 (details); Poilecot, Boissiera 56: 178 (*E. lophotrichus*), 180 (*E. desvauxii*), 1999; Boulos, Fl. Egypt 4: 242, 2005; Cope, Fl. Arab. Penins. 5/1: 110, 2007 (details); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 94, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013; César & Chatelain, Fl. ill. Tchad: 192, 2019. – Pl. 30, pl. 31 (as *E. lophotrichus*).

syn.: *E. brachystachyus* (Jaub. & Spach), incl. var. *macrantherus* Stapf; *E. lophotrichus* Chiov. ex H. Scholz & P. König; *E. pusillus* Rendle; *Pappophorum brachystachyum* Jaub. & Spach; *P. vincentianum* J. A. Schmidt; *P. nanum* Steud.; *P. arabicum* Hochst. ex Steud.; *P. pusillum* (Rendle) K. Schum.; *P. fasciculatum* Chiov.; *P. figarianum* Fig. & De Not.; *Cottea sarmentosa* Nees ex Steud.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial, or annual, densely tufted grass, often stoloniferous; base densely leafy; culms wiry below, 2–40 cm tall, usually densely short hairy with a ring of hairs around the nodes; *basal leaf sheaths persistent*, forming a *pseudobulbous base*, ultimately *disintegrating into a tuft of fibres*; blades 2,5–12 cm × 3–5 mm, *involute*; inflorescence a spike-like ovate panicle 2–8 cm long; spikelets 3–6 mm long; lemma 3–6 mm long incl. awns (ciliate). – Often produces cleistogamous spikelets enclosed within the enlarged basal leaf sheaths. The large caryopsis of these spikelets finally germinates in place so that seedlings grow out of the old plant. Small panicles producing normal spikelets are also produced within basal or nodal leaf sheaths.

Acacia, *Commiphora* deciduous bushland and semi-desert, on rocky or sandy, often calcareous soils; open grassland, in limestone pans; thin soil overtopping basalt rocks; stony outcrops; sandy-clayey soils or sandy penplain with *Stipagrostis uniplumis*, *Aristida stipoides*, *A. sieberiana*, *A. funiculata*, *Panicum turgidum*, *Cymbopogon schoenanthus*; wadi beds; sandy hollow with *Acacia seyal*, *Panicum turgidum*; sometimes abundant (Chad: Ennedi); dry rough waste places; 0–1650 m alt.

N. Africa (Morocco to Egypt); Cape Verde Isl.; Namibia, Botswana, S. Africa; Canary Isl.; Socotra; temperate Asia, Arabia through to India and NW China; C. & S. America.

ENNEAPOGON

E. limpopoensis Mashau, Kew Bull. 74/1: § 4: 1–2, 2019, with figures and map.

Perennial, reed-like, robust, tufted grass 0,55–1,1 m tall; culms hard, stiff, erect, profusely branched in upper part which is leafy; leaf blades *deciduous*, to 17 cm × 3–4 mm, flat; inflorescence open, *narrow, branched*; spikelets 6–7,5 mm long, incl. awns (plumose). Savanna, in river valley.

S. Africa (Limpopo Province, Kruger Natl. Park). Possibly endemic to the area.

Closely related to *E. scoparius* (and *E. spathaceus* Gooss. in NE S. Africa).

E. persicus Boiss. – In some floras figuring as *E. schimperianus* (Hochst. ex A. Rich.) Renvoize – Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015; César & Chatelain, Fl. ill. Tchad: 193, 2019. – Icon.: Audru & al., Les plantes vascul. Rép. Djibouti 2/2: 842, 1994; Fl. Eth. & Eritrea 7: 90, 1995; Boulos, Fl. Egypt 4: 242, 2005; Cope, Fl. Arab. Penins. 5/1: 110, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 185, 2013; Ibrahim & al., Grasses Mali: 68, 2018.

syn.: *E. schimperianus* (Hochst. ex A. Rich.) Renvoize; *E. elegans* (Nees ex Steud.) Stapf; *E. glumosus* (Hochst.) Maire & Weiller; *Pappophorum persicum* (Boiss.) Steud.; *P. schimperianum* Hochst. ex A. Rich.; *P. aucheri* Jaub. & Spach; *P. elegans* Nees ex Steud.; *P. glomosum* Hochst.; *Calotheca elegans* Wight & Arn. ex Steud.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass; culms wiry below, 0,1–1 m tall, usually hairy below inflorescence; basal leaf sheaths remaining intact; blades 3–18 cm × 4 mm; inflorescence a spike-like panicle 5,5–10–18 cm long; spikelets 0,6–1,3 cm long; glumes sparsely hairy, 0,5–1 cm long; fertile lemma incl. awn 0,5–1–1,3 cm long.

Wooded grassland; *Acacia*, *Commiphora* deciduous bushland; semi-desert; wadi beds; perennial grassland; shrubland; open woodland; gravelly or alluvial soils overlying limestone; stony or rocky soils; sometimes with *E. desvauxii* (i. e. in Ennedi mountains); widespread and common on dry, often disturbed soils in savanna; dry rocky waste places; escarpment with *Cenchrus ciliaris*; 160–2500 m alt.

Spain, Algeria, Egypt; Arabian Penins., Middle East to NW China, Indian subcontinent (N India: Willdenowia 35: 149, 2005, with map) to Burma.

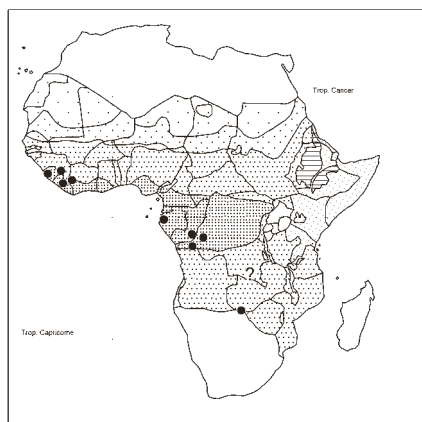
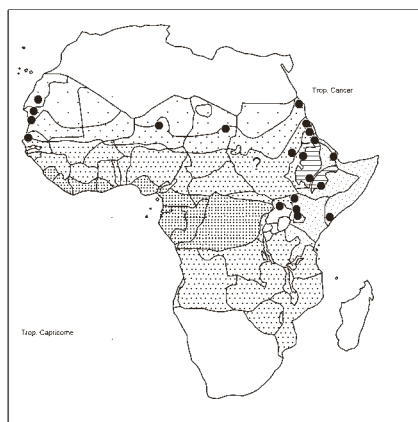
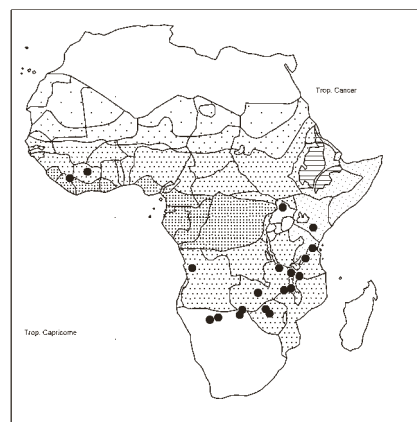
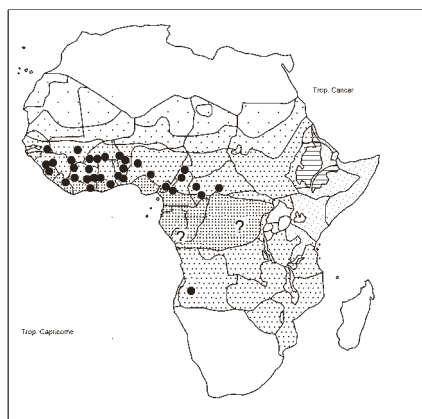
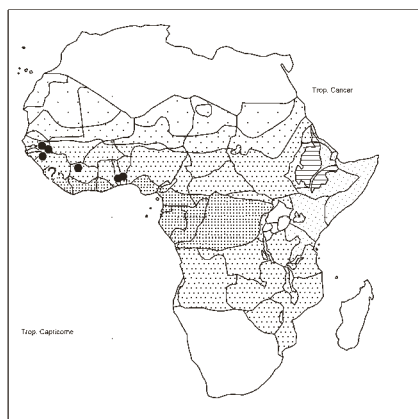
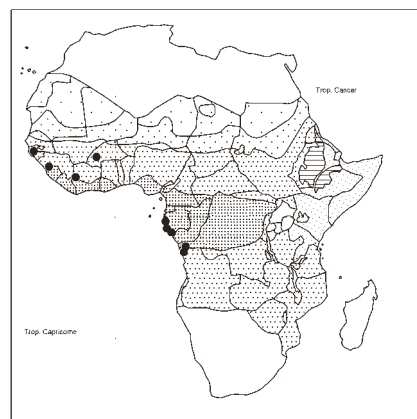
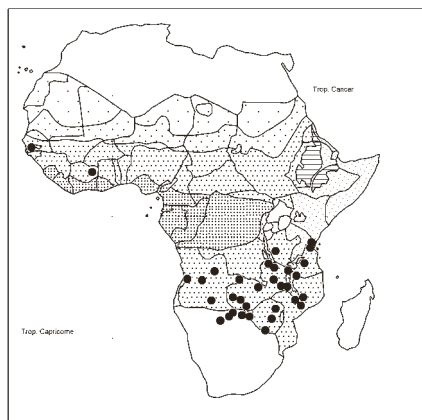
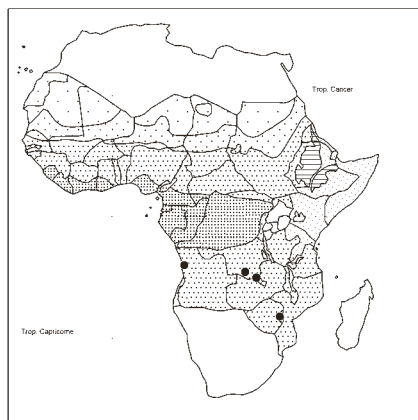
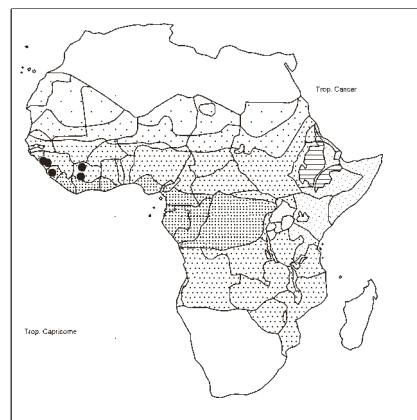
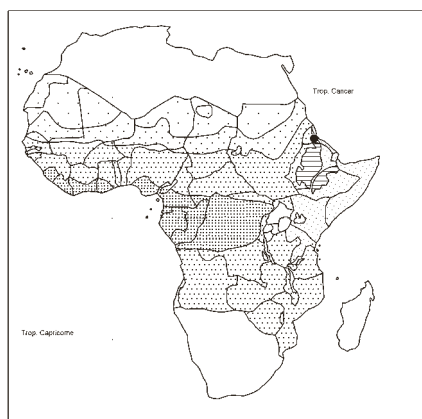
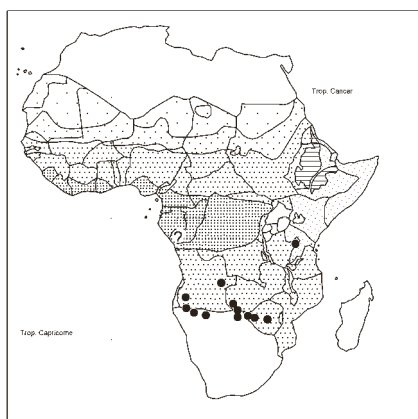
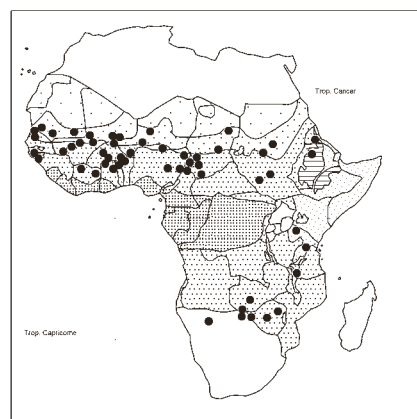
Intergrades with *E. cenchroides*. Confused with *E. desvauxii*.

E. scaber Lehm. var. **scaber**; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 280, 2010; César & Chatelain, Fl. ill. Tchad: 192, 2019. – Icon.: Boulos, Fl. Egypt 4: 242, 2005 (spikelet); Cope, Fl. Arab. Penins. 5/1: 110, 2007; Müller, Grasses Namibia, rev. ed.: 131, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 157, 2012.

syn.: *E. benguellensis* Rendle; *Pappophorum scabrum* (Lehm.) Kunth; *P. benguellense* (Rendle) K. Schum.; *P. laxum* Chiov.

Perennial densely tufted grass; culms branching, ascending, 6–35 cm tall, hairy; leaves hairy; basal sheaths remaining intact; blades 5–15 cm × 2–5 mm; inflorescence an open to *loosely contracted* panicle 3–12 cm long; spikelets contracted around the primary branches; spikelets 4–6 mm long, 3-flowered; glumes 4–6 mm long; fertile lemma 5–6,5 mm long, incl. awns (9, *scaberulous throughout, not ciliate*).

Sometimes in thick tufts to 10 cm Ø and more; wadi beds; rubbles; sandstone ravines; sandy places on river banks; ?–300 m alt.

*Elionurus platypus**Elionurus royleanus**Elionurus tripsacoides**Elymandra androphila**Elymandra archaelymandra**Elymandra gossweileri**Elymandra grillata**Elymandra lithophila**Elymandra subulata**Elymus africanus**Elytrophorus globularis**Elytrophorus spicatus*

ENNEAPOGON SCABER

Morocco (Förther & Podlech in Sendtner 8: 46, 2002), Algeria, Tunisia, Egypt; Namibia, Botswana, S. Africa; Saudi Arabia. – Disjunct distribution.

Var. **namibiensis** Mashau, Kew Bull. 72/3: § 39: 1, 2017. – Icon.: ibid.: p. 2–3; map p. 39. An *annual* grass to 20 cm tall, densely hairy with short and gland-tipped hairs, with an open, not spike-like inflorescence; spikelets 3 mm long, incl. awns; widespread in W Namibia only, growing among rocks on hillsides.

Often confused with *E. scoparius* (with smaller, more densely contracted inflorescences).

E. scoparius Stapf, Gibbs Russell & al., Grasses south. Afr.: 136, 1990. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: 237, 1955; Müller, Grasses Namibia, rev. ed.: 133, 2007; Cope, Fl. Arab. Penins. 5/1: 110, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 111, 2012.

syn.: *E. filifolius* (Pilg.) Stapf ex Garab.; *Pappophorum filifolium* Pilg.; *P. setifolium* Hochst. 1871, nom. nud.; *P. scoparium* (Stapf) Chiov.

Perennial tufted grass with a dense shrub-like growth form; culms 20–80 cm long, *wiry*, arising from a *sub-bulbous base*, and *profusely branched a few cm above the base*; basal leaf sheaths remaining intact, long-persistent; blades filiform, 5–25 cm × 1–3 mm; panicle *densely contracted, spike-like*, 1.5–12 cm long; spikelets c. 4 mm long; lemmas with 9 hairy awns.

Colophospermum mopane woodland; scrub, open grassland; in arid conditions; among limestone pebbles, basaltic soils, sandy hillslopes; along rocks; *Commiphora* bushland on sand; c. 170–1700 m alt.

Namibia, Botswana, S. Africa, Lesotho, Swaziland; Yemen. – Disjunct distribution.

(**E. spathaceus** Gooss.); Renvoize in Kew Bull. 22: 399, 1968; Gibbs Russell & al., Grasses south. Afr.: 136, 1990; Mashau in Kew Bull., l.c., 2017.

Perennial tufted grass with short rhizomes, 65–90 cm tall; culms *wiry* from a sub-bulbous base; leaf blades 15–20 cm × 3–4 mm; panicle open, branched, to 16 cm long; spikelets 6–7 mm long; lemmas incl. awns 8–9 mm long.

Savanna.

Known only from NE S. Africa (N Transvaal), near border to S Zimbabwe.

SYNONYMS:

Enneapogon abyssinicus (Hochst.) Rendle

= **Enneapogon cenchroides**

benguellensis Rendle = **E. scaber** var. **scaber**

brachystachyus (Jaub. & Spach) Stapf, incl. var.

macrantherus Stapf = **E. desvauxii**

elegans (Nees ex Steud.) Stapf = **E. persicus**

filifolius (Pilg.) Stapf ex Garab. = **E. scoparius**

glumosus (Hochst.) Maire & Weiller = **E. persicus**

leptotrichus Chiov. ex H. Scholz & P. König

= **E. desvauxii**

mollis Lehm. = **E. cenchroides**

pusillus Rendle = **E. desvauxii**

schimperianus (Hochst. ex A. Rich.) Renvoize

= **E. persicus**

(ENODIUM)

Enodium coeruleum (L.) Gaudin = **Molinia coerulea**
litorale Rchb. ex Kunth = **M. coerulea**

ENTEROPOGON / 7

19 species in the tropics and subtropics. “Very similar to ... *Chloris* but distinguished by the dorsally rather than laterally compressed fertile lemma and caryopsis ... a number of species hitherto included in *Chloris* are now placed in *Enteropogon*...” (Flora Zambes. 10/2: 216, 1999).

Enteropogon barbatus C. E. Hubb. – Icon.: Fl. Eth. & Eritrea 7: 173, 1995.

Perennial grass forming dense tussocks; culms erect, 0.4–1 m tall, unbranched; leaf blades linear-filiform, 6–30 cm long; *sheaths keeled*; spike solitary, 7–20 cm long, silky hairy, glistening; *spikelets* 2–3-flowered with *callus hairs* 3–5 mm long; fertile lemma 6–8 mm long, bidentate, with awn 3.5–5 mm long.

Acacia woodland degraded by overgrazing; dry sandy soils; c. 150–1200 m alt.

E. longiaristatus (Napper) Clayton – Icon.: Fl. Trop. E. Afr., Gramin. 2: 338, 1974 (spikelet; under *Chloris*); D. E. Anderson, Taxonomy of the genus *Chloris* (Gramineae), Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 47, 1974.

bas.: *Chloris longiaristata* Napper

Perennial grass; culms 30–60 cm tall, geniculate ascending, often rooting at lower nodes; leaf blades folded 3–13 cm × 2–3 mm when flattened, somewhat pungent at apex; inflorescence of 2–5 paired or closely digitate spikes 4–9 cm long; spikelets 3-flowered, 3-awned; awns 2.5–4 cm long.

Disturbed ground in grassland on sandy soils; 1150–1300 m alt.

E. macrostachyus (Hochst. ex A. Rich.) Munro ex Benth.; Burkill, Useful pl. W. Trop. Afr., ed. 2: 244, 1994. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 136, 1990; Fl. Eth. & Eritrea 7: 173, 1995; Müller, Grasses Namibia, rev. ed.: 29, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 73, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013.

bas.: *Chloris macrostachya* Hochst. ex A. Rich.

syn.: *C. campulodes* Trin. ex Steud.; *Megastachya abyssinica* Hochst. ex Steud.

Perennial densely tufted grass; culms 0.5–1 m tall, often with clusters of dead leaf sheaths around base, nodes dark; leaf blades linear, 10–60 cm × 4–5 mm; *inflorescence* a *single spike* (seldom 2) 10–20 cm long, slightly curved; spikelets 3-flowered, 8–10 mm long; awns (2) purple 10–18 and 6 mm long.

Acacia bushland or grassland, often in shade along water courses; disturbed places in *Acacia*, *Commiphora* bushland; sandy plains; rice- and cane-fields; deciduous woodland in shade; mopane and miombo on sandy soils; termitaria; amongst rocks; pathsides; drier grassy hills and cliffs; 20–1760 m alt.

N Namibia, Caprivi Strip, Botswana, S. Africa; Saudi Arabia, Yemen.

Closely allied to *E. monostachyos* but that species has awns 2.5–8 mm long.

E. monostachyos (Vahl) K. Schum. subsp. **africanus** Clayton; Fl. Trop. E. Afr., Gramin. 2: 333–334, 1974; Thulin, Fl. Somalia 4: 209, 1995; Gibbs Russell & al., Grasses south. Afr.: 137, 1990; Fl. Zambes. 10/2: 218–219, 1999. – Icon.: Sharma & al. in J. Bombay Nat. Hist. Soc. 105: 112, 2008 (subsp. *monostachyos*, India, Rajasthan); Indian J. Forestry 43: 230, 234, 2020.

bas.: *Cynosurus monostachyos* Vahl



Plate 28. *Elytrophorus spicatus* (Willd.) A. Camus, see p. 241
 a: habit ($\times 1$); b: ligule; c: inflorescence ($\times 1$); d: involucre bract ($\times 10$); e: spikelet with 3 florets ($\times 20$);
 f-g: glumes lower and upper ($\times 24$); h: single floret ($\times 24$); i-j: lemma and palea ($\times 24$); k: caryopsis ($\times 24$).



Plate 29. *Enneapogon cenchroides* (Licht.) C. E. Hubb., see p. 241
a: habit ($\times 1$); b: node ($\times 2$); c: ligule; d: inflorescence ($\times 1$); e: spikelet ($\times 12$); f-g: glumes lower and upper;
h-i: lemma and palea of lower floret; j: caryopsis; k: third floret.



Plate 30. *Enneapogon desvauxii* P. Beauv., see p. 242

a-b: habit; c: node ($\times 3$); d: ligule; e: spikelet ($\times 10$); f-g: glumes lower and upper ($\times 10$); h: florets without glumes ($\times 10$); i-j: lemma and palea of the lower floret ($\times 15$); k: caryopsis ($\times 15$); l: second and third florets ($\times 10$).



Plate 31. *Enneapogon lophotrichus* Chiov. ex H. Scholz & P. König, synonym of *E. desvauxii* P. Beauv. see p. 242
 a–b: habits ($\times 1$); c: node ($\times 5$); d: ligule; e–f: spikelets young and older ($\times 10$); g–h: glumes lower and upper ($\times 10$);
 i: lemma of the lower floret ($\times 15$); j: palea of the lower floret ($\times 15$); k: upper floret ($\times 15$).

ENTEROPOGON MONOSTACHYOS

syn.: *Chloris monostachya* (Vahl) Poir.; *C. simplex* Schumacher & Thonn.; *Rabdochloa monostachya* (Vahl) P. Beauv.; *Leptochloa monostachya* (Vahl) Roem. & Schult.; *Enteropogon simplex* A. Chev., nom. superfl.; *E. melicoides* (J. Koenig ex Rottler) Nees; *Ischaemum melicoides* J. Koenig ex Rottler (for typification see Turner in Taxon 70: 413–414, 2021).

Perennial tufted grass with short ascending rhizome; culms unbranched, 0,6–1 m tall; basal *sheaths* keeled, margins with *fine white* tubercle-based *hairs*; leaf blades 15–30 cm × 2–4 mm; spike 8–15 cm long; spikelets 2(–3)-flowered; lower lemma 6–8 mm long with *awn* 2,5–8 mm long.

Open places in deciduous bushland; cliff-face in a gorge; 630–1600 m alt.

S. Africa, Swaziland; India (cf. Sharma & al. in J. Bombay Nat. Hist. Soc. 105: 112, 2008), Sri Lanka, Myanmar (subsp. **monostachyos**, distinguished by its 3-flowered spikelets with awns 5–8 mm long).

E. prieurii (Kunth) Clayton – Figuring in many floras and flora lists as *Chloris prieurii* Kunth – Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 280, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 128, 2015; César & Chatelain, Fl. ill. Tchad: 207–208, 2019. – Icon.: Anderson, Taxonomy of the genus Chloris (Gramineae). Brigham Young Univ. Sci. Bull., Biol. Ser. 19/2: 41, 1974; van der Zon, Gramin. Cameroun 2: 178, 1992; Poilecot, Boissiera 56: 278, 1999; Boulous, Fl. Egypt 4: 278, 2005; Ibrahim & al., Grasses Mali: 46, 2018.

bas.: *Chloris prieurii* Kunth

syn.: *C. cryptostachya* Steud. ex J. A. Schmidt; *C. punctulata* Hochst. ex Steud.; *C. subtriflora* Steud.; *C. parva* Mameur

Annual tufted grass; culms geniculately ascending, 0,15–1,1 m tall; leaf sheaths keeled, blade flat; blades 10–30 cm long, 2–5 mm wide, glaucous; inflorescence a digitate head of 4–9 ascending racemes 5–12 cm long; spikelets 3–5 mm long, 4–6-flowered; florets becoming blackish at maturity; fertile lemma 3–5 mm long, *glandular along each side of the midnerve*, ciliate above, awn 0,7–2,5 cm long.

Open bush; disturbed ground on poor soils; dry sandy soils; humid soils (hollows, watercourse sides, irrigated gardens); under shade on dune slopes with *Chloris virgata*, *C. gayana*, *Dactyloctenium aegyptium*, *Brachiaria ramosa*; alluvial banquettes of “koris” with *Cymbopogon schoenanthus*, *Eragrostis cilianensis*, *E. pilosa*, *Pennisetum pedicellatum*, *Aristida mutabilis*, *A. funiculata*; gardens; *Acacia seyal* savanna; near sea-level–1200 m alt.

Enteropogonetum prieurii new association described in Candollea 63: 64, 2008, from Burkina Faso. Also cited as an accompanying species of the *Eragrostio pilosae* – *Echinochloetum colonae* association (Etudes flor. vég. Burkino Faso 9: 12, 2005).

Disjunct area. Egypt; Namibia (rare); Cape Verde Isl.; Madeira; Yemen; India. Introduced in Madagascar, and naturalised in USA/Alabama, N. Carolina (Voronstsova & al. in Candollea 69: 86, 2014).

Likely to be under-recorded due to its striking similarity to the common *Chloris virgata* Sw.

E. rupestris (J. A. Schmidt) A. Chev.; Gibbs Russell & al., Grasses south. Afr.: 137, 1990; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015; César & Chatelain, Fl. ill. Tchad: 206, 2019. – Icon.: Fl. Eth. & Eritrea 7: 173, 1995 (spikelet); Poilecot, Boissiera 56: 279, 1999.

bas.: *Ctenium rupestre* J. A. Schmidt

ENTEROPOGON RUPESTRIS

syn.: *Enteropogon somalensis* Chiov.; *E. ruspolianus* Chiov.; *Campulosus rupestris* (J. A. Schmidt) Kuntze

Perennial caespitose grass; culms wiry, 0,3–1 m tall, often bare below, *much branched*, basal buds clad in short pale cataphylls; leaf blades linear, 5–25 cm × 4–5 mm, flat; sheaths glabrous; inflorescence a solitary raceme 6–17 cm long; spikelets 2(–3)-flowered; lemma of lowest floret 5–8 mm long, its *awn* 1–5 mm long.

Scattered tree grassland on black clay; open *Acacia*, *Commiphora* woodland on deep red sand; seasonally flooded grassy plains; sandstone screes; 160–1800 m alt.

Disjunct distribution. Morocco, Cape Verde Isl. (Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 26, 2002); Namibia, Botswana.

Similar to *E. macrostachyus*, but that species has much longer lemma awns.

E. sechellensis (Baker) T. Durand & Schinz – Icon.: Fl. Trop. E. Afr., Gramin. 2: 334, 1974; Thulin, Fl. Somalia 4: 208, 1995; Fl. Zambes. 10/2: 217, 1999.

bas.: *Ctenium sechellense* Baker

syn.: *Enteropogon leptophyllus* Benth.; *E. seychellarum* Benth., orth. var.

Tufted perennial grass; culms to 0,8–1 m tall; leaf blades involute, linear, 8–28 cm × 2–6 mm; sheaths keeled, *sparsely to densely pilose, especially on margins*; raceme solitary, 6–15 cm long; spikelets 2–3-flowered, lowermost floret fertile, 4,4–7 mm long, its *awn* 1–2 cm long.

Coastal bushland on light soils; wooded grassland on sandy soil; stabilized dunes on red sand; 0–1160 m alt.

Madagascar, Aldabra, Seychelles.

SYNONYMS:

Enteropogon leptophyllus Benth. = **Enteropogon sechellensis**
muticus Hack. = **Microchloa altera**
ruspolianus Chiov. = **Enteropogon rupestris**
seychellarum Benth., orth. var. = **E. sechellensis**
simplex A. Chev. = **E. monostachyos**
somalensis Chiov. = **E. rupestris**

ENTOLASIA / 2

Genus of 6 species in tropical and S. Africa, New Guinea to E & SE Australia.

Entolasia imbricata Stapf; Agnew, Upl. Kenya wild flow., ed. 3: 432, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 574, 1982; Fl. Zambes. 10/3: 49, 1989; Gibbs Russell & al., Grasses south. Afr.: 138, 1990; Cook, Aquat. & wetland pl. south. Afr.: 205, 2004.

syn.: *Panicum endolasion* Mez ex Peter

Tufted perennial grass; culms erect, 0,6–1,5 m tall; basal leaf sheaths silky pubescent; blades linear, 7–50 × 0,2–1 cm; inflorescence 10–45 cm long, bearing appressed racemes 2–7 cm long, these sessile or the lower stalked and sometimes compound; pedicels *strongly flattened*; spikelets in 2 rows, 4,5–6,5 mm long, straw-coloured; lower glume 0,3–0,7 mm long.

Marshes; streamsides; flood plain, seasonally flooded to 1 meter in savanna; edge of swampy valley; wet soils; 950–2000 m alt.

Namibia, Botswana, S. Africa.

ENTOLASIA

E. olivacea Stapf; Renier, Fl. Kwango 1: 37, 1948; Lebrun in Bull. Soc. Bot. France 115: 247, 1967; Gibbs Russell & al., Grasses south. Africa: 138, 1990; Lye & al. in Lidia 4: 165, 2000; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 234, 2010; Sosef & al. in Pl. Ecol. Evol. 152: 101, 2019. – Icon.: Jacques-Félix, Les graminées d'Afr. trop. 1: 248, 1962 (Inst. Rech. Agron., Bull. Sci. 8); van der Zon, Gramin. Cameroun 2: 238, 1992; Velayos & al., Fl. Guinea Ecuat. 12: 188, 2015.

syn.: *Panicum entolasium* Stapf 1911, nom. nud.; *P. olivaceum* Stapf 1911, nom. nud.; *P. kimpakoense* Vanderyst 1919, nom. provis.

Perennial grass from a creeping rhizome; culms 0,5–1 m long, decumbent, branched, rooting at lower nodes; leaf blades linear-lanceolate, 4–15 × 0,5–1,8 cm, with a basal constriction; inflorescence 7–15 cm long, compound, the primary branches 3–7 cm long and bearing crowded secund racemets 0,4–1 cm long, *pedicels terete*; *spikelets* 2,2–2,5 mm long, dull green; *lower glume* 0,2–0,4 mm long.

Stream banks; swampy soils, swampy meadows; in shallow water in swamp forest; forest gallery; under shade; 490 (Gabon)–1150 (Uganda) m alt.

NE S. Africa.

ENTOPLOCAMIA / 1

Monotypic genus in SW Africa.

Entoplocamia aristulata (Hack. & Rendle ex Scott-Elliot) Stapf – Icon.: O. H. Volk, Gräser des Farmgebietes von Südwestafrika: fig. 13, 1974; Gibbs Russell & al., Grasses south. Afr.: 138, 1990; Müller, Grasses Namibia, rev. ed.: 31, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 260, 2012 (inflor.); Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 368, 2015.

bas.: *Tetrachne aristulata* Hack. & Rendle ex Scott-Elliot

syn.: *Entoplocamia benguellensis* Rendle; *E. procera* Chiov.

Annual, caespitose grass; culms 0,2–1,1 m tall, ascending, ultimately erect, branching at base; leaf sheaths glabrous except at mouth; blades linear, 7,5–15 cm × 2–3 mm, glaucous, prickly, finely puberulous or scaberulous or with scattered long hairs towards base; inflorescence *interrupted*: a spike or spike-like raceme with some spikelets; spike 5–7,5 cm long, longest branches to 1,7–2 cm long; spikelets ovate, 0,9(–2) cm, *laterally compressed*, many-flowered; lemma 9–11-nerved, midrib extending to a *sharp spiny deflexed awn*.

Sandy rocky hills, stony slopes, dry river beds.

W & S Namibia (infrequent, occasionally in dense stands in moist depressions).

ERAGROSTIELLA / 1

Genus of 6 species in E Africa, India, Sri Lanka, Burma, Australia.

Eragrostiella bifaria (Vahl) Bor var. **bifaria**; Agnew, Upl. Kenya wild flow., ed. 3: 422, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 245, 1974; Fl. Eth. & Eritrea 7: 130, 1995.

bas.: *Poa bifaria* Vahl

syn.: *Eragrostis bifaria* (Vahl) Wight; *Catapodium bifarium* (Vahl) Link; *Triticum bifarium* (Vahl) Kuntze

ERAGROSTIELLA BIFARIA

Perennial grass; culms 23–56 cm tall, invested at base with fibrous remains of old leaf sheaths; blades filiform, 4–16 cm × 0,6–2,1 mm (when flattened), pilose above and on margins, glabrous below; inflorescence unbranched, 8–22 cm long; spikelets overlapping, olive-grey, 9–50-flowered, 0,6–2 cm long, *erect*; lemma *disarticulating*, leaving behind the *persistent palea*.

Semi-desert grassland; dry bushland on shallow soil; often among rocks in very dry bushland; dry volcanic soils; along drainage lines; 300–2500 m alt.

Indian subcontinent to Vietnam, Australia (Queensland).

Split from *Eragrostis* on the basis of its inflorescence, a solitary terminal raceme (in *Eragrostis* the inflorescence is a panicle).

ERAGROSTIS / 162

Eragrostis Wolf; syn.: *Triphlebia* Stapf 1898, nom. illeg; *Stiburus* Stapf 1900; *Diandrochloa* De Winter 1960; etc.

Cosmopolitan (tropical, subtropical and warm temperate regions) genus with about 400 species (Christenhusz & al., Plants of the world: 209, 2017, give 413 species; 437 according to Kellogg in K. Kubitzki, Fam. & genera vascul. pl. 13: 366, 2015). It is one of the world's most diverse genera, i.e. morphologically variable.

A “difficult genus to name by any standards” (Fl. Trop. E. Afr., Gramin. 2: 188, 1974). It is, in fact, not taxonomically very difficult, but any problems that do exist are exacerbated by unsuitable material, the manner of disarticulation of the spikelet, lack of the base of the plant (e. g. whether rhizomes or stolons are present), shapes of the inflorescence and caryopsis (in outline or in transverse section). There is usually very little variation within species with respect to structure and dimensions (from Flora Zambesiaca 10/2: 49–50, 1999).

Among the 162 species retained for our area, a few are insufficiently known: base of plant not seen for 2 species, no fruit (caryopsis) cited for 7 species, and 13 species (c. 8%) are known only from the type gathering.

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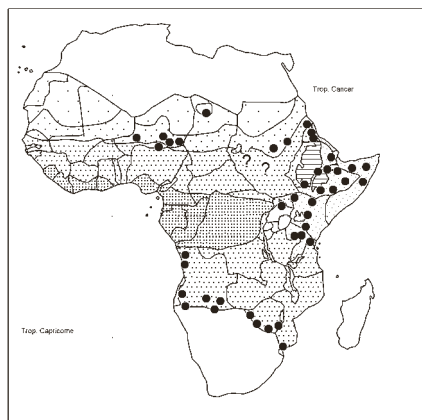
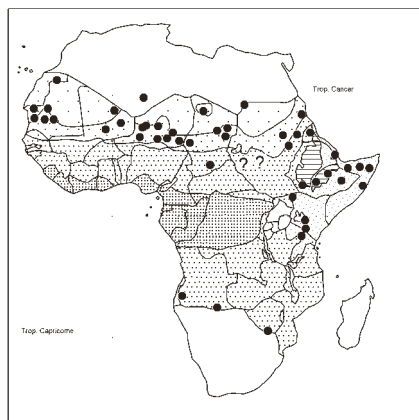
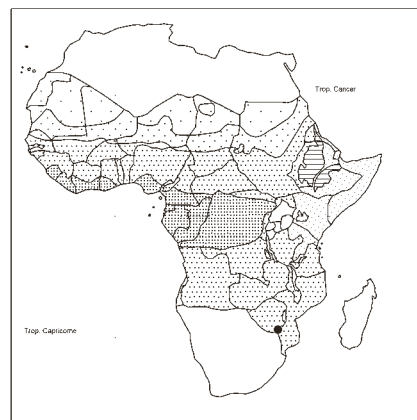
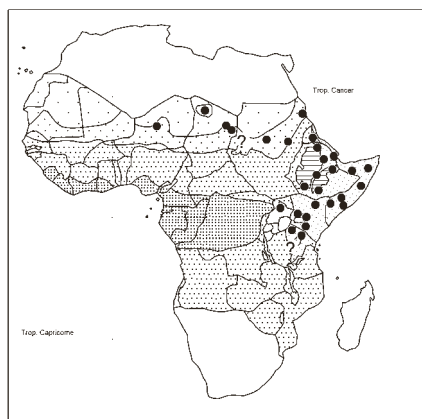
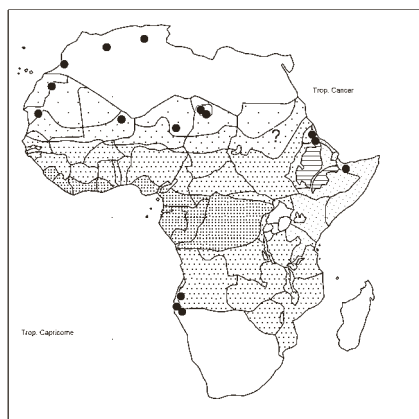
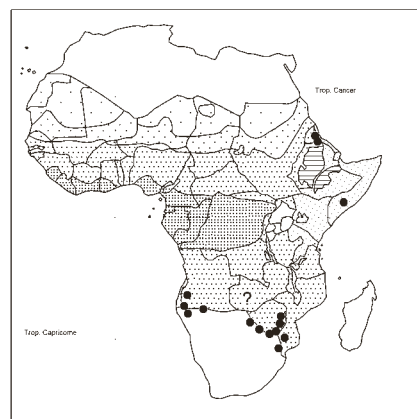
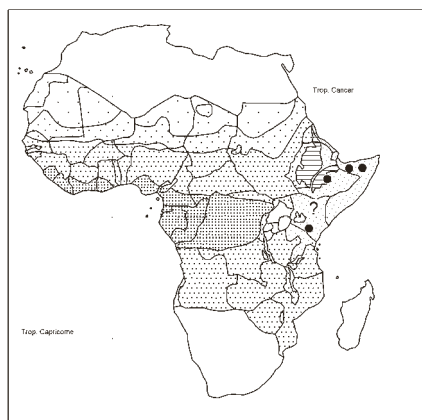
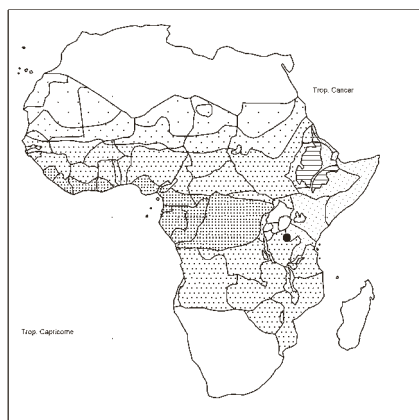
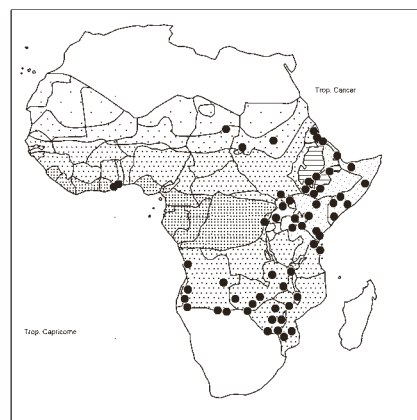
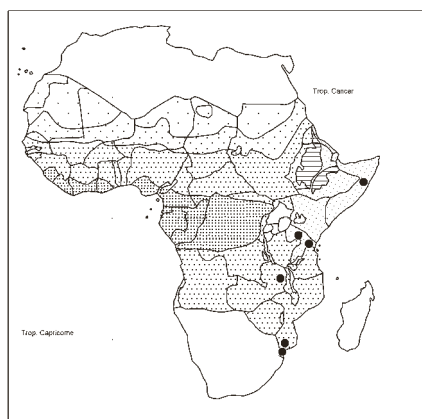
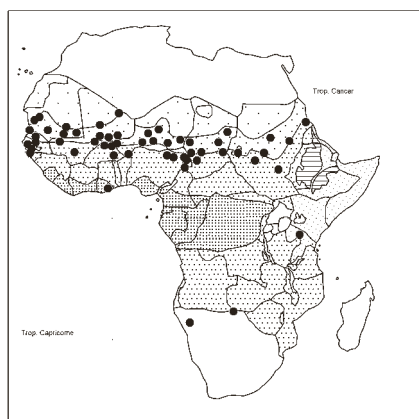
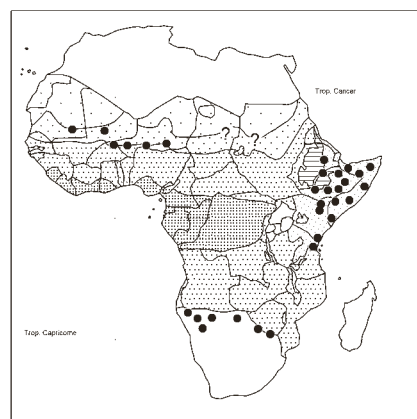
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*Enneapogon cenchroides**Enneapogon desvauxii**Enneapogon limpopoensis**Enneapogon persicus**Enneapogon scaber* var. *scaber**Enneapogon scoparius**Enteropogon barbatus**Enteropogon longiaristatus**Enteropogon macrostachyus**Enteropogon monostachyos**Enteropogon prieurii**Enteropogon rupestris*

Eragrostis acamptoclada Cope; Fl. Zambes. 10/2: 66, 1999. – Icon.: Kew Bull. 53: 137, 1998 (details).

Perennial caespitose grass; culms to 80 cm tall, erect, unbranched; basal leaf sheaths persistent, eglandular; blades setaceous, lightly involute, to 21 cm × 0.7 mm, long-ciliate below; panicle elliptic-oblong, 13–25 cm long, loose, open, spikelets evenly distributed; branches and branchlets stiff, straight, clearly demarcated from the slender, flexuous pedicels, these 3–6 mm long; primary branches not in whorls, usually terminating in a slender bristle or abortive spikelet; spikelets elliptic, 4.5–8 mm long, 8–15-flowered; caryopsis not seen.

In or at edges of dambos; 1200–c. 1500 m alt.

Near *E. canescens*.

E. acraea De Winter – Icon.: Fl. Zambes. 10/2: 57, 1999 (spikelet); Poilecot, *Eragrostis* Zimb.: 130, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 265, 2012 (inflor.).

Densely caespitose perennial grass; culms erect, to 2 m tall, usually unbranched; basal leaf sheaths *glabrous*, firmly chartaceous, glossy yellow, terete, persistent or decaying into parallel fibres; blades 15–60 × 0.6–1.5 cm, rigid, pungent, glabrous or sparsely pilose, *flat* (involute on drying); panicle 15–70 cm long, narrowly oblong-elliptic, rather dense, usually contracted; spikelets evenly distributed on pedicels 2–6 mm long; primary branches 1-several at a node but scarcely whorled, terminating in a fertile spikelet; spikelets oblong, 3–7 mm long, 5–12-flowered.

Grassland; forest margins; grassy rocky hillsides; often on granite sands; disturbed places, roadsides; 1050–2000 m alt.

S. Africa.

E. aegyptiaca (Willd.) Delile, incl. subsp. *humifusa* H. Scholz; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 280, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015; César & Chatelain, Fl. ill. Tchad: 198, 2019. – Icon.: Scholz in Willdenowia 26: 231, 1996; Poilecot, Boissiera 56: 212, 1999; Boulos, Fl. Egypt 4: 260, 2005; Ibrahim & al., Grasses Mali: 69, 2018.

bas.: *Poa aegyptiaca* Willd.

syn.: *P. pilosa* var. *aegyptiaca* (Willd.) B. Fedtsch.; *P. antennata* Delile ex Poir.; *P. amabilis* Roem. & Schult.; *P. pallida* Lag.; *Eragrostis senegalensis* Nees non (Desv.) A. Chev.; *E. minima* Jedwabn.; *E. albida* Hitchc.; *E. nigerica* A. Chev.

Annual densely tufted grass 1–5 cm (= subsp. *humifusa*) to 60 cm tall; leaf blades 3–8 cm × 1–2 mm; panicle narrowly ovate to linear-lanceolate, 1.5–15 cm long; spikelets loosely to densely contracted about primary branches, these spreading or appressed to the main axis, clustered or whorled, often bare of spikelets below, sometimes panicle contracted and subcylindrical in smaller plants; spikelets linear, 0.5–1 cm long, 9–20-flowered.

Along water-courses; sandstone gorge near natron pond; dry mud 1 cm thick and 5m²; dry mud on sand; with *Riccia cavernosa*, *Chloris*, *Crypsis*, *Eragrostis ciliaris*, *Polypogon*; sandy river bed; open waste places; clay; flooded area; flooded sides of ponds with *Eragrostis japonica*, *Chloris virgata*, *C. pilosa*, *Cenchrus prieurii*; koris edges with *Eragrostis tenella*, *E. barrelieri*, *Dactyloctenium aegyptium*, *Panicum repens*, *Cynodon dactylon*, *Brachiaria ramosa*, *Cenchrus biflorus*, etc.; near sea-level–1650 m alt.

SE Algeria, Libya, Egypt; ? Saudi Arabia.

E. aethiopica Chiov.; Gibbs Russell & al., Grasses south. Afr.: 144, 1990; Lye & al. in Lidia 4: 165, 2000; Brink & Belay, Pl. Resources Trop. Afr. 1, Cereals & pulses: 65, 2006. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 154, 1969; Troupin,

ERAGROSTIS AETHIOPICA

Fl. Rwanda 4: 249, 1988; Fl. Zambes. 10/2: 57, 1999 (spikelet); Poilecot, Boissiera 56: 212, 1999; idem, *Eragrostis* Zimbabwe: 124, 2007; Cope, Fl. Arab. Penins. 5/1: 136, 2007 (spikelet); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 265, 2012 (inflor.); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

Loosely tufted annual grass; culms 10–65 cm tall, erect or ascending, slender; leaf blades 3–20 cm × 1–3 mm; panicle elliptic, 6–25 cm long, delicate, loose and open, axils *glabrous*, branches often loosely whorled; spikelets linear, 6–18-flowered, 1.7–5 mm long; florets disarticulating from below upwards.

Disturbed ground; weedy places; floodplain grassland; river banks and beds; alluvial soils; sand, clayey soils or rainwater pans; disturbed ground at roadsides and under cultivation; red sand; silt; abundant in some dry bushlands after good rains; 0–1700 m alt.

Botswana, S. Africa, Swaziland; Madagascar; Saudi Arabia, Yemen. Introduced in Cape Verde Isl.

E. amabilis (L.) Wight & Arn. (for rejection of this name, See Taxon 71: 222, 2022); incl. var. *breviculmis* Stapf, var. *duriuscula* K. Schum., var. *insularis* (C. E. Hubb.) P. Umam. & P. Daniel, var. *plumosa* (Retz.) E. G. Camus & A. Camus, and var. *tenella* (L.) A. Camus, and fa. *varia* Kuntze, but excl. other vars. (cf. World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.) – In many (older) floras figuring as *E. tenella* L. [now considered as a good taxon, viz. *E. tenella* (L.) P. Beauv. ex Roem. & Schult.; cf. Taxon 71: l. c.] – See comment on name below. – Boulos, Fl. Egypt 4: 255, 2005; Veldkamp in Blumea 47: 164–166, 2002; Klaassen & Craven, Checklist grasses Namibia: 36, 2003; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 22, 143, 1969; Poilecot, Boissiera 50: 113, 1995; idem, ibid. 56: 201, 1999; idem, *Eragrostis* Zimbabwe: 70, 2007; Peterson & Sánchez Vega in Ann. Missouri Bot. Gard. 94: figs. 6 A–D, 7 A, B, 2007; Vivek & al. (2015): 2 (caryops); Velayos & al., Fl. Guinea Ecuat. 12: 196, 2015; César & Chatelain, Fl. ill. Tchad: 195, 2019.

bas.: *Poa amabilis* L. Sp. pl.: 68, 1 Mai 1753.

syn.: *P. tenella* L., Sp. pl.: 69, 1 Mai 1753; *P. plumosa* Retz.; *Megastachya amabilis* (L.) P. Beauv.; *Cynodon amabilis* (P. Beauv.) Raspail; *Megastachya tenella* (L.) Bojer; *Eragrostis plumosa* (Retz.) Link; *E. tenella* (L.) P. Beauv. ex Roem. & Schult. var. *plumosa* (Retz.) Stapf and var. *insularis* C. E. Hubb.; World Checklist, etc. (cited above).

Delicate tufted annual grass; culms 6–50 cm tall, erect or geniculately ascending; leaf blades flat, 1–9 cm × 2–4 mm; panicle *elliptic or pyramidal* (linear in var. *insularis*) 2–14 cm long, *open*, axils hairy or not, branches spreading, bearing yellowish glands; spikelets oblong, 1.5–2.5 mm long, 4–8-flowered.

Bare soil by pathsides and cultivated land; ruderal in humid sands; fallows; gardens; becoming invading; pond sides with *Dactyloctenium aegyptium*, *Cynodon dactylon*, *Eragrostis cilianensis*, *E. aegyptiaca*, *E. tremula*, *Tragus berteronianus*, *Sporobolus spicatus*, *Chloris virgata*; coastal dunes; disturbed ground; clayey-muddy soil; 0–1400 m alt.

Tropical and subtropical Old World. Namibia, Botswana, S. Africa; not confirmed in Egypt (Boulos, l.c.); Bioko/Fernando Poo, S. Tomé, Principe; Madagascar, Mauritius, Réunion, Aldabra, Seychelles; Arabian Peninsula E-wards to Indo-China, Philippines, New Zealand (introduced according to Gardner in Auckland Bot. Soc. J. 75: 125, 2020); introduced in the Pacific Isl., S N. America, C. & S. America.

Note on nomenclature. The lectotype of *Poa amabilis* L. was designated by Veldkamp (Blumea 47: 164, 2002). However, there seems to be much confusion about the application of this name.

ERAGROSTIS AMABILIS

As a result P. M. Peterson & al. made a proposal to reject the name *P. amabilis* L.: (2620) in Taxon 67: 644–645, 2018. The latter authors proposed 3 options, recommending the “outright rejection of *P. amabilis*, which would also remove any uncertainty over the relative priority of *P. amabilis* vs. *P. tenella*”. Rejection recommended: Taxon 71: 222 (2022).

E. amanda Clayton; Agnew, Upl. Kenya wild flow., ed. 3: 419, 2013; Kipkoech & al. in PhytoKeys 131: 113, 2019. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 196, 1974 (spikelet).

Tufted perennial grass (base unknown); culms 1,2–2,5 m tall; leaf blades to 60 × 1 cm, stiff, harsh; panicle dense, narrow, 30–40 cm long, not whorled; spikelets narrow, 6–14 mm long, purplish.

Open grassy glades in evergreen forest or bamboo thickets, rare; 2400–2800 m alt.

Very similar to *E. curvula*.

E. ambleia Clayton; Fl. Trop. E. Afr., Gramin. 2: 210, 1974; Cope in Kew Bull. 47: 282, 1992; Thulin, Fl. Somalia 4: 180, 1995.

Tufted annual grass; culms 30–90 cm tall, erect; leaf blades flat, to 30 cm × 2–4 mm; panicle elliptic, 15–25 cm long, branches stiff, horizontally spreading, axils bearded; spikelets shortly pedicelled, often loosely grouped about the primary branches; spikelets linear, 7–15-flowered, 0,4–1 cm long.

Commiphora woodland on red sand; dry dense thorn scrub and open bushland on sandy soil; 200–500 m alt.

The spikelets closely resemble those of *E. aspera* (broadly truncate lemmas, scabrid palea keels); *E. aspera* has a diffuse panicle with its copious spikelets trembling on slender pedicels.

E. anacrantha Cope; Kew Bull. 55: 490, 2000. – Icon.: Kew Bull. 53: 137, 1998 (spikelet).

syn.: *Eragrostis* sp. (Aistle 994) of Simon in Kirkia 8: 62, 1971.

Densely caespitose perennial grass; culms to 90 cm tall, erect, unbranched, glabrous at nodes; basal leaf sheaths glabrous at base, chartaceous, terete, disintegrating into persistent fibres (other sheaths glabrous to loosely or stiffly pilose); blades filiform, 3–30 cm × 0,5–1 mm, tightly involute, pilose to glabrescent; panicle 4–30 cm long, open or ± contracted, elliptic to oblong; spikelets evenly distributed, branches and branchlets stiff, straight, clearly demarcated from the filiform pedicels (2,5–8 mm long), primary branches not whorled; spikelets oblong, 4,5–6 mm long, 6–13-flowered; anthers 3.

Dambos in high rainfall woodland; seasonally wet grassland beside rivers; 1190–1680 m alt.

Resembling *E. acamptoclada*.

E. anacranthoides Cope; Fl. Zambes. 10/2: 67, 1999. – Icon.: Kew Bull. 55: 489, 2000.

syn.: *Eragrostis* sp. (Aistle 3140) of Simon in Kirkia 8: 62, 1971.

Delicate annual grass; culms to 30 cm tall, erect, unbranched, nodes glabrous; leaf sheaths glabrous below, pilose above; blades linear, 4–8 cm × 1–2 mm, flat or loosely involute, pilose; panicle ± elliptic, 7–13 cm long, open; spikelets evenly distributed, branches and branchlets stiff, straight, clearly demarcated from the filiform pedicels (0,8–1 cm long), primary branches not whorled; axils of branchlets and pedicels with a beard of long stiff hairs; spikelets 2,5–3,5 mm long, ovate-oblong, 6–10-flowered; anthers 2.

On rocks beside running water; common; 1400–c. 1600 m alt.

ERAGROSTIS ANACRANTHOIDES

Near *E. anacrantha* but annual, smaller spikelets (2,5–3,5 × c. 1,5, not 4,5–6 × 1,8–2,6), 2 minute anthers.

The two species have the same distribution area.

E. annulata Rendle ex Scott-Elliott, incl. var. *major* Rendle; Gibbs Russell & al., Grasses south. Afr.: 144–145, 1990; Kew Bull. 53: 158, 1998 (in key); Fl. Zambes. 10/2: 137–138, 1999; Brink & Belay, eds., Pl. resources trop. Afr., Cereals & pulses: 65–66, 2006. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: fig. 150, 1955; Müller, Grasses SW. Africa: 143, 1984; Müller, Grasses Namibia, rev. ed.: 177, 2007.

syn.: *E. ramosa* Hack.

Loosely caespitose delicate annual grass; culms 15–35 cm tall, ascending, branched or not, nodes glabrous, with a glandular ring below the nodes; leaf sheaths thinly pilose with slender hairs and shorter, gland-tipped hairs; blades 2–12 cm × 1–5 mm, flat, thinly pilose with slender hairs mixed with shorter gland-tipped hairs, with scattered crateriform glands along margins and a line of glandular pits along midnerve beneath; panicle 4–20 cm long, ovate, fairly dense to open, stiffly branched, the spikelets evenly distributed on pedicels 1–3 mm long, these with a distinct annular gland, primary branches not whorled, terminating in a fertile spikelet; spikelets laterally compressed, oblong-linear, 0,3–1,5 cm long, 6–40-flowered; caryopsis square in profile, c. 0,5 mm long.

Sandy places on river banks; on a variety of soils, especially on sandy or stony ground.

Namibia, Botswana, S. Africa.

Resembling *E. cilianensis* but differs from that species by its smaller spikelets (0,3–1,5 cm × 1,3–2 mm, not 0,3–2 cm × 2–4 mm) and squarish caryopsis. Near *E. procumbens* but differs from that species by the more open panicle and obtuse lemmas.

E. arenicola C. E. Hubb.; Brenan & al. in Mem. New York Bot. Gard. 9: 104–105, 1954; Gibbs Russell & al., Grasses south. Afr.: 145, 1990; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 245, 1994; Klaassen & Craven, Checklist grasses Namibia: 36, 2003; Gill & Mensah (2001): 44; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: 180, 1955; Fl. Zambes. 10/2: 73, 1999; Poilecot, Eragrostis Zimbabwe: 72, 2007.

syn.: *E. tenella* (L.) Roem. & Schult. var. *compacta* Rendle

Annual loosely tufted grass; culms 15–50 cm tall, erect or ascending, somewhat wiry; leaf blades linear, to 15 cm × 4 mm; panicle narrowly lanceolate, 4–22 cm long, contracted but scarcely spiciform, branches not whorled, ascending, with or without glands; spikelets close to one another, ± ovate, 2–4 mm long, purplish, 4–14-flowered, breaking up from apex downwards.

Sandy soils by pathsides; old farmland; waste places; disturbed land; old plantations near a temporary swamp; wooded grasslands; dambo margins; river sides; lake-shores, floodplains; Kalahari sands; good red loam; dry argillaceous soils; sometimes abundant; ruderal; weed of cultivated land reaching sometimes nuisance proportions; invading irrigated cultivations (Sudan); 330–1700 m alt. Namibia, S. Africa.

Proliferating specimens occasionally collected in Malawi.

Near *E. amabilis*. Occasionally confused with *E. ciliaris*.

E. aristiglumis Kabuye – Icon.: Kew Bull 26: 84, 1971.

Tufted annual grass; culms to 70 cm tall, erect; leaf blades flat, to 20 cm × 4 mm; panicle narrowly oblong, 12–28 cm long, axils bearded; primary branches ascending, 1–10 cm long, racemose; spikelets sessile in dense clusters of 1–12 on little

ERAGROSTIS ARISTIGLUMIS

side-branches the lower ones to 10 cm long, the upper to 5 cm long; pedicels bearded; spikelets broadly ovate, c. 2–3 mm long, light brown, breaking up from the apex; glumes 1,5 mm long, drawn out into an *awn* 2–3,6 mm long.

Deciduous bushland with *Panicum maximum*, *Digitaria*, *Dactyloctenium giganteum*, *Chloris virgata*, *Hyparrhenia* sp. on pale sandy clay loam; c. 885 m alt.

Only known from the type collected in 1970.

Near *E. trimucronata*, a perennial species.

E. aspera (Jacq.) Nees, incl. var. *major* Peter; Thulin, Fl. Somalia 4: 180, 1995; Gill & Mensah (2001): 44; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 280, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015. – Icon.: Fl. W. Trop. Afr., ed. 2, 3/2: 388, 1972; Fl. Trop. E. Afr., Gramin. 2: 190, 1974 (spikelet); Troupin, Fl. Rwanda 4: 249, 1988; Poilecot, Boissiera 50: 115, 1995; Fl. Zambes. 10/2: 57, 95, 1999; Boulos, Fl. Egypt 4: 254, 2005; Poilecot, Eragrostis Zimbabwe: 108, 2007; Cope, Fl. Arab. Penins. 5/1: 136, 2007 (spikelet); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 178, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 189, 2015; Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis); Ibrahim & al., Grasses Mali: 69, 2018; Fl. Mascareignes 203, Gramin.: 71, 2018; César & Chatelain, Fl. ill. Tchad: 71, 2019.

bas.: *Poa aspera* Jacq.

syn.: *P. hippuris* Schumach.; *Eragrostis devolvens* Gand.; *E. quintasii* Gand.; World Checkl. Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Tufted annual grass; culms 20–80 cm tall, erect; leaf blades linear, flat, keeled, 5–30 × 0,2–1 cm; panicle ovate-elliptic, *open to very diffuse*, 10–40 cm long (often more than half the length of the entire plant), branches ascending at 45°, rough and stiff, axils bearded; spikelets (on *long fine pedicels*) red to purple, 0,3–1 cm long, 6–22-flowered.

Old farmland; disturbed places; sandveld; short grassland; dambo margins; Kalahari Sands; rocky hillsides; moist sandy depressions; common on fallows; with *Panicum pansum*, *Eragrostis tremula*, *Andropogon pseudapricus*, *A. gayanus*, *Pennisetum pedicellatum*, *P. polystachium*, *Loudetia togoensis*, *Melinis repens*; gravel in dry stream-beds; limestone rocks; *Acacia* woodland on red sand over limestone; weed of old farmland, disturbed sites and of irrigation; common in old fields; (?–)180–2000 m alt.

Bioko/Fernando Poo; Egypt; N Namibia, Botswana, S. Africa, Swaziland; Madagascar; Arabian Peninsula; Socotra; S. India, Indo-China; introduced in Jawa, Philippines (Veldkamp in Blumea 47: 166–167, 2002). – Type cultivated in Europe, seeds from India.

E. astrepta S. M. Phillips; Fl. Eth. & Eritrea 7: 121–122, 1995. – Icon.: Kew Bull. 46: 112, 1991 (caryopsis).

Tufted annual grass; culms 8–23 cm tall, ascending, rigid, *dotted with glands below the nodes*; leaf blades 1–4 cm × 2–3,5 mm, rigid; sheaths *thinly glandular-punctate*; panicles terminal and axillary, contracted, 3–7 cm long, the short primary branches inserted singly; pedicels thick, sometimes glandular, 0,5–1,5 mm long; spikelets linear, 10–14-flowered, 5,5–7,5 mm long, *margins serrate*; grain *laterally compressed, rugulose, semi-translucent*, c. 1 mm long.

Open ground over weathered granite rock in *Combretum*, *Terminalia* woodland; 1500–1600 m alt.

Closely resembling some forms of *E. minor* with contracted panicles but differing by its stiff habit, slightly firmer, more acute lemmas, non glandular leaf margins, grain different (dark

ERAGROSTIS ASTREPTA

reddish-brown, 0,6–0,8 mm long, broadly oblong or occasionally subrotund). *E. barrelieri* is related but with plumper grain.

E. astreptochlada Cope; Fl. Zambes. 10/2: 64, 1999; Kew Bull. 55: 490, 2000 (in key). – Icon.: Kew Bull. 53: 137, 1998 (partial). syn.: *E. sp.* (Astele 3165) of Simon in Kirkia 8: 62, 1971.

Caespitose perennial grass; culms to 70–80 cm tall, erect, unbranched; basal leaf sheaths glabrous, chartaceous, terete, persistent; blade setaceous, to 20 cm × 0,4–0,6 mm, tightly involute, rarely flat (to 1,7 mm wide), ciliate below, otherwise glabrous to densely pilose; panicle ± linear, 30–35 cm long, loose, usually open, spikelets evenly distributed, branches and branchlets stiff, straight, pedicels slender, flexuous, these 1–5 mm long, the primary branches not whorled, axils *glabrous*; spikelets oblong, 3–4,5 mm long, laterally compressed, 4–9-flowered.

River banks on damp sand; usually in sandy soil; sandy washes at margins of peat bogs; 1400–1560 m alt.

Distinguished from *E. canescens* by *glabrous* lemmas and glumes that do not quite reach the ½ of the adjacent lemmas.

Forming a very close-knit group with *E. acamptoclada*, *E. anacrantha*, *E. anacranthoides*.

E. atrovirens (Desf.) Trin. ex Steud. 1840, incl. var. *fontanesiana* Maire 1933, nom. nud., and var. *hesperidum* Maire, but excl. var. *congesta* Robyns & Tournay (= *E. botryodes*), non *E. atrovirens* Lange 1860. – Houinato & al. in Belg. J. Bot. 133: 23–24, 2000; Veldkamp in Blumea 47: 167, 2002; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 280, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015; César & Chatelain, Fl. ill. Tchad: 197, 2019. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 166, 1969; Poilecot, Boissiera 50: 135, 1995; idem, ibid. 56: 206, 1999; idem, Eragrostis Zimbabwe: 136, 2007; Ann. Missouri Bot. Gard. 94: 760, 2007; Velayos & al., Fl. Guinea Ecuat. 12: 190, 2015; Vivek & al. (2015): 2 (caryopsis); Ibrahim & al., Grasses Mali: 70, 2018. – Pl. 32.

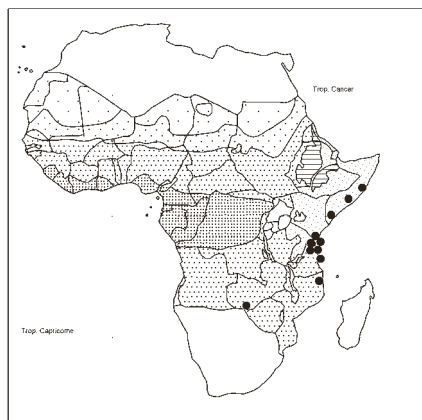
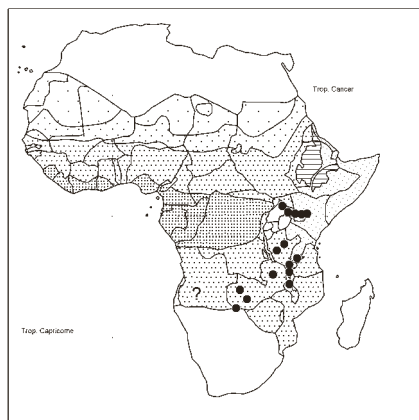
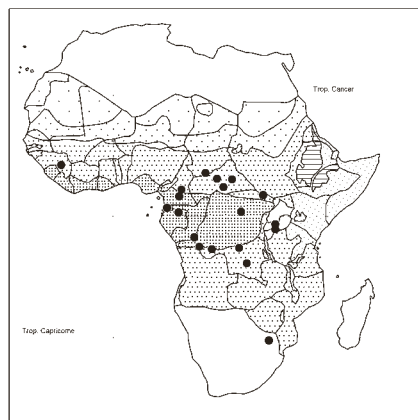
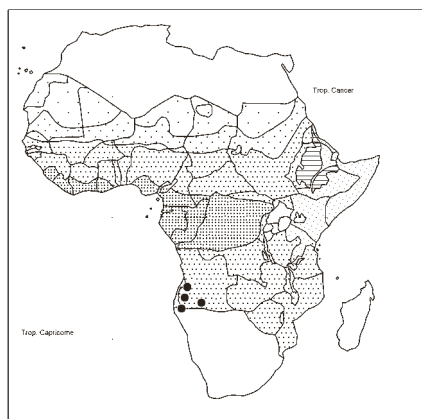
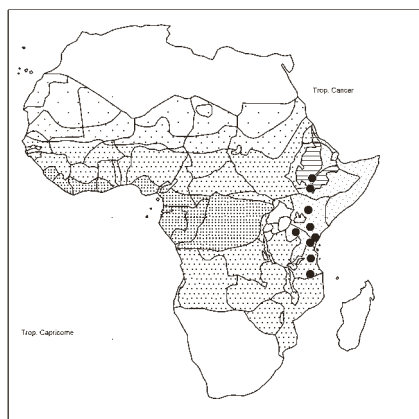
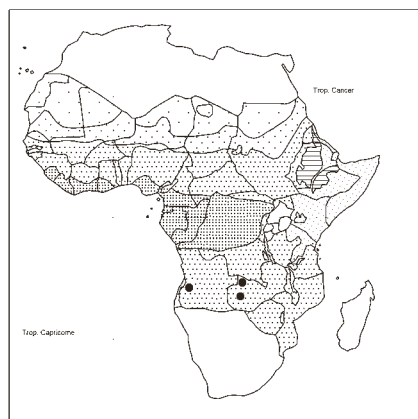
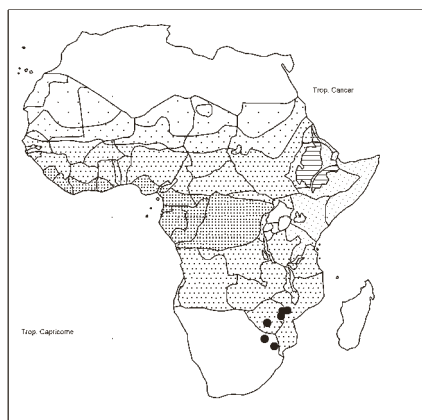
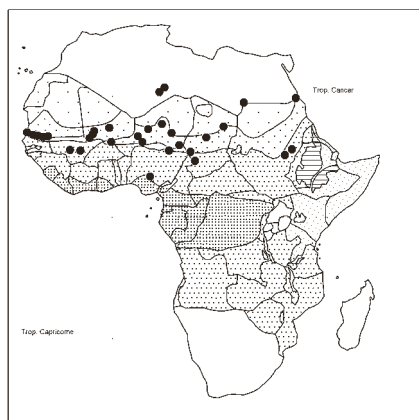
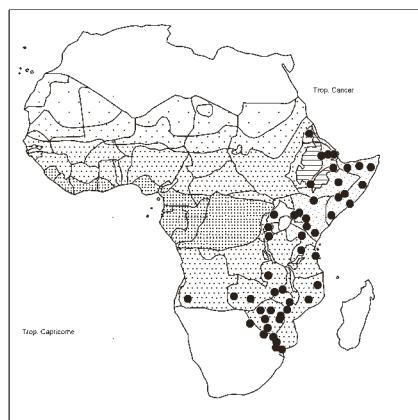
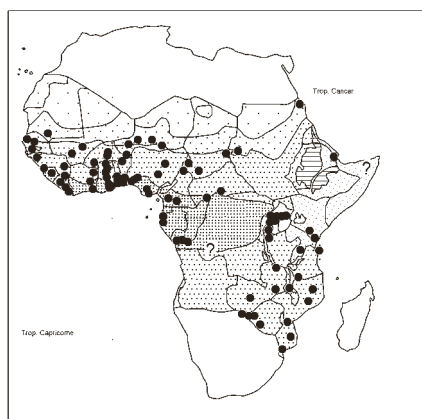
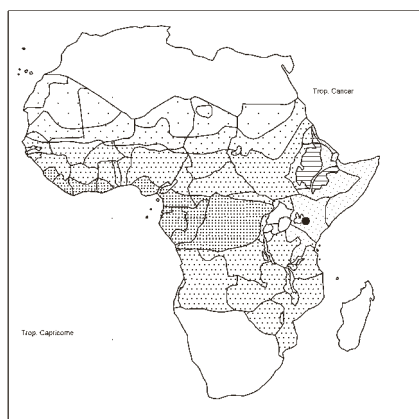
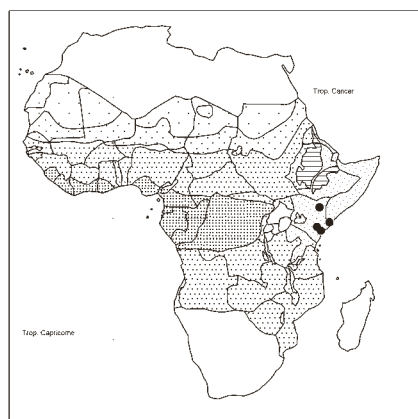
bas.: *Poa atrovirens* Desf.

syn.: *Eragrostis atroviridis* Maire 1937, nom. superfl.; *E. biformis* (Kunth) Benth.; *E. bromoides* Jedwabn. 1924, nom. illeg.; *E. sudanica* A. Chev.; *E. multiflora* var. *biformis* (Kunth) A. Chev.; *E. chariis* auct. non (Schult.) Hitchc., i.e. misapplied [*E. chariis* (Schult.) Hitchc. is a synonym of *E. nutans* (Retz.) Nees ex Steud., a perennial Indian species]; *Poa biformis* Kunth; *Briza elegans* Osbeck; World Checkl. Select. Pl. Fam., Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass; culms *slender, erect*, 0,3–1 m tall, nodes glabrous; leaf blades linear, 10–30 cm × 2–4 mm; panicle open, ovate-oblong, 4–40 cm long, *primary branches* solitary, obliquely *ascending*, bearing *spikelets loosely contracted* on short scaberulous pedicels; spikelets ± oblong, 0,3–2 cm long, 6–50-flowered, breaking up from the base upwards.

Moist soils; marshy grassland; often in shallow water; pool margins; sometimes in small stands; coastal savannas with *Rhytachne rottboellioides*, *Anadelphia trispiculata*, *Panicum parvifolium*, *Eragrostis domingensis*; 0–2700 m alt. – An element of the *Echinochloetalia colonae* association (Wittig in Etudes florist. végét. Burkina Faso 9: 12, 2005).

Tropical and subtropical Old World. – Morocco, Algeria, Libya; Cape Verde Isl.; Namibia, Botswana, S. Africa; Madagascar; south. Asia, India (Narain in Ind. J. Forestry 32: 495, 2009) E-wards to Malesia, Philippines, Japan, New Guinea. Introduced in C & S Europe, Australia, south. USA and N. America, Caribbean, C. & S. America (Peterson & Sánchez Vega in Ann. Missouri

*Enteropogon sechellensis**Entolasia imbricata**Entolasia olivacea**Entoplocamia aristulata**Eragrostiella bifaria**Eragrostis acamptoclada**Eragrostis acraea**Eragrostis aegyptiaca**Eragrostis aethiopica**Eragrostis amabilis**Eragrostis amanda**Eragrostis ambleia*

ERAGROSTIS ATROVIRENS

Bot. Gard. 94: 758, 2007; invasive in Cuba, e.g., fide Sylvester in Edinb. J. Bot. 74: 65, 2017).

A collection by Homblé cited from Zaire, Katanga, is in fact based on plants collected in Guangxi, China (Robbrecht & al. in Blumea 66: 85, 2021).

Belonging to a closely related group of intergrading species such as *E. inamoena*, *E. chalarothyrsos*, *E. gangetica* (annuals).

E. aurorae Launert; Simon in Kirkia 8: 60, 1971; Cope in Kew Bull. 53: 143, 1998; Fl. Zambes. 10/2: 79, 1999.

Densely caespitose perennial grass sometimes with a short oblique rhizome; culms to 70 cm tall, erect, unbranched; basal leaf sheaths glabrous or more usually pilose, chartaceous, terete, *disintegrating into a persistent cushion of fibres*; blades 3–15 cm × 0.2–1.5 mm, filiform, glabrous or pilose; panicle 6–11 cm long, ovate or elliptic, loose, open, rarely contracted and linear; spikelets evenly distributed on pedicels 0.2–1 cm long, primary branches not whorled, axils glabrous; spikelets ± linear, 0.8–1.2 cm long, 3–10-flowered. Sandy soils in dambos; shallow laterite pans; 1000–1270 m alt.

E. barbinodis Hack.; Gibbs Russell & al., Grasses south. Afr.: 145, 1990; Cope in Kew Bull. 53: 159, 1998 (in key); Fl. Zambes. 10/2: 142–143, 1999. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: figs. 108/13, 114, 1955; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 263, 2012 (in flor.).

Caespitose perennial grass; culms 0.6–1 m tall, usually ascending, often decumbent, rooting at nodes, unbranched, nodes *barbate*, internodes pilose; basal leaf sheaths shortly silky pilose below, chartaceous, terete, persistent; blades linear, 3.5–15 cm × 2–5 mm, pilose, rarely glabrous; panicle 5.5–13 cm long, ovate, loose, open; spikelets evenly distributed on pedicels 0.5–1 mm long, primary branches not whorled, axils glabrous; spikelets oblong, 4–6 mm long, 5–8-flowered.

Sandy soils in short grassland on pan margins; rocky hillsides; behind coastal dunes; 40–1350 m alt.

Botswana, S. Africa.

E. barrelieri Daveau, incl. var. *ambigua* Dobignard & Portal, subsp. *ambigua* (Dobignard & Portal) H. Scholz & Valdés, subvar. *pygmaea* Daveau, var. *pygmaea* (Daveau) Dobignard & Portal, and subsp. *pygmaea* (Daveau) Portal & H. Scholz; Gibbs Russell & al., Grasses south. Afr.: 145, 1990; Cope in Kew Bull. 47: 282, 1992 (in key); Fl. Zambes. 10/2: 138, 1999; Klaassen & Craven, Checklist grasses Namibia: 37, 2003; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 280–281, 2010; César & Chatelain, Fl. ill. Tchad: 196–197, 2019. – Icon.: Icon. Pl. African. (IFAN) 5: n° 107, 1962; Kew Bull. 46, 112, 1991 (caryopsis); Poilecot, Boissiera 56: 211, 1999; Boulos, Fl. Egypt 4: 260, 2005; Cope, Fl. Arab. Penins. 5/1: 143, 200 (spikelet), 2007; Poilecot, Eragrostis Zimbabwe: 188, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 265, 2017 (in flor.); Pickering & Awale, Introd. pl. Central Somaliland: 117, 2018.

syn.: *E. pooides* var. *barrelieri* (Daveau) Fiori; *E. vulgaris* subsp. *barrelieri* (Daveau) Douin, and var. *barrelieri* (Daveau) Douin; *E. panormitana* Lojac.; *E. insulatantica* A. Chev.

Annual loosely tufted grass; culms to 40–60 cm tall, erect or ascending, branched or not, nodes glabrous, *with or without glandular pits below nodes, these often coalesce into a ring*; leaf sheaths glabrous; blades linear, 3–13 cm × c. 3 mm, glabrous; panicle oblong, 7–16 cm long, open, stiffly branched, spikelets evenly distributed on pedicels 1–3 mm long, primary branches not whorled, axils glabrous; spikelets ± linear, 0.5–1.5 cm × 1.5–1.8 mm, laterally compressed, 9–25-flowered.

ERAGROSTIS BARRELIERI

Weed, often on agricultural research stations and irrigation schemes; river banks; disturbed ground at roadsides; humid soils around guelta with *E. japonica*, *E. pilosa*, *Cynodon dactylon*; along gully with *Cymbopogon schoenanthus*, *Dichanthium foveolatum*, *Panicum turgidum*; damp soils, sandy soils; floodplains, escarpments; sandy hollow with *Limonium sinuatum* s.l.; 0–2400 m alt.

N. Africa, Socotra, Arabian Peninsula, E-wards to Pakistan, India; Madeira, Canary Isl. (Brochmann & Rustan subsp. *pygmaea* fide Greuter & Raab-Straube in Euro-Med Notulae in Willdenowia 39: 332, 2009); Cape Verde Isl. (Garcia de Orta, Sér. Bot. 16: 26, 2002).

Introduced in SE trop. Africa, S. Africa; C Europe (Scholz & Ristow in Verh. Bot. Ver. Berlin Brandenburg 138: 24, 2006); SE Asia, Australia, Pacific Isl.; N., C. & S. America, Caribbean.

One of a critical group of 4 species; *E. barrelieri* lacks crateriform glands along leaf margins, on glumes & lemmas; *E. procumbens* with a compact panicle and acute lemmas; *E. cilianensis* has a subrotund caryopsis; *E. annulata* with glandular hairs on vegetative parts and a squarish caryopsis (Fl. Zambes. 10/2: 138–139, 1999).

E. barteri C. E. Hubb.; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 234, 2010; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire, 250, 2011; Phytokeys 121: 98–99, 95 (map), 2019. – Icon.: van der Zon, Gramin. Cameroun 2: 136, 1992; Poilecot, Boissiera 50: 133, 1995; Ibrahim & al., Grasses Mali: 71, 2018. syn.: *E. fluviatilis* A. Chev.

Perennial, caespitose, *subwoody* grass to 1 m tall; culms *branched*, left lying obliquely by the subsiding flood, producing fascicles of short flowering shoots from the nodes during the dry season; culms often *geniculate* at base, *rooting* at nodes, *sometimes stoloniferous*; leaf blades linear, 3–20 cm × 1–3 mm, glabrous; inflorescence a *lax* open panicle 15–25 cm long; spikelets linear, 0.8–1.6 cm long, solitary, long pedicelled.

Between stones and rocks, also on sandbanks in river beds; with *Chloris robusta*, *Digitaria debilis*, *Hemarthria altissima*, *Cynodon dactylon*, *Leptochloa caerulea*, *Vetiveria nigriflora*, *Panicum anabaptistum*; in crevices of rocks, gneiss boulders, abundant.

Near *E. atrovirens* which has, however, herbaceous erect culms.

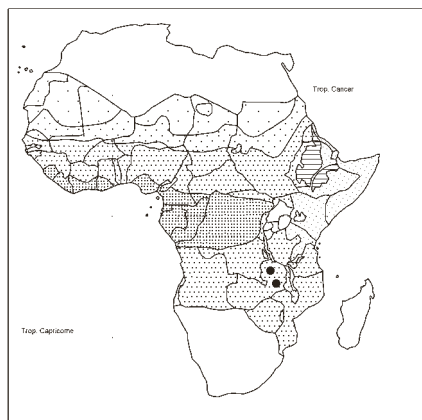
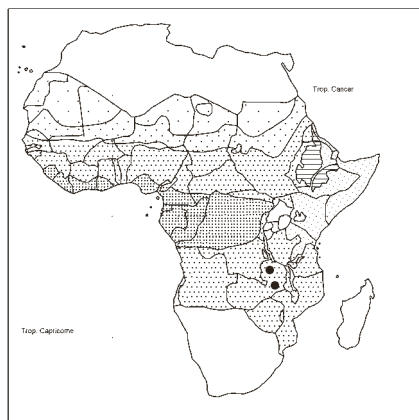
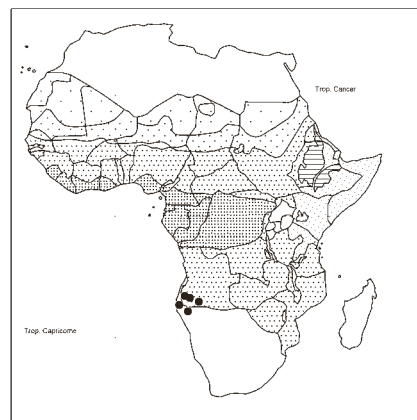
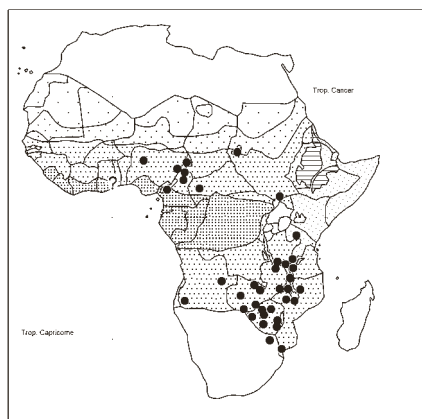
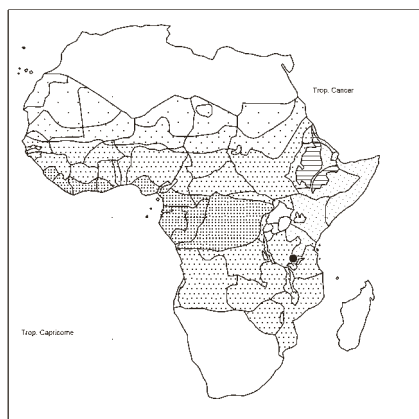
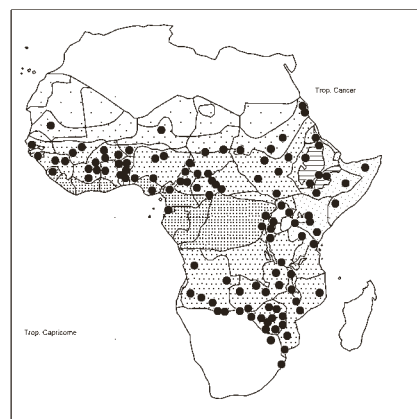
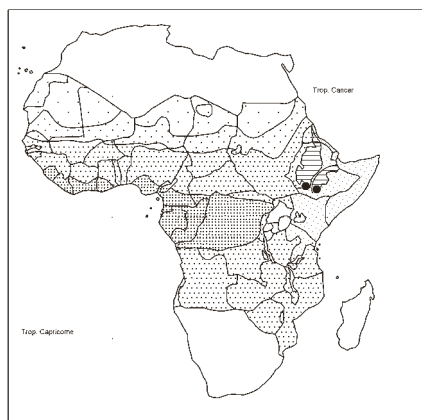
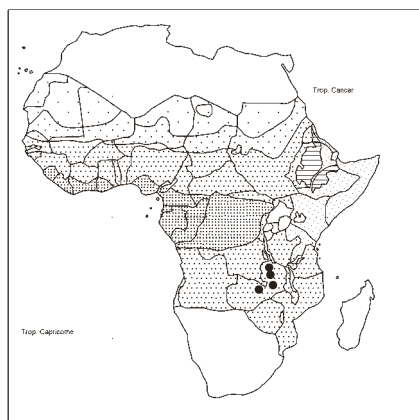
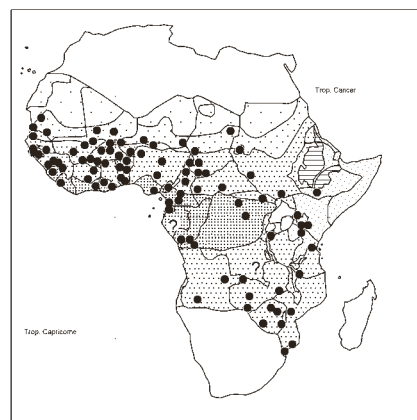
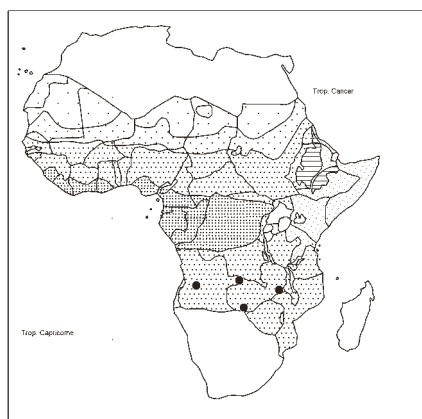
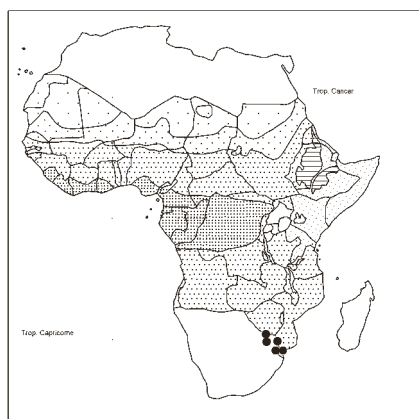
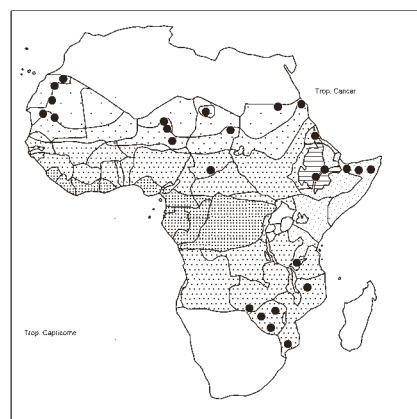
E. bicolor Nees; Gibbs Russell & al., Grasses south. Afr.: 146, 1990; Cope in Kew Bull. 53: 143, 1998 (in key). – Icon.: Chippindall in Meredith, Grasses & pastures S. Africa: figs. 108/12, 109, 1955; Fl. Zambes. 10/2: 56, 1999 (spikelet); Müller, Grasses Namibia, rev. ed.: 179, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 161, 2012; Poilecot, Eragrostis Zimbabwe: 84, 2007; Fish (2010): 24 (palea).

syn.: *E. burtt-davii* Stent

Densely caespitose cushion-like perennial grass (hydrophyte) with short horizontal rhizome; culms to 10–50–60 cm tall, usually erect, unbranched, nodes glabrous, with scattered gland-dots; basal leaf sheaths glabrous or obscurely pubescent, chartaceous, slightly compressed, keeled, gland-dotted along midnerve, persistent; blades 3–17 cm × c. 2 mm, blue-green, curled, with a fine wiry tip; panicle ovate-oblong, 2.5–18 cm long, loose, open, primary branches not whorled; branches & spikelets spreading; spikelets linear, 3–8 mm long, 3–12-flowered, *bi-coloured* (purple & yellow).

Sandveld; damp soils of shallow pans, often in sandy soils; disturbed ground; locally common; dry river beds; often in dense stands; 610–1470 m alt.

C & S Namibia, Botswana, S. Africa, Lesotho.

*Eragrostis anacrantha**Eragrostis anacranthoides**Eragrostis annulata**Eragrostis arenicola**Eragrostis aristiglumis**Eragrostis aspera**Eragrostis astrepta**Eragrostis astreptoclada**Eragrostis atrovirens**Eragrostis aurorae**Eragrostis barbinodis**Eragrostis barrelieri*

ERAGROSTIS

E. biflora Hack.; Fl. Eth. & Eritrea 7: 112, 1997; Cope in Kew Bull. 53: 157, 1998 (in key). – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: figs. 108/11, 118, 1955; Gibbs Russell & al., Grasses south. Afr.: 146, 1990; Poilecot, Grasses Zimbabwe: 168, 2007; Müller, Grasses Namibia: 181, 2007; van Oudtshoorn, Guide grasses south. Afr., rev. ed. 3: 179, 2012.

Annual tufted grass; culms soft, 10–90 cm tall, erect, unbranched; leaf blades linear, 9–30 cm × 2–8 mm, glabrous; panicle delicate, open, 16–30 cm long, lower branches whorled; spikelets evenly distributed on slender pedicels 1,5–5 mm long; spikelets elliptic, 1,5–2,5 mm long, 1–3-flowered.

Hot dry country: usually in shade of *Acacia* woodland and *Albizia* thickets; sandy soil at base of rocky outcrops or dense bush at pan margins; locally common; grassland on seasonally flooded soils or alluvial flats, water courses; moist disturbed areas especially under trees in nitrogen-rich soils; also a weed in moist shady areas (gardens); 0–1800 m alt.

Namibia, Botswana, S. Africa. – Disjunct area: also reported for Ethiopia.

Near *Sporobolus*, and 1-flowered variants could be mistaken for a *Sporobolus* species (with single-flowered spikelets), or even a *Panicum* species.

E. blepharostachya K. Schum. – Icon.: Poilecot, Boissiera 50: 119, 1995.

Coarse tufted perennial grass 0,45–1 m tall; culms erect, generally simple, glabrous, straw-yellow; leaf blades linear, 10–30 cm × 3–9 mm, becoming rose-violaceous when dry, rather rigid, glabrous or pilose, margins glandular; panicle open, stiff, branches ascending, spreading, 10–15 cm long, glandular as the pedicels; spikelets 4–7 × 4–6,5 mm, straw-yellow or violaceous; lemma, keel and nerves glandular.

Savannas on sandy, degraded, ± humid soils; roadsides with *Sporobolus pyramidalis*, *Eragrostis tremula*, *E. turgida*, *Digitaria delicatula*, *Brachiaria villosa*; disturbed, often damp soils.

E. botryodes Clayton; Cope in Kew Bull. 53: 150, 1998; Fl. Zambes. 10/2: 111–112, 1999; Lidia 5/5: 130–131, 2001; Burrows & Willis, Pl. Nyika Plateau, Malawi: 345, 2005; Agnew, Upl. Kenya wild flow., ed. 3: 419, 2013. – Icon.: Troupin, Fl. Rwanda 4: 253, 1988 (lemma, palea); Fl. Eth. & Eritrea 7: 128, 1995; Poilecot, Eragrostis Zimbabwe: 134, 2007; Fish (2010): 24 (palea). syn.: *E. atrovirens* var. *congesta* Robyns & Tournay

Perennial tufted grass; culms 20–90 cm tall; leaf blades linear, 10–30 cm × 2–4 mm; panicle ovate or oblong, 4–20 cm long; spikelets densely clustered about the distal ends of primary panicle branches, the proximal ends bare of spikelets, primary branches not whorled; spikelets very dark green, short, fat, 6–20-flowered, 0,3–1,2 cm long.

Moist soils among rocks, river banks; swampy grassland; dambos; abandoned road in papyrus swamp grassland, swampy *Miscanthus* community; old lava; clayey dry ground; road sides; savanna grassland; sometimes frequent; 850–2990 m alt.

Intergrades with *E. friesii*, *E. atrovirens*, *E. paniciformis* (this species has more obviously ciliate than pubescent palea keels); *E. botryodes* has dark spikelets clustered about the distal ends of the primary panicle branches.

E. brainii (Stent) Launert, non *E. braunii* Schweinf.; Cope in Kew Bull. 53: 159, 1998 (in key); Fl. Zambes. 10/2: 141, 1999. – Icon.: Launert in Senckenberg Biol. 47: 307, 1966 (details); Poilecot, Eragrostis Zimbabwe: 196, 2007.

ERAGROSTIS BRAINII

bas.: *Pogonarthria brainii* Stent

Caespitose perennial grass; culms to 1,3 m tall, erect, unbranched, nodes glabrous, pilose on internodes; basal leaf sheaths pilose or glabrescent, chartaceous, terete, persistent or rarely decaying into fibres; blades linear, 10–25 cm × 2–3 mm; panicle 13–28 cm long, broadly linear with ascending or appressed strictly racemose branches; spikelets secund along the whole length of branches on pedicels 0,3–0,4 mm long, primary branches not whorled, axils glabrous; spikelets ovate, 2,5–3,5 mm long, 3–4-flowered, breaking up from base upwards.

Kalahari Sand woodland; wooded grassland; miombo on sandy soils; 375–1300 m alt.

Closely resembling the genus *Pogonarthria* but racemes persistent with spikelets that break up at maturity (in *Pogonarthria* the racemes themselves are deciduous).

E. braunii Schweinf., non *E. brainii* (Stent) Launert nec *E. brownii* (Kunth) Nees; Lye & al. in Lidia 4: 165, 2000. – Icon.: Cope, Fl. Arab. Penins. 5/1: 140, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

Perennial tough tussocky grass; culms 20–90 cm long, wiry, ascending, branching, with a yellow glandular patch just below the panicle; leaf blades glaucous, filiform, 5–13 cm × 2–3 mm, pilose above, underside, margins and sheath pitted with small glands; panicle narrow, cylindrical, spiciform, 4–14 × 0,5–1 cm, dark grey-green; spikelets lanceolate, 4–7,5 mm long, 6–12-flowered.

Thin overgrazed or eroded soils; poor sandy soils; open savanna, grassland; stony hillsides; among rocks; 1600–2700 m alt.

Saudi Arabia, Yemen.

Often confused with *E. minor* (syn.: *E. pooides* P. Beauv.) and *E. cilianensis*.

E. caesia Stapf; Gibbs Russell & al., Grasses south. Afr.: 147, 1990; Cope in Kew Bull. 53: 150, 1998 (in key). – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: fig. 107, 1955; Poilecot, Eragrostis Zimbabwe: 142, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 262, 2012 (in flor.).

syn.: *E. dieterlenii* Hack.

Perennial densely tufted grass; culms 45–60 cm tall, erect, unbranched, nodes glabrous; basal leaf sheaths glabrous, compressed, keeled, persistent; blades linear, 11–20 cm × 1,5–3 mm, flexuous, eglandular; panicle narrowly oblong, 8–15 cm long, branches appressed to the main axis, the spikelets evenly distributed on pedicels 0,5–2 mm long, primary branches not whorled, axils glabrous; spikelets narrowly oblong, 4–7 mm long, 2–7-flowered; lemmas with conspicuous dark oil-glands along lateral nerves.

Short (open) grassland; moist areas on shallow soil; cave sandstone; seepage areas; c. 2200 m alt. in Zimbabwe.

S. Africa, Lesotho, Swaziland.

E. caespitosa Chiov.; Cope in Kew Bull. 53: 141, 1998 (in key); Lye & al. in Lidia 4: 165–166, 2000; Kew Bull. 62: 514, 2007 (in key). – Icon.: Repert. Spec. Nov. Regni Veg. Beih. 40, 1, Liefer. 4: pl. 59, 1936 (as *E. fasciculata*); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. fasciculata* Peter, incl. var. *stenophylla* Peter; *E. basilepis* Pilg.

Tufted perennial grass; base invested with hard yellow glabrous to silky tomentose scales; culms 15–60 cm tall, wiry, erect or ascending; leaf blades flat, 3–12 cm × 2–4 mm, sheaths glabrous to pilose; panicle narrowly oblong, 3–13 cm long, fairly dense; spikelets 4–15-flowered, 2,5–5,5 mm long.

ERAGROSTIS CAESPITOSA

Dry sandy soils behind coastal dunes; dry overgrazed soils or weedy places; under bush, red soil; 0–1600 m alt.

Similar to *E. glischra* but with slender, unbranched eglandular culms and slightly shorter lemmas (1,3–1,7 mm long, not 1,8–2 mm), and hard yellow scales at plant base.

E. camerunensis Clayton; Chapman & Chapman, Forests of Taraba & Adamawa States, Nigeria: c53, 2001; Onana & Cheek, Red Data Book flow. pl. Cameroon: 377–378, 557 (map), 2011; Onana, Fl. Cameroun 40: 242, 2013. – Icon.: Clayton in Kew Bull. 20: 267, 1966.

Perennial densely tufted grass; culms erect, simple, wiry, 30–60 cm tall; leaves mostly basal; blades inrolled, 3–7 cm × 1–2 mm, rigid; panicle linear, 3–10 cm long with few branches appressed to main axis; spikelets dark grey, along the central axis, dense, concealing axis, 5–7 mm long, shortly stalked.

Grassland; fallow weed; 1500–2100 m alt.

Very near *E. atrovirens*, but culms short, wiry, leaves basal, panicle dense.

“Vulnerable” species: > 30% of its population has been lost in 3 generations... Its range corresponds with the most densely populated & cultivated part of the Cameroon Highlands (Onana & Cheek, l.c.)

E. canescens C. E. Hubb.; Brenan & al. in Mem. New York Bot. Gard. 9: 105–106, 1954; Burrows & Willis, Pl. Nyika Plateau, Malawi: 345, 2005. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 200, 1974; Fl. Zambes. 10/2: 65, 1999.

syn.: *E. pseudohispida* Napper; *E. stolzii* Gilli

Perennial densely tufted grass; culms erect, 15–90 cm tall; leaf blades filiform, 2–30 cm × 0,3–0,6 mm Ø; panicle lanceolate, 6–30 cm long, open, spikelets evenly distributed, branches & branchlets stiff and straight, pedicels flexuous 5–10 mm long, primary branches not whorled and terminating in a slender bristle; spikelets ovate, 2–9 mm long, 2–20-flowered; lemmas leaden grey, pilose.

Short grassland on stony hill slopes; common on grasslands of plateau rim, on the slopes only; 600–3000 m alt.

E. caniflora Rendle; Cope in Kew Bull. 53: 145, 1998 (in key); Burrows & Willis, Pl. Nyika Plateau, Malawi: 345, 2005; Kew Bull. 62: 514, 2007 (in key). – Icon.: Fl. Zambes. 10/2: 57, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 96, 2007.

Perennial densely tufted grass; culms erect, 15–45 cm tall, wiry, erect or ascending; basal leaf sheaths glabrous, persistent (or decaying into fibres); blades filiform or short and flat, 2–16 cm × 1–4,5 mm, loosely pilose; panicle broadly ovate, open, 3–8 cm long, spikelets evenly distributed on filiform pedicels 2,5–9 mm long, branches not whorled; spikelets ovate-oblong, 2–5 mm long, not compressed, 4–11-flowered, dark brownish red, mature florets falling from spikelet apex downwards; palea pilose on back and flanks, with stiff hairs, keel glabrous.

Grassland, dambo grasslands; seasonally flooded stream banks and lake margins; 1610–2430 m alt.

E. capensis (Thunb.) Trin.; Renier, Fl. Kwango 1: 56, 1948 (as *E. brizoides*); Cope in Kew Bull. 53: 151, 1998 (in key); Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013. – Icon.: De Wildeman in Bull. Jard. Bot. Etat Bruxelles 6: pl. I (as *E. elongatocompressa*), pl. V (as *E. manikensis*), 1919; Bosser, Gramin. patur. cult. Madag.: 148, 1969; Fl. Zambes. 10/2: 58, 1999 (spikelet); Burrows & Willis, Pl. Nyika Plateau, Malawi: 344, 2005; Poilecot,

ERAGROSTIS CAPENSIS

Eragrostis Zimbabwe: 146, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 128, 2012.

bas.: *Briza capensis* Thunb.

syn.: *Poa brizoides* L. f.; *Megastachya brizoides* (L. f.) P. Beauv.; *Cynodon brizoides* (L. f.) Raspail; *Eragrostis brizoides* (L. f.) Nees 1832, nom. illeg., non *E. brizoides* Costa 1877 (= *E. minor*), nom. illeg., non Schult. 1824; *E. trachyphylla* Pilg.; *E. elongatocompressa* De Wild.; *E. manikensis* De Wild.

Perennial tufted grass from a short underground rhizome; basal sheaths ± persistent, sometimes fibrous, tomentose; culms 0,1–1,2 m tall, erect, sometimes geniculate; leaves mostly basal; blades filiform, 7–35 cm × 2–5 mm, firm, glaucous; panicle narrowly ovate & spreading or linear & contracted (not spiciform), sparsely branched, 4–11 cm long; spikelets shortly pedicelled (1–2 mm) on primary branches, heart-shaped, plump, 4–15 mm long, 3–7 mm wide, greenish flushed with purple.

Drainage lines on sandy to clayey soils; seasonally moist places in deciduous bushland and wooded grassland; widely common in savanna; seasonally moist rocky and disturbed places; coastal areas; 0–2290 m alt.

E & S S. Africa, Lesotho, Swaziland; Madagascar.

E. capitulifera Chiov. – Icon.: Fl. Eth. & Eritrea 7: 123, 1995.

syn.: *E. cephalotes* Chiov., nom. inval.

Perennial tufted grass with tough clusters of coriaceous basal leaf sheaths, new shoots arising around the periphery; culms 5–40 cm tall, erect; leaf blades flat, 4–16 cm × 2–4 mm, softly pilose; panicle a solitary globose-ovoid head of spikelets 1–2 cm long, shortly exserted from the uppermost sheath, occasionally with additional heads terminating axillary branches, axils bearded, pedicels glabrous; spikelets oblong, 4–6 mm long, 4–8-flowered. Lava outcrop; *Acacia-Commiphora* scrubland; short grassland on sandy or loamy soils, often in light shade; 1200–1900 m alt.

E. castellaneana Buscal. & Muschl.; Cope in Kew Bull. 53: 140, 1998 (in key); Burrows & Willis, Pl. Nyika Plateau, Malawi: 345, 2005. – Icon.: Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 62, 2007.

syn.: *E. weberae* Peter; *E. caespitosa* sensu Simon in Kirkia 8: 60, 1971, non Chiov.

Perennial tufted robust grass, base without hard bladeless sheaths; culms 0,6–1,2 m tall, erect; leaf sheaths densely pilose; blades linear, 7,5–45 × 0,2–1 cm; panicle broadly linear, 8–50 cm long, copiously branched or loose, spikelets evenly distributed, mostly on short slender pedicels from secondary branches, primary branches not whorled; spikelets ± ovate, 2–3 mm long, purplish, shedding their florets from below upwards.

Poor sandy soils in *Brachystegia* wooded grassland; dambo and riverine grassland; in long grass beside pans; alluvial soils; disturbed ground at roadsides; old cultivated lands; juniper forest; 910–2300 m alt.

E. cenolepis Clayton; Gill & Mensah in J. Econ. Taxon. Bot., Add. Ser. 19: 45, 2001. – Icon.: Clayton in Kew Bull. 20: 268, 1966.

Perennial tufted grass; culms erect, 0,45–1 m tall, simple, glabrous; leaf blades linear, 10–30 cm × 1–3 mm, glabrous, rigid; panicle oblong, 12–20 × 3–7 cm, very loose, slender, trembling; branches ascending, capillary, with or without long white hairs from axils, pedicels filiform, flexuous, 0,3–1,5 cm long; spikelets ovate, 3–6 × 2–4 mm, flattened, 5–10-flowered, glabrous.

ERAGROSTIS CENOLEPIS

Moist soils; moist grassland at edge of fringing forest; stream bed; among grassy thick tussocks (with a “trunk”) with *Lipocarpa chinensis*, *Fuirena stricta*, *Drosera pilosa* in swampy glade in forest gallery near a source; c. 1650 m alt.

Very similar to *E. plurigluma* which has, however, obtuse (not acute) tips of lemmas (cf. Clayton in Kew Bull. 20: 269, 1966).

E. chalarothyrsos C. E. Hubb.; van der Zon, Gramin. Cameroun 2: 134, 1992; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006. – Icon.: Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

Perennial tufted grass or arising from a short oblique rhizome; culms stout, 0.6–1.2 m tall; leaf blades filiform, 10–40 cm × 2–4 mm; panicle ovate-elliptic, loose, 6–20 cm long, with branches to 7 cm long; spikelets ovate-oblong, 4–12 × 3–5 mm, 9–24-flowered, greyish green, the opposite rows of florets not overlapping (i.e. rhachilla exposed).

Swampy soils in grassland; vleis; seasonally wet grassland; common; 500–2500 m alt.

Merging with *E. inamoena* and *E. pauciformis*, but distinguished from the former by its broader ovate spikelets, and from the latter in its scaberulous palea-keels and exposed rhachilla.

E. chapelieri (Kunth) Nees, incl. var. *vexillaris* Peter; Renier, Fl. Kwango 1: 57, 1948; Cope in Kew Bull. 53: 157, 1998 (in key); Klaassen & Craven, Checklist grasses Namibia: 38, 2003; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 234, 2010; Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015. – Icon.: Andrews, Flow. pl. Sudan 3: 455, 1956; Bosser, Gramin. patur. cult. Madag.: 148, 1969; Fl. Zambes. 10/2: 58, 125, 1999; Poilecot, Eragrostis Zimbabwe: 160, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 260, 2012 (inflorescence).

bas.: *Poa chapelieri* Kunth

syn.: *Eragrostis dolichostachya* Peter

Perennial tufted grass; culms 0.3–1.2 m tall, usually erect, simple; leaf blades linear, 6–45 cm × 1–8 mm, tip filiform; panicle spike-like, cylindrical, often interrupted below, 4–22 × 1–3 cm, primary branches unwhorled, short, dense, appressed to main axis, overlapping; spikelets densely contracted about the primary branches, ± sessile; spikelets linear-oblong, 7–56-flowered, 0.6–3 cm long, 2–3 mm wide, laterally compressed, reddish brown; stamens 2.

Margins, clearings, pathsides in woodland or bushland on infertile sandy soils; locally common; occasionally on clay and alluvium, more rarely on granite outcrops; coastal sand; river banks, lake shores; rainwater pans in mopane woodland; disturbed ground at roadsides; 0–1800 m alt.

Namibia, S. Africa, Swaziland; Madagascar.

Similar to *E. patens*, which is an annual with 3 anthers.

Occasionally the inflorescence is interrupted throughout (= syn. *E. dolichostachya*).

E. cilianensis (All.) Janch., incl. numerous subsp., vars. and forms [but excl. fa. *nana* Maire & Weiller and subsp. *pooides* (Husn.) Maire, both = *E. minor*]; Sprague & C. E. Hubbard in Bull. Misc. Inform. Kew 1933: 17, 1933; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 247, 1994; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 281, 2010. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 233, 1974; van der Zon, Gramin. Cameroun 2: 121, 1992; Thulin, Fl. Somalia 4: 182, 1995; Poilecot, Boissiera 50: 137, 1995; idem, ibid. 56: 207, 1999; Fl. Zambes. 10/2: 58, 136, 1999; Boulos, Fl. Egypt 4: 260, 2005; Poilecot, Eragrostis Zimbabwe: 184, 2007; Cope, Fl. Arab. Penins. 5/1: 143, 2007 (spikelet); van Oudtshoorn, Guide

ERAGROSTIS CILIANENSIS

grasses south. Afr., ed. 3: 163, 2012; Clarke, Name those grasses: 224–225, 2015; Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis); Pickering & Awale, Introd. pl. Central Somaliland: 117, 2018; Fl. Mascareignes 203, Gramin.: 73, 2018; Ibrahim & al., Grasses Mali: 71, 2018; César & Chatelain, Fl. ill. Tchad: 196, 2019.

bas.: *Poa cilianensis* All.

syn.: *P. cachetica* Schumacher; *Briza eragrostis* L. 1753, non *Poa eragrostis* L. 1753; *Eragrostis megastachya* (Koeler) Link; *E. major* Host 1809, nom. superfl., incl. var. *conferta* Ten. and var. *subbiloba* (Chiov.) Chiov.; *E. multiflora* (Forssk.) Aschers. var. *insularis* Chiov., and var. *subbiloba* Chiov.; *E. articulata* De Wild. 1919, nom. illeg.; *E. pappi* Gand; *E. schweinfurthiana* Jedwabn.; *E. polysperma* Peter; *E. monodii* A. Camus; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard. Kew. – For *Eragrostis cilianensis* (All.) C. E. Hubb. versus (All.) Janch., see Phytotaxonomy 3: 136, 2003, and Taxon 35: 697, 1986.

Annual loosely tufted grass with slanting culms and usually knee-like bent nodes; often with an unpleasant smell when fresh; culms 5–90 cm tall, usually branched from lower nodes; leaf sheaths glabrous; blades flat, 6–20 × 2–8 mm, mostly glabrous, usually with a row of warty glands along margins; panicle ovate, 4–30 cm long, fairly dense, contracted, stiffly branched, pedicels stiff and branchlets usually with glands; spikelets (leadens) grey-green, 0.3–2 cm long, 2–4 mm wide, 5–60-flowered; caryopsis globose.

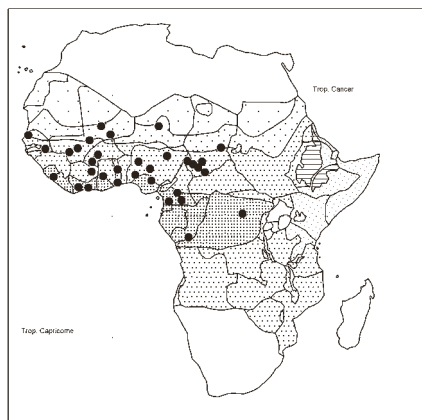
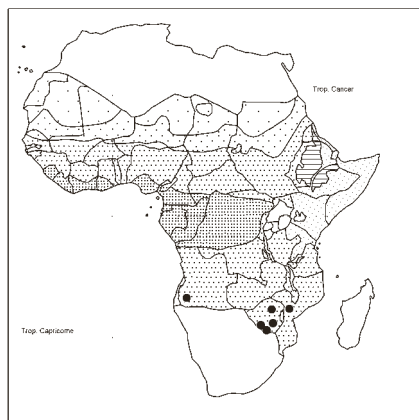
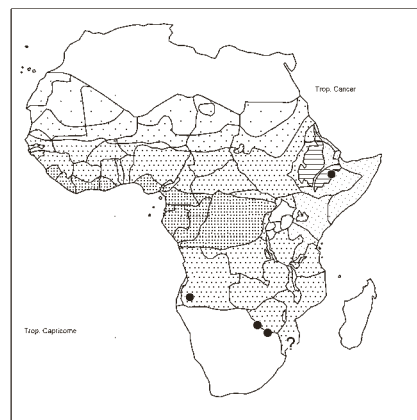
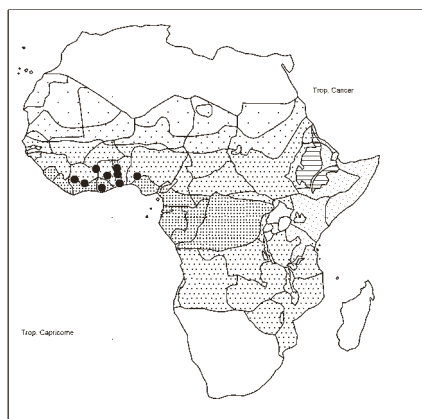
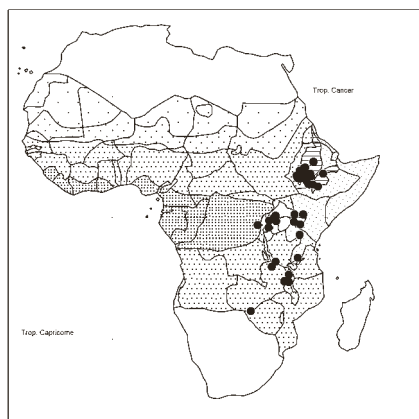
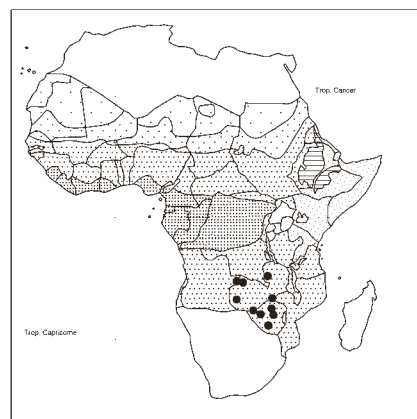
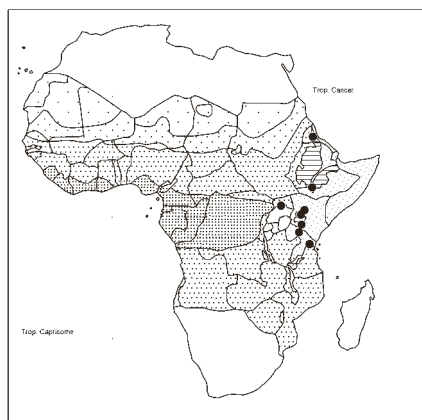
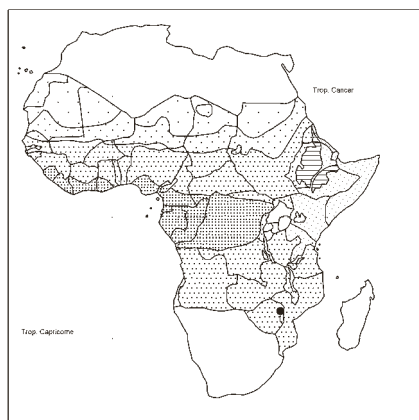
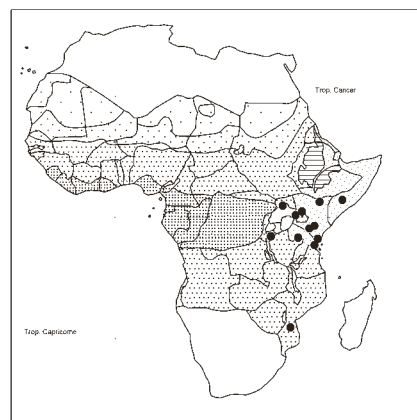
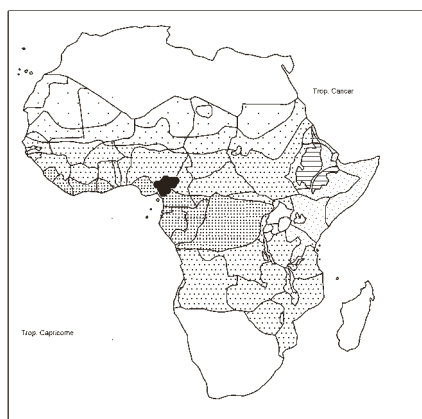
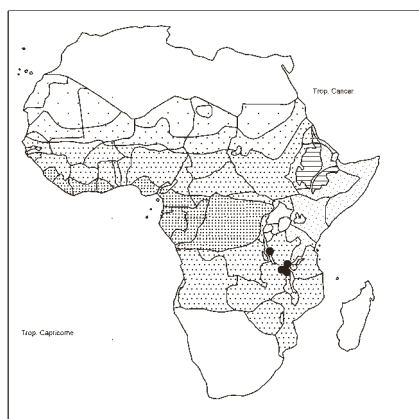
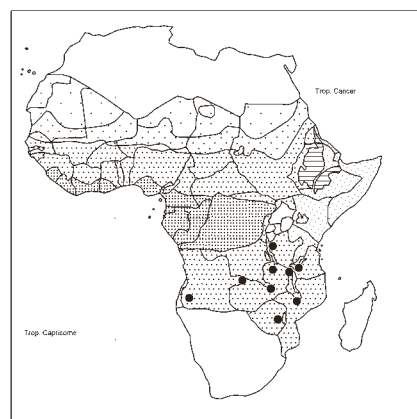
Lava plains; pathsides, farmland; weedy or overgrazed places; locally common; sandy soils; often in moist places in deciduous woodlands; pan margins on black alluvial turf and clay soils, sand and gravels of river banks; 0–2500 m alt.

Originally in the (sub)tropical Old World, now in all (sub)tropics (Veldkamp in Blumea 47: 171, 2002), i. e. tropical and warm temperate Old World. – Mediterranean region, tropical and S. Africa, Cape Verde Isl., Azores; Namibia, S. Africa, Botswana, Swaziland; Socotra, Madagascar, Comoros; Near East E-wards to Japan, SE Asia, New Guinea. Introduced in C Europe, Madeira; New Zealand (Gardner in Auckland Bot. Soc. J. 75: 125, 2020), Australia, America.

A widespread and extremely variable weed in which the mode of disarticulation of the spikelet is clearly a very unstable character... The distinction between *E. cilianensis* and *E. minor* is not always clear... but generally *E. cilianensis* has a broader spikelet with longer lemmas and almost spherical caryopsis (Cope, Fl. Arab. Penins. 5/1: 146–147, 2007).

E. ciliaris (L.) R. Br., incl. var. *brachystachya* Boiss., subsp. *brachystachya* (Boiss.) H. Scholz, var. *clarkei* Stapf ex Hook. f., var. *compta* (Link) Schrad., var. *latifolia* Hack., and var. *laxa* Kunth, but excl. var. *patens* Chapm. ex Beal (= *E. amabilis*); Renier, Fl. Kwango 1: 57, 1948; Gibbs Russell & al., Grasses south. Afr.: 148, 1990; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 248, 1994; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006; Kew Bull. 62: 399, 2007 (Raddi, Brazil); Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 281, 2010; Thiam & al. in Webbia 68: 179, 2013. – Icon.: Icon. Pl. Afric. (IFAN) 2: n° 42, 1953; Busson, Pl. aliment. Ouest Afric.: 467, 1965; Bosser, Gramin. patur. cult. Madag.: 142, 1969; Poilecot, Boissiera 50: 111, 1995; idem, ibid. 56: 200, 1999; van der Zon, Gramin. Cameroun 2: 115, 1997; Boulos, Fl. Egypt 4: 254, 2005; Peterson & Sánchez Vega in Ann. Missouri Bot. Gard. 94: 752, 2007 (caryopsis); Poilecot, Eragrostis Zimbabwe: 66, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 103, 2012; Velayos & al., Fl. Guinea Ecuat. 12: 191, 2015; Ibrahim & al., Grasses Mali: 72, 2018; César & Chatelain, Fl. ill. Tchad: 194–195, 2019.

bas.: *Poa ciliaris* L.

*Eragrostis barteri**Eragrostis bicolor**Eragrostis biflora**Eragrostis blepharostachya**Eragrostis botryodes**Eragrostis brainii**Eragrostis braunii**Eragrostis caesia**Eragrostis caespitosa**Eragrostis camerunensis**Eragrostis canescens**Eragrostis caniflora*

ERAGROSTIS CILIARIS

syn.: *Megastachya ciliaris* (L.) P. Beauv.; *Eragrostis pulchella* Parl.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual tufted grass; culms 1–60 cm tall, erect; leaf blades linear, 5–20 cm × 1–6 mm, bright green; panicle *spike-like*, contracted, or *lobed or interrupted*, woolly, 1–20 cm long; *spikelets densely crowded*, not overtopped by uppermost leaves, usually flushed with purple, ovate, 2–4.5 mm long, 6–12-flowered; *palea* very characteristic by its *very long cilia*; anthers 2.

Farmland; clearings; overgrazed places; cultivations; coastal sandy places, even pure sand (also fixing dunes); grassland on river banks, swamp margins; locally common; by seasonal pans in mopane woodland; invasive in fallows; open situations in *Acacia* bushland; *Acacia-Commiphora* shrubland, on red sand over limestone or gypsum; saline plains; on granite or sandstone with *Aristida*, *Crypsis*, *Eragrostis*, *Polypogon*, *Pulicaria*, sometimes with green filamentous algae, *Riccia*, *Leptestheria* (Crustacea); with *Sporobolus pyramidalis*, *Eleusine indica*, *Dactyloctenium aegyptium*, *Digitaria horizontalis*, *Chloris pilosa*, *Eragrostis tremula*; 0–1500 m alt.

Tropical and subtropical Old World; Morocco?, Algeria, Libya, Egypt; Cape Verde Isl. (Garcia de Orta, Sér. Bot. 16: 26, 2002; Adansonia, Sér. 3, 41: 161, 2019); N Botswana, S. Africa, Swaziland; Madagascar, Mascarene Isl.; through Arabia to India, Sri Lanka, Pakistan, Indo-China, Philippines. Introduced in C. Europe, Hawaii, Caribbean, N., C. & S. America.

E. cimicina Launert; Gibbs Russell & al., Grasses south. Afr.: 148, 1990. – Icon.: Poilecot, *Eragrostis* Zimbabwe: 144, 2007.

Perennial densely tufted robust grass; culms to 1.5 m tall, erect, unbranched, nodes glabrous, sometimes with a sticky glandular patch encircling culm beneath panicle; basal leaf sheaths glabrous, chartaceous, terete, persistent or tardily decaying into fibres; blades linear, 6–40 cm × 2–5 mm, pilose on both surfaces; panicle elliptic to ovate, open, axis flexuous, the spikelets evenly distributed on *flexuous pedicels* 3–8 mm long, primary branches flexuous, not whorled; spikelets ovate, 4–6 × 3–4 mm, 6–10-flowered; *palea keels wingless*.

Open woodlands; sandy soil on river banks; floodplains; open grassland on clay or moist sandy loam sands (Kalahari sands); 910–1160 alt.

NE Namibia, Caprivi Strip, Botswana, S. Africa.

Near *E. thollonii* but *palea* keel wingless, spikelet parts smaller. – Near *C. capensis* which has contracted panicle and dull glandular spikelets.

(**E. conertii** Lobin in Willdenowia 16: 143, 1986).

Endemic to Cape Verde Islands. A rare species growing in steep humid cliffs. Probably most closely related to *E. braunii* Schweinf. Fide Brochmann & Rustan in Garcia de Orta, Sér. Bot. 16: 26–27, 2002.

E. congesta Oliv., incl. var. *cephalantha* Peter, var. *elongata* Peter and var. *penicillata* Peter; Renier, Fl. Kwango 1: 56, 1948; Gibbs Russell & al., Grasses south. Afr.: 148–149, 1990; Lye & al. in Lidia 4: 166, 2000; Burrows & Willis, Pl. Nyika Plateau, Malawi: 345, 2005; Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013. – Icon.: Chippindall in Meredith, Grasses & past. S. Afr.: 138, 1955; Fl. Zambes. 10/2: 58, 1999 (spikelet); Poilecot, *Eragrostis* Zimbabwe: 152, 2007.

syn.: *E. eichingeri* Pilg.

Perennial weak tufted grass; culms 0.3–1.1 m tall, erect; leaf blades flat, 10–20 cm × 3–4 mm; panicle linear, 6–30 cm long, comprising

ERAGROSTIS CONGESTA

2–8 globular/ovoid clusters of spikelets each 0.5–2 cm Ø, *clusters distant along central axis* but often the uppermost confluent and the lowermost sometimes branched, axis glabrous to hirsute, pedicels bearded; spikelets elliptic, 0.3–1 cm long, 4–22-flowered, grey-green flushed with purple.

Deciduous bushland; (wooded) grassland; moist soils, often in weedy places; dry bushland; forest; gardens, golf course, roadsides, lawns; river banks; 90–2000 m alt.

SE S. Africa.

Spikelet length, shape of lemma-tip vary considerably even on the same plant.

E. crassinervis Hack.; Gibbs Russell & al., Grasses south. Afr.: 149, 1990. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: fig. 151, 1955; Poilecot, *Eragrostis* Zimbabwe: 200, 2007.

syn.: *E. poecilantha* Stapf; *E. bovinei* Chiov.

Perennial densely tufted grass occasionally hydrophyte, sometimes with short oblique rhizome; culms to 60 cm tall, erect or ascending, mostly unbranched, nodes glabrous; basal leaf sheaths glabrous, chartaceous, persistent, compressed, keeled, *nerves gland-dotted*; blades linear, 3–10 cm × 1.5–2 mm, villous above, *gland-dotted on midnerve beneath*; panicle oblong-elliptic, 4–12 cm long, axis, branches and pedicels gland-dotted, *spikelets condensed* about branches and branchlets, pedicels < 1 mm long, primary branches unwhorled; spikelets oblong, 0.5–1.5 cm long, 12–20-flowered, laterally compressed, *gland-dotted*; lateral nerves of lemmas raised, excurrent as short mucros.

Moist sand in bed of seasonal rivers, beside waterholes and springs; moist clayey soil of pans; brackish soils; 600–1400 m alt.

NW Namibia, S. Africa.

E. curvula (Schrad.) Nees, incl. var. *atrata* (Schweinf.) Cufod., var. *conferta* Stapf, var. *decorans* Rendle (non *decolorans* Rendle), and var. *valida* Stapf; Fl. Zambes. 10/2: 144–145, 1999; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 281, 2010; Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013. – Icon.: Bothalia 12: 215, 1977; Gibbs Russell & al., Grasses south. Afr.: 139, 1990; Cope, Fl. Arab. Penins. 5/1: 143, 2007 (spikelet); Poilecot, *Eragrostis* Zimbabwe: 172, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 155, 2012; Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis); Clarke, Name those grasses: 226–227, 2015; Royaud in Bull. Soc. Linn. Bordeaux 152, N. S. 45: 164, 2017; Weber, Invasive plant species of the world, ed. 2: 172, 2017 (with map).

bas.: *Poa curvula* Schrad.

syn.: *Eragrostis robusta* Stent; *E. huillensis* Rendle; *E. procerior* Rendle; *E. capillifolia* Nees; *E. chloromelas* Steud.; *E. jeffreysii* Hack.; *E. poa* Stapf; *E. lehmanniana* var. *ampla* Stapf; *E. valida* Stent 1923, nom. illeg.; *E. subulata* Nees; *E. thunbergiana* Steud., incl. var. *atrata* Schweinf.; *E. pubiculmis* Jedwabn.; *E. filiformis* (Thunb.) Nees; *Poa filiformis* Thunb.; *P. capensis* Steud.

Perennial densely tufted grass; basal leaf sheaths *strongly striate* with nerves forming prominent ridges, hard, *silky hairy*; culms 0.3–1.2 m tall, erect; leaf blades many, lax, drooping, filiform, 12–40 cm × 3–4 mm; inflorescence a darkish grey-green loose open or contracted panicle 6–30 cm long, lowest branches often whorled, axils hairy; spikelets 4–10 mm long, 4–13-flowered.

Fynbos, savanna, grassland on sandy or acid to loamy soils; clearings; overgrazed, trampled, disturbed places; among rocks; wooded grassland on Kalahari Sand; used for meadow forage, now a rare dryland escape (Kenya); 0–3500 m alt.

ERAGROSTIS CURVULA

Exceedingly variable. It is distinguished from other similar perennial species by its hard, yellowish, prominently ribbed, silky-hairy basal sheaths.

Native to southern Africa; N Namibia, Botswana, S. Africa, Swaziland, Lesotho. Introduced: Morocco, Madeira, Madagascar; C & S Europe (Scholz & Ristow in Verh. Bot. Ver. Berlin Brandenburg 138: 24, 2006; Royaud, l.c., in France, Gironde, Landes); Arabia E-wards to Pakistan, Thailand, Philippines, New Guinea, Australia, New Zealand (Gardner in Auckland Bot. Soc. J. 75: 125, 2020), Pacific Islands, N., C. & S. America, Antilles; used as a fodder and ground cover grass.

A polymorphic species... most *E. curvula* cultivars and closely related species, such as *E. lehmanniana* reproduce by apomixis. Although a few sexual diploids ($2n = 2 \times = 20$) were identified, they are very infrequent. Tetraploid ($2n = 4 \times = 40$) collections are all apomictic (Cardone & al. in Euphytica 151: 264, 2006).

E. cylindriflora Hochst., incl. var. *gymnorrhachis* Schweinf.; Lebrun & Gaston in Adansonia, Sér. 2, 15: 388, 1976; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015; César & Chatelain, Fl. ill. Tchad: 198–199, 2019; Mbuni & al. in PhytoKeys 120: 25, 2019. – Icon.: Fl. Trop. E. Afr., Gramin.2: 241, 1974; Poilecot, Boissiera 56: 209, 1999; idem, Eragrostis Zimbabwe: 180, 2007; Cope, Fl. Arab. Penins. 5/1: 143, 2007 (spikelet); Müller, Grasses Namibia, rev. ed.: 185 and 213 (*E. trichophora*), 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 265, 2012 (inflorescence); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. trichophora* Coss. & Durieu; *E. agrostioidea* Rendle, incl. var. *speciosa* Rendle and var. *viscosa* Rendle [non *E. agrostoides* (Benth.) R. L. Barrett & P. M. Peterson in Austral. Syst. Bot. 33: 468, 2020]; *E. quadriflora* Rendle; *E. annulata* Chiov.; *E. atherstonei* Stapf; *E. rigidior* Pilg.; *E. horizontalis* Peter; *E. adenocoleos* Pilg.; *E. seineri* Jedwabn.; *E. multipilosa* Hochst. ex Borzi; *E. geniculata* (Durieu) Durieu 1867, nom. illeg.; *Poa geniculata* Durieu; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass or tussocky perennial; culms 0,2–1 m long, slender, erect or geniculate-ascending, with conspicuous brown nodes, with a *ring of glands just below nodes*; leaves mostly cauline; *sheaths glabrous*, keeled, usually dotted with *oblong crateriform glands*; blades soft, linear, 3–25 cm $\times$ 2–5 mm, usually hairless; panicle open, narrowly ovate, 8–40 cm long, branches in successive whorls, axis glabrous or with few hairs, spikelets uniformly distributed on pedicels 0,5–2,5 mm long; spikelets $\pm$ linear, 3–8 mm long, 4–14-flowered, grey-green.

Trodden, weedy and overgrazed places, pioneer grass; arable lands; dry sandy river beds; wooded grassland; river bank alluvium; lake-shore sand; granite sandveld, Kalahari Sands; weed of irrigated crops; locally common; clayey loam or black turf in river beds; floodplains; dry rocky places; 90–1650 m alt.

Cape Verde Isl.; Namibia, Caprivi Strip, Botswana, S. Africa, Lesotho, Swaziland. Introduced in Algeria, Tunisia, Madagascar, Yemen, Australia.

A member of a complex group that can be segregated into $\pm$ distinct species throughout its range of distribution in Africa, but in the Flora Zambesiaca area the distinctions break down: *E. rigidior* a stout tussocky perennial; *E. trichophora* a slender wiry perennial (both treated above as synonyms under *E. cylindriflora*); *E. cylindriflora* s. str. annual; *E. porosa* (see below under that species).

E. cylindriflora may be confused with *E. pilosa*, an annual, that has, i. a., no ring of glands beneath culm nodes.

ERAGROSTIS

E. dentifera Launert – Icon.: Fl. Zambes. 10/2: 104, 1999.

Perennial densely tufted grass; culms to 60 cm tall, erect or ascending, branched or not, nodes glabrous; basal leaf sheaths glabrous, coriaceous, often bladeless, terete, persistent; blades filiform, wiry, 5–17 cm $\times$ 0,5–4 mm; panicle ovate-elliptic, open, $\pm$ lax, 10–20 cm long, spikelets condensed about primary branches on pedicels 2–6 mm long, primary branches not whorled; spikelets ovate-oblong, 0,4–1,2 cm $\times$ 2–3 mm, laterally compressed, 10–22-flowered; *apex of lemmas deeply tridentate*.

Dambos, lake margins, often in seasonally waterlogged grassland; c. 1700 m alt.

Closely resembling *E. hierniana* (without excurrent nerves of lemma). Near *E. mariae* (with lemmas shallowly tridenticulate at apex).

E. desolata Launert; Fl. Zambes. 10/2: 144, 1999. – Icon.: Poilecot, Eragrostis Zimbabwe: 202, 2007.

syn.: *E. sp.* (Simon 839) of Simon in Kirkia 8: 28, 1971.

Perennial densely tufted grass; culms to 70 cm tall, erect, unbranched, glabrous at nodes, with *sunken small glands on internodes* and an *annular glandular patch below nodes*; basal leaf sheaths chartaceous, densely shortly pilose, eglandular, persistent; blades linear, 5–14 cm $\times$ 0,5–4,5 mm, glabrous to densely pilose; panicle ovate-oblong to elliptic, 10–30 cm long, open, with stiff branches, spikelets evenly distributed on pedicels 2–5 mm long, primary branches not whorled; branches, branchlets and pedicels with *punctate or crateriform glands*, branchlets and pedicels also with *annular glands*; spikelets $\pm$ elliptic, 5–10 $\times$ 2,5–4 mm, 8–14-flowered.

Grassland on sandy soils; 1120–1680 m alt.

S. Africa.

Near *E. moggii* but that species has spikelets 1–1,5 mm wide. Closely related to *E. sclerantha*.

E. dinteri Stapf; Gibbs Russell & al., Grasses south. Afr.: 149, 1990; Fl. Zambes. 10/2: 96–97, 1999. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: pl. 4 facing p. 80, 1955; Müller, Grasses Namibia, rev. ed.: 187, 2007.

Annual tufted grass with an unpleasant smell; culms erect or ascending, 50–70 cm tall, internodes with *scattered crateriform glands* and a *ring of glands below nodes*; leaf sheaths with *scattered crateriform glands*; blades broadly linear, 2,5–15 cm $\times$ 2–8 mm, pubescent above with additional long hairs and *crateriform glands* along margins and nerves beneath; panicle narrow, 7–15 cm long, spikelets evenly distributed on stiff pedicels 1–2 mm long; primary branches stiffly ascending or spreading, not whorled, with *crateriform glands* on main axis, branches and pedicels; spikelets ovate, 0,8–1,7 cm $\times$ 3–6 mm, compressed, 12–30-flowered; lemmas acuminate, sometimes awned.

Short grassland; open woodland on Kalahari Sands; dunes; sandy soils over calcrete; rocky slopes; also in heavily grazed areas; 930–980 m alt.

N Namibia, N Botswana.

Near *E. rogersii* but that species has subacute lemmas, awnless but sometimes mucronate.

E. divaricata Cope – Icon.: Cope in Kew Bull. 53: 134, 1998; Fl. Zambes. 10/2: 60, 1999.

Annual grass; culms erect, to 30 cm tall, unbranched, nodes glabrous; leaf blades setaceous, 3–8 cm $\times$ 0,5 mm $\varnothing$, glabrous; panicle ovate, 3–8 cm long, *very loose* and open, branchlets and pedicels *widely divaricate*, spikelets evenly distributed on *filiform*

ERAGROSTIS DIVARICATA

pedicels 3–6 mm long, primary branches not whorled; branches, branchlets and pedicels *long-pilose* on a *conspicuous swelling in axils*; spikelets narrowly ovate, 1,3–1,8 mm long, 2–3-flowered. Laterite pans; on peaty soil between waterholes; c. 1400 m alt.

Very similar to *E. milnei*, a perennial. Also near *E. paradoxa*, however perennial with basal sheaths decaying into a cushion of persistent fibres.

E. echinochloidea Stapf; Gibbs Russell & al., Grasses south. Afr.: 150, 1990. – Icon.: Fl. Zambes. 10/2: 57, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 106, 2007; Müller, Grasses Namibia, rev. ed.: 189, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 182, 2012.

syn.: *E. auriculata* Hack.; *E. ×pseudobtusa* auct., non De Winter; *E. obtusa* sensu T. Durand & Schinz, Consp. Fl. Afric. 5: 886, 1895, p. p., non Munro ex Ficalho & Hiern

Caespitose perennial grass with short oblique rhizome; culms 20–85 cm tall, erect or ascending, usually unbranched, sometimes branched below, nodes glabrous, often with an *annular gland* below nodes; basal leaf sheaths glabrous or thinly pilose, chartaceous, terete, with scattered *glandular pits*, persistent; blades linear, 2,5–20 cm × 1–5 mm, with or without *glandular pits* in nerves below; panicle 4–19 cm long, ± lanceolate, spikelets densely clustered on very short pedicels on stubby side branches, primary branches not whorled, axils glabrous, rachis with an *annular gland* beneath each branch, and branches with *crateriform glands*; spikelets ovate, 3–4 × 2,5–3 mm, strongly laterally compressed, 6–14-flowered; lemma *gland-dotted on keel and lateral nerves*; palea keels *broadly winged in lower half*.

Hot dry country in short grassland, wooded grassland, sandveld; usually on Kalahari Sands and calcareous pans; disturbed ground at roadsides; infrequent to locally common; preferably on shallow lime soils; 850–1050 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa, Lesotho. – Naturalised in Arizona, USA.

E. egregia Clayton, non *E. guingensis* Rendle var. *egregia* Rendle (= *E. nindensis*); Lisowski, Fl. Rép. Guinée 1: 459, 2009. – Icon.: Clayton in Kew Bull. 20: 272, 1966; Poilecot, Boissiera 50: 125, 1995.

Perennial grass 0,6–1,5 m tall; culms erect, glabrous; leaf blades linear to 30 cm × 2–5 mm, pilose above, glabrous beneath; panicle spreading, 15–30 × 10–15 cm; primary branches ascending, rigid, spikelets subsessile or on lateral branches; spikelets linear, 0,9–1,5 cm long, yellowish or purplish.

Degraded soils; savannas; sandy roadsides, gravels; old fallows; shallow stony ground over rocks; associated with *Eragrostis tremula*, *Imperata cylindrica*, *Andropogon africanus*, *A. pseudapricus*, *A. fastigiatus*, etc.; 0–? m alt.

Resembling *E. perbella*.

E. elegantissima Chiov.; Lebrun & al. in Adansonia, Sér. 2: 11: 114, 1971; Lebrun in Boissiera 24: 96, 1975 (map); Fl. Eth. & Eritrea 7: 118, 1995; César & Chatelain, Fl. ill. Tchad: 197, 2019. – Icon.: Poilecot, Boissiera 56: 214, 1999.

Annual loosely tufted grass; *culms wiry, 10–30 cm long*; leaf blades linear, 5–7 cm × 1–3 mm, silky-pilose above; panicle open, elliptic, 4–19 cm long, branches rather stiff, capillary, inserted singly and well spaced along main axis, or occasionally linear and contracted; spikelets linear, 0,8–2,5 cm long, 10–45-flowered.

Gravelly and skeleton soils; banded vegetation; muddy or clayey-sandy soils, ± temporarily flooded; 2–700 m alt.

ERAGROSTIS ELEGANTISSIMA

A widespread but scarce and rarely collected grass. Resembling *E. tremula* but smaller and habit more delicate, and rachilla usually visible between the 2 ranks of florets. Probably overlooked.

E. exasperata Peter; Burrows & Willis, Pl. Nyika Plateau, Malawi: 345, 2005; PhytoKeys 155: 126, 2020. – Icon.: Feddes Repert. Spec. Nov. Regni Veg. 40/1 (4): pl. LXIV after p. 128, 1930; Troupin, Fl. Rwanda 4: 253, 1988; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. trichocordia* Gilli

Annual loosely tufted grass; culms 1,5–90 cm tall, erect or ascending, branched or unbranched, nodes glabrous; leaf blades linear, 5–20 cm × 2–4 mm, glabrous; panicle ovate, 7–25 cm long, open, richly branched, spikelets evenly distributed on long fine pedicels 5–25 mm long, primary branches not whorled; spikelets ± ovate, fat, 3–9 mm long, 6–32-flowered; lemmas c. 2 mm long, bulging on the back; *anthers* 3, c. 0,3 mm long.

Moist grassland; moist swampy ground beside streams; seasonally flooded places over rocks and ironstone outcrops; roadsides; dambo grassland often in standing water; 300–2000 m alt.

Sometimes mistaken for a perennial and then determined as *E. paniciformis* but that species is stouter with *longer* lemmas and *anthers* (0,5–0,7 mm).

E. exelliana Launert – Icon.: Launert in Bol. Soc. Brot., Ser. 2, 47: pl. 1 facing p. 350, 1973; Fl. Zambes. 10/2: 114, 1999; Burrows & Willis, Pl. Nyika Plateau, Malawi: 344, 2005.

Annual weak straggling, usually decumbent, grass forming loose mats; culms 20–35 cm long, usually branched, nodes glabrous, internodes often pilose; leaf sheaths usually pilose with tubercle-based hairs; blades linear, 0,5–15 cm × 1–4 mm, densely pilose; panicle elliptic, open, 1,5–10 cm long, spikelets *clustered about short stiff primary branches* (not whorled) on *stout pedicels* 0,3–3 mm long, axis and branches glabrous or pilose; spikelets broadly ovate, 2,5–5,5 × 2–3 mm, 4–11-flowered, laterally compressed; *anthers* 2.

Peaty grassland; forest clearings; forming mats over exposed rocks; around boulders in *Isoberlinia*, *Protea*, *Philippia* woodland; 1800–2600 m alt.

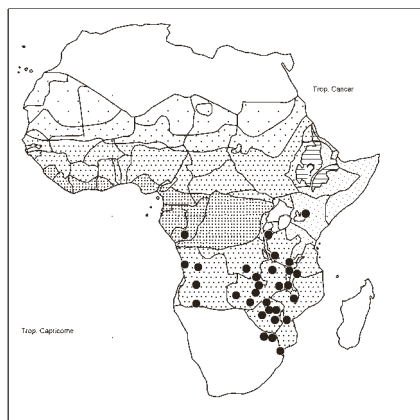
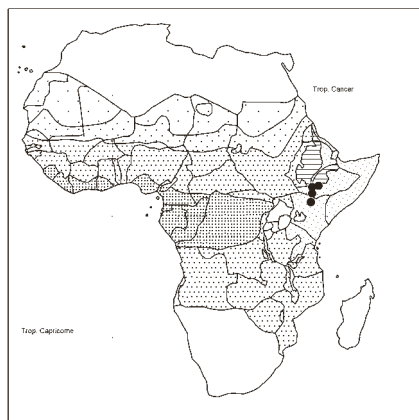
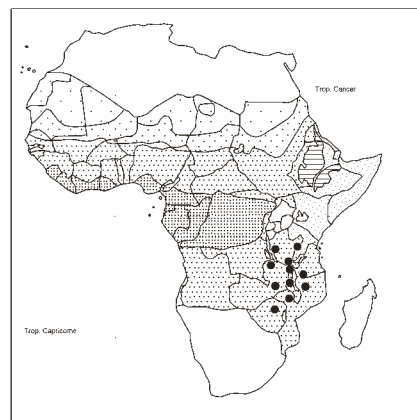
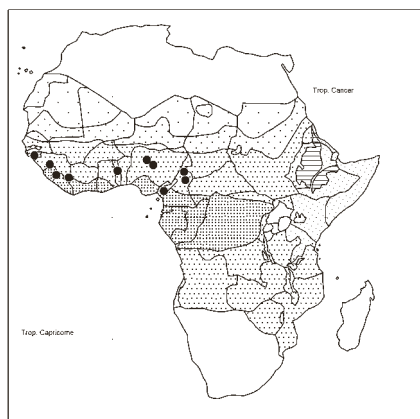
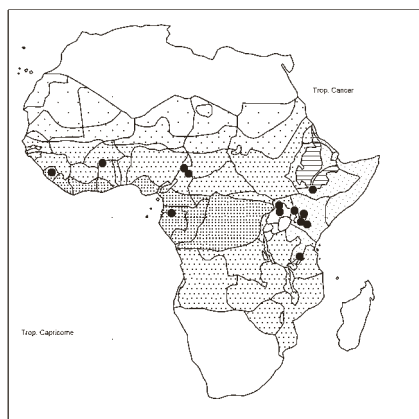
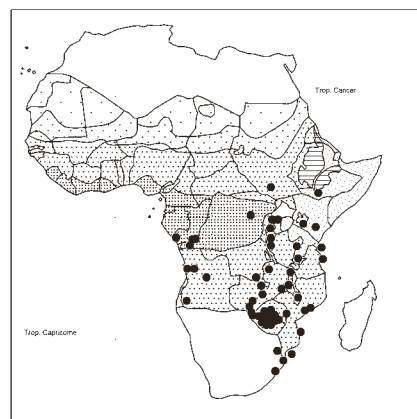
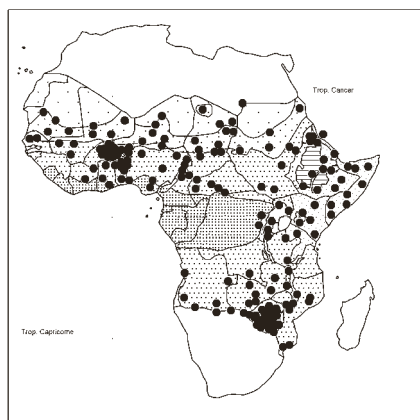
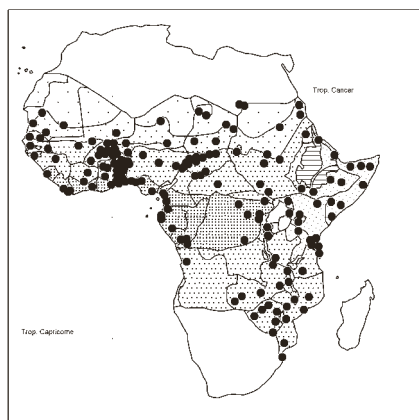
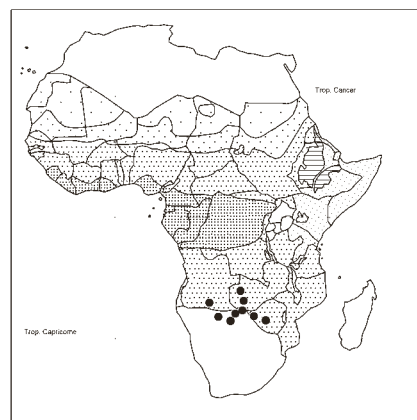
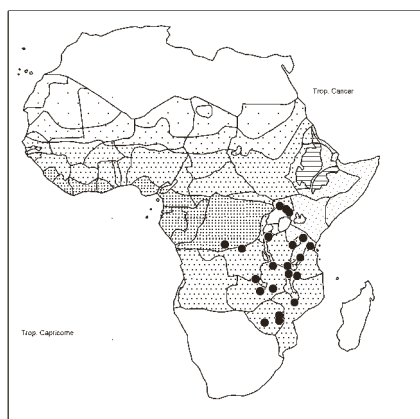
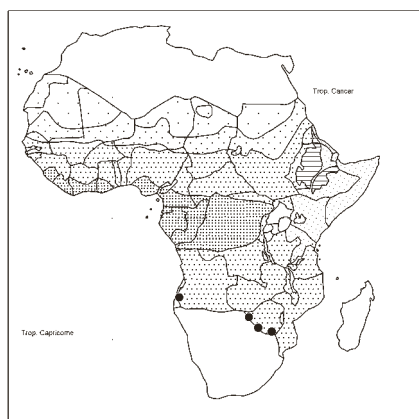
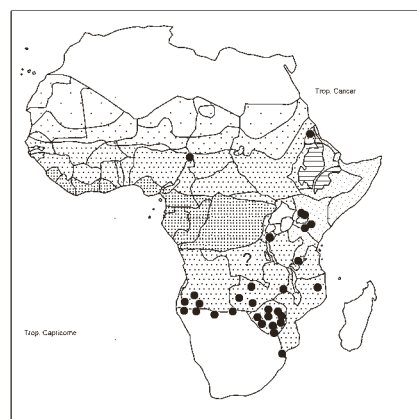
Very similar to *E. flavicans*, *E. volkensii*, both species with 3 anthers (not 2).

E. fastigiata Cope – Icon.: Cope in Kew Bull. 53: 154, 1998; Fl. Zambes. 10/2: 117, 1999.

Caespitose perennial grass; culms to 75 cm tall, erect, *fastigately branched above a bare woody base*, nodes concealed; basal leaf sheaths glabrous, chartaceous, terete, persistent; blades 10–30 cm × 0,5–0,8 mm Ø, tightly involute, setaceous, flexuous or curved, glabrous; panicle 7,5–11,5 cm long, narrowly oblong-elliptic to ovate, sometimes dense, spikelets clustered about branches and branchlets on pedicels 0,5–1 mm long, primary branches not whorled; spikelets 2,8–3,6 × 2–3 mm, laterally compressed, 4–6-flowered; lemmas 2–2,3 mm long, *membranous to chartaceous, densely scaberulous*, keeled.

Open grassland in rock crevices and amongst rocks on open hillsides; 2000–2150 m alt.

Strongly resembling *E. gummiflua* superficially, but mature spikelets very different.

*Eragrostis capensis**Eragrostis capitulifera**Eragrostis castellaneana**Eragrostis cenolepis**Eragrostis chalarothyrsos**Eragrostis chapelieri**Eragrostis cilianensis**Eragrostis ciliaris**Eragrostis cimicina**Eragrostis congesta**Eragrostis crassinervis**Eragrostis curvula*

ERAGROSTIS

E. fimbriata Cope – Icon.: Cope in Kew Bull. 53: 142, 1998; Fl. Zambes. 10/2: 98, 1999.

Perennial tufted grass; culms to 35 cm tall, erect, unbranched, nodes not exposed; basal leaf sheaths glabrous, chartaceous, terete, persistent; blades setaceous, to 13 cm × 0,5 mm Ø, tightly involute, terete, glabrous except extreme base (ciliate or pilose); panicle narrowly oblong-elliptic, 7–12 cm long, loose, open, spikelets evenly distributed on filiform pedicels 0,3–1,2 cm long, primary branches not whorled, axils glabrous; spikelets oblong-elliptic, 4,5–7,5 mm long, 9–12-flowered; *apex of lemma minutely fringed*.

Dambo margins in high-rainfall miombo.

E. flavicans Rendle; Fl. Zambes. 10/2: 90, 1999.

syn.: *E. cylindripica* Rendle

Annual grass; culms 20–60 cm tall, erect; leaf blades linear, 3–9 cm × 2–4 mm, flat; panicle linear, 3–17 cm long, spikelets sessile on stubby side-branches 0,5–1 cm long, primary branches not whorled; spikelets broadly ovate to oblong, 2–9 mm long, 2–20-flowered, strongly laterally compressed, densely imbricate, *yellowish green tinged purple*; glumes keeled.

Grassland on exposed rocky slopes; damp sandy thicket, wet shallow soil over rock; sandy pastures grown with short thickets by edges of wood; high rainfall plateau woodland in shady places; 1500–2000 m alt.

Very similar to *E. nindensis* (a perennial).

E. friesii Pilg.; Fl. Zambes. 10/2: 111, 1999; Klaassen & Craven, Checklist grasses Namibia: 39, 2003. – Icon.: Poilecot, Eragrostis Zimbabwe: 132, 2007.

syn.: *E. valida* Pilg. 1916, non Stent 1923, nom. illeg. (= *E. curvula*).

Perennial robust densely tufted grass; culms stout, rather soft, *reed-like*, 1–2 m tall, branched, nodes glabrous; basal leaf sheaths glabrous, persistent; blades linear, to 30 cm × 4–5 mm; panicle narrowly elliptic-oblong, 15–30 cm long, open, spikelets clustered along the distal half of primary branches (not whorled) on pedicels 1–2,5 mm long; spikelets oblong, 5,5–13 × c. 2 mm, 12–25-flowered.

Beside lakes, dams, rivers; dambos, swamp margins; spray zone of waterfalls; usually in large stands; often rooted in water; 850–1500 m alt.

With *E. botryodes*, *E. atrovirens*, *E. inamoena* forming a group of intergrading taxa rather hard to differentiate (see key in Fl. Zambes. 10/2: 54, 1999).

Caprivi Strip.

E. gangetica (Roxb.) Steud.; Renier, Fl. Kwango 1: 57, 1948; Lye & al. in Lidia 4: 166, 2000; Sosef & al., Check-list pl. vascul. Gabon: 183, 2006. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 190, 1974 (spikelet); Rev. Int. Bot. Appl. Agric. Trop. 29: 131, 1949; Bosser, Gramin. patur. cult. Madag.: 150, 1969; Poilecot, Boissiera 50: 129, 1995; idem, ibid. 56: 204, 1999; idem, Eragrostis Zimbabwe: 120, 2007; Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis); Ibrahim & al., Grasses Mali: 72, 2018.

bas.: *Poa gangetica* Roxb.

syn.: *P. cambessediana* Kunth; *P. ovina* A. Rich.; *P. floribunda* Willd. ex Spreng.; *P. stenoclada* (J. Presl) Kunth; *Eragrostis cambessediana* (Kunth) Steud.; *E. stenoclada* J. Presl; *E. ovina* (A. Rich.) Steud.; *E. flamignii* De Wild.; *E. stenophylla* Hochst. ex Miq.; *E. elegantula* Nees ex Miq.; *E. kalinaensis* Vanderyst, nom. provis.;

ERAGROSTIS GANGETICA

E. dakarensis A. Chev.; *E. dumasiana* A. Chev.; *E. pumila* A. Chev.; *E. vinicolor* A. Chev., incl. var. *pallida* A. Chev.

Annual tufted grass; culms 15–80 cm long, erect, decumbent or ascending, branched or unbranched, nodes glabrous; leaf blades linear, 3–15 cm × 1–3 mm, glabrous; panicle ovate, 6–20 cm long, open (occasionally ± contracted), branches not whorled, usually solitary, axils glabrous; spikelets narrowly oblong, 0,3–1 cm × c. 1 mm, 6–35-flowered, greyish green or tinged pink; *glumes subequal*, 0,6–1,8 mm long; *anthers* 2, 0,2 mm long.

Roadsides; fallows; short grass turf over granite; coastal savannas; humid sand with *Eragrostis domingensis*, *E. atrovirens*, *Anadelphia afzeliana*, *Brachiaria stigmatistata*, *Digitaria delicata*, *Microchloa indica*; around ponds with *Oryza longistaminata*, *Panicum phragmitoides*, *Echinochloa obtusiflora*, *Vetiveria nigritana*, *Imperata cylindrica*; dambo and floodplain grassland; pan margins; sandbanks along rivers; mopane and mixed deciduous woodlands on sandy soils; disturbed ground at roadsides; open and weedy places; sandy-clayey or clayey soils; 0–1840 m alt.

Libya; N Namibia, Caprivi-Strip, Botswana; Madagascar; Indian subcontinent E-wards to Vietnam, Borneo, Malaya. Introduced in S USA, C. America (Belize), Venezuela.

Varies considerably in W. Africa. Closely related to the perennial *E. atrovirens* (with 3 anthers!).

E. dumasiana A. Chev. from ironstone pans, pools, appears to be a short-lived perennial, flowering in the dry season, and has spikelets becoming purple.

E. georgii A. Chev. – Icon.: Fl. Gabon 5: 229, 1962.

Perennial grass with a strong rhizomatous base formed by numerous joint roots; culms densely tufted, to 20 cm tall, with numerous nodes; leaf sheaths imbricate, flat, glabrous; blades setaceous, to c. 10 cm long, inrolled; inflorescence a spike-like panicle, branches solitary, alternate, the lower ones with 1–3 spikelets on long pedicels, the upper ones with only 1 spikelet; spikelets linear, 1,5–2,5 cm long, 20–30-flowered; rachis persistent, glumes not seen (already fallen), lemmas lanceolate, glabrous, 3-nerved. On schistose rocks in rapids (River Nyanga, Gabon).

Known only from the type collected in 1910.

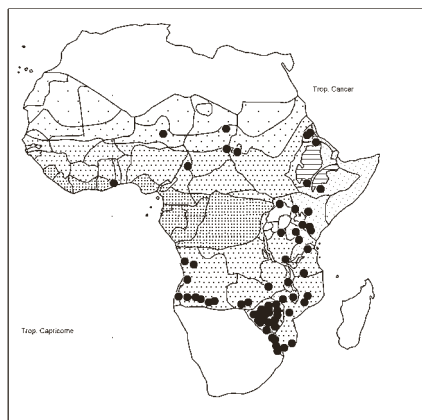
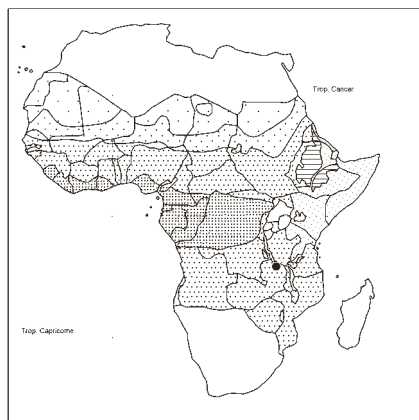
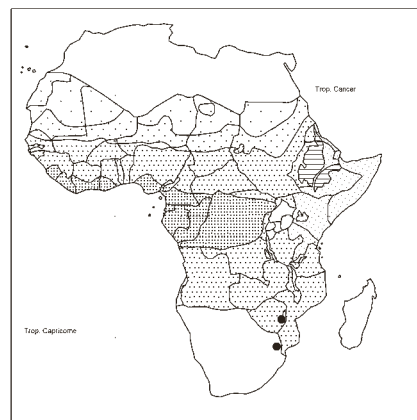
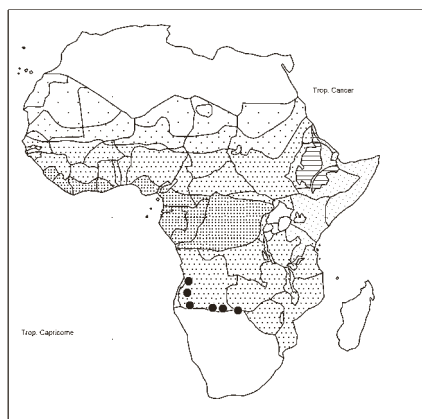
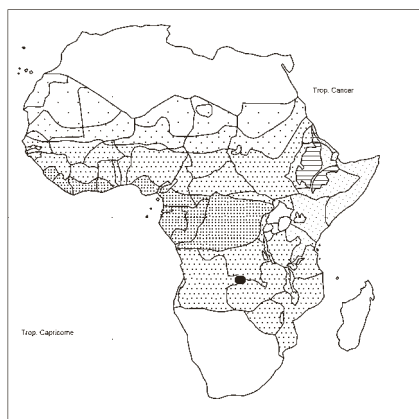
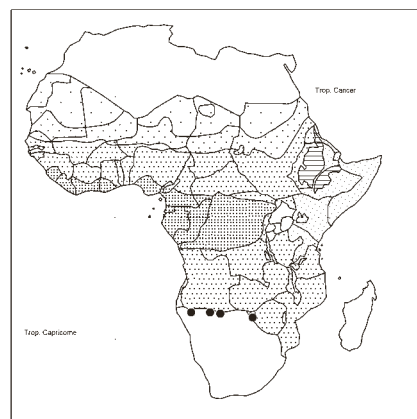
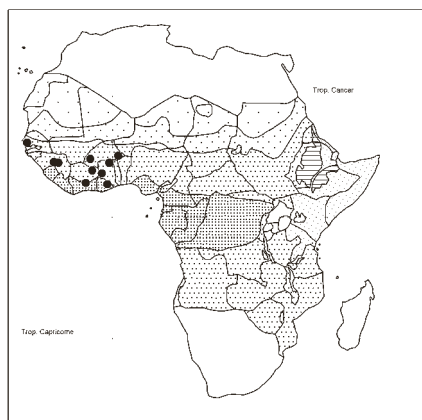
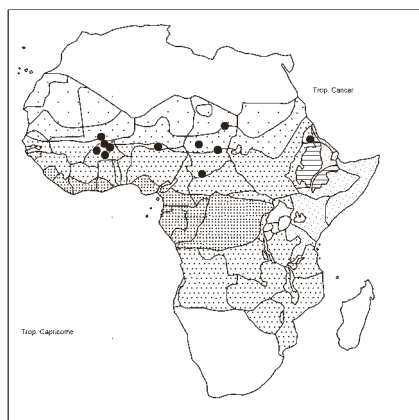
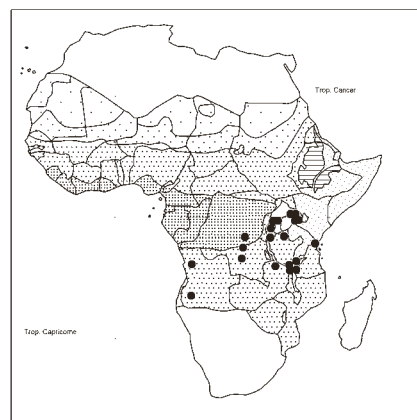
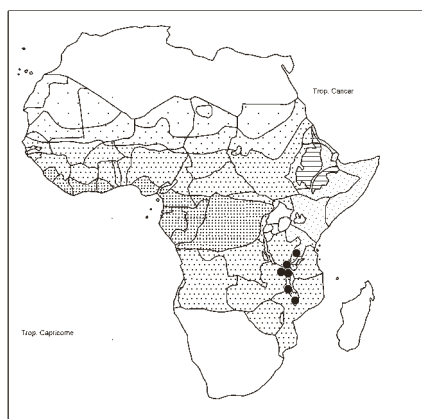
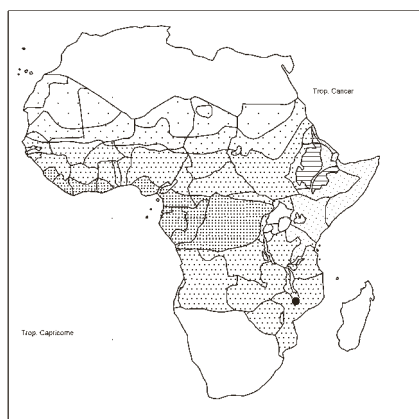
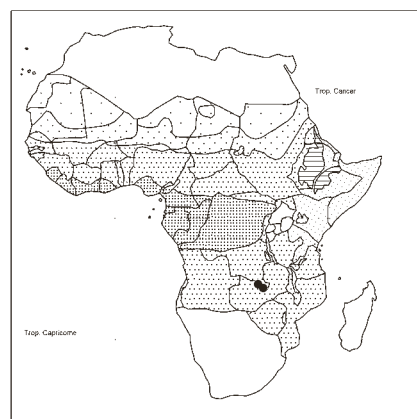
Perhaps an adaptation of *E. gangetica*; to compare with *E. fluviatilis* A. Chev. which is a form of *E. barteri* C. E. Hubb.

E. glandulosipedata De Winter; Gibbs Russell & al., Grasses south. Afr.: 150, 1990; Fl. Zambes. 10/2: 132, 1999. – Icon.: Poilecot, Eragrostis Zimbabwe: 178, 2007.

Caespitose annual or rarely short-lived perennial grass; culms to 0,5–1 m tall, erect or ascending, often rooting from lower nodes, branched or not, nodes glabrous, with a ring of elongated glands just below the nodes; leaf sheaths glabrous or pilose with tubercle-based hairs, with or without glandular pits above; blades linear, 4–8 cm × c. 3 mm, thinly pilose or glabrous; panicle 6–14 cm long, narrowly oblong-ovate, loose or ± dense, spikelets evenly distributed on pedicels 1–2,5 mm long, primary branches mostly branched from the base, often in a succession of whorls, *branchlets and pedicels* with a *glandular ring*; spikelets oblong, 4–6 × 1–2 mm, 4–10-flowered.

Woodland, open short grassland on Kalahari Sand, clayey soils of shallow pans; mopane woodland; thickets on pan margins; coastal sand; also ruderal; locally common; gravel, turf, calcareous soils; moist and disturbed soils; 0–1060 m alt.

Namibia, Botswana, S. Africa.

*Eragrostis cylindriflora**Eragrostis dentifera**Eragrostis desolata**Eragrostis dinteri**Eragrostis divaricata**Eragrostis echinochloidea**Eragrostis egregia**Eragrostis elegantissima**Eragrostis exasperata**Eragrostis exelliana**Eragrostis fastigiata**Eragrostis fimbrillata*

ERAGROSTIS GLANDULOSIPEDATA

Very like *E. porosa* but with longer lemmas and a glandular ring on branchlets and pedicels. Also resembling *E. moggii*, a true perennial with shorter lemmas.

E. glischra Launert – Icon.: Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 64, 2007.

Caespitose perennial grass with short horizontal rhizome; culms stout, firm, to 40 cm tall, erect or ascending, branched above, nodes not exposed (or if so glabrous); basal sheaths glossy, glabrous, firmly chartaceous, yellowish, with sticky elliptic or sub-orbicular sunken glands along the midline, persistent, eventually shedding their blade; leaf blades linear, 2–13 cm × 2,5–5 mm, glabrous or loosely pilose, pale green to glaucous, rather stiff, somewhat pungent with sticky oblong or elliptic sunken glands along midline and towards margins; panicle 3–10 cm long, ovate to elliptic, open, spikelets evenly distributed on stout pedicels 1–2 mm long, primary branches not whorled, axils glabrous, with sticky glands on main axis, branches, pedicels; spikelets ovate to oblong, 0,5–1 cm × c. 3 mm, 5–20-flowered; lemma c. 2 mm long; palea ciliate.

Hot dry areas, often in bare ground in mopane woodland; rocky slopes in stony soil and Kalahari Sand; 850–1000 m alt.

Related to *E. viscosa* (annual grass). Resembling *E. caespitosa* (but eglandular). *E. mildbraedii* shows some superficial similarities, but its palea is not ciliate. Similar to *E. lappula* and *E. hierniana* but these two are eglandular.

E. gloeophylla S. M. Phillips; Cope in Kew Bull. 47: 282, 1992 (in key); Thulin, Fl. Somalia 4: 181–182, 1995; Fl. Eth. & Eritrea 7: 119, 1994. – Icon.: Kew Bull. 46: 115, 1991 (caryopsis).

Annual tufted grass; leaf sheaths, lower surface of blades and sometimes culms viscid from a covering of glandular hairs to which sand grains adhere; culms 4–45 cm tall, erect; leaf blades linear, 3–12 cm × 2–4 mm; panicle elliptic-oblong, contracted, 2–10 cm long, spikelets subsessile, clustered on short lateral branches; spikelets oblong, 0,5–1,6 mm long, 6–19-flowered.

Red sand over limestone; dry *Acacia-Commiphora* bushland on red sandy soils; 125–980 m alt.

Closely related to *E. cilianensis* but differing by the oblong truncate lemmas and the viscid glands particularly on sheaths and underside of blades.

E. gloeophylla, *E. psammophila*, *E. ambleia*, *E. kuchariana* form a group of closely related annual species occurring on red sand in dry bushland in Somalia and Ethiopia (see key in Kew Bull. 46: 117, 1991).

E. gummiflua Nees – Icon.: Bosser, Gramin. patur. cult. Madag.: 150, 1969; Poilecot, Eragrostis Zimbabwe: 100, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 145, 2012.

Perennial densely tufted grass; culms 0,3–1,3 m tall, erect, usually unbranched, nodes glabrous, with sticky glands below nodes; basal leaf sheaths glossy, glabrous, coriaceous, terete, persistent, with sticky glands below the collar to which grains of sand adhere; the sticky parts are light brown to purple; blades linear, 10–35 cm × 2–5 mm; panicle oblong-lanceolate, 10–35 cm long, rather dense, spikelets densely clustered on short secondary branchlets on stout pedicels 0,2–1 mm long, primary branches ascending, not whorled, axils glabrous; spikelets elliptic-oblong, 3–5 mm long, 5–11-flowered.

Wooded short grassland, mopane scrub on Kalahari Sand, granite sandveld; miombo woodland on sandy soil; overgrazed grassland; fynbos; 970–1480 m alt.

ERAGROSTIS GUMMIFLUA

Namibia, Botswana, S. Africa, Lesotho, Swaziland; Madagascar. – Not in Zambia (fide Oudtshoorn l.c.).

L. Fish in Bothalia 35: 80–81, 2005, reported on a non-sticky “variant of *E. gummiflua* or a new taxon”. It is characterised by a more open inflorescence with “neat” spikelets and not sticky leaf sheaths below collar, collected in S Mozambique (Bella Visto to Umbeluzi) and also NE KwaZulu-Natal. The identity of this plant is unknown to us.

E. habrantha Rendle; Gibbs Russell & al., Grasses south. Afr.: 150, 1990; Fl. Zambes. 10/2: 99, 1999. – Icon.: Chippindall in Meredith, Grasses & past. S. Afr.: 154, 1955; Poilecot, Eragrostis Zimbabwe: 112, 2007.

Perennial tufted grass; culms to 1,25 m tall, erect, wiry, unbranched, nodes (mostly not exposed) glabrous; basal leaf sheaths ± coriaceous, pubescent to thinly pilose, ± compressed, sometimes densely gland-dotted on nerves, persistent; blades linear, 5–60 cm × 1–2,5 mm, glabrous; panicle linear, 25–40 cm long, delicate, much branched, branches capillary, spikelets evenly distributed on pedicels 1–2 mm long, primary branches not whorled, axils pilose; spikelets ovate, 1–2 mm long, 2–5-flowered; lemmas glabrous.

Mixed dambo grassland; wooded grassland; sandveld, mopane woodland; often in moist soil beside pans; dam and river banks; disturbed ground at roadsides; locally common; clayey soils; thicket-grown fields, no longer cultivated; 300–1530 m alt.

NE Namibia, Botswana, S. Africa.

Resembling *E. leptotricha* which has, however, pilose lemmas.

E. heteromera Stapf – Icon.: Chippindall in Meredith, Grasses & past. S. Afr.: 154, 1955; Poilecot, Eragrostis Zimbabwe: 80, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 184, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. wilmsii* Stapf

Perennial tufted grass; culms 0,4–1,15 m tall, erect or ascending, branched or not, glabrous, with few leaves; basal leaf sheaths papery, persistent, rarely decaying into parallel fibres; blades linear, 10–15 cm × 2–4 mm, glabrous; panicle elliptic-ovate, 15–40 cm long, open, spikelets loosely condensed about primary branches on pedicels 1–3,5 mm long, primary branches 1–8 at each node but not whorled; spikelets linear-oblong, 4–9 mm long, 5–16-flowered, dark green to purple; glumes very unequal; lemmas prominently keeled.

Dambo, floodplain grasslands, wooded grassland on riverbanks; coastal grassland, rarely on sandy soils; cracking black clay in depressions; saline lake shores; old farmland; disturbed places; 0–3000 m alt.

N Namibia, Botswana, E S. Africa, Lesotho, Swaziland.

Closely related to and often confused with *E. rotifer* that has, however, densely hairy lower leaf sheaths. Also confused with *E. curvula* (but with hardened pubescent leaf sheaths and wiry leaf blades).

E. hierniana Rendle – Icon.: Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 60, 2007.

syn.: *E. uniglumis* Hack.

Perennial densely tufted grass sometimes with short stout rhizomes; culms 0,3–1,2 m tall, usually erect, unbranched, glabrous; basal leaf sheaths chartaceous, terete, persistent; blades linear, 10–25 cm × 2–6 mm, glabrous or sometimes with tubercle-based hairs on margins; panicle ovate-elliptic, 6–25 cm long, loose or ± dense, spikelets evenly distributed on pedicels 2–6 mm long,

ERAGROSTIS HIERNIANA

primary branches not whorled, axils glabrous or long-ciliate; spikelets $\pm$ lanceolate, 0,4–1,7 cm $\times$ c. 2 mm, 5–20-flowered; glumes unequal; lemmas glabrous.

Dambo grassland in peaty soil, hairy alluvium, Kalahari Sand; sandveld, coastal plain grassland; lake shore sandy beaches; damp sandy soil on river banks; locally common; drainage tracts; disturbed areas such as old cultivated lands; 20–1800 m alt.

Botswana, S. Africa, Swaziland.

Resembling *E. lappula* which has, however, ciliate lemmas with tubercle-based hairs; also *E. inamoena* which has scabrid palea keels.

E. hispida K. Schum., incl. var. *psilothyrsus* Peter; Darbyshire & al., Pl. Sudan & S. Sudan: 129, 2015. – Icon.: Chippindall & Crook, 240 grasses S. Afr. 3: part 153, 1976; Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 54, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. bequaertii* De Wild.; *E. blepharolepis* Hack.; *E. elisabethae* Peter

Perennial tussocky grass; culms 12–70 cm tall, unbranched; basal leaf sheaths firm, ribbed, distintegrating into a cushion of persistent fibres with age; blades filiform, 5–25 cm $\times$ 0,5–2,5 mm, hispid or glabrous; panicle ovate, open, 1–10 cm long, with *spikelets clustered at tips of the primary branches* on short flexuous scabrid pedicels 1,5–3 mm long; primary branches not whorled, *spikelets conspicuously grey-hairy*, broadly ovate, 2,5–6 mm long, 4–12-flowered.

Rocky outcrop with wet flushes and thin soil with *Selaginella njamnjamensis*, *Aeollanthus* spp., *Aloe* sp. and many annuals; swampy places; waterlogged soils in dambos, vleis, river banks; spongy and damp shallow soils; sometimes common; seepage over granitic outcrops and on wet sandy soils at base of rocky outcrops; 910–2900 m alt.

E. homblei De Wild. – Icon.: Bull. Jard. Bot. Etat Bruxelles 6: pl. III after text, 1919; Fl. Trop. E. Afr., Gramin. 2: 190, 1974 (spikelet); Fl. Zambes. 10/2: 58, 1999 (idem).

syn.: *E. chalarantha* Gilli; *E. emsonii* C. E. Hubb.; *E. linozodes* Gilli; *E. lukwangulensis* Pilg.; *E. phaeantha* C. E. Hubb.

Perennial coarse tussocky grass; culms 20–90 cm tall, erect; leaf blades linear, flat, 10–35 cm $\times$ 3–6(–10) mm; panicle elliptic, 15–33 cm long, diffuse, *branches and pedicels slender, flexuous*; spikelets oblong, 3–7 $\times$ 1–2 mm, 4–8-flowered, dark purplish green; *anthers* 3.

Glades in evergreen forest; damp places; frequent on forest paths and open banks of streams in forests; grassland and amongst bracken and shrubs; 1200–2400 m alt.

Very similar to the annual *E. macilentia* but recognized by the long narrow glumes (1,5–2,7 mm not 1–1,5 mm).

E. homomalla Nees; Gibbs Russell & al., Grasses south. Afr.: 151, 1990; Fl. Zambes. 10/2: 106, 1999. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: fig. 153, 1955; Müller, Grasses Namibia, rev. ed.: 191, 2007.

syn.: *E. hygrophila* C. E. Hubb. & Schweick.

Annual loosely tufted grass; culms erect to decumbent, 8–40 cm tall; leaf blades linear, 2–10 cm $\times$ 1–4 mm, glabrous; panicle ovate, 3–15 cm long, spikelets *untidily condensed* about the primary branches (not whorled) on stout pedicels 1–2 mm long; spikelets linear, 2–7 mm long, 6–15-flowered; *branchlets and pedicels gland-dotted*; glumes very unequal.

ERAGROSTIS HOMOMALLA

Pans, pan margins, shallow depressions on clayey soils, becoming waterlogged or inundated; soils often brackish; short grassland on Kalahari Sand; 200–1250 m alt.

Namibia, Botswana, S. Africa.

E. humidicola Napper; Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 193, 1974 (spikelet); Troupin, Fl. Rwanda 4: 253, 1988.

Perennial tufted grass; culms erect, wiry, 0,3–1,1 m tall; leaf blades linear, 10–25 cm $\times$ c. 2 mm; panicle *linear*, with *irregularly disposed branches 1–7 cm long*, these ascending close to the axis and densely spiculate to the base; lateral pedicels to 1 mm long; spikelets linear, 0,5–1,6 cm $\times$ 1–2 mm, 12–40-flowered, *greyish green*.

Deciduous bushland on dry hillsides and roadsides; flood-plain grassland; rare in *Themeda* grassland; fairly common in *Combretum* woodland; locally common in *Hyparrhenia* grassland; 1200–2000 m alt.

Similar to *E. braunii*, differing in the looser panicle and shorter broader lemmas (these broadly ovate, 1,2–1,5 mm, not 1,7–2,2 mm).

E. inamoena K. Schum.; Lye & al. in Lidia 4: 166, 2000; Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013. – Icon.: Stent in Bothalia 1/1: 177 pl. IV, 1923 (as *E. galpinii*); Fl. Trop. E. Afr., Gramin. 2: 193, 1974; Chippindall & Crook, 240 grasses S. Afr. 3: 154, 1976; Poilecot, Eragrostis Zimbabwe: 138, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 160, 2012.

syn.: *E. galpinii* Stent; *E. calantha* Peter; *E. sp.* of Simon in Kirkia 8: 62, 1971; *E. atrovirens* auctt., non Trin. & Steud.

Perennial, *arising from a short oblique rhizome*; culms 0,3–1 m tall; leaf blades linear, 4–25 cm $\times$ 2–4 mm; panicle 7–25 cm long, ovate, *loose* to moderately dense with spikelets *uniformly* distributed; spikelets oblong, 0,5–2 cm long, 9–40-flowered; lemmas not overlapping across the spikelet, exposing the zig-zag axis.

Moist soils, streamsides, swamp margins; locally common on sandy to organically rich soils in dambos, seasonally flooded areas; coastal areas; shallow pans in clayey soils; 0–2000 m alt. Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland.

Closely resembling *E. atrovirens* and $\pm$ intergrading with in. It can be distinguished by its rhizomatous base and its evenly distributed larger spikelets. It also intergrades with *E. chalarothyrsos* but that species has distinctly ovate spikelets.

E. incrassata Cope; Thulin, Fl. Somalia 4: 181, 1995.

Perennial *densely tufted* glaucous grass to 40 cm tall; base much-branched, *woody*, spreading by long *woody rhizomes and stolons*; leaves distichous, *soft*; panicle oblong or narrowly lanceolate, 3–9 cm long; spikelets $\pm$ linear, 0,6–2,4 cm long, to 16–21-flowered; glumes subequal, c. 2,5 mm long, acute.

Forming extensive mats or tufts on damp ground in water-courses; c. 1750 m alt.

E. invalida Pilg.; Sosef & al., Check-list pl. vascul. Gabon: 184, 2006. – Icon.: Poilecot, Boissiera 50: 127, 1995.

syn.: *E. glanvillei* C. E. Hubb.

Perennial *densely tufted* grass 0,15–1 m tall; culms simple, sometimes geniculate at base; basal leaf sheaths villous to glabrescent, upper glabrous; blades filiform, 15–30 cm $\times$ 3–6 mm, glabrous or loosely pilose above; panicle *loose*, open, elliptic-oblong, to 25 $\times$ 12 cm, branchlets solitary, slender; pedicels capillary,

ERAGROSTIS INVALIDA

0,3–2,5 cm long; *spikelets* ovate-oblong, 0,6–1,4 cm × 3,5–5,5 mm, 10–30-flowered, *olive green* or tinged purple; *palea* ciliate, *winged*.

Inselbergs; granite outcrops; on peat with *Afrotrilepis pilosa*; oozing pan with *Lycopodium cernuum*; an element of a variant of the *Torenio dinklagei-Justicietum saxatilis* association, i. e. a species-poor mesoxeric grassland growing on slopes of rock outcrops (Parmentier & Müller in Phytocoenologia 36: 555, 585, 2006); 30–c. 1600 m alt.

E. japonica (Thunb.) Trin., incl. var. *interrupta* (Lam.) Henrard; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 281, 2010; César & Chatelain, Fl. ill. Tchad: 195, 2019. – Icon.: Fl. Eth. & Eritrea 7: 115, 1995; Poilecot, Boissiera 50: 117, 1995; idem, ibid. 56: 202, 1999; Boulos, Fl. Egypt 4: 254, 2005 (spikelet); Cope, Fl. Arab. Penins. 5/1: 136, 2007 (idem); Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis); Ibrahim & al., Grasses Mali: 73, 2018. bas.: *Poa japonica* Thunb.

syn.: *P. sporoboloides* A. Rich.; *P. diarrhena* Schult. & Schult. f.; *Eragrostis namaquensis* Nees ex Schrad., incl. var. *robusta* Stapf and var. *diplachnoides* (Steud.) Clayton; *E. tenuissima* Schrad. ex Nees; *E. diplachnoides* Steud.; *E. leprieurii* Steud.; *E. hochstetteri* Steud.; *E. depauperata* Andersson; *E. interrupta* var. *namaquensis* (Nees ex Schrad.) T. Durand & Schinz and var. *diplachnoides* (Steud.) Stapf ex Hook. f.; *E. maritima* A. Chev.; *E. tenuissima* Schrad. ex Nees 1841, nom. superfl.; *E. sporoboloides* (A. Rich.) Peter; *Sporobolus confertiflorus* A. Rich.; *Diandrochloa namaquensis* (Nees ex Schrad.) De Winter; *D. japonica* (Thunb.) A. N. Henry; *D. diplachnoides* (Steud.) A. N. Henry; *Catabrosa micrantha* Hochst. ex A. Rich.; *C. pilosa* Steud. 1854, pro. syn.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Tufted annual or short-lived perennial grass; culms 0,1–1,65 m tall, erect or geniculately ascending, often branched below, nodes glabrous; leaf blades linear, 3–30 cm × 1–7 mm, flat, *ligule* a short distinct membrane; panicle linear-lanceolate, 5–60 cm long, contracted or spreading, spikelets evenly distributed but often crowded on short pedicels < 1 mm long, primary branches not whorled; spikelets ovate-oblong, 1–3 × c. 1 mm, 3–8-flowered; anthers 2.

Dambos, swampy grassland; river margins, lake and dam shores; sandy beaches; damp muddy ground; sometimes in riverine woodland; often in water; cultivated or abandoned fields and gardens; beside irrigation canals; weed of rice, cotton; 0–1850 m alt.

Tropical and subtropical Old World. Algeria, Egypt; Namibia, Botswana, S. Africa, Swaziland; Madagascar; Arabia E-wards to Iraq, Iran, India, Sri Lanka, SE Asia, Indonesia, Philippines, New Guinea, Japan. Introduced in the Neotropics, S N. America, C. & S. America, Antilles.

Plants (filed as *E. namaquensis* and *E. tenella*) collected by Homblé from “S Zaire” were, in fact, collected in China, Guanxi (Blumea 66: 84, 86, 2001).

A widespread complex of numerous intergrading forms two of which are recognisable in Africa: “namaquensis” with smooth palea keels, and “diplachnoides” with scaberulous keels, but they are sympatric in tropical Africa (Fl. Zambes. 10/2: 89, 1999). – Near *E. pusilla* which has spikelets c. 1 mm long and 3–4-flowered.

The membranous ligule is confined to *E. japonica* and allied species which have sometimes been treated as a separate genus, *Diandrochloa* De Winter, on this basis (Cope o.c.: 137).

ERAGROSTIS

(**E. kohorica** Quézel 1957), Chad. Cf. César & Chatelain, Fl. ill. Tchad: 198, 2019. A form of **E. papposa** (See below).

E. kuchariana S. M. Phillips; Thulin, Fl. Somalia 4: 180, 1995. – Icon.: Phillips in Kew Bull. 46: 115, 1992 (caryopsis).

Annual grass to 55–60 cm tall; leaf sheaths with *clavate glandular hairs*; blades linear, 10–15 cm × 3–5 mm, apex filiform; panicle *diffuse* or rarely contracted, 25–30 cm long, the spikelets on pedicels 0,5–2 mm long; spikelets linear, 1,2–2,4 cm long, 14–30-flowered; anthers 3; *caryopsis faintly reticulate*.

Orange sand in *Commiphora* bushland, locally common.

Near *E. gloeophylla* (See under that species above).

E. lappula Nees, incl. var. *divaricata* Stapf – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: 164, 1955; Fl. Trop. E. Afr., Gramin. 2: 190, 1982 (spikelet); Poilecot, Eragrostis Zimbabwe: 58, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 264, 2012 (inflorescence).

syn.: *E. frederici* Rendle; *E. comata* Peter

Perennial tufted grass; culms 0,3–1,2 m tall, erect, unbranched; leaf blades linear, 10–25 cm × 2–4 mm, almost glabrous to hoary-tomentose; panicle ovate, spreading, or linear, contracted, 10–30 cm long, branches not whorled, spikelets evenly distributed on scabrid pedicels 2–7 mm long; spikelets narrowly oblong, 0,5–1 cm long, 5–15-flowered; *lemmas ciliate* on nerves with *stiff tubercle-based hairs* (these 0,5–1,2 mm long).

Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland.

Moist soils at edges of drainage tracts in *Brachystegia* woodland; dambos; floodplain grassland; swamp grassland; damp sandy soil on river banks; wooded grassland; termitaria; occasionally in disturbed ground; 0–1660 m alt.

Grades into *E. hierniana*, a species with glabrous lemmas and weakly ciliate paleas. *E. lappula* has a *Poa*-like panicle.

E. latifolia Cope; Fl. Zambes. 10/2: 79–80, 1999. – Icon.: Cope in Kew Bull. 53: 142, 1998; Poilecot, Eragrostis Zimbabwe: 78, 2007.

Caespitose perennial grass; culms to 70 cm tall, erect, unbranched, nodes glabrous, with an *irregular annular glandular patch* below nodes; basal leaf sheaths glabrous, terete, persistent; blades linear, 5–6,5 × c. 0,5 cm, flat, *amplexicaule*, margins pale cartilaginous; panicle c. 16 cm long, oblong-elliptic, loose, open, spikelets evenly distributed on pedicels 1–2,5 mm long, primary branches several at a node but not obviously whorled, axils pilose; spikelets oblong, 5–6 × 1,1–1,3 mm, 5–7-flowered.

Rocky granite outcrop; 1130 m alt.

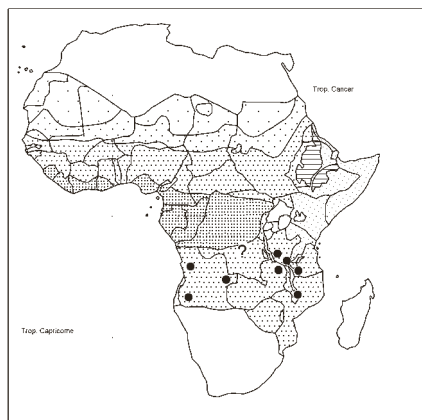
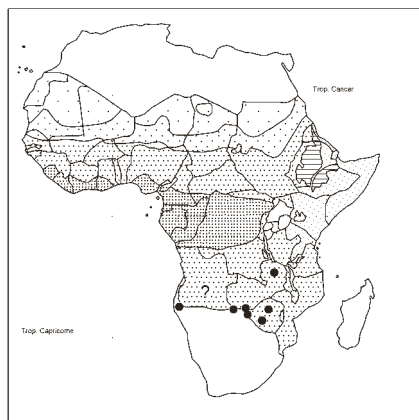
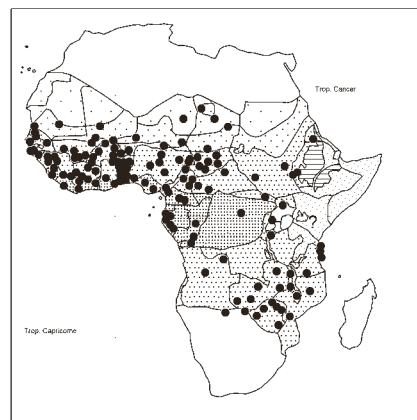
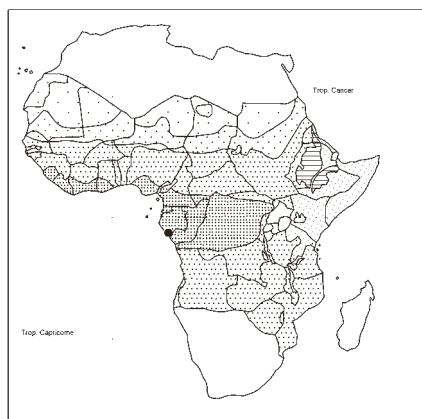
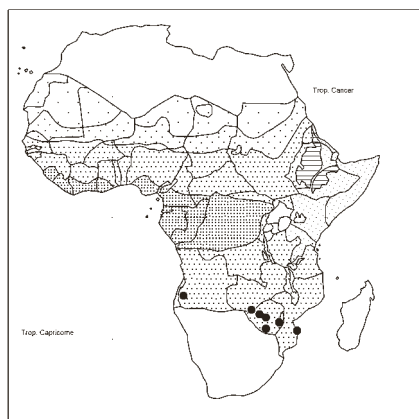
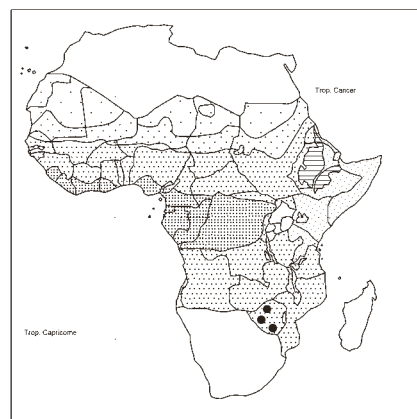
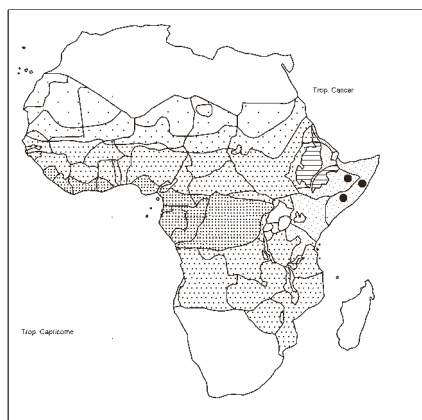
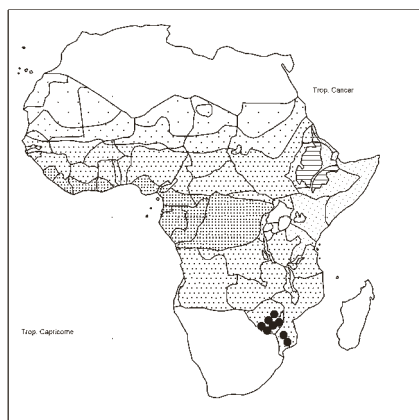
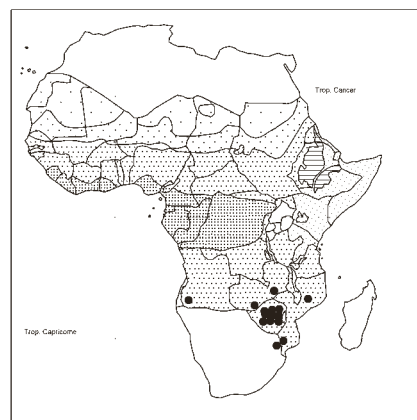
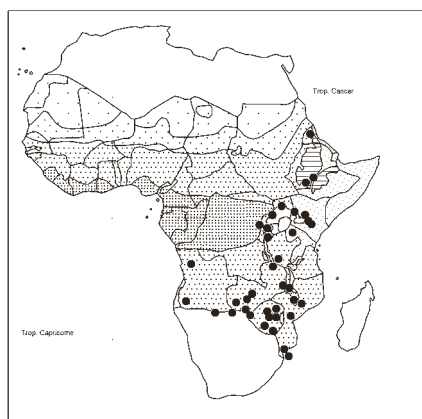
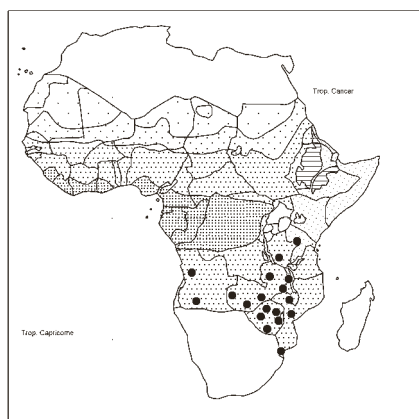
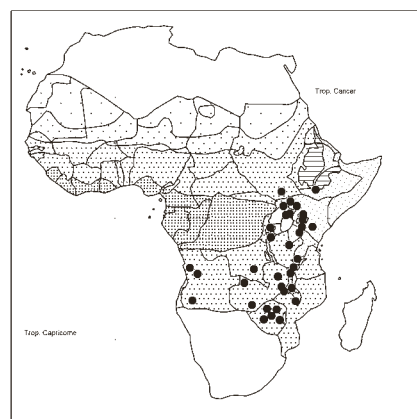
Only known from the type collected in 1920.

Near *E. heteromera* and “doubtless derived from it”.

E. leersiformis Launert, non *E. leersioides* (C. Presl) Steud.; Gibbs Russell & al., Grasses south. Afr.: 152, 1990; Fl. Zambes. 10/2: 109, 1999.

Caespitose annual grass; culms to 40 cm tall, usually erect, branched or not, nodes glabrous; leaf blades linear, 3–17 cm × c. 2,5 mm, flat, glabrous; panicle 6–17 cm long, broadly elliptic to obovate, spikelets evenly distributed on fine pedicels 0,2–1 cm long, primary branches ascending or spreading, flexuous, not whorled, axils glabrous; spikelets oblong, 3–5 × < 1 mm, 3–6-flowered; lemmas 1,3–1,5 mm long, lightly keeled, *broadly ovate* in profile, *scaberulous on nerves and flanks*.

Drier parts of dambos; c. 1280 m alt.

*Eragrostis flavicans**Eragrostis friesii**Eragrostis gangetica**Eragrostis georgii**Eragrostis glandulosipedata**Eragrostis glischra**Eragrostis gloeophylla**Eragrostis gummiflua**Eragrostis habrantha**Eragrostis heteromera**Eragrostis hierniana**Eragrostis hispida*

ERAGROSTIS LEERSIFORMIS

C Namibia, ? Botswana, ? S. Africa. Presence in Tanzania, Malawi, Mozambique, Zimbabwe not confirmed by us.

Near *E. pilosa* which has lemmas narrowly ovate, glabrous on nerves and flanks. Also near *E. aspera* but *E. leersiformis* has an ovate-elliptic caryopsis.

E. lehmanniana Nees, incl. var. *chaunantha* (Pilg.) De Winter, but excl. var. *ampla* Stapf (= *E. curvula*); Fl. Zambes. 10/2: 146–147, 1999. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 153, 1990; Nicora, Rev. Eragrostis Argentina... in Boissiera 54: 44, 1998; Poilecot, Eragrostis Zimbabwe: 204, 2007; Müller, Grasses Namibia, rev. ed.: 195, 2007; Fish in X. van der Burgt & al., eds., Systematics & conservation of African Plants: 24, 2010 (palea); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 168, 2012; Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis).

syn.: *E. chaunantha* Pilg.; *E. pseudoteff* Peter; *E. vansonii* Bremek. & Oberm.

Caespitose perennial grass sometimes with stolons; culms 20–90 cm tall, erect, ascending or decumbent, rooting at nodes, branched, nodes glabrous (internodes glabrous or pilose); basal leaf sheaths shortly pilose below, sometimes glabrous, chartaceous, ± compressed and keeled, persistent; blades linear, 6–25 cm × 1,5–3,5 mm, flat, puberulous above; panicle 9–16 cm long, ovate-elliptic, loose, open, spikelets condensed about branchlets on pedicels 0,5–1 mm long, primary branches not whorled; spikelets ± linear, 0,4–1,1 cm × 1–1,5 mm, 7–15-flowered; lemmas 1,8–2 mm, obtuse to shallowly 3-lobed at apex, membranaceous with distinct lateral nerves.

Common in short grassland, wooded grassland on Kalahari Sand, on paragneiss sands, in rainwater pans in mopane, on margins of calcareous pans; common on riverbanks, in *Acacia* woodland; loam often over limestone; roadsides; overgrazed uncultivated lands where it can form dense stands; 0–1500 m alt. – Highly drought tolerant.

Namibia, Botswana, S. Africa, Lesotho. Introduced in E. Africa as a fodder grass, and then to Nigeria; also in India, Burma; N., C. & S. America (e. g., Schussman & al. in Diversity Distrib. 12: 582–592, 2006, SW USA; used for consolidation of eroded surfaces; Hatch & al., Field guide to common Texas grasses: 143, 2015; Weber, Invasive plant species of the world, ed. 2: 173, 2017, with map).

Near *E. curvula*. Confused with *E. cylindriflora* which has the lower panicle branches whorled.

E. lepida (A. Rich.) Hochst. ex Steud.; Cope in Kew Bull. 47: 281, 1992 (in key); Thulin, Fl. Somalia 4: 180, 1995; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 282, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015. – Icon.: Collenette, Wild flowers Saudi Arabia: 380, 1999; Boulos, Fl. Egypt 4: 254, 2005; Cope, Fl. Arab. Penins. 5/1: 136, 2007 (spikelet).

bas.: *Poa lepida* A. Rich.

syn.: *Eragrostis tenella* sensu auctt., non (L.) P. Beauv. ex Roem. & Schult.

Annual loosely tufted grass; culms geniculate, spreading or prostrate, 6–50 cm long; leaf sheaths scattered-pilose; blades flat, 1–2,5 mm wide; panicle delicate, lanceolate to narrowly elliptic, open, 3–15 cm long, spikelets evenly spaced on setaceous branchlets and pedicels; spikelets elliptic-oblong, c. 2–3 mm long, 4–13-flowered, with stiff spreading tubercle-based hairs from the palea keels; anthers 2.

Open sandy ground; disturbed ground, often near water; near 0–1000 m alt.

ERAGROSTIS LEPIDA

Egypt; Saudi Arabia. N Kenya?

Very similar to the pantropical annual *E. amabilis* which differs by its rounded lemma (not mucronate) and by the possession of 3 anthers.

E. lepidobasis Cope – Icon.: Cope in Kew Bull. 53: 156, 1998; Fl. Zambes. 10/2: 120, 1999.

Caespitose perennial grass; culms to 75 cm tall, erect, wiry, unbranched, nodes glabrous; basal leaf sheaths with vestigial blade, distichous, loosely imbricate, scale-like forming a sub-bulbous base to the lowermost 2–2,5 cm of culm, glabrous, chartaceous, terete, persistent; blades to 9 cm × 0,5 mm Ø, tightly involute, filiform, glabrous; panicle 2,5–6,5 cm long, linear with appressed racemose branches below, racemose above, spikelets few on pedicels 2–3 mm long, primary branches remote, axils glabrous; spikelets 5–6 × 2,5–3 mm, ovate, c. 8-flowered; caryopsis unknown.

Wet areas in watershed grassland; c. 1340 m alt.

May be expected to occur in Angola.

Distinguished from *E. longifolia* by its glabrous leaves and deciduous paleas.

Only known from the type collected in 1969.

E. leptotricha Cope – Icon.: Kew Bull. 53: 148, 1998; Fl. Zambes. 10/2: 98, 1999; Poilecot, Eragrostis Zimbabwe: 114, 2007.

Caespitose short-lived perennial grass; culms to 60 cm tall, erect, wiry, unbranched, nodes glabrous (these mostly not exposed); basal leaf sheaths shortly pilose below, firmly chartaceous, subterete to lightly compressed, sometimes with scattered glandular pits, persistent; blades linear, 6–30 cm × 1–2,5 mm, involute, glabrous; panicle 15–25 cm long, narrowly oblong-elliptic, effuse, with capillary branchlets and pedicels, spikelets evenly distributed on pedicels 1–2,5 mm long, primary branches not whorled, axils pilose; spikelets 1,4–2 × 0,8–1 mm, ovate, 3–4-flowered; lemmas 0,9–1,2 mm long, greyish-green, thinly pilose with slender hairs on the flanks between margins and lateral nerves.

Hot dry country, in open short grassland, on sandy soils usually overlying an impervious clay layer.

Botswana.

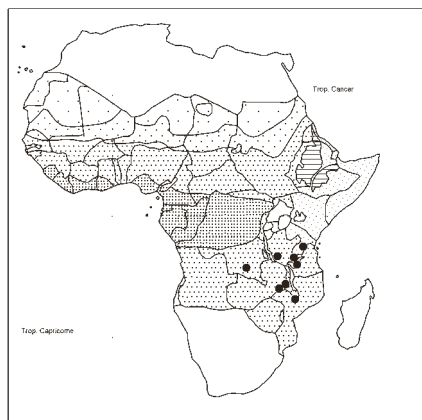
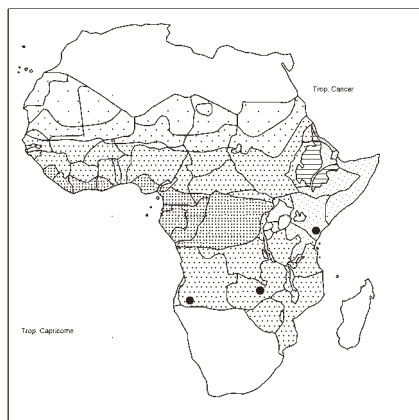
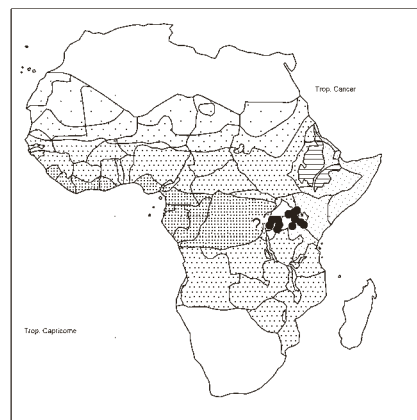
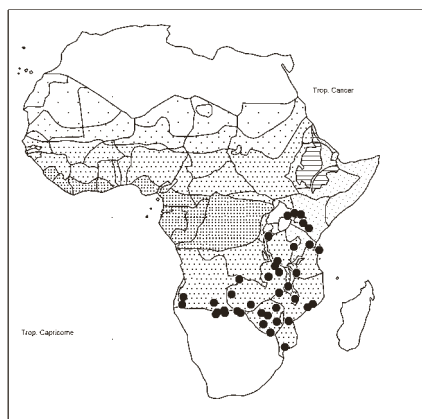
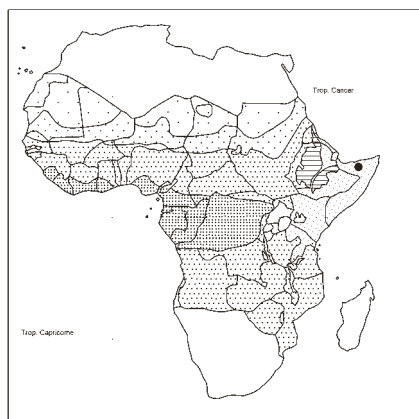
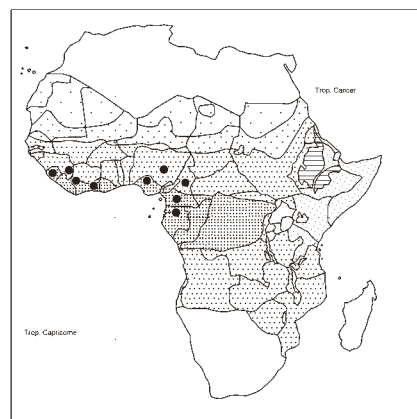
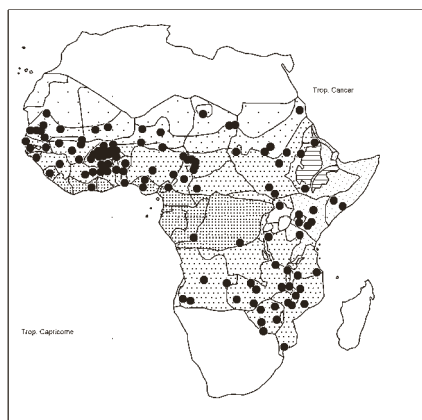
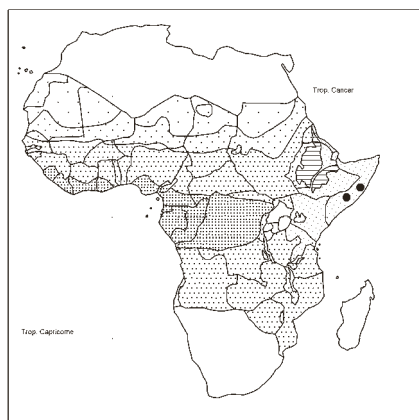
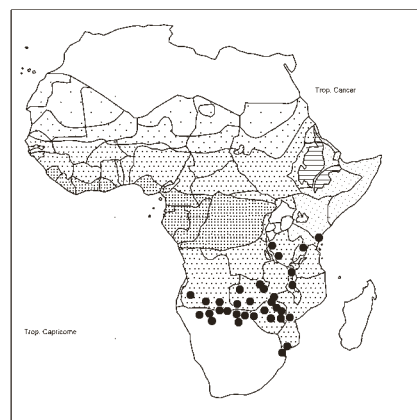
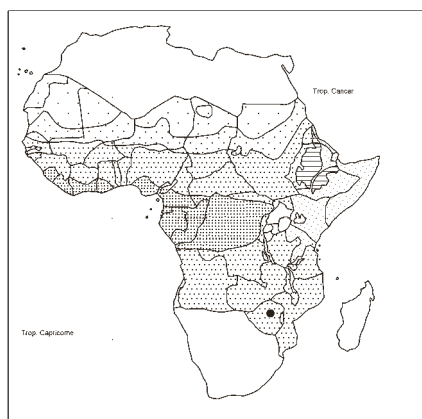
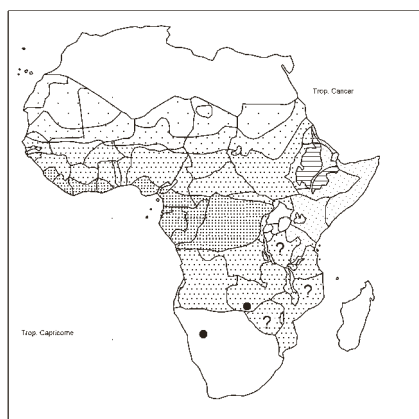
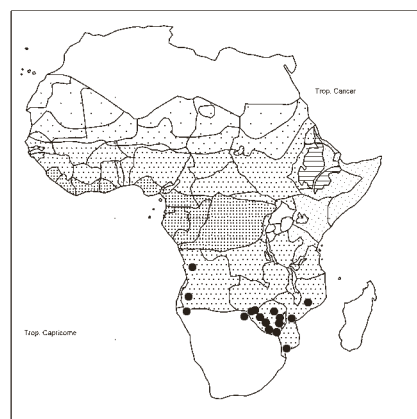
Differs from *E. habrantha* by its pilose lemmas.

E. lingulata Clayton; Lebrun in Bull. Soc. Bot. France 116: 260–261 (map), 1969; Lisowski, Fl. Rép. Guinée 1: 459, 2009. – Icon.: Clayton in Kew Bull. 20: 270, 1966; Fl. W. Trop. Afr., ed. 2, 3/2: 392, 1972; Naegelé, Les graminées des pâturages de Mauritanie: 94, 1977 (FAO, Pâturages & cultures fourragères Etude 5); Malaisse, Guide florist. Parc Natl. Cantanhez: pl. 823, 2010; Ibrahim & al., Grasses Mali: 73, 2018.

syn.: *E. perbella* sensu Berhaut, Fl. Sénégal, ed. 2: 410, 1967, non K. Schum.

Annual loosely tufted grass; culms erect or ascending, 20–40 cm tall, rounded, with 2–3 nodes; leaf sheaths striate, glabrous or sparse pilose; blades linear, 4–8 cm × 2–4 mm, glaucous, pilose above, glabrous beneath; panicle 6–15 cm long, linear-elliptic, dense; branches ascending, axils glabrous; spikelets subsessile, closely clustered about primary branches; spikelets linear, 0,7–3,5 cm × 2–2,5 mm, imbricate, pallid or pinkish brown, 10–100-flowered; lemmas acute, c. 2,5 mm long, imbricate; stamens 2.

Waste land; heavy soils (clayey soils on ferruginous pans or fine gravels); also ruderal on compact sands or humid colluvial deposits; weedy places; wooded savanna.

*Eragrostis homblei**Eragrostis homomalla**Eragrostis humidicola**Eragrostis inamoena**Eragrostis incrassata**Eragrostis invalida**Eragrostis japonica**Eragrostis kuchariana**Eragrostis lappula**Eragrostis latifolia**Eragrostis leersiiformis**Eragrostis lehmanniana*

ERAGROSTIS LINGULATA

Shows some resemblance to other African *Eragrostis* with 2 stamens, i. e., *E. chapelieri*, *E. squamata*, *E. tremula*, but the 2 former are perennials; the third has obtuse lemmas and very pretty trembling panicles.

E. longifolia (A. Rich.) Hochst. ex Steud.; Fl. Eth. & Eritrea 7: 117–118, 1995. – Icon.: Cope, Fl. Arab. Penins. 5/1: 140, 2007 (spikelet).

bas.: *Poa longifolia* A. Rich. 1850, nom. illeg.

Perennial *densely tufted* grass, *the whole plant softly pilose*; culms slender, wiry, erect, 14–30–50 cm tall, scarcely exceeding the leaves; basal leaf sheaths *coriaceous*, ribbed, *sometimes bulbous*; blades filiform, to 35 cm × 0,5–1,5 mm, *flexuous*, tip setaceous; panicle narrow, *spike-like*, 2–6 cm long, *sparse*, few-spiculate, often reduced to a raceme, or with short erect branches in the lower part bearing up to 4 spikelets; spikelets *dark grey-green*, ovate-oblong, 6–11 mm long, 5–17-flowered, florets loosely imbricate, paleas persistent on the tough rhachilla after shedding the lemmas; palea keels narrowly winged.

Upland grassland; among rocks; 1600–2000 m alt.

N Yemen (2200 m alt.).

A seldom-collected species (overlooked?). Probably conspecific with *E. pobeguinii* (W. Africa), a very variable species. But in that case the distribution of the plant is very disjunct (Senegal, Ghana, Cameroon, Ethiopia, Yemen).

E. lutensis Cope – Icon.: Kew Bull. 50: 114, 1995; Thulin, Fl. Somalia 4: 184, 1995 (spikelet).

Tufted perennial grass to 40 cm tall; leaf blades *flat*, stiff, *pungent*, *scabrid* on both surfaces; panicle 8–10 cm long, elliptic, spikelets shortly pedicelled on the racemose primary branches; spikelets 4–7,5 mm long, oblong to linear, 5–9-flowered; anthers 3, c. 0,2 mm long; grain unknown; also the base of the plant missing.

In shallow water in floodplain; c. 1000 m alt.

Apart from being marginally larger, the spikelets are almost identical to those of *E. barrelieri*, but the habit of the plant is quite different.

Known only from the type collection.

E. macilenta (A. Rich.) Steud.; Puff & Sileshi, Pl. Simen: 249, 2005; Agnew, Upl. Kenya wild flow., ed. 3: 420, 2013. – Icon.: Bosser, Gramin. patur. cult. Madag.: 154, 1969; van der Zon, Gramin. Cameroun 2: 121, 1992; Poilecot, Eragrostis Zimbabwe: 170, 2007; Cope, Fl. Arab. Penins. 5/1: 143, 2007 (spikelet); Velayos & al., Fl. Guinea Ecuat. 12: 192, 2015; Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis).

bas.: *Poa macilenta* A. Rich.

syn.: *Eragrostis decidua* Hochst.; *E. passa* Rendle; *E. dekindtii* Pilg.; *E. pseudonigra* Mattei; *E. nervosa* Hochst.; *E. laxissima* Engl. 1894, nom. nud.

Annual loosely tufted coarse grass; culms 7–60–75 cm tall, erect or ascending, branched or not; leaf sheaths keeled, tuberculate-ciliate along margins; blades thin, flat, 2–20 cm × 2–5 mm, light green; panicle elliptic-ovate, *diffuse*, branches solitary, paired or whorled, with spikelets on capillary pedicels 0,2–1,2 cm long; spikelets linear, 3–7 mm long, 4–14-flowered, *light green to almost black*, with *florets spreading* giving a *serrate outline*, glumes narrow, acuminate; anthers 3, 0,3–0,5 mm long.

Old farmland, roadsides, waste places; often in shade; lava plains; meadows; rather damp abandoned fields; open situations in dry evergreen bushland; rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*, along trail in forest; 800 (? and less)–3000 m alt.

ERAGROSTIS MACILENTA

Bioko/Fernando Poo; Madagascar; Yemen, India (rarely).

Rather like *E. minor* which has shorter stalks (1–3 mm) to the green spikelets and obtuse lemmas. Confused with *E. gangetica* (with 2 stamens), or with *E. homblei*, a perennial. Similar to *E. cylindriflora*, but the lax panicle with serrate-margined spikelets and acute lemmas of *E. macilenta* are distinctive enough.

E. mahrana Schweinf. (as “mabrana”); Thulin, Fl. Somalia 4: 180–181, 1995. – Icon.: Settesoldi & al., Esploratori italiani nell’Africa Orientale 1870–1930: 47, 2005 (as *E. hararensis*); Cope, Fl. Arab. Penins. 5/1: 140, 2007; Baldini in Symb. Bot. Ups. 35: 164, 2011 (as *E. hararensis*).

syn.: *E. hararensis* Chiov.; *E. fruticans* Jedwabn.

Tough *glaucous* perennial grass *forming spiny cushions or bushes* to 30 cm tall; branches *clothed in persistent imbricate* leaf sheaths; *leaves distichous, pungent*, blade often deciduous from the sheath; panicle 3–7 cm long, ovate, spikelets on pedicels < 1 mm long; spikelets linear-oblong, 4–1,4 cm long, 5–30-flowered, the longer spikelets often falcately curved.

Limestone pavement, alluvium in water-courses; dry sandy or gravelly soils; 0–560 m alt.

Yemen, Oman. – Possibly also Ethiopia.

E. mariae Launert; Cope in Kew Bull. 53: 149, 1998 (in key); Fl. Zambes. 10/2: 102–103, 1999.

Densely caespitose perennial grass; culms to 65 cm tall, erect or ascending, unbranched, nodes glabrous; basal leaf sheaths glabrous or thinly pilose, chartaceous, terete, persistent; blades linear, 4–20 cm × 1–3 mm, glabrous or thinly pilose above; panicle 10–30 cm long, ovate-oblong or elliptic, open, spikelets evenly distributed or ± condensed about the primary branches on pedicels 1,5–5 mm long, primary branches not whorled; spikelets 0,4–1 cm × 2,5–3 mm, strongly laterally compressed, ± oblong, 5–16-flowered; lemmas *shallowly tridenticulate* (excurrent lateral nerves) at apex.

Dambo; swampy grassland; usually on peaty soil; 1280–1770 m alt.

Near *E. hierniana* but lemmas with apex shallowly tridenticulate.

E. membranacea Hack. ex Schinz; Gibbs Russell & al., Grasses south. Afr.: 154, 1990. – Icon.: Poilecot, Eragrostis Zimbabwe: 118, 2007.

Annual tufted hydrophyte (occasionally); culms to 1,1 m tall, erect or ascending, usually branched, nodes glabrous; leaf sheaths glabrous, with or without glandular spots; blades linear, 4–40 cm × 1,5–5 mm, glabrous; panicle ovate, open, 5–19 cm long, spikelets evenly distributed on pedicels 3,5–10 mm long, lower primary branches in 1 or 2 (sub-)whorls, the remainder not so, pedicels bearing a glandular ring; spikelets ± oblong, 0,3–1,5 cm × 2–4 mm, 8–14-flowered; *glumes unequal*; anthers 3; caryopsis c. 1 mm long.

Sandy soils in moist areas around pans and watercourses; occasionally in shallow water; mopane woodland; 500–1000 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa.

Resembling *E. patentipilosa* (a perennial with caryopsis 0,8 mm long).

E. micrantha Hack.; Gibbs Russell & al., Grasses south. Afr.: 154, 1990. – Icon.: van Oudtshoorn, Guide grasses south. Afr., ed. 3: 264, 2012 (inflorescence).

syn.: *E. burchellii* Stapf

ERAGROSTIS MICRANTHA

Weak perennial grass 0,45–1 m tall; tufted culms easily separated into individual culms; basal leaf sheaths glabrous; blades to 60 cm × 3 mm, tip filiform; inflorescence 10–30 cm long, *effuse*, much branched, branches *spreading*; spikelets 2–4 × 1,2 mm, *spreading* from each other and from the branches; glumes translucent, smooth or scaberulous along keel and around apex; lemma light greenish to green-grey, strongly keeled along entire length.

Ecology unknown in Angola. Sands, loams and calcareous soils in disturbed area and moist places around pans etc.; and mainly grassland in Namibia, S. Africa.

Namibia, ? Botswana, S. Africa, Lesotho.

Near *E. heteromera*, a moderately strong perennial with an open inflorescence with spikelets appressed to the branches.

E. microsperma Rendle

Caespitose annual grass; culms 45 cm tall, ascending at base then erect, subterete, glabrous; nodes pale brown, glabrous; leaf sheaths and blades *rufescent*, lower sheaths broad, loose, enveloping the internodes, veins bearing *scattered whitish glands in upper portion*; blades linear-lanceolate, 3–7,5 × 0,3–0,6 cm, acuminate, rigidulous, scabridulous beneath, sparsely pilose; panicle 15–17 × 5 cm Ø, oblong, subeffuse, branches slender, 3,3 cm long, alternate, regular, spreading, bearing from the base upwards the *long-stalked spreading* spikelets these 4–8 × c. 2 mm; pedicels with *a median annular gland*, filiform, *spikelets tremulous*, *Briza-like*, *purplish*; caryopsis minute, globose, c. 0,4 mm Ø.

Sandy road sides.

Resembling somewhat the more effuse *E. racemosa* but differing from that species by its tremulous, more delicate spikelets and smaller caryopsis (in *E. racemosa*: square, 0,5–0,7 mm long).

E. mildbraedii Pilg. – Icon.: Troupin, Fl. Rwanda 4: 257, 1988; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. kwamouthensis* Vanderyst 1920, nom. provis.

Perennial mat-forming grass with *long slender rhizomes*; culms 10–40 cm tall, branched at base; basal leaf sheaths persistent; blades linear, 2–8 cm × 1–3 mm, distichous, glaucous; panicle ovate, 2–8 cm long, open, stiffly branched, spikelets ± evenly distributed on pedicels 0,5–2 mm long, primary branches not whorled; spikelets linear, 3–10 mm long, often curved, 5–20-flowered, purplish brown.

Lake shores; roadsides, overgrazed places, old farmland; flood-plain, swampy grasslands; riverine bushland; sandy alluvium; Kalahari Sands; 950–1800 m alt.

N Botswana.

E. milnei Launert ex Cope – Icon.: Cope in Kew Bull. 53: 134, 1998; Fl. Zambes. 10/2: 60, 1999.

syn.: *E. paradoxa* sensu Simon in Kirkia 8: 61, 1971, non Launert

Densely caespitose robust *perennial* grass; culms to 1,3 m tall, erect, unbranched, nodes glabrous; basal leaf sheaths glabrous, chartaceous, terete, *persistent* or rarely somewhat decaying into fibres; blades linear, 5–20 cm × 0,8–2 mm, glabrous; panicle 8–20 cm long, broadly ovate, very effuse with *widely divaricate* branchlets and pedicels, spikelets evenly distributed on *very slender* pedicels 0,6–2,2 cm long, primary branches unwhorled; branches, branchlets & pedicels *long-pilose* (hairs to 1,2 cm long) on *a conspicuous swelling in the axils*; spikelets 0,6–1,3 cm × 2,5–3 mm, 5–18-flowered.

Dambos; standing water on laterite pans; 1200–1360 m alt.

ERAGROSTIS MILNEI

May be expected to occur in Angola.

Near *E. paradoxa* but more robust; *E. paradoxa* has a panicle rather scantier, leaves filiform & flexuose, basal sheaths decaying into a cushion of persistent fibres.

E. minor Host, incl. subsp. *angusta* H. Scholz & Raus, var. *minima* B. S. Sun & S. Wang, var. *suaveolens* (A. K. Becker ex Claus) Schmalh., fa. *arenosa* A. F. Schwarz and fa. *umbrosa* A. F. Schwarz (other vars. = *E. cilianensis*); Scholz & Ristow in Verh. Bot. Ver. Berlin Brandenb. 138: 25, 2006 (in C Europe); Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 282, 2010; Agnew, Upl. Kenya wild flow., ed. 3: 420–421, 2013. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 146, 1969; Colletette, Wild flowers Saudi Arabia: 380, 1999; Boulos, Fl. Egypt 4: 260, 2005 (spikelet); Greuter & Raus in Willdenowia 36: 729, 2006 (inflor.); Cope, Fl. Arab. Penins. 5/1: 143, 2007 (spikelet); Fl. China 22, Illustr.: 668, 2007 (inflor.); Vivek & al. in Nelumbo 57: 2, 2015 (caryopsis).

syn.: *Poa eragrostis* L.; *Eragrostis pooides* P. Beauv.; *E. cilianensis* subsp. *pooides* (Husn.) Maire and fa. *nana* Maire & Weiller 1953, nom. nud.; *E. megastachya* var. *nana* Trab.; *E. multiflora* var. *pappiana* Chiov.; *E. pappiana* (Chiov.) Chiov.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass; culms ascending, 6–60 cm tall; leaf blades linear, to 12 cm × 5 mm, usually with *a row of crateriform glands along margins*; panicle ovate, 4–20 cm long, fairly dense to open, stiffly branched with short pedicels (1–3 mm), *branchlets and pedicels with or without crateriform glands*; spikelets linear-oblong, 0,3–1,5 cm × 2 mm, green or olive to leaden grey or reddish, 6–16-flowered; *glumes glandular along veins*; *caryopsis oblong*, 0,6–0,8 mm, dark brown.

Weedy places; sandy and stony soils along water courses; 50–1400 m alt.

Warm temperate and subtropical regions of the Old World. Algeria, Egypt; Azores, Madeira; Madagascar, Réunion; C & S Europe; Palestine, Arabia, Socotra, E-wards to Iran-India (Narain in Ind. J. Forestry 32: 496, 2009) – SE Asia-Korea-China-Japan-Indonesia-New Guinea. Introduced (and naturalised) in S. Africa, Australia, N. C. & S. America.

Intergrades with *E. cilianensis*, but distinguished by the narrower oblong (not ovate) spikelets and more open panicle, and oblong (not subglobose) caryopsis. Differs from *E. barrelieri* mainly by the presence of crateriform glands along leaf margins.

E. moggii De Winter, incl. var. *contracta* De Winter; Gibbs Russell & al., Grasses south. Afr.: 154, 1990; Fl. Zambes. 10/2: 143–144, 1999.

Caespitose, short-lived perennial grass; culms 40–90 cm tall, erect, ascending or decumbent, rooting at nodes, usually branched, nodes glabrous, *eglandular or with a ring of small coalescent glandular patches below nodes*; basal leaf sheaths glabrous, chartaceous, keeled, nerves *gland-dotted*, persistent; blades linear, 5–20 cm × 3–5 mm, glabrous; panicle 11–23 cm long, narrow, contracted or open, effuse, stiffly branched, the spikelets evenly distributed on pedicels c. 2 mm long, these *with a conspicuous annular gland*; primary branches unwhorled (often paired or loosely clustered); spikelets oblong, 4–7 × c. 1 mm, 4–13-flowered. Frequent on coastal dunes or on sandy soils behind dunes; 0–200 m alt.

S. Africa.

Very similar to *E. glandulosipedata* but: more positively perennial, smaller lemmas (1,4–1,6 mm not 1,5–1,9), panicle branches

ERAGROSTIS MOGGII

not whorled. Similar to *E. phyllacantha* which has pilose axils in panicle.

E. mokensis Pilg.; Onana & Cheek, Red Data Book flow. pl. Cameroon: 378, 558 (map), 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 126, 1992; Velayos & al., Fl. Guinea Ecuat. 12: 193, 2015.

syn.: *E. moritzii* Jedwabn.; *Briza dura* Desv.

Annual, very ramose grass 30–40 cm tall, forming small open tufts; leaf blades filiform, 6 cm × 3–5 mm, long white hairy; panicle open, stiff, 5–12 × 3–7 cm, branches perpendicular on the main axis; pedicels 1–2 mm long; spikelets *suborbicular*, olive green, 2–5 × c. 2 mm, inflated, 5–10-flowered.

Grassland, weed of cultivation, fallows; 1000–2200 m alt.

Bioko/Fernando Poo.

E. mollior Pilg.; Mildbraed in Notizbl. Bot. Gart. Berlin Dahlem 13: 409, 1936; Burrows & Willis, Pl. Nyika Plateau, Malawi: 345–346, 2005. – Icon.: Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 52, 2007.

syn.: *E. longipaniculata* De Wild.; *E. gracilis* Peter 1928, nom. nud.; *E. stenosoma* Peter

Caespitose perennial grass; *basal leaf sheaths woolly-tomentose* below; culms 0,6–1,2 m tall; leaf blades linear, to 50 cm × 2–8 mm; panicle 15–70 cm long, broadly linear to lanceolate, diffuse or contracted, spikelets evenly distributed on capillary pedicels c. 5 mm long from the numerous primary branches or from short secondary branchlets; spikelets 2,5–4,5 mm long, ovate-oblong, 3–10-flowered, olive-green.

Open places with poor sandy soil on hillsides; lawn; miombo woodland; glades in a dense rather dried dry forest; 220–2600 m alt.

Rather variable species. The glume shape intergrades with *E. olivacea*, but the tendency to broad unequal obtuse glumes is characteristic.

E. muerensis Pilg. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 193, 1974 (spikelet); Fl. Zambes. 10/2: 58, 1999 (idem).

Densely caespitose *perennial* grass; culms 0,9–1,3 m tall, stout, erect; leaf blades linear, flat, 30–60 cm × 2–5 mm; panicle linear, contracted, 14–18 cm long, branches ascending, mostly 1–3 cm long, the spikelets condensed about the primary branches on pedicels 1–2 mm long, primary branches not whorled; spikelets *ovate*, 5–8 × 3–5 mm, 4–11-flowered.

Wooded grassland; miombo woodland; 300–1710 m alt.

E. nindensis Ficalho & Hiern; Brink & Belay, eds., Plant resources Trop. Afr. 1, Cereals & pulses: 66–67, 2006. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 155, 1990; Müller, Grasses Namibia, rev. ed.: 197, 2007; Poilecot, Eragrostis Zimbabwe: 104, 2007; Fish in van der Walt & al., eds., Systematics & conservation Afric. pl.: 24, 2010 (palea); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 126, 2012.

syn.: *E. acutissima* Jedwabn.; *E. andongensis* Rendle; *E. buchananii* K. Schum.; *E. denudata* Hack.; *E. guinensis* Rendle, incl. var. *egregia* Rendle; *E. vanderystii* De Wild.

Perennial densely tufted grass arising from a short oblique rhizome; culms 20–90 cm tall, erect, 1-noded; leaves concentrated at base; blades filiform, 5–30 cm × 2–3 mm; panicle ovate, 5–25 cm long, with *stiffly spreading primary branches*, or narrowly lanceolate and *densely contracted*, or linear, interrupted with *spikelets*

ERAGROSTIS NINDENSIS

subsessile in clusters on stubby side-branches; spikelets ovate-oblong, 0,4–2 cm long, 8–30-flowered, yellow-green; palea keels thickened, winged.

Moist soils; granite sandveld; wooded short grassland and especially pathsides; seasonal or permanently wet dambo grassland; usually sandy soils; calcareous pans on rocky outcrops; granite domes; seepage areas over rock; locally common; it is often a pioneer; sandy black very hot schist; on the highest ridges of the loftiest rock; 600–2400 m alt.

Namibia, Botswana, S. Africa.

Polymorphic species, often confused with *E. racemosa* (with dark, short to 1 cm long spikelets, paleas not winged).

The grain is eaten. A palatable pasture grass.

E. oligostachya Cope; Lock in Kew Bull. 70/4: § 46: 3, 2015 (Robinson). – Icon.: Cope in Kew Bull. 53: 148, 1998; Fl. Zambes. 10/2: 57, 101, 1999.

Loosely caespitose *annual* grass; culms to 30 cm tall, erect, unbranched, nodes glabrous; leaf sheaths glabrous; blades 1,5–12 cm × c. 1 mm Ø, involute-filiform, glabrous; panicle 2–3 cm long, with 2–4 *racemosely arranged spikelets* on primary branches 0,5–1,5 cm long; spikelets ovate, 0,6–1,7 cm × 4–5 mm, 20–58-flowered; *anthers* 3, c. 0,8 mm long.

Dambos; margins of shallow pools on rocky outcrops; damp grassland over laterite; c. 1400 m alt.

May be expected to occur in Angola and Zaire.

E. olivacea K. Schum., incl. var. *congesta* K. Schum.; Lidia 5/5: 131, 2001; Burrows & Willis, Pl. Nyika Plateau, Malawi: 346, 2005; Sánchez-Ken in Kew Bull. 62: 514, 2007 (in key); Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015. – Icon.: Napper, Grasses of Tanganyika: pl. 6 p. 120, 1965 (Min. Agric. Forests, Wildlife Bull. 18); Fl. Trop. E. Afr., Gramin. 2: 190, 1974 (spikelet); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

syn.: *E. blepharoglumis* K. Schum.; *E. lasiantha* Stapf; *E. lume-neensis* Vanderyst 1920, nom. prov.; *E. pendula* Peter

Tussocky perennial grass; basal leaf sheaths glabrous, persistent; culms 0,25–1,5 m tall, to 2–5 mm Ø, erect; blades linear, terete, 6–30 cm × 1–2 mm, rarely flat (to 55 cm × 8 mm); panicle variable: from *diffuse*, narrowly ovate to *condensed* and linear 5–50 cm long, spikelets evenly distributed, borne on filiform pedicels; spikelets 2,5–8 mm long, narrowly oblong, 3–20-flowered.

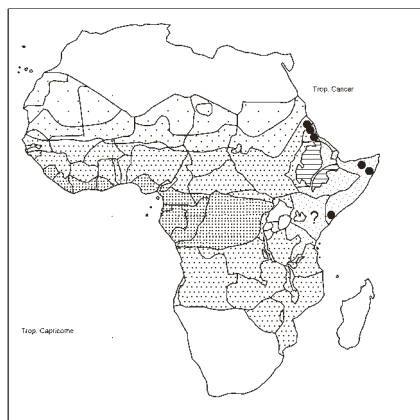
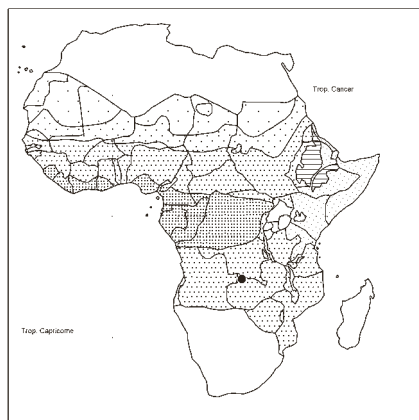
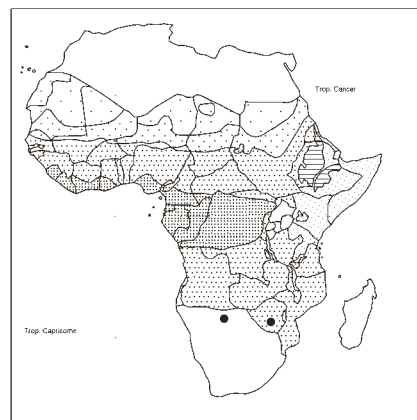
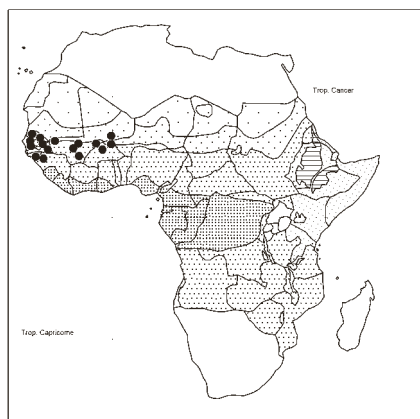
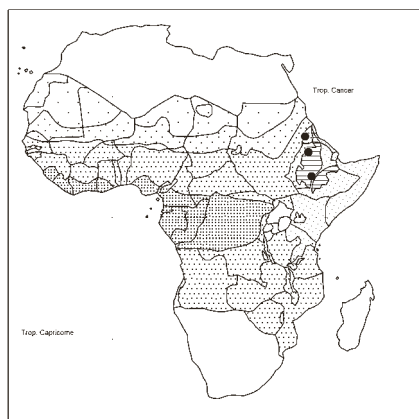
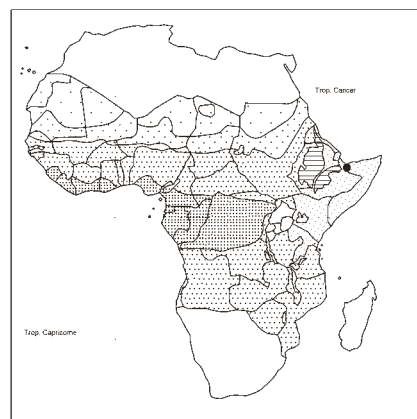
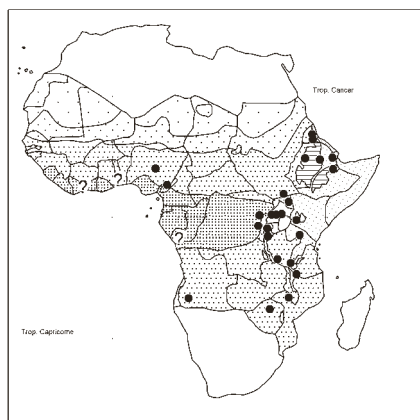
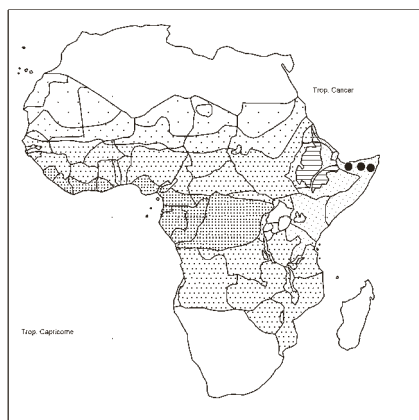
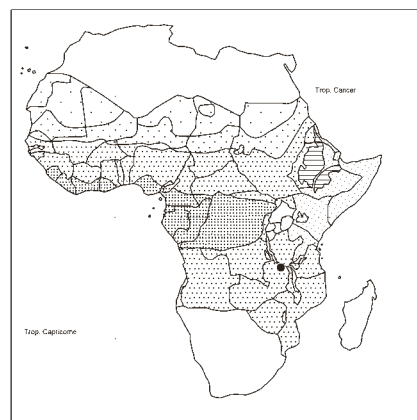
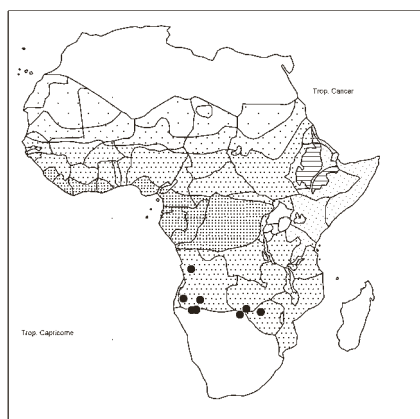
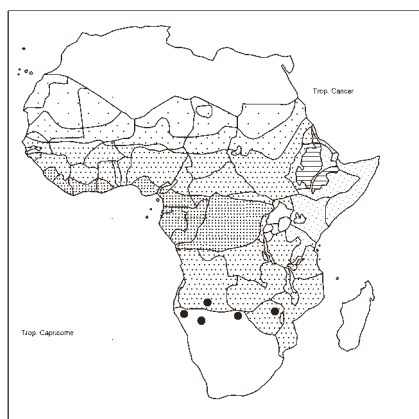
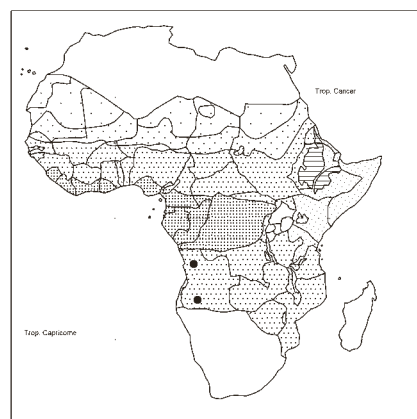
Open grassland on dry stony hill slopes and in rock crevices, rising to *Phillipia* moorland; occasionally on black clays or other swampy soils; 1300–3300 m alt.

Variable species (continuous variation), particularly in panicle shape and lemma indumentum. Very similar to and related to *E. canescens*, but spikelets evenly distributed and palea keels ciliate (not scaberulous).

E. pallens Hack. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 156, 1990; Fl. Zambes. 10/2: 57, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 102, 2007; Müller, Grasses Namibia, rev. ed.: 201, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 130, 2012.

syn.: *E. dura* Stapf

Densely caespitose perennial grass; culms to 0,4–1,5–2 m tall, erect, branched or not, nodes glabrous; basal leaf sheaths *thinly pilose below or glabrous*, firmly chartaceous, persistent; blades linear, 0,07–0,4–1 m × 3–8 mm, involute, glabrous or thinly pilose; panicle 13–45 cm long, narrowly oblong to broadly ovate, open, spikelets sessile or shortly pedicelled (0,5–1 mm long) on

*Eragrostis lepida**Eragrostis lepidobasis**Eragrostis leptotricha**Eragrostis lingulata**Eragrostis longifolia**Eragrostis lutensis**Eragrostis macilentia**Eragrostis mahrana**Eragrostis mariae**Eragrostis membranacea**Eragrostis micrantha**Eragrostis microsperma*

ERAGROSTIS PALLENS

racemose primary branches these ascending or spreading, not whorled, or on secondary branchlets, axils glabrous; spikelets oblong-linear, 1–2 cm × 1,7–2 mm, 8–36-flowered; palea keels thickened, *wingless*.

Floodplain, dambo grassland; sandveld; wooded short grassland with mopane or with mixed deciduous trees on Kalahari Sand and other sandy soils; *Terminalia sericea*, *Burkea africana* woodland; around seasonal pans; 30–1500 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa.

E. palustris Zon.; Onana, Fl. Cameroun 40: 242, 2013. – Icon.: van der Zon, Gramin. Cameroun 2: 129, 1992.

Perennial grass, erect, densely caespitose 0,9–1,1 m tall, glaucous, base often purplish; leaf blades 15–30 cm long, rigid; panicle ovate-elliptic, 18–25 cm long, branchlets slender, ascending, to 10 cm long with white hairs in axils; pedicels capillary, 1–1,8 cm long, spikelets *ovate-elliptic*, 2–2,5 × 0,8–1 mm, purplish, 5–6-flowered, the 3 basal flowers *sterile*, reduced to lemmas; glumes 1–1,2 mm, lanceolate; lemmas ovate, 1,8–2 mm long, 3-nerved.

Swampy places; c. 300 m alt.

According to van der Zon (o.c.: 128) the species occurs in West Africa, from Guinea to Nigeria and Cameroon. Onana (l.c.) pointed out that the only collection known is van der Zon 3494, collected 30 km S of Garua (Cameroon) at Laende Massa, in 1986.

Related to *E. cenolepis* (with ovate spikelets 3–6 × 2–4 mm).

E. paniciformis (A. Braun) Steud.; Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015; PhytoKeys 155: 127, 2020. – Icon.: Troupin, Fl. Rwanda 4: 253, 1988; Fl. Eth. & Eritrea 7: 128, 1995; Fl. Zambes. 10/2: 57, 1999 (spikelet); Nozawa & Grande in Ernstia 20: 84, 2010; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013; Veldkamp & al. in Rheede 27: 47–48, 2017.

bas.: *Poa paniciformis* A. Braun

syn.: *Eragrostis keniensis* Pilg.; *E. fumigata* Peter

Loosely tufted, *perennial* grass; culms 0,15–1 m tall, erect or geniculate; leaf blades linear, flat, 3–15 cm × 2–5 mm; panicle ovate, 4–22 cm long, spreading or ± contracted, much branched, spikelets borne on long pedicels; spikelets *ovate*, 4–9 × 3–5 mm, 10–26-flowered; palea keels with comb-like hairs 0,1–0,2 mm long.

Seasonally wet soils in deciduous bushland; swamp grassland; streamsides; wet flushes; dambos; floodplain; disturbed ground at roadsides; wet meadow on lateritic pans; moist situations in arable land; often in ditches and irrigation channels; lava plain; 300–3000 m alt. (PhytoKeys 155: 127, 2020).

Introduced in India (Veldkamp & al., l.c.; Plant Discoveries 2017: 47, 2018), Australia, S. America (Venezuela: Ernstia l.c.).

Like *E. exasperata* but larger in all parts. Grading into *E. botryodes* and *E. chalarothyrsos*: the palea with its ciliolate keels is the most reliable distinguishing feature.

E. papposa (Roem. & Schult.) Steud.; Lye & al. in Lidia 4: 167, 2000; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 282, 2010; César & Chatelain, Fl. ill. Tchad: 198, 2019. – Icon.: Mém. Inst. Rech. Sahar., Mém 4: pl. I p. 113, 1958 (as *E. kohorica*); Audru & al., Les plantes vascul. Rép. Djibouti 2/2: 849, 1994; Fl. Eth. & Eritrea 7: 123, 1995; Collenette, Wild flow. Saudi Arabia: 381, 1999; Cope, Fl. Arab. Penins. 5/1: 143, 2007 (spikelet); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis).

bas.: *Megastachya papposa* Roem. & Schult.

ERAGROSTIS PAPPOSA

syn.: *Poa papposa* Dufour ex Roem. & Schult. 1817, pro. syn.; *P. nigra* Clem. ex Willk. & Lange 1861, pro syn.; *P. aulacosperma* Fresen.; *Eragrostis aulacosperma* (Fresen.) Steud., incl. var. *perennis* Schweinf.; *E. vulgaris* Coss. & Germ. var. *sporostachya* Coss. & Durieu (as “speirostachya”); *E. sporostachya* (Coss. & Durieu) Lange; *E. atrovirens* Lange 1860, pro syn., non *E. atrovirens* (Desf.) Trin. ex Steud. 1840; *E. rigidifolia* Hochst. ex Schweinf.; *E. verticillata* Coss. 1900, pro syn.; ***E. kohorica*** Quézel, Bull. Soc. Hist. Nat. Afrique N. 48: 83, 1957; Mém. Inst. Rech. Sahar., Mém. 4 (Mission bot. Tibesti): 112 & pl. I p. 113, 1958, e descript. & fig., **syn. nov.**

Perennial (short-lived) compactly tufted grass; culms 2–55 cm long, 1–2 mm Ø, wiry, erect or ascending; leaf blades filiform, 2–15 cm × 1–2 mm, stiff, glaucous, often forming a compact cushion; panicle ovate, 3–20 cm long, open, *with or without glands* on the capillary pedicels 0,4–1 cm long; spikelets linear, 3–11 × 1 mm, 5–20-flowered, dark grey; lower glume 0,3–1 mm long; anthers 3, 0,1–0,2 mm long.

Juniperus or *Acacia* shrubland over limestone, gypsum or gneiss; sandy and gravelly soils in watercourses; weed of cultivation and flower beds; dry, often sandy soils in deciduous bushland; very short lawn on volcanic lappiaz; dry hill slopes in open *Acacia* scrubland and grassland; cracks on pavement, sandy roadside paths and hard bare ground; 900–3300 m alt.

SE Spain; Morocco, Algeria, Tunisia; Arabian Peninsula, Socotra, to Afghanistan, Nepal, Pakistan, W Himalaya, Burma.

E. kohorica Quézel is only a reduced, high altitude variant of *E. papposa*. Smaller compact forms of *E. papposa* are often confused with *E. barrelieri*, that is, however, an annual (with a similar geographic range) with a denser panicle and longer lemmas (1,7–2,5 mm, not 1–1,7 mm).

E. paradoxa Launert; Burrows & Willis, Pl. Nyika Plateau, Malawi: 346, 2005. – Icon.: Chippindall & Crook, 240 grasses S. Africa 3: part 168, 1976; Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, *Eragrostis* Zimbabwe: 48, 2007.

Caespitose *perennial* grass; culms to 40 cm tall, erect, unbranched, nodes glabrous; basal leaf sheaths glabrous, chartaceous, terete, *decaying into a cushion of persistent fibres*; blades 3–12 cm × 0,5–1 mm, tightly convolute, *filiform, flexuous*, glabrous; panicle 2,5–9 cm long, ovate, loose, open, with *widely divaricate* branchlets and pedicels, the spikelets evenly distributed on slender pedicels 0,2–1,2 cm long, primary branches not whorled; branches, branchlets, pedicels *pubescent or thinly long-pilose* on a conspicuous swelling in the axils (sometimes glabrous, eglandular); spikelets ovate-oblong, 5,5–8,5 × 3–5 mm, conspicuously tapering to apex, 7–20-flowered.

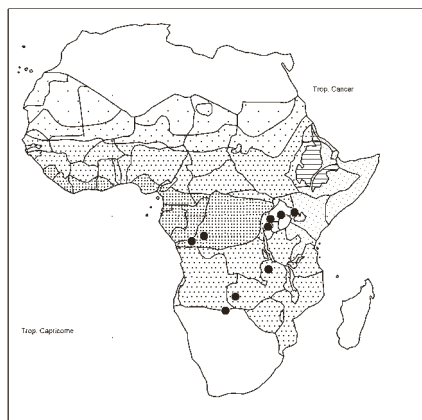
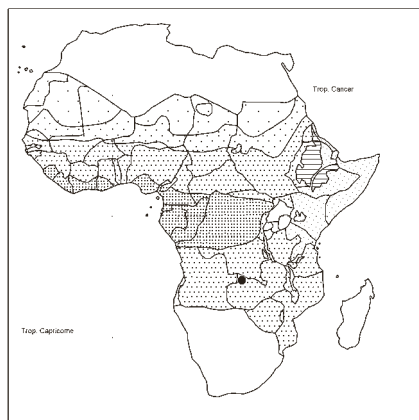
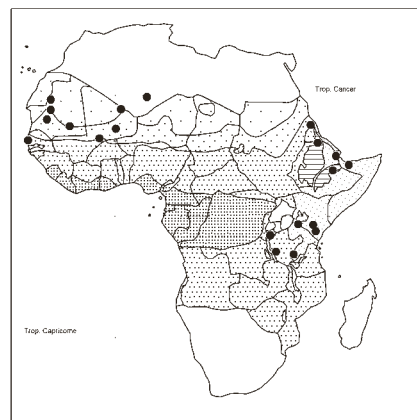
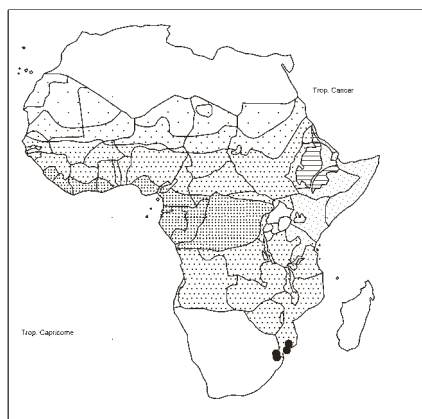
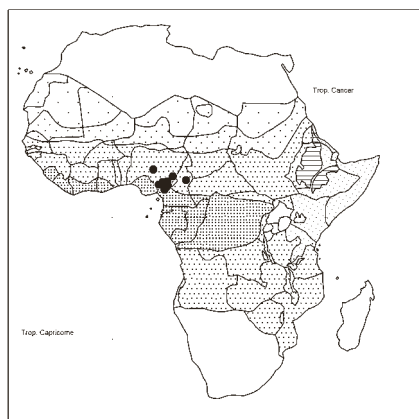
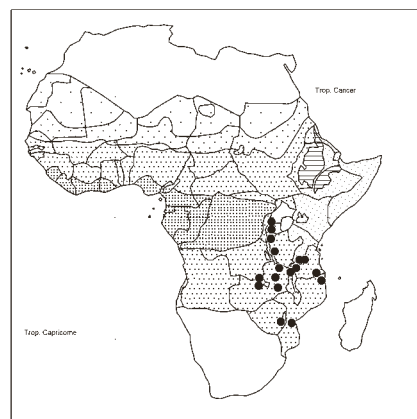
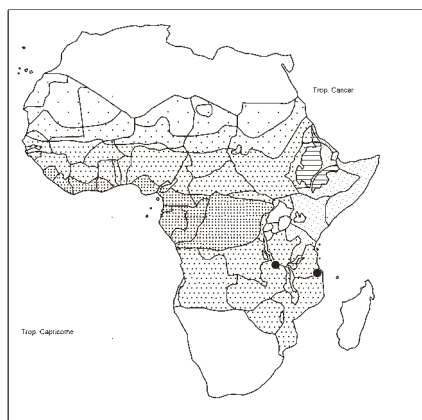
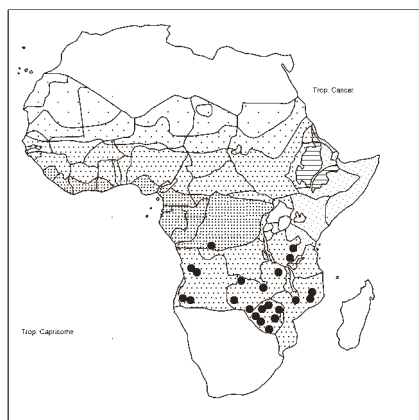
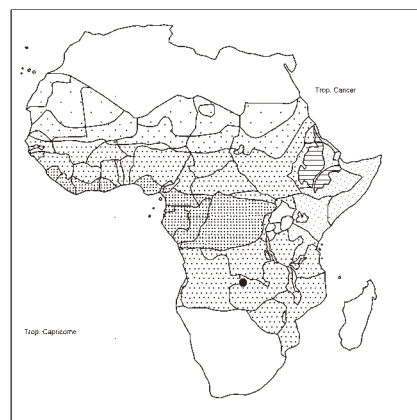
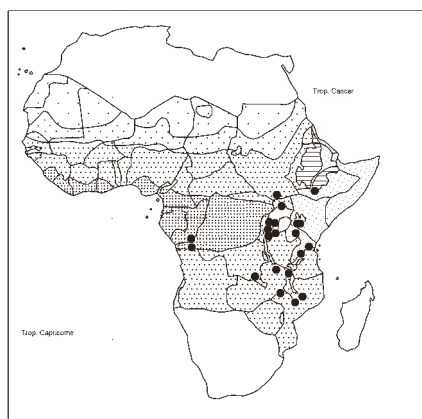
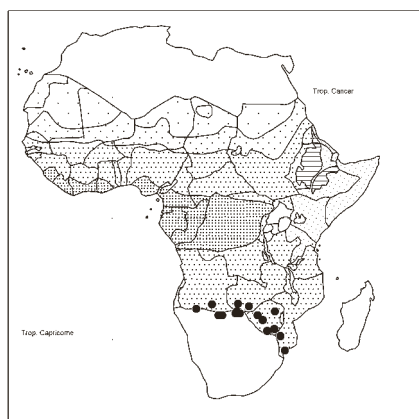
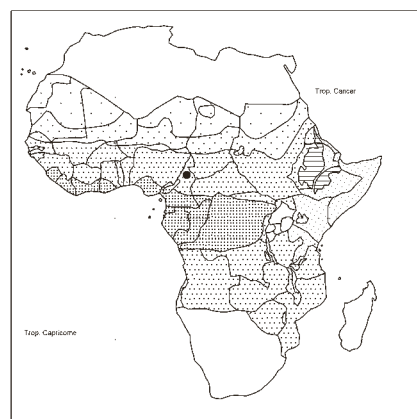
Rocky outcrops; riverine fringes; grassland; waterslicks; wet hollows amongst rocks, wet dambos; shallow damp soils on rocks; 1220–2480 m alt.

May be mistaken for *E. patentipilosa*, but can be easily distinguished by the dichotomous branches.

E. pascua S. M. Phillips; Fl. Eth. & Eritrea 7: 118, 1995. – Icon.: Kew Bull. 46: 113, 1991 (caryopsis).

Tufted *annual* grass; culms erect or ascending, 40–70 cm tall; leaf blades filiform, 6–20 cm × 2,5–5 mm; panicle 10–20 cm long, elliptic or ovate, primary branches inserted singly, spikelets distant on slender pedicels 3–8 mm long, *sometimes with a yellow gland* near the middle; spikelets oblong, 0,6–1,2 cm × c. 2 mm, *dark grey-green*, 7–21-flowered.

Moist grassland; 2000–2500 m alt.

*Eragrostis mildbraedii**Eragrostis milnei**Eragrostis minor**Eragrostis moggii**Eragrostis mokensis**Eragrostis mollior**Eragrostis muerensis**Eragrostis nindensis**Eragrostis oligostachya**Eragrostis olivacea**Eragrostis pallens**Eragrostis palustris*

ERAGROSTIS PASCUA

Resembling *E. macilenta* which has, however, smaller lemmas (1,3–1,7 mm long, not 2–2,6 mm), and reddish brown, smaller caryopsis (0,6 mm long, not 0,8 mm).

E. patens Oliv., incl. var. *congoensis* Franch. and var. *pilosa* Peter; Klaassen & Craven, Checklist grasses Namibia: 44, 2003; Agnew, Upl. Kenya wild flow., ed. 3: 421, 2013; Sosef & al. in Pl. Ecol. Evol. 152: 101, 2019 (Gabon). – Icon.: Fl. Trop. E. Afr., Gramin. 2: 226, 1974; Troupin, Fl. Rwanda 4: 255, 1988; Fl. Zambes. 10/2: 58, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 158, 2007.

Tufted *annual* grass; culms 6–40 cm tall, erect or ascending; leaf blades linear, 3–25 cm × 2–6 mm, flat; panicle spike-like, 2–10 cm × 1,5–6 cm, dense, spikelets sessile in *wedge-shaped clusters*, these ± *coalescent into an ovoid or oblong head*, sometimes the lower clusters distant; rhachis glabrous to hirsute, branchlets bearded; spikelets linear, 0,7–4 cm × 1–2 mm.

Pathsides; overgrazed and woody places; sandy dry savannas; cultivations; pastures; wooded grassland; sandveld; rock outcrops; granite sands; Kalahari Sands; red doleritic soils; serpentine soils; roadsides; cultivated ground; clayey loams; weedy places; 250–2400 m alt.

Namibia, S. Africa, Swaziland.

E. patentipilosa Hack.; Fl. Trop. E. Afr., Gramin. 2: 231–232, 1974 (as *E. pseudosclerantha*); Gibbs Russell & al., Grasses south. Afr.: 152, 1990 (as *E. lamprospicula*); Agnew, Upl. Kenya wild flow., ed. 3: 421, 2013. – Icon.: Fl. Eth. & Eritrea 7: 115, 1995 (spikelet); Fl. Zambes. 10/2: 58, 1999 (idem); Poilecot, Eragrostis Zimbabwe: 198, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 169, 2012.

syn.: *E. pseudosclerantha* Chiov.; *E. lamprospicula* De Winter Short-lived perennial grass forming sprawling tufts; culms 12–50 cm tall, geniculately ascending, sometimes stoloniferous; leaf blades 3–9 cm × 2–3 mm, prominently ribbed; panicle 3–8 cm long, broadly ovate, loose, open; pedicels *slender*, 2–7 mm long, often with a *brownish ring* about the midpoint; spikelets elliptic, 0,5–1 cm long, 7–18-flowered, florets *rather loose* with *spikelet-margins serrate*, dark greyish green, glossy.

Roadsides; miombo; wooded grassland on sandy soils; dambos; disturbed ground; sometimes on termitaria; locally common; stony soils in open places; heavily overgrazed and trampled veld; 1000–2200 m alt.

S. Africa.

Differs from *E. racemosa* in the slender pedicels, looser spikelets with serrate margins.

E. patula (Kunth) Steud. – In most floras and flora lists treated as *E. tenuifolia* (A. Rich.) Hochst. ex Steud. (cf. also Note below) – Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015. – Icon.: Bosser, Gramin. patur. cult. Madag.: 166, 1969; Fl. Eth. & Eritrea 7: 123, 1995 (spikelet); Nicora in Boissiera 54: 93, 1998; Fl. Zambes. 10/2: 56, 83, 1999; Cope, Fl. Arab. Penins. 5/1: 136, 2007 (spikelet); Poilecot, Eragrostis Zimbabwe: 86, 2007; Ann. Missouri Bot. Gard. 94: 785, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 263, 2012 (inflorescence); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 197, 2015; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis); Fl. Mascareignes 203, Gramin.: 79, 2018.

bas.: *Poa patula* Kunth

syn.: *P. tenuifolia* A. Rich.; *Eragrostis tenuifolia* (A. Rich.) Hochst. ex Steud., incl. var. *polytricha* Peter; *E. parviglumis* Hochst. ex Steud.; *Megastachya patula* (Kunth) Roem. & Schult.

ERAGROSTIS PATULA

Weak perennial tufted grass; culms 10–80 cm tall, erect or geniculate, then with shoots and roots at lower nodes, branching intravaginally at base, *culms and shoots strongly laterally compressed*; leaf blades ribbon-like, 4–30 cm × 1,4 mm, attenuate; panicle narrowly elliptic, 5–20 cm long, axils white-bearded (or not), branches erecto-patent, solitary, stiff, to 5–8 cm long; pedicels 3,5–12 mm long, longer than spikelets; these narrow, 0,4–1,6 cm × 1–3 mm, 4–16-flowered, with distant spreading florets, *dark green, margins coarsely serrate*; caryopsis 1 mm long, *strongly flattened*.

Tracksides, disturbed land; dambo grasslands; riverine vegetation; *Acacia* veld on black clay soil; cultivated ground; sandy soils, gravels, loams; usually in areas of high moisture; overgrazed pasturelands; lava plains; grassy clearing in sclerophyllous forest; sometimes ruderal; a common weed of dry bushland and a noxious weed of road sides; 0–2800 m alt.

Tropical and subtropical Old World. Bioko/Fernando Poo; SE S. Africa, Swaziland; (mostly in towns and cities); Madagascar, Réunion; Arabian Peninsula; India, Sri Lanka, SE Asia (cf. Veldkamp in Blumea 48: 495, 2003). Introduced in Madeira, Egypt (perhaps no longer extant); Malesia, Philippines, Australia; C. & S. America.

“A noxious weed resistant to mowing and difficult to pull up by hand”.

“Recognised by its distinctive dark green linear spikelets with tiny glumes, flattened grain and keeled basal shoots”.

Allied to *E. plana*, a strong perennial with condensed panicle, lemmas with thickened gland on lateral nerves.

Note: *Poa patula* Kunth was excluded by Peterson & Sánchez Vega (Ann. Missouri Bot. Gard. 94: 787, 2007) who wrote: “the status of this species and its use are questionable”.

E. perbella K. Schum.; Thulin, Fl. Somalia 4: 185, 1995. – Icon.: Chiovenda, Fl. Somalia 2: 459, 1932.

syn.: *E. araiostachya* Chiov.

Loosely tufted perennial grass; culms 0,6–1 m tall, erect; leaf blades linear, to 25 cm × 2–3 mm; panicle 9–35 cm long, oblong to ovate, moderately dense; spikelets *shortly pedicelled*, oblong, 0,7–1,8 cm × 2–3,5 mm, 12–30-flowered; glumes 1,5–2,7 mm long; lemmas 2–3 mm long, membranous-papery, sharply *acute to subspiculate*; anthers 2, c. 0,6 mm long.

Coastal bushland; 0–450 m alt.

Closely resembling *E. squamata* which has grey spikelets, less acute lemmas which remain imbricate at maturity; *E. egregia* differs in its broader blades (5 mm) and stiffly radiate panicle branches; also near *E. homblei* which has spikelets 3–7 mm long on long slender pedicels and anthers 3,1–1,2 mm long; confused with the West African *E. lingulata* (annual, spikelets 0,7–3,5 cm long, 10–100-flowered, glumes unequal: lower 2,5–3 mm long, upper slightly longer).

E. phyllacantha Cope; Fl. Zambes. 10/2: 139, 1999. – Icon.: Kew Bull. 53: 161, 1998; Poilecot, Eragrostis Zimbabwe: 190, 2007.

Stiff wiry caespitose annual or short-lived perennial grass; culms to 25 cm tall, erect, *branched below*, nodes glabrous; leaf sheaths papillose-hirsute; blades linear, 1–3,5 cm × 1–1,5 mm, *stiff, pungent*, usually *involute*, papillose-hirsute below; panicle 3,5–5 cm long, ovate, open, with *stiff* branches, spikelets distributed on pedicels 0,8–1,5 mm long, primary branches not whorled, axils *shortly pilose*, with *shallowly depressed glands* at midpoint of pedicels (occasional on branches and branchlets); spikelets 3–4 × c. 1 mm, 5–6-flowered.

ERAGROSTIS PHYLLACANTHA

Open grassland; sandveld; sandy soils; limestone outcrops; 1000–1400 m alt.

Botswana.

Similar to *E. moggii* but: axils of panicle branches shortly pilose; less positively perennial.

E. pilgeriana Dinter ex Pilg.; Klaassen & Craven, Checklist grasses Namibia: 44, 2003. – Icon.: Gräser der Farmgeb. Südwestafrika: fig. 163, 1974.

Annual tufted grass; culms to 40 cm tall, erect or ascending; leaf blades linear, to 15 cm × 4 mm; panicle narrowly oblong, 3–8 cm long, lower branches not whorled, bearing 2–3 imbricate spikelets on stout pedicels 1–5 mm long; spikelets ovate, 6,5–8,5 × 4,5–7 mm, 5–10-flowered, sides appearing jagged, *falling entire* like *E. superba*; lemma keeled with conspicuous lateral nerves, keel winged; palea keeled, winged.

Sandy and loamy soils usually over calcareous rocks, often in disturbed ground and roadsides.

Namibia, N Botswana, S. Africa.

E. pilosa (L.) P. Beauv., incl. var. *glabra* Ducommun, fa. *imberbis* Franch., var. *imberbis* Franch., subsp. *imberbis* (Franch.) Tzvelev, var. *major* Litv., subsp. *neglecta* H. Scholz, subsp. *subspontanea* H. Scholz, var. *versicolor* Kuntze, and var. *verticillata* (Cav.) Rchb.; for other vars. and subsp. see World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 251–252, 1994; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 283, 2010; César & Chatelain, Fl. ill. Tchad: 199, 2019; Phytotaxa 501: 226, 2021. – Icon.: Chevalier in Rev. Int. Bot. Appl. Agric. Trop. 29: 129, 1949 (as *E. baguirmiensis*); Fl. Eth. & Eritrea 7: 128, 1995; Poilecot in Boissiera 50: 131, 1995; Nicora in Boissiera 54: 72, 1998; Poilecot, *ibid.* 56: 205, 1999; Boulos, Fl. Egypt 4: 257, 2005; Poilecot, Eragrostis Zimbabwe: 126, 2007; Clarke, Name those grasses: 228–229, 2015; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis); Ibrahim & al., Grasses Mali: 74, 2018.

bas.: *Poa pilosa* L.

syn.: *P. senegalensis* Desv.; *P. linkii* Kunth; *P. tenuiflora* Steud. 1854, pro. syn.; *Eragrostis tenuiflora* Rupr. ex Steud.; *E. filiformis* Link; *E. linkii* (Kunth) Steud.; *E. senegalensis* (Desv.) A. Chev. 1934, nom. illeg.; *E. multicaulis* Steud. 1855; *E. baguirmiensis* A. Chev.; *E. albensis* H. Scholz; *E. afghanica* Gand.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass; culms 8–75 cm tall, erect or ascending; leaf blades linear, 2–20 cm × 1–4 mm, flat; panicle delicate, elliptic-ovate, 4–25 cm long, open, lowest branches whorled (not so in the smallest panicles), axils with nearly always *a few long hairs*; spikelets 3–10 × c. 1 mm, 4–14-flowered, purplish; glumes *tiny*, < 1 mm long; caryopsis *ellipsoid* with 1 side straight, 0,6–1 mm long.

Roadsides; old farmland; weedy places; often near ditches; infrequent or locally common; black basaltic soil; sandy soils in wet areas; weed of cultivation; disturbed open woodland, savannas; clay soils in Mopane woodland; riverine thickets; floodplains; weed in coffee plantations and gardens; guelta edges with *E. barrelieri*, *E. japonica*, *E. cilianensis*, *Cynodon dactylon*; hollows between dunes with *Cenchrus biflorus*, *Aristida funiculata*, *A. mutabilis*, *Eragrostis tremula*, *Digitaria nuda*; 10–2300 m alt.

A character species of *Eragrostis pilosae-Echinocloetum colonae* assoc. nov. (Wittig in Etudes florist. vég. Burkina Faso 9: 11–12, 2005), and of *Echinocloetalia colonae* assoc. (*ibid.* 13), in

ERAGROSTIS PILOSA

inundated grasslands in semi-arid and sub-humid tropical W. Africa (Belg. J. Bot. 139: 203–219, 2007).

Tropical & warm temperate regions of the world (cf. El Mokni & Verloove in Fl. Medit. 29: 49–50, 2019). N. Africa (also Tunisia, cf. El Mokni & Verloove, l.c.); Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland; C & S Europe; Madagascar, W Indian Ocean islands; Andaman & Nicobar islands (J. Econ. Taxon. Bot. 39: 454, 2015); Arabian Peninsula, Palestine, E-wards to Iraq, Afghanistan, India, Sri Lanka, C Asia, SE Asia, Indonesia, New Guinea, Philippines. Introduced in Australia, Pacific islands, N., C. & S. America, West Indies. Invasive species.

Closely resembling *E. aethiopica* which has axils of panicle branches not bearded, lemma short (0,7–1 mm, not 1–1,6 mm), caryopsis broadly elliptic, c. 0,5 mm long.

E. pilosa is perhaps the wild ancestor of *E. tef*, both tetraploid (2n = 40); cf. Fl. Eth. & Eritrea 7: 125–126, 1995.

E. plana Nees; Brink & Belay, eds., Plant resources of trop. Africa 1, Cereals & pulses: 67, 2006. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 158, 1969; Nicora in Boissiera 54: 74, 1998; Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 76, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 138, 2012; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis); van Wyk & Gericke, People's plants ..., ed. 2: 367, 2018.

syn.: *Diplachne hackeliana* Thell.

Perennial *densely tufted* hairless grass difficult to uproot; culms 0,4–1 m tall, strongly compressed below, erect, unbranched; basal leaf-sheaths overlapping, chartaceous, prominently flattened, persistent; blades linear, 10–80 cm × 2–5 mm, difficult to break, *sometimes with punctate glands along midnerve*; panicle narrowly oblong-ovate, 10–35 cm long, branches ascending or spreading, *spikelets loosely appressed to the branchlets* on pedicels to 2 mm long, primary branches not whorled; spikelets linear, 0,6–1,3 cm long, 9–13-flowered, with toothed margins; lemmas c. 2 mm long with punctate glands, keeled, in rows not overlapping (rhachilla visible).

Dambo; floodplain grassland; sandveld; grassland; sandy soils; sometimes in shallow laterite pans; disturbed ground at roadsides; locally common to locally dominant in savanna and grassland; overgrazed, burnt or disturbed areas; 390–2000 m alt.

Botswana, S. Africa, Swaziland, Lesotho; Madagascar. Introduced in W & C Europe, India, Burma, C. & S. America.

Sometimes confused with *Sporobolus africanus* and *S. pyramidalis*, also with strong leaves and difficult to uproot. Similar to *Eragrostis patula*, a weak perennial or annual lacking glands on lemma nerves.

E. planiculmis Nees; Fl. Zambes. 10/2: 80–81, 1999. – Icon.: Poilecot, Eragrostis Zimbabwe: 82, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 264, 2012 (inflor.).

syn.: *E. nebulosa* Stapf

Caespitose perennial grass; culms *to 1,2 m* tall, erect, unbranched, nodes glabrous; *basal leaf sheaths glabrous*, chartaceous, suffused with red (the inner ones usually yellow), compressed, keeled, persistent; blades 10–90 cm × c. 1,5 mm Ø, tightly involute, setaceous, glabrous; panicle 10–70 cm long, narrowly elliptic-ovate to linear-lanceolate, loose, ± open, spikelets loosely condensed about the branchlets on pedicels 5–8 mm long, primary branches 1–6 at a node but not whorled, axils glabrous; spikelets linear, 4,5–8 × 1–1,5 mm, 5–11-flowered.

ERAGROSTIS PLANICULMIS

Dambo grassland; cultivated ground; fynbos; savanna; clay or dolorite soils in depressions; vle margins; disturbed areas; 900–1520 m alt.

S. Africa, Swaziland, Lesotho.

Resembling *E. curvula* which has densely hairy basal sheaths.

E. plurigluma C. E. Hubb.; Lisowski, Fl. Rép. Guinée 1: 460, 2009. – Icon.: Fl. Zambes. 16/2: 76, 1999; Ibrahim & al., Grasses Mali: 74, 2018 (cf. comment below).

syn.: *E. trepidula* C. E. Hubb.

Perennial densely tufted grass; culms 0,6–1,2 m tall, erect, unbranched, nodes glabrous; basal leaf sheaths glabrous, chartaceous, compressed, keeled; blades mostly basal, filiform, 10–45 cm × 1–2,5 mm, tightly involute, glabrous; panicle (ovate-) oblong, open, lax, 7–27 cm long, spikelets evenly distributed on filiform pedicels 0,4–2 cm long, primary branches slender, not whorled, axils glabrous; spikelets elliptic, 4–7,5 × 3–4,5 mm, 7–14-flowered, *lowermost lemmas barren*; palea ciliolate with hairs; *anthers* 0,8–1,4 mm long.

Permanently wet dambos; swampy grassland, along riverbanks; moist soils; termitaria; 1250–1710 m alt. (Fl. Zambes. area).

Not in Mali: confusion with Ségou in Senegal (12°25'N × 12°17'W).

Distribution disjunct.

Closely resembling *E. paniciformis*, which has all lemmas fertile and anthers 0,5–0,7 mm long.

E. pobeguinii C. E. Hubb.; Lisowski, Fl. Rép. Guinée 1: 460, 2009; Cheek & al., Plants of Dom, Bamenda Highl., Cameroon: 151, 2010. – Icon.: Chevalier in Rev. Int. Bot. Appl. Agric. Trop. 29: 131, 1949 (as *E. fleuryi*); van der Zon, Gramin. Cameroun 2: 121, 1992.

syn.: *E. fleuryi* A. Chev.

Perennial densely tufted grass 15–50 cm tall; lower leaf sheaths hardened, bulbously swollen; blades setaceous, 10–15 cm × c. 2 mm, pilose with tubercle-based hairs; panicle linear, scantily branched, 3–12 × 0,5–2 cm, bearing to 15 spikelets on pedicels 3–6 mm long, pallid to olive-grey; spikelets oblong, 7–15 × 3–6 mm, 8–12-flowered.

Shallow soils over rock and ironstone; c. 1000–2200 m alt.

“A disconcertingly variable species, possibly conspecific with *E. longifolia*” (Fl. W. Trop. Afr., ed. 2, 3/2: 390, 1972). Possibly conspecific with *E. racemosa*.

E. poculiformis Cope – Icon.: Kew Bull. 55: 489, 2000.

Annual delicate grass; culms to c. 25 cm tall, unbranched, nodes glabrous; leaf sheaths glabrous below, pilose with *tubercle-based hairs* above; blades linear, to 4 cm × 1,5 mm, pilose with tubercle-based hairs; panicle elliptic-oblong, 6–15 cm long, open, spikelets evenly distributed, branches and branchlets slender, flexuous, pilose with tubercle-based hairs, clearly demarcated from the filiform pedicels, these 5–9 mm long, primary branches not whorled, all axils with a beard of long stiff hairs; spikelets ovate-oblong, 3,5–5 × 1,8–2,5 mm, not compressed, 6–14-flowered; the lemmas in opposite rows not imbricate, rhachilla concealed by the expanded palea; *anthers* 3.

Large rocky outcrop with open *Brachystegia* woodland, large patches of shallow sandy seasonally inundated soil over rocks; 1300 m alt.

Only known from the type collected in 1997.

Very similar to *E. anacanthoides* which has 2 anthers, lemma pilose, palea glabrous.

ERAGROSTIS

E. porosa Nees, incl. var. *parvula* Stapf; Fl. Eth. & Eritrea 7: 124–125, 1995; César & Chatelain, Flore ill. Tchad: 199, 2019. – Icon.: Müller, Grasses Namibia, rev. ed.: 203, 2007; Poilecot, Eragrostis Zimbabwe: 176, 2007.

syn.: *E. hereroensis* Hack.; *E. podotricha* Chiov.; *Sporobolus verticillatus* Peter 1928, nom. nud.

Annual loosely tufted grass; culms 6–80 cm tall, erect or geniculately ascending, nodes glabrous but with a *ring of elongated glands just below* them; leaf *sheaths usually pilose with tubercle based hairs*; blades linear, 4–15 cm × 2–5 mm, flat, glabrous or pilose; panicle lanceolate-ovate, 8–25 cm long, open, spikelets evenly distributed on pedicels 1–2 mm long, primary (lowermost) branches whorled; spikelets linear-oblong, 3–8 × c. 1 mm, 5–14-flowered; *glumes* 0,6–1,5 mm long, rounded.

Hot dry country: short grassland, wooded grassland on sandy soil; disturbed ground at roadsides; infrequent to common; stony soils; often on limestone around rivers and pans; granitic sands; (semi-desert) bushland; 300–1300 m alt.

Namibia, Botswana, S. Africa; ? Yemen. – Doubtfully in Sudan (Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015).

Specimens from Ethiopia are doubtfully specifically distinct from *E. cylindriflora*. Distinguished from the latter by its hairy leaf-sheaths, shorter lower glume, rounded lemmas; but the two species tend to intergrade.

E. procumbens Nees; Gibbs Russell & al., Grasses south. Afr.: 157, 1990; Fl. Zambes. 10/2: 137, 1999. – Icon.: Volk, Gräser des Farmgebietes von Südafrika: fig. 165, 1974; Poilecot, Eragrostis Zimbabwe: 186, 2007.

Loosely caespitose annual grass; culms to 50 cm tall, procumbent or geniculately ascending, less often erect, mostly branched, nodes glabrous, sometimes with a *glandular ring below nodes*; leaf sheaths glabrous or thinly pilose, with *glandular pits along midnerve*; blades linear, 2–20 cm × 1,5–3,5 mm, glabrous or thinly pilose, with *crateriform glands along margins* and a *line of glandular pits along midnerve below*; panicle 3–10 cm long, (elliptic-)oblong, *densely contracted*, primary branches appressed to the axis (sometimes the lowermost spreading), spikelets condensed about the branches on pedicels 0,5–1,5 mm long, these *with crateriform glands*, primary branches not whorled, axils glabrous; spikelets ± oblong, 5,5–7 × 1,7–2,5 mm, 10–12-flowered; glumes c. 2 mm long, usually with 1–2 *crateriform glands on the keel*; lemmas *often* with a *crateriform gland on the keel above*, glabrous, *acute*.

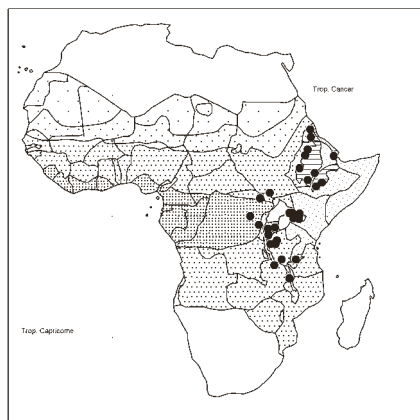
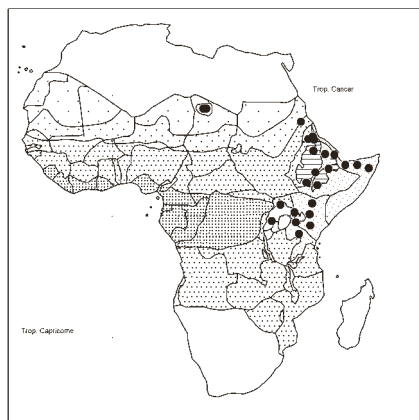
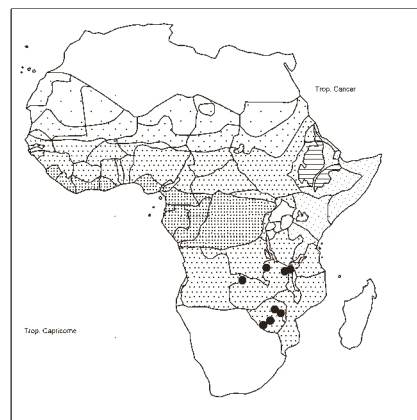
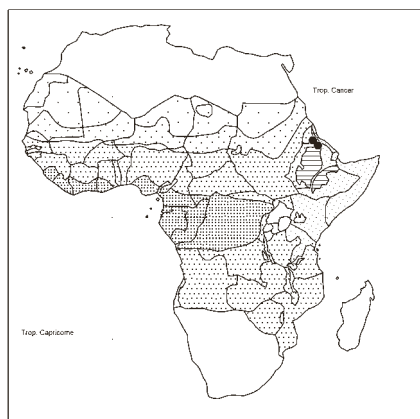
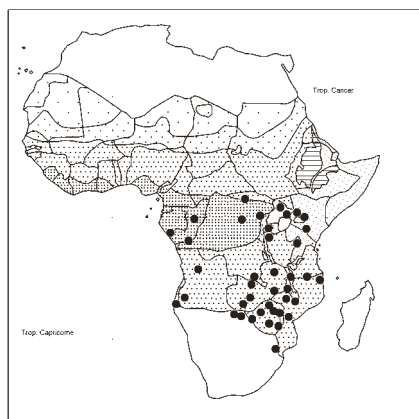
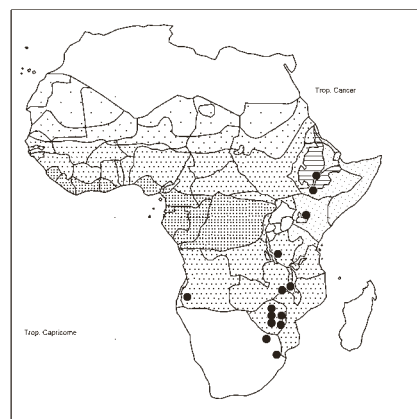
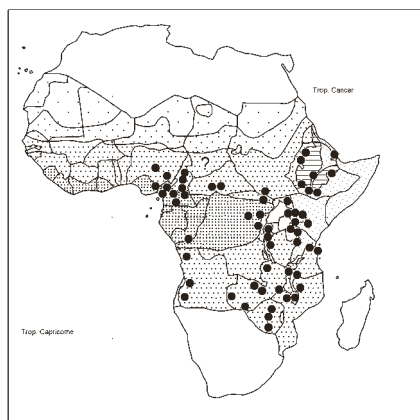
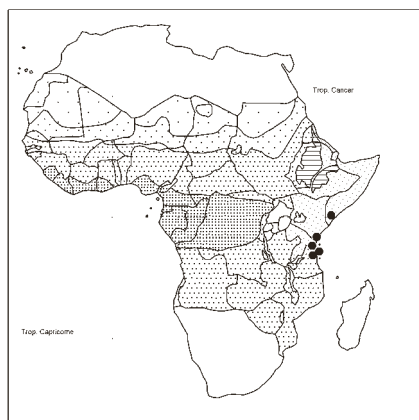
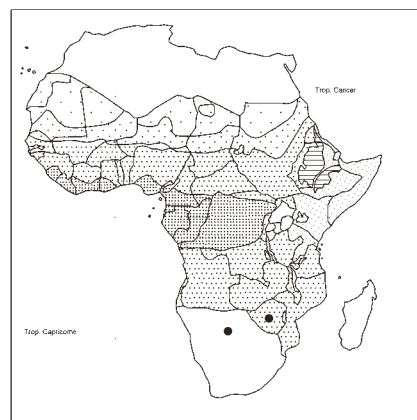
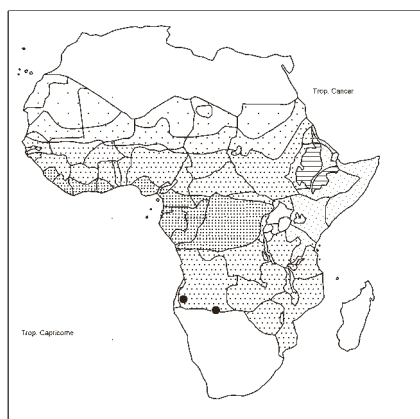
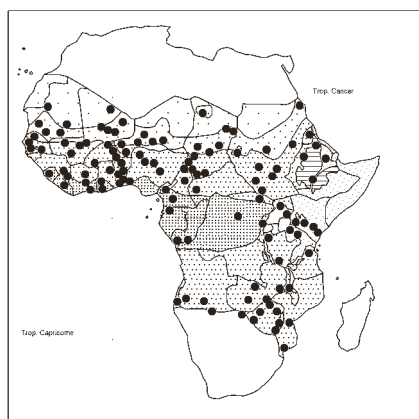
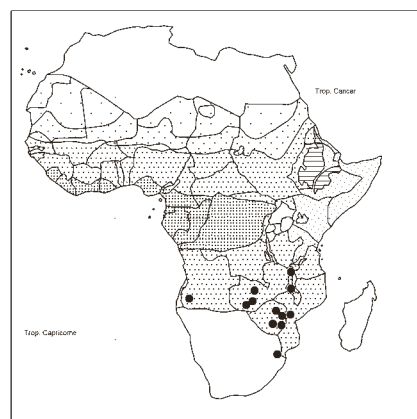
Sandveld; disturbed ground; gravel and sandy soils in depressions; along watercourses; 0–c. 1360 m alt.

SW Namibia, S. Africa, Lesotho.

E. prolifera (Sw.) Steud. – In many (older) floras figuring as *E. domingensis*. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 249, 1994. – Icon.: Feinbrun-Dothan, Fl. Palaestina 4 (plates): 374, 1986; Poilecot, Boissiera 50: 141, 1995; Ibrahim & al., Grasses Mali: 75, 2018.

bas.: *Poa prolifera* Sw.

syn.: *P. domingensis* Pers.; *P. linearis* Schumach.; *Eragrostis domingensis* (Pers.) Steud.; *E. linearis* (Schumach.) Benth.; *E. fascicularis* Trin.; *E. albescens* Steud.; *E. pallens* Hitchc.; *E. hagerupii* Hitchc.; *E. guineensis* Trin.; *E. sp. A* of Fl. Trop. E. Afr., Gramin. 2: 244, 1974; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

*Eragrostis paniciformis**Eragrostis papposa**Eragrostis paradoxa**Eragrostis pascua**Eragrostis patens**Eragrostis patentipilosa**Eragrostis patula**Eragrostis perbella**Eragrostis phyllacantha**Eragrostis pilgeriana**Eragrostis pilosa**Eragrostis plana*

ERAGROSTIS PROLIFERA

Perennial coarse tufted grass; culms hard, rigid, 0,8–1,5 m tall; roots clothed in a dense sheath of hairs to which sand grains adhere (thus assisting in sand-binding); leaves mostly cauline, ± glaucous; sheaths glabrous except at top; blades linear, 5–30 × 3–4 mm, glabrous or loosely pilose at base above; panicle narrowly oblong, 10–30 cm long, with short *ascending* branches *close to the axis*; spikelets linear, 5–7 × c. 2 mm; lemmas obtuse.

Coastal savannas on sandy humid soils; degraded soils from old cultivations; overgrazed places; littoral sand dunes, even slightly brackish; lagoon sides; small depressions; often with *Anadelphia afzeliana*, *A. trispiculata*, *Eragrostis atrovirens*, *Ctenium newtonii*, *Andropogon auriculatus*; coastal sands with *Schizachyrium pulchellum*, *Sporobolus virginicus*, *Stenotaphrum secundatum*; lakes. S. Tomé; tropical & subtropical America (S N. & C. & S. America, West Indies).

Cf. under *E. benguelensis* Wawra & Peyr. at end of *Eragrostis*.

E. psammophila S. M. Phillips; Cope in Kew Bull. 47: 282, 1992. – Icon.: Kew Bull. 46: 115, 1991 (caryopsis); Thulin, Fl. Somalia 4: 183, 1995.

Annual grass 9–17 cm tall; leaf blades slender, 2–5 cm × 1–1,5 mm, glabrous or pilose below; sheaths tuberculate-pilose; panicle ovate, loose, 5–9 cm long, branches solitary or paired, pedicels 0,5–4 mm long; spikelets ± oblong, 4–6 × < 2 mm, 6–10-flowered; *lemmas truncate-emarginate at tip*; caryopsis ellipsoid, c. 0,5 mm long, *shining, pale brown*.

Red sandy soils in *Acacia-Commiphora* bushland; c. 250 m alt. Closely related to *E. gloeophylla* (cf. that species above).

E. pseudopoa C. E. Hubb.; Fl. Trop. E. Afr., Gramin. 2: 221, 1974.

Caespitose perennial grass from a short underground rhizome; culms 50 cm tall, erect; leaf blades to 10 cm × 3 mm; panicle narrowly ovate, 7–11 cm long, *lax*, branches flexuous, nodding, pedicels *slender 0,4–1,2 cm* long; spikelets ovate, 6–9 × 4–6 mm, 5–8-flowered, purple; lemmas *firmly membranous*, 4–5 mm long. Swampy places; 1800–2000 m alt.

Possibly a local variant of *E. capensis* but: panicle lax, pedicels long, lower spikelets with longer membranous lemmas.

E. punctiglandulosa Cope – Icon.: Kew Bull. 53: 142, 1998 (portion of inflorescence).

Annual or short-lived perennial grass; culms to 80 cm tall, erect, unbranched, nodes glabrous, *occasionally* with *punctate glands below nodes*; basal leaf sheaths glabrous, chartaceous, terete or *somewhat compressed*, sometimes glandular on midnerve, persistent; blades linear, 8–15 cm × c. 2 mm, glabrous; panicle elliptic-ovate, 15–22 cm long, *loose, open*, spikelets *evenly distributed along the flexuous branches and branchlets on pedicels 1–2 mm* long, primary branches not whorled; spikelets linear, 6,5–9,5 × c. 1,3 mm, 6–16-flowered; glumes very unequal, keeled, keel scabrid; lemmas *keeled*, lateral nerves prominent, *these and keel with conspicuous punctate glands*.

Heavy black clay soil.

Resembling *E. tenuifolia* but with glandular lemma nerves and scarcely compressed basal leaf sheaths.

Only known from the type collected in 1963.

E. pusilla Hack.; Klaassen & Craven, Checklist grasses Namibia: 25, 2003 (idem); Gibbs Russell & al., Grasses south. Afr.: 104, 1990 (under *Diandrochloa*). – Icon.: Chippindall in Meredith, Grasses & pastures S. Africa: fig. 157, 1955.

ERAGROSTIS PUSILLA

syn.: *Diandrochloa pusilla* (Hack.) De Winter

Delicate loosely tufted annual grass; culms 10–42 cm tall, erect or ascending, often branched below, nodes glabrous; leaf blades linear, flat, 4–15 cm × 1,5–5 mm, scaberrulous; ligule a short, distinct membrane; panicle elliptic, 5–21 cm long, delicate, very diffuse, spikelets evenly distributed on pedicels 0,8–1,8 mm long, primary branches not whorled; spikelets ovate, 0,8–1 × 0,6 mm, 3–4-flowered; *lemmas c. 0,5 mm* long.

Floodplain grassland; 30–950 m alt.

Namibia, Botswana, S. Africa.

E. pynchnostachys Clayton; Fl. Trop. E. Afr., Gramin. 2: 224–225, 1974. – Icon.: Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013.

Perennial tufted grass; culms hard, wiry, erect, 1 m tall; basal leaf *sheaths glabrous*; blades linear, to 25 cm × 4 mm, flat, tip acuminate to filiform; panicle lanceolate, 20–25 cm long, primary branches spreading or ascending, 3–5 cm long, distant in lower part of panicle, shorter and closer above; spikelets borne singly or in little untidy clusters on primary branches to form *dense secund pseudoracemes*, pedicels very short, hairy at foot; spikelets oblong, 3–6 × 1,2–1,5 mm, pale green, 5–10-flowered; glumes < 2 mm long, equal.

Pathsides and stream banks in forest; common in some forest openings; 1700–2200 m alt.

Possible affinity with *E. patens*.

E. racemosa (Thunb.) Steud. (non *E. ramosa* Hack. = *E. schwein-furthii*), excl. var. *holstii* (Engl. & K. Schum.) Chiov. (= *E. schwein-furthii*); Gibbs Russell & al., Grasses south. Afr.: 158, 1990. – Icon.: Chippindall in Meredith, Grasses & past. S. Afr.: 165, 1955; Fl. Zambes. 10/2: 125, 1999; Poilecot, Eragrostis Zimbabwe: 156, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 127, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013; Malaisse & al., Copper-Cobalt flora Upper Katanga and Copperbelt: 384, 2016.

bas.: *Poa racemosa* Thunb.

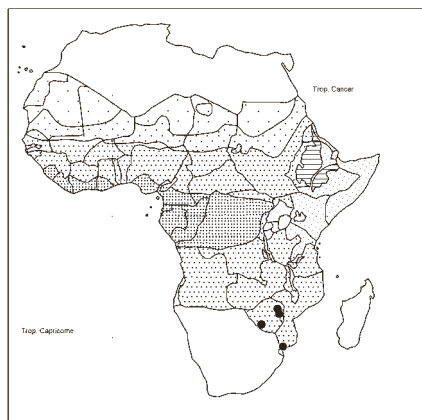
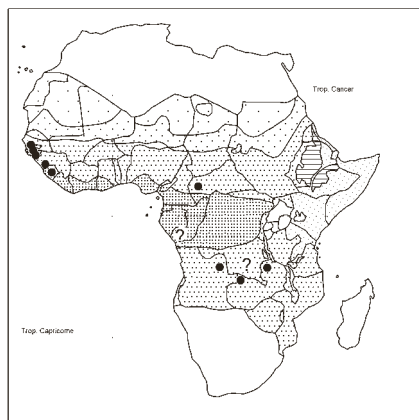
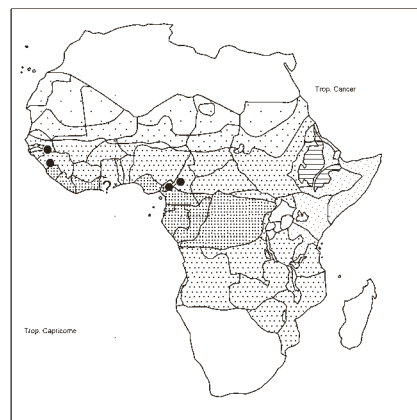
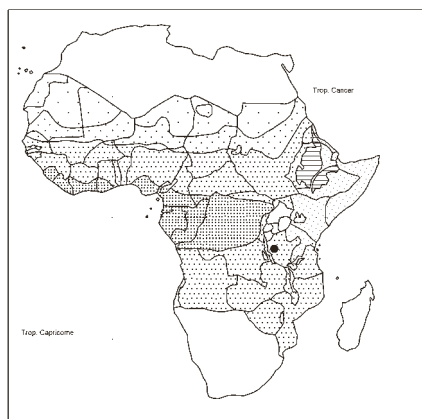
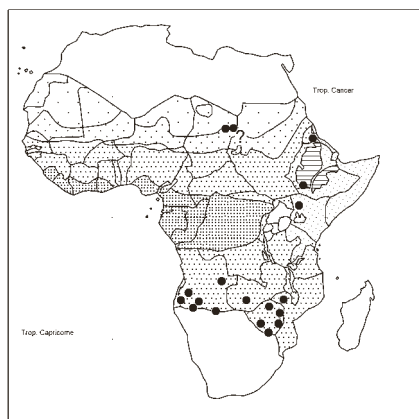
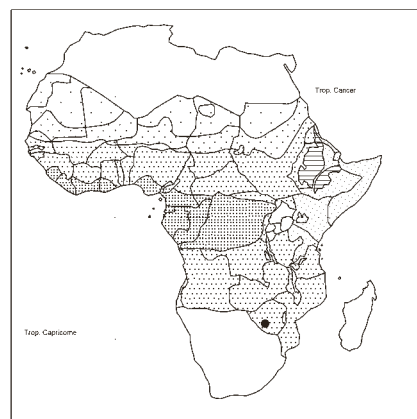
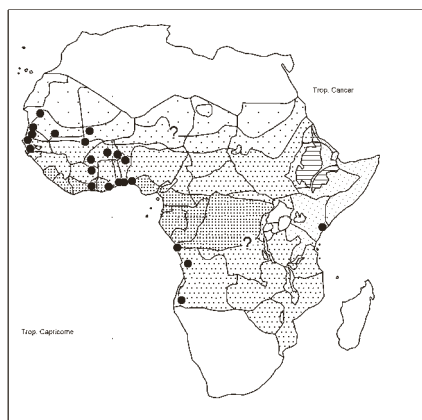
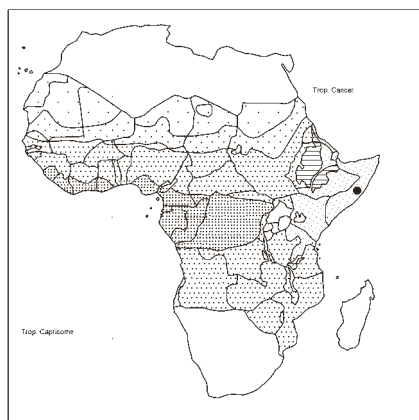
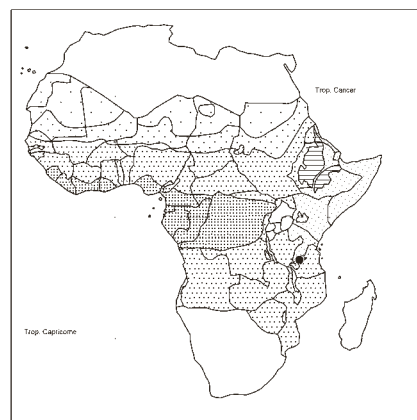
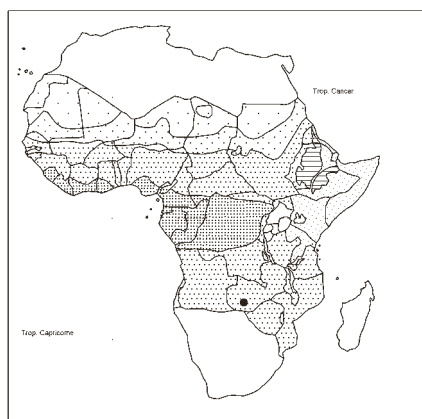
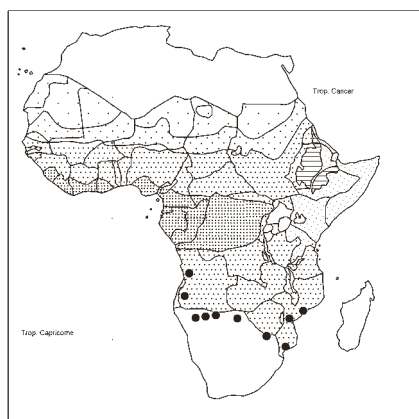
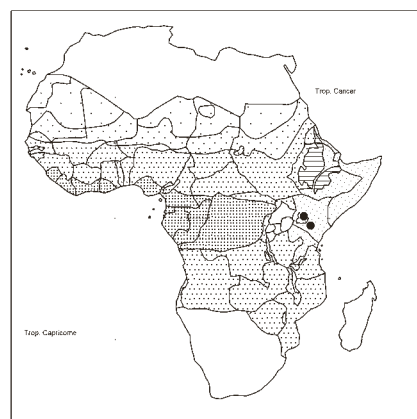
syn.: *P. chalcantha* (Trin.) Kunth; *Eragrostis chalcantha* Trin., incl. var. *neesii* K. Schum., var. *effusa* Rendle, var. *hirsuta* Peter, var. *intermedia* Peter; *E. hackii* De Wild.; *E. con-radsii* Pilg.; *E. lasiophylla* K. Schum.; *E. boehmii* Hack.

Perennial densely tufted grass, leaves mostly concentrated at base; culms 9–80 cm tall; basal leaf sheaths *glabrous* or *thin-ly silky hairy*, sometimes becoming fibrous; blades linear, 6–30 cm × 2–5 mm; panicle narrowly ovate, 3–18 cm long, open or ± contracted, primary branches stiff, racemose or with short side branches bearing 2–3 spikelets, these on *stout pedicels 1–2 mm* long, spreading; spikelets narrowly ovate, olive to dark green, 3–15 mm long, 6–40-flowered; anthers 3, c. 1 mm long; caryopsis c. 0,6 mm long, ± square.

In most vegetation types; usually on poor sandy or shallow stony soils; dambos; path sides; woodlands; sandy and red doloritic soils; granite outcrops; hillsides; shallow soils over rocks; disturbed ground at roadsides; old cultivations; fynbos; clayey soils; open granite sandveld; *Loudetia arundinacea* grassland on very shallow soil; locally common; 60–3000 m alt.

Hyperaccumulator of copper in Zaire (2800 µg/g dry weight) fide R. R. Brooks, Plants that hyperaccumulate heavy metals : 80, 1988 (as *E. boehmii*).

S. Africa, Lesotho, Swaziland; Madagascar, Seychelles. To be expected in S Ethiopia (Fl. Eth. & Eritrea 7: 117, 1995).

*Eragrostis planiculmis**Eragrostis plurigluma**Eragrostis pobeguini**Eragrostis poculiformis**Eragrostis porosa**Eragrostis procumbens**Eragrostis prolifera**Eragrostis psammophila**Eragrostis pseudopoa**Eragrostis punctiglandulosa**Eragrostis pusilla**Eragrostis pycnostachys*

ERAGROSTIS RACEMOSA

Often confused with *E. nindensis* which has, however, yellowish green spikelets with a serrate outline (more sharply pointed lemmas), and much larger caryopsis (1–1,5 mm).

E. raynaliana J.-P. Lebrun; Onana & Cheek, Red Data Book flow. pl. Cameroon: 378, 558 (map), 2011; Onana, Fl. Cameroun 40: 242, 2013. – Icon.: Lebrun in Adansonia, Sér. 2, 9: 568, 1970; van der Zon, Gramin. Cameroun 2: 115, 1992.

Perennial densely tufted grass 30–90 cm tall; leaf blades filiform, inrolled, 20–60 cm × 1 mm; basal sheaths slightly fibrous; panicle purple, narrowly ellipsoid, 10–30 cm long with branches to 8 cm long, not whorled; spikelets lax, 4 × c. 3 mm, 3–7-flowered, pedicels 3–4 mm long; rachilla conspicuous between florets; glumes glabrous, unequal; lemma violet, 3-nerved, c. 2 mm long, white-hairy.

Inselbergs in the N part of the equatorial forest zone. Seepages on rock surfaces in open habitats sometimes in forest areas; meadows on humid thin soil and gneissous pans; meadow with *Afrotrilepis pilosa*; 800–1000 m alt. (for more details, see Raynal in Adansonia, Sér. 2, 6: 285, 1966).

Near *E. olivacea* but spikelets purplish with distant flowers. Resembling “*Gossweilerochloa delicatula* Renvoize” from Angola.

E. rejuvenescens Rendle; Cope in Kew Bull. 53: 145, 159, 1998 (in keys); Fl. Zambes. 10/2: 87, 1999. – Icon.: De Wildeman in Bull. Jard. Bot. Etat Bruxelles 6: pl. VI, 1919 (as *E. purpureopedicellata*). syn.: *E. purpureopedicellata* De Wild.

Small densely tufted perennial grass; base of culms *sub-bulbous*, culms to 23 cm tall, erect, unbranched, nodes not exposed; *inner basal leaf sheaths densely greyish-lanate* (the outer glabrous), chartaceous, terete, persistent or decaying into coarse fibres; blades filiform, 1–5 cm × 0,3 mm Ø, tightly convolute, rigid and ± pungent, glabrous; panicle elliptic-ovate, 1,5–4 cm long, loose, open, spikelets evenly distributed on pedicels 1,5–3,5 mm long, primary branches not whorled, axils glabrous, but axis, branches and pedicels with *numerous crateriform glands*; spikelets ovate, c. 3 × 2 mm, 6–9-flowered.

Open watershed grasslands of plateaux, on sandy soils; short thicket-grown pastures recently burnt; dambos; 1100–1525 m alt.

Rarely collected. Similar to *E. caniflora*, but with glabrous basal leaf sheaths and without a sub-bulbous culm base.

De Wildeman (l.c.) indicated that *E. purpureopedicellata* was collected by Hock on the “Haut Plateaux de la ligne de faite Congo-Zambèse dans les dembos”.

(*E. rigidior* Pilg.). Figuring in many floras and flora lists is a synonym of **E. cylindriflora** Hochst. (See above).

E. rogersii C. E. Hubb.; Gibbs Russell & al., Grasses south. Afr.: 159–160, 1990. – Icon.: Fl. Zambes. 10/2: 57, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 110, 2007.

Caespitose annual grass; culms to 40–70 cm tall, erect or ascending, branched or not, nodes glabrous, internodes with *scattered crateriform glands* especially below nodes; leaf sheaths with *scattered crateriform glands* mostly on midnerve; blades linear, 3–10 cm × 2,5–5 mm, loosely pilose above or glabrous, with *scattered crateriform glands* on midnerve beneath and a few along margins, green or glaucous, stiff, somewhat pungent; panicle 8–16 cm long, elliptic-ovate to narrowly oblong-ovate, spikelets evenly distributed on stiff pedicels 1,5–6 mm long, primary branches stiffly ascending or spreading, loosely racemose, not whorled, axils shortly pilose, with *crateriform glands* along main

ERAGROSTIS ROGERSII

axis, branches & pedicels; spikelets 5,5–17 × 3–4 mm, strongly laterally compressed, 7–36-flowered; lemmas *acute to subacute* in profile, *awnless* but sometimes mucronate.

Mopane and miombo woodland on well-drained sandy soils, rocky hillsides and Kalahari Sands; shrubland with *Baphia massaiensis*, *Schmidtia pappophoroides*, *Loudetia flavida*; sandy soils in disturbed areas; 460–1000 m alt.

N Botswana.

Resembling *E. dinteri* but this has acuminate and usually awned lemmas.

E. rotifer Rendle – Icon.: Fl. Zambes. 10/2: 57, 1999 (spikelet); Müller, Grasses Namibia, rev. ed.: 207, 2007; Poilecot, Eragrostis Zimbabwe: 128, 2007; van Oudtshoorn, Guide grasses south. Africa, ed. 3: 185, 2012; T. & R. van der Walt, 50 grasses Limpopo Valley: 50, 2021.

syn.: *Poa tenuiflora* Licht.; *Eragrostis airiformis* Rendle; *E. angusta* Hack.; *E. beroensis* Rendle; *E. densiflora* Rendle; *E. margaritacea* Stapf; *E. platyphylla* Rendle

Perennial tufted grass; culms 0,4–1,5 m tall, erect, branched or not, nodes glabrous, *sometimes with glandular dots or patches below nodes*; basal leaf sheaths densely *silky hairy* at base, terete, persistent; blades linear, 10–30 cm × 2–5 mm, stiff, glaucous, glabrous; panicle lanceolate-ovate, loose, open, spikelets sometimes condensed about the primary branches on pedicels 2–5 mm long, primary branches ± whorled, *axils pubescent to pilose*; spikelets linear, 4–10 × c. 1 mm, 7–16-flowered, mostly purple.

Widespread in sandveld, river sand banks and alluvium, moist sand of seasonal watercourses, mopane woodland clayey soils, dambo; wooded grassland on sandy soils; commonly a weed of cultivated and disturbed places; sometimes forming pure stands; pan edges; 50–1400 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa, Lesotho, Swaziland.

Easily confused with *E. heteromera* (occurring in the same habitats), but that species has solitary or paired lower inflorescence branches, and lower leaf sheaths ± hairless. Hybrids between these 2 species may occur. *E. rotifer* also has some resemblance to *E. pilosa* but is readily distinguished by its robust habit, pubescent basal leaf sheaths, and longer glumes (1,2–1,5 mm, not c. 0,6 mm).

E. sabulicola Pilger ex Jedwabn. 1924, Koechlin 1961; Fl. Gabon 5 b: 26, 1999; Sosef & al., Check-list pl. vascul. Gabon: 184, 2006. – Icon.: Fl. Gabon 5: 229, 1962.

? Perennial grass (base unknown?); culms stout, 25–40 cm tall, with dense fascicles of new growth and floriferous branches from the nodes; leaves with glabrous imbricate sheaths; blades distichous, stiff, to c. 20 cm long, 3–4 mm wide; panicle spike-like, loose, 10–15 × 2–3 cm, secondary branches branched from (near) the base; spikelets olive green, 5–10 × 2 mm, 6–15-flowered; glumes 1-nerved, keel scabrous, c. 1,5 mm long; lemmas ± obtuse, 3-nerved, keel scabrous near top.

Probably in humid depressions in the littoral zone.

Very rarely collected.

E. saresberiensis Launert – Icon.: Chippindall & Crook, 240 grasses S. Africa 3: part 168, 1976; Fl. Zambes. 10/2: 56, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 88, 2007.

Perennial compactly tufted grass; culms 30–90 cm tall, terete, sometimes wiry; basal leaf sheaths persistent; blades linear, 8–20 cm × 1–3 mm; panicle narrowly ovate, 7–25 cm long, open, primary branches not whorled, spikelets evenly distributed on

ERAGROSTIS SARESBERIENSIS

pedicels 1–5 mm long; spikelets linear, 5–11 × 1 mm, 5–10-flowered; lemmas not imbricate, and rhachilla visible.

Open places in wooded grassland; dambo grassland; mixed deciduous woodlands in sandy soil; rocky outcrops; termitaria; disturbed ground at roadsides; 1120–1500 m alt.

E. sarmentosa (Thunb.) Trin.; Klaassen & Craven, Checklist grasses Namibia: 46, 2003; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 282, 2010. – Icon.: Chippindall in Meredith, Grasses & pastures S. Afr.: fig. 130, 1955; Bosser, Gramin. pâtur. cult. Madag.: 158, 1969; Fl. Zambes. 10/2: 58, 1999 (spikelet); Boulos, Fl. Egypt 4: 257, 2005; Poilecot, Eragrostis Zimbabwe: 162, 2007; César & Chatelain, Fl. ill. Tchad: 198, 2019.

bas.: *Poa sarmentosa* Thunb.

syn.: *Eragrostis hackeliana* Bornm. & Kneuck.; *E. kneuckeri* Hack. & Bornm.

Mat-forming perennial grass with rhizomes and often long stolons; culms 15–50 cm tall, erect or ascending, often decumbent, rooting at nodes, unbranched, nodes glabrous; basal leaf sheaths glabrous, chartaceous, terete, persistent; blades linear, 2.5–10 cm × 1.5–4.5 mm, glabrous; panicle 6–15 cm long, linear, short distant primary branches appressed to the axis, spikelets densely contracted about them on pedicels to 1 mm long, primary branches not whorled, axils glabrous; spikelets 3–7 × 1.3–1.7 mm, 10–14-flowered.

Wet places, often in standing water; dambos; river banks and beds; lake shores; beside freshwater coastal lagoons; moist sandy soils; floodplains; dams; disturbed overgrazed areas; 0–1500 m alt.

Namibia, Botswana, S. Africa; Madagascar. Probably introduced in Egypt, and also Chad (Quézel 1958, probably a weed), Palestine.

E. schweinfurthii Chiov., incl. var. *kiwuensis* (Jedwabn.) S. M. Phillips; Fl. Zambes. 10/4: 182, 2012. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 163, 1955; Troupin, Fl. Rwanda 4: 253, 1988 (panicle, under *E. kiwuensis*); Fl. Eth. & Eritrea 7: 115, 1995; Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, 2013; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis).

syn.: *Poa multiflora* Forssk.; *Briza multiflora* (Forssk.) P. Beauv.; *Megastachya multiflora* (Forssk.) P. Beauv.; *Eragrostis multiflora* (Forssk.) Asch. 1864, nom. illeg., non Trin. 1830; *E. chalcantha* var. *holstii* Engl. & K. Schum. and var. *composita* Jedwabn., nom. superfl.; *E. holstii* (Engl. & K. Schum.) Engl. ex Peter, incl. var. *contracta* Peter; *E. racemosa* var. *holstii* (Engl. & K. Schum.) Chiov.; *E. kiwuensis* Jedwabn.; *E. blastocaulos* Pilg.

Annual or short-lived perennial, loosely tufted grass; culms 10–80 cm tall, erect or geniculately ascending, wiry, rooting at lower nodes; leaf blades linear, 1–10 cm × 1–4 mm; panicle ovate, 2–16 × 0.5–1 cm, *branches stiff, appressed* to the axis or *stiffly spreading*; lowermost primary branches not whorled; spikelets narrowly ovate, 0.2–1 cm × 1.3–2 mm, with a smooth outline, *pedicels stout, 1–2 mm long*.

Rolling montane grassland with patches of pine forest; grassland, often on shallow soils; clearings; old farmland in evergreen and bamboo forest; rocky outcrops; weedy places; sometimes common; meadows under *Eucalyptus*; savanna with *Hyparrhenia*; often along drainage channels; 950–3600 m alt.

Yemen; Sri Lanka.

Like *E. racemosa* and sometimes hard to distinguish from that species (cf. Fl. Eth. & Eritrea 7: 117, 1995).

ERAGROSTIS

E. sclerantha Nees; Gibbs Russell & al., Grasses south. Afr.: 160–161, 1990; Siebert & al. in Bothalia 34: 70, 2004. – Icon.: Chippindall in Meredith, Grasses & past. S. Africa: fig. 166, 1955; Fl. Zambes. 10/2: 58, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 164–166, 2007; Fish in X. van der Burgt & al., eds., Systematics & conservation of African plants: 24, 2010 (palea).

Perennial densely tufted grass; culms 0.15–1 m tall, erect; basal leaf sheaths *woolly tomentose* with whitish to yellowish hairs; blades linear, 15–25 cm × 2–6 mm; panicle ovate to oblong, 7–35 cm long, spikelets spreading (subsp. *sclerantha*) or appressed to the ascending primary branches (subsp. *villosipes*); spikelets elliptic-oblong, 2–9 × 1.5–2 mm, 6–20-flowered, olive-green.

Brachystegia wooded grassland; miombo; dry evergreen forests; sandveld; sandy soils; rocky hill slopes; dambos; disturbed ground at roadsides; Kalahari Sand woodlands; 50–2000 m alt.

C Namibia (subsp. *villosipes*), S. Africa, Swaziland, Lesotho.

Comprises 2 subsp.: – subsp. **sclerantha** [syn. *E. natalensis* Hack.] with culms rarely > 30 cm, panicle ovate < 15 cm long with spreading spikelets on spreading branches, in S part of range, in montane grassland; – subsp. **villosipes** (Jedwabn.) Launert [bas.: *E. villosipes* Jedwabn.; syn.: *E. sclerantha* var. *villosipes* (Jedwabn.) De Winter] with culms 60–100 cm, panicle oblong 15–35 cm long, spikelets appressed to the ascending branches, in the whole area from low to high altitude.

E. sclerantha subsp. *sclerantha* is similar to *E. racemosa* (with basal leaf sheaths glabrous or thinly silky hairy); also resembling *E. desolata* (with basal leaf sheaths glabrous or hairy, not densely woolly-hairy).

E. scotelliana Rendle; Sosef & al., Check-list pl. vascul. Gabon: 184, 2006. – Icon.: van der Zon, Gramin. Cameroun 2: 126, 1992; Poilecot, Boissiera 50: 121, 1995; Velayos & al., Fl. Guinea Ecuat. 12: 194, 2015.

Annual loosely tufted grass 15–60 cm tall; culms erect or ascending, sometimes branched; leaf blades linear, 2–18 cm × 2–7 mm, with long white hairs above; panicle delicate, c. 15 cm long, spreading, *glandular* on branches and pedicels; spikelets *purplish*, ovate, 3–8 × 3 mm, on capillary pedicels; *lemmas* with a line of *white tubercle-based hairs* near margins and *a few glands on nerves*.

On shallow soils over iron pan or rock; rocky outcrops; in small depressions or in rock fissures, often associated with *Sporobolus infirmus*, *Digitaria leptorachis*, *Melinis macrochaeta*, *Panicum griffonii*, etc.; 450–c. 1400 (Sierra Leone, Mt Loma) m alt.

Bioko/Fernando Poo.

Near *E. turgida*, a species with panicle branches and pedicels usually without glands, and spikelets 3–20 × 3–4 mm, and ± glabrous lemmas.

Said to be lemon-scented.

E. sennii Chiov.; Fl. Eth. & Eritrea 7: 112, 1995; Thulin, Fl. Somalia 4: 179, 1995. – Icon.: Chiovenda, Fl. Somalia 2: 461, 1932.

syn.: *E. abrumpens* Kabuye

Annual tufted grass; culms 4–30 cm tall, erect or ascending; leaf blades linear, 8–15 cm × 2–3 mm; panicle linear, 2–10 cm long, much reduced, spikelets clustered towards tip of stem on short pedicels, or with few-spiculate branches below; spikelets oblong, 0.8–1.8 cm × 4 mm, 9–32-flowered, the *outline conspicuously serrate*, disarticulating below glumes and falling entire; palea keels winged.

ERAGROSTIS SENNII

Roadsides; evergreen bushland; heavily used grassland; weed of disturbed and cultivated soils; calcareous soils with *Lintonia nutans*, *Tragus berteronianus*, *Solanum* cf. *renschii*; 0–500 m alt.

E. sericata Cope; Fl. Zambes. 10/2: 145–146, 1999; Darbyshire & al. in PhytoKeys 136: 78, 2019. – Icon.: Kew Bull. 53: 161, 1998 (details).

Perennial densely tufted grass; culms to 95 cm tall, erect, unbranched, nodes concealed within leaf sheaths; *basal leaf sheaths densely silky-villous, chartaceous*, terete, persistent; blades linear, to 20 cm × 3,5 mm, glabrous or thinly pilose; panicle ovate, 12–15 cm long, *very loose and open*, spikelets evenly distributed on pedicels 2–5 mm long, primary branches not whorled, axils glabrous; spikelets elliptic-ovate, 7–8 × c. 4 mm, 11–13-flowered; caryopsis not seen.

Coastal dry woodland on sandy soil; c. 30–100 m alt.

E. setulifera Pilg.; Fl. Zambes. 10/2: 70, 1999. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 190, 1974 (spikelet).

Tufted annual grass; culms 25–60 cm tall; leaf blades linear, 4–17 cm × 3–8 mm, flat; panicle 6–30 cm, broadly linear to narrowly oblong, fairly dense with spikelets evenly distributed, with or without glandular patches on pedicels and branchlets, these sticky or not; primary branches numerous, stiff, ascending, not whorled; spikelets ovate, 2–3,5 mm long, 6–20-flowered, purplish; lemmas truncate, often distinctly *mucronate*; palea keels tuberculate-ciliate.

Dry sandy soils in wooded grassland; tall mopane woodland on alluvium; seasonally damp sand beside river; disturbed cultivated areas; 260–1300 m alt.

Very similar to *E. arenicola*, *E. viscosa* but has acuminate glumes and truncate, mucronate lemmas; lacks sticky glumes and sheaths of *E. viscosa*.

(**E. singuaensis** Pilg., Bot. Jahrb. Syst. 45: 211, 1910).

Tufted glabrous grass; culms numerous, slender, erect, c. 50–60 cm tall, 2-noded, with few shoots from the nodes; leaf blades very narrow, ± involute, to 20 cm long; the uppermost only 3–5 cm long; sheath narrow, short; panicle small, loose, 4–8 cm long, branches short, slender, flexuous, single or in pairs; spikelets c. 4 mm long, brownish olive-green, up to 5-flowered, compressed; glumes c. 1 mm long; palea ciliate.

Grass savanna; 2400 m alt. – Not mapped by us.

Known only from the type: Ledermann 1644, collected in December 1908 in Cameroon, Bambutos Mts, Markt (Market town) Singwa (5°38'N × 10°02'E).

Said to be related to *E. chalcantha* Trin. [= *E. racemosa* (Thunb.) Steud.] but differs from that species by its slender, paired, inflorescence branches, small spikelets and longer leaves.

The identity of this plant is uncertain. Not cited by van der Zon, Graminées du Cameroun 2, 1992, nor figuring in Fl. W. Trop. Afr., ed. 2, 3/2, 1972.

E. spicigera Cope – Icon.: Kew Bull. 53: 156, 1998; Fl. Zambes. 10/2: 120, 1999.

Densely tufted perennial grass; culms to 60 cm tall, erect, unbranched, nodes glabrous; basal leaf sheaths glabrous, broadly chartaceous, terete, disintegrating into a *cushion of coarse persistent fibres*; blades 5–10 cm × 0,5–0,7 mm Ø, *tightly involute-setaceous*, glabrous; panicle 3–6,5 cm long, *sparse, linear, contracted*, spikelets in remote groups of 2–3, pedicels 0,5–10 mm long, primary branches not whorled, axils glabrous; spikelets

ERAGROSTIS SPICIGERA

oblong, 0,8–1,2 cm × c. 3 mm, 6–9-flowered; lemmas *keeled*; caryopsis not seen.

Perennially wet swampy grassland and dambos; 1220–1680 m alt.

E. squamata (Lam.) Steud.; César & Chatelain, Fl. ill. Tchad: 196, 2019. – Icon.: Rev. Bot. Appl. Agric. Trop. 29: 133, 1949; Poilecot, Boissiera 50: 139, 1995; idem, ibid. 56: 208, 1999; Velayos & al., Fl. Guinea Ecuat. 12: 195, 2015; Ibrahim & al., Grasses Mali: 75, 2018.

bas.: *Poa squamata* Lam.

syn.: *P. sequamosa* P. Beauv., nom. nud.; *Eragrostis kinshasaensis* Vanderyst 1920, nom. provis.; *E. halophila* A. Chev.

Perennial tufted grass; culms 0,3–1,2 m tall, erect; foliage often glaucous, mostly cauline; blades *stiff*, linear, 10–20 cm × 1–6 mm, *rolled, densely scabrid above*; panicle *elliptic*, (6–)20–40 cm long, *stiff, open*, spikelets short-pedicelled, loosely appressed to the branches; spikelets oblong-ovate, 0,5–2,5 cm × 2–2,5 mm, *purplish grey*; lemmas *closely imbricate*, c. 2,5 mm long; *anthers 2*.

Roadsides, waste places, particularly on sandy soils; sandy beaches; humid soils; river beds on sandy banks; with *Panicum congense*, *Anadelphia afzeliana*, *Eragrostis domingensis*, *Sporobolus pyramidalis*; hollows on clayey-sandy soils; salt tolerant; 5–360 m alt.

Element of ephemeral vegetation in temporary flooded interdune depressions near the coast: *Eragrostietalia squamatae* ord. nov. Müller & Deil in Phytocoenologia 35: 358–360, 2005, with *Eragrostion squamatae* all. nov., ibid., and *Eragrostienion squamatae* suball.

Cape Verde Isl.

E. stapfii De Winter; Gibbs Russell & al., Grasses south. Afr.: 161, 1990; Fl. Zambes. 10/2: 130–131, 1999. – Icon.: Chippindall in Meredith, Grasses past. S. Afr.: 152, 1955; Poilecot, Eragrostis Zimbabwe: 174, 2007.

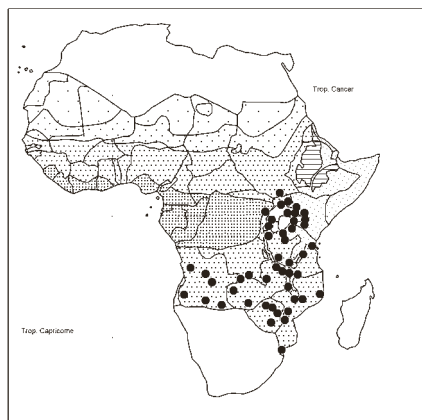
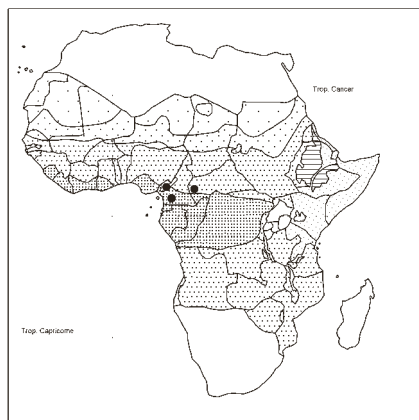
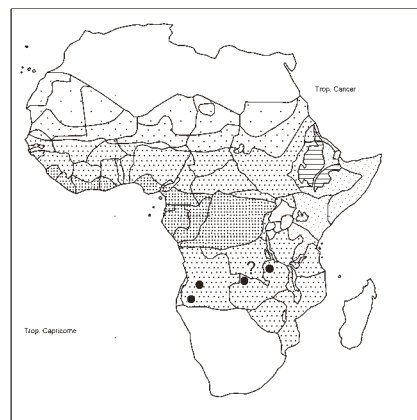
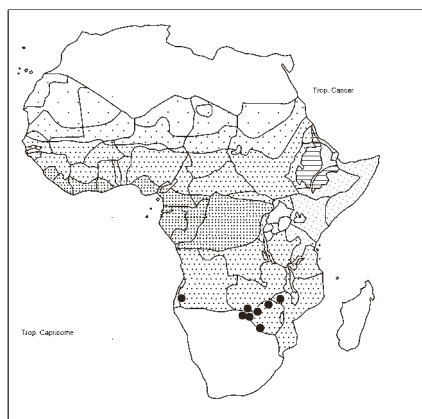
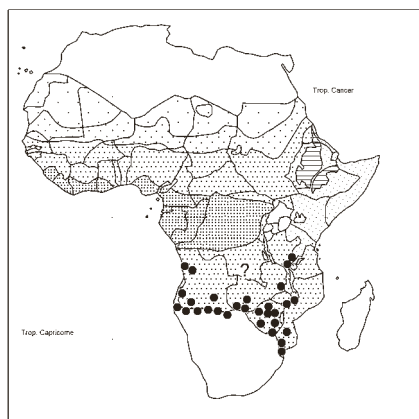
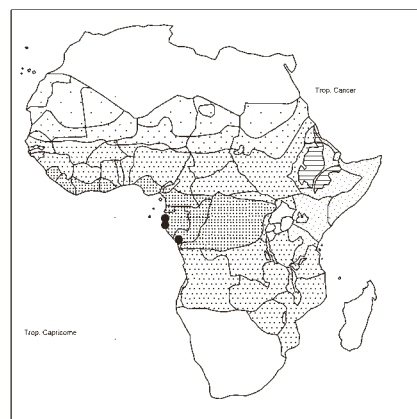
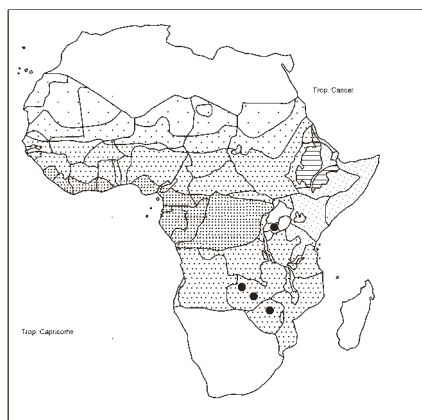
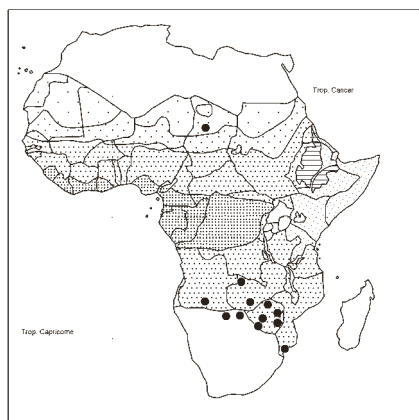
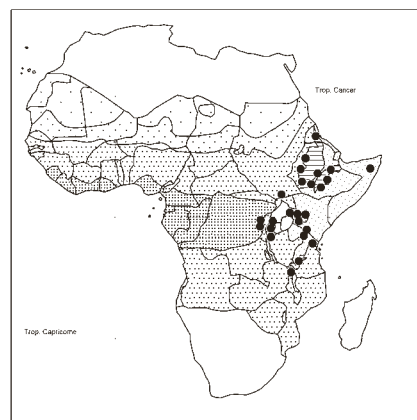
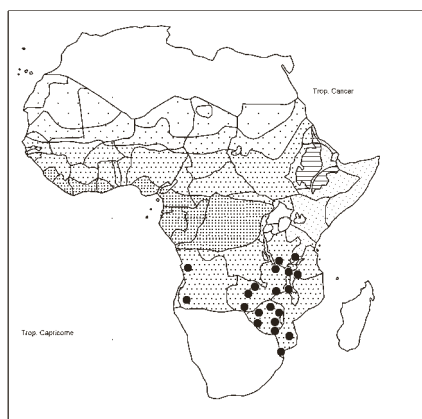
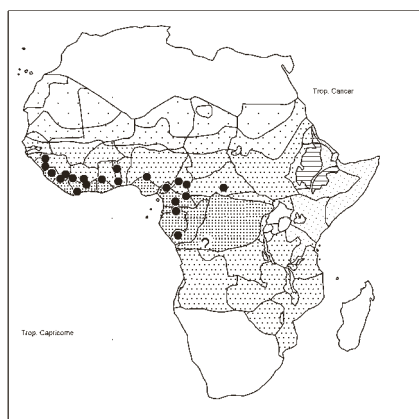
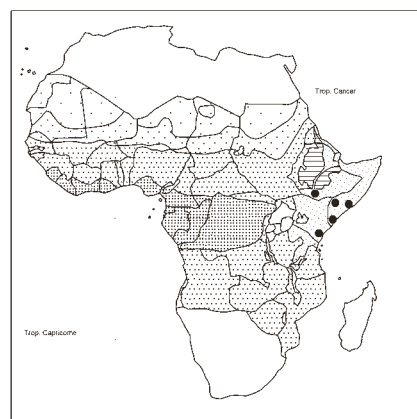
Perennial densely tufted grass; *leaves mostly basal*; culms to 60 cm tall, erect, unbranched, nodes glabrous; basal leaf sheaths coriaceous, glabrous, terete, persistent; blades *tightly folded-setaceous*, glabrous, 4–10 cm × 0,3–0,5 mm; panicle narrowly ovate-elliptic, 5,5–14 cm long, loose, open, spikelets evenly distributed on pedicels 1,5–3 mm long, primary branches or at least the lowermost whorled, glabrous; spikelets oblong, c. 3 × < 1 mm, *3–4-flowered*.

Hot dry areas; common in granite sandveld; Kalahari Sand grassland; open woodland; granite outcrops; dambo margins; sometimes in wet disturbed areas; 900–1400 m alt.

Namibia, Botswana, S. Africa.

E. superba Peyr., incl. var. *contracta* Peter; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 253, 1994; Thulin, Fl. Somalia 4: 179, 1995; Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015; Phytotaxa 501: 226, 2021. – Icon.: Nicora, Boissiera 54: 90, 1998; Fl. Zambes. 10/2: 56, 85, 1999; Müller, Grasses Namibia, rev. ed.: 211, 2007; Cope, Fl. Arab. Penins. 5/1: 136, 2007 (spikelet); Poilecot, Eragrostis Zimbabwe: 93, 2007; Pickering & Roe, Wild flowers Victoria Falls area: 95, 2009 (in flor.); Agnew, Upl. Kenya wild flow., ed. 3: pl. 186, pl. 194, 2013; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis); T. & R. van der Walt, 50 grasses Limpopo Valley: 58, 2021.

syn.: *E. alata* Ficalho & Hiern; *E. elata* Munro ex Ficalho & Hiern; *E. platystachys* Franch.; *Uniola jardinii* Steud. 1854, non *Eragrostis jardinii* Steud. 1854.

*Eragrostis racemosa**Eragrostis raynaliana**Eragrostis rejuvenescens**Eragrostis rogersii**Eragrostis rotifer**Eragrostis sabulicola**Eragrostis saresberiensis**Eragrostis sarmentosa**Eragrostis schweinfurthii**Eragrostis sclerantha**Eragrostis scotelliana**Eragrostis sennii*

ERAGROSTIS SUPERBA

Perennial tough tufted grass; culms 0,2–1,2 m tall; leaf blades linear, to 40×0,3–1,2 cm, firm, glaucous; panicle 10–30 cm long, lanceolate-broadly ovate, open; primary branches stout, usually with secondary branchlets, spikelets on pedicels 1–5 mm long; spikelets large, ovate, flattened, 0,6–2,3×0,3–1 cm, 6–47-flowered, tinged purple, *disarticulating below the glumes, falling entire* (like *E. pilgeriana*); lemmas 3–4,5 mm long, strongly keeled.

Typically on sandy soils in deciduous bushland or wooded grassland; often in disturbed places; floodplain grasslands; shallow pan-like depressions; black clay alluvium; rocky outcrops; termitaria; also in rich soil; 0–1500 m alt.

S. Tomé; Namibia, Botswana, S. Africa, Swaziland. Introduced in Benin, Ghana, Nigeria (fide Burkill, l.c.), Saudi Arabia, Pakistan; S N. America, C. & S. America.

Often confused with *E. capensis* which has spikelets with smooth edges. Also confused with *E. dinteri*, *E. rogersii*.

E. sylviae Cope; Fl. Zambes. 10/2: 147–148, 1999.

Caespitose perennial grass; culms to 35 cm tall, erect, unbranched, nodes concealed in sheaths; basal leaf sheaths glabrous, chartaceous, terete or lightly compressed, persistent; blades linear, 5,5–9,5 cm×c. 3 mm, thinly and shortly pilose; panicle 6,5–9 cm long, ovate-oblong, *open but not diffuse*, spikelets *condensed* about the branchlets on pedicels 0,5–1 mm long, primary branches not whorled, axils thinly pilose; spikelets 7,5–9×c. 3 mm, elliptic, 10–13-flowered; caryopsis not seen.

Grassland; c. 2100 m alt.

Only known from the type collected in 1991.

Near *E. racemosa* but with clearly secondary branched panicle and acute lemmas.

[**E. tef** (Zuccagni) Trotter, incl. subsp. *spiciformis* (Serp.) Portal & H. Scholz]; Gibbs Russell & al., Grasses south. Afr.: 162, 1990; Fl. Eth. & Eritrea 7: 125–126, 1995; Thulin, Fl. Somalia 4: 181, 1995; Phillips in Symb. Bot. Upsal. 35/2: 139, 2011; Agnew, Upl. Kenya wild flow., ed. 3: 421, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 130, 2015. – Icon.: J. Agric. Trop. Bot. Appl. 5: 454, 1958; Ann. Bot. (London) 42: 1369, 1978; Econ. Bot. 33: 413, 1979; Canad. J. Bot. 63: 1900, 1985; Boulos, Fl. Egypt 4: 257, 2005 (spikelet); Brink & Belay, eds., Plant Resources of Tropical Africa 1, Cereals & pulses: 69, 2008 (inflor.); Poilecot, Eragrostis Zimbabwe: 122, 2007; Cope, Fl. Arab. Penins. 5/1: 136, 2007 (spikelet); van Oudtshoorn, Guide grasses south. Afr., ed. 3: 141, 2012; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis); Markwirth, Trees, grasses & crops...: 280, 2019 (inflor.)

bas.: *Poa tef* Zuccagni

syn.: *P. abyssinica* Jacq.; *P. cerealis* Salisb. 1796, nom. superfl.; *P. radicans* Moench; *P. flaccida* Moench ex Steud. 1840, pro syn.; *Cynodon abyssinicus* (Jacq.) Raspail; *Eragrostis abyssinica* (Jacq.) Link, incl. var. *alba* Hochst. ex Chiov., and var. *viridis* Hochst. ex Chiov.; *E. pilosa* var. *tef* (Zuccagni) Fiori, and subsp. *abyssinica* (Jacq.) Asch. & Graebn.; *E. abessinica* Link, orth. var.

Annual grass; culms 20–90 cm tall, erect; leaf blades flat, to 30 cm×4 mm; panicle 10–60 cm long, loose, open, contracted and narrowly elliptic to diffuse, with long flexuous branches (the *lowermost whorled*) and slender pedicels; spikelets narrow, oblong, 4–9×2 mm, 4–12-flowered, often pale or reddish, not breaking up, and beaded at maturity as the grain swells; florets persistent and grain retained, remaining intact on the tough rachilla; caryopsis *ellipsoid, turgid, 1–2 mm long*.

ERAGROSTIS TEF

Widely cultivated only in Ethiopia as a staple cereal crop (growing best at 1800–2100 m alt.), also occurring as an escape in disturbed areas, roadsides, weedy places on sandy soils in savanna, grassland; 750–2500 m alt. (Cf. map by Carney & Rosomoff 2009: fig. 1.4). – Not mapped by us.

Introduced into other tropical and subtropical countries, mainly within Africa, for forage and often escaping. C Europe (Verh. Bot. Ver. Berlin Brandenburg 138: 25–26, 2006); Israel (Willdenowia 36: 728, 2006), Arabian Peninsula; Libya, Egypt, (CE) Sudan, Somalia (record from 1931 but no modern records), Uganda, Kenya, Tanzania, N & E Zimbabwe, C Namibia, E S. Africa; S N. America, S. America (e. g. Brasil, Iheringia, Ser. Bot. 55: 153, 2001). – Cf. Brink & Belay o.c.: 68–72.

Teff appears to have been cultivated in Ethiopia for at least 2000 years. It is very variable, and a large number of cultivars have been described based on grain colour, panicle shape and colour, differences in the vegetative cycle (Fl. Eth. & Eritrea 7: 126, 1995).

Teff is perhaps descended from the closely related wild *E. pilosa*, a tetraploid (2n = 40) annual like teff (allotetraploid).

ABRAHA, M. T. & al. (2016). Assessment of the genetic relationship of tef (*Eragrostis tef*) genotypes using SSR markers. *S. Afric. J. Bot.* 105: 106–110.

ASSEFA, K. & al. (1999). Diversity among germplasm lines of the Ethiopian cereal tef [*Eragrostis tef* (Zucc.) Trotter]. *Euphytica* 106: 87–97.

ASSEFA, K. & al. (2002). Qualitative trait variation in Tef [*Eragrostis tef* (Zucc.) Trotter] germplasm from Western and Southern Ethiopia. *Euphytica* 127: 399–410.

BEN-ZEEV, S. & al. (2018). Phenotypic diversity and heritability in *Eragrostis tef* under irrigated Mediterranean conditions. *Israel J. Pl. Sci.* 65: 222–231.

CARNEY, J. A. & R. N. ROSOMOFF (2009). *In the shadow of slavery. Africa's botanical legacy in the Atlantic World*. University of California Press, Berkely etc. [fig. 1.4]. XVI + 280 pp.

D'ANDREA, A. C. (2008). T'ef (*Eragrostis tef*) in ancient agricultural systems in highland Ethiopia. *Econ. Bot.* 62: 547–566.

D'ANDREA, A. C. & P. WADGE (2011). T'ef (*Eragrostis tef*): A legacy of pastoralism? In: FAHMY, A. G. & al., *Windows on the African past*: 225–241. Reports in African Archaeology, Proceedings of the 6th International Workshop on African Archaeobotany, held June 13–15, 2009, at Helwan University, Cairo, Egypt.

INGRAM, A. L. & J. F. DOYLE (2003). The origin and evolution of *Eragrostis tef* (Poaceae) and related polyploids: Evidence from nuclear waxy and plastid rps 16. *Amer. J. Bot.* 90: 116–122.

E. tenella (L.) P. Beauv. ex Roem. & Schult. – See under **E. amabilis** above.

E. thollonii Franch.; Kami in Belg. J. Bot. 126: 40, 1991; Fl. Zambes. 10/2: 118, 1999.

syn.: *E. sapinii* De Wild.; *E. sclerochlaena* Chiov.

Perennial densely tufted grass; culms to 1,15 m tall, erect, unbranched, nodes glabrous; basal leaf sheaths glabrous, chartaceous, terete, eventually decaying into fibres; blades linear, 16–20 cm×1,5–2 mm, pilose on both surfaces; panicle ovate, 13–21 cm long, open, spikelets evenly distributed on flexuous pedicels 5–8 mm long, primary branches flexuous, not whorled; spikelets ovate-oblate, plump, 4–6×4–6 mm, 5–15-flowered; *palea keels conspicuously winged*.

Open woodland on Kalahari Sands; savanna with *Loudetia simplex*, *L. demeusii*; 1160–1400 m alt.

Close to *E. ciminica*.

E. tincta S. M. Phillips – Icon.: Hooker's Icon. Pl. 27: pl. 2612, 1899 (as *Triphlebia alopecuroides*); Gibbs Russell & al., Grasses south. Afr.: 316, 1990 (as *Stiburus alopecuroides*); Fl. Zambes. 10/2: 123, 1999; Poilecot, Eragrostis Zimbabwe: 154, 2007.

ERAGROSTIS TINCTA

syn.: *Lasiochloa alopecuroides* Hack. 1895, non *Eragrostis alopecuroides* Balansa; *Triphlebia alopecuroides* (Hack.) Stapf; *Stiburus alopecuroides* (Hack.) Stapf

Perennial densely tufted grass; culms 17–63 cm tall, erect, usually unbranched, nodes glabrous, often pilose on internodes; leaves mostly basal; sheaths ± terete, persistent; blades ± setaceous, 5–36 cm × 1–2 mm, softly pilose; panicle cylindrical, 2–10,5 cm long, dense, compact, rarely interrupted, branches appressed to main axis, spikelets subsessile, primary branches not whorled; spikelets ovate, 2,7–4,5 × 1,6–4,6 mm, 2–6-flowered; lemmas silky-pilose ('Stiburus').

Grassland, often in wet or swampy places at lake or stream-sides; can form dense stands; poorly drained rock plates; fertile soils; 1250–2560 m alt.

E S. Africa, Lesotho, Swaziland.

E. trachyantha Cope – Icon.: Kew Bull. 50: 114, 1995; Thulin, Fl. Somalia 4: 184, 1995.

Annual grass to 40 cm tall, erect or geniculately ascending; leaf blades inrolled; panicle to 30 cm long, lanceolate-narrowly ovate (far exceeding length of the stem), spikelets remote on pedicels 0,5–9 mm long on distant racemose primary branches; spikelets linear, 0,8–2 cm long, 10–26-flowered; glumes unequal, very acute; lemmas scaberulous throughout.

Rich deciduous, evergreen shrubland on orange sand; said to be common; locality unknown, only coordinates given (1°34'N × 42°57'E); c. 95 m alt.

Only known from the type collected in 1982.

Near *E. barrelieri* which has thin chartaceous lemmas, with lateral nerves not thickened, scaberulous only near tip, 1,7–2,3 mm long (not 2,3–2,6 mm).

E. tremula Hochst. ex Steud. 1854, incl. var. *gajanandii* Genda Singh, Bala & C. S. Purohit – Treated here in the sense of Fl. W. Trop. Afr., ed. 2, 3/2: 391, 1972, and, e. g., of Boulos, Fl. Egypt 4: 258, 2005 (See further below), with *E. multiflora* Trin. 1830, non (Forssk.) Asch. 1864 (= *E. schweinfurthii*), as a synonym. – Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 254, 1994; Fl. Eth. & Eritrea 7: 118, 1995; Fl. Zambes. 10/2: 139–140, 1999; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 235, 2010; César & Chatelain, Fl. ill. Tchad: 196, 2019. – Icon.: Poilecot, Boissiera 50: 143, 1995; idem, ibid. 56: 213, 1999; Boulos, Fl. Egypt 4: 257, 2005; Poilecot, Eragrostis Zimbabwe: 192, 2007; Gandhi & al. in Telopea 15: 90, 2013 (caryopsis); Vivek & al. in Nelumbo 57: 3, 2015 (idem); Vande weghe & al., Pl. à fleurs Gabon: 187, 2016; Ibrahim & al., Grasses Mali: 76, 2018.

syn.: *Poa tremula* Lam. 1792; *P. multiflora* Roxb. 1820, non Forssk. 1775; *Eragrostis lamarckii* Steud. 1854; *E. serpula* Chiov.; *E. rhachitricha* Hochst. ex Miq.

Annual (or short-lived perennial) loosely tufted grass; culms 0,3–1 m tall, erect or ascending, unbranched (or rarely branched), nodes glabrous; leaf blades linear, 4–18 cm × 1–5,5 mm, glabrous or thinly pilose (like the sheaths); panicle ovate, 7–50 cm long, open, very lax, of long trembling spikelets on long very fine pedicels to 2 cm long, primary branches not whorled; spikelets linear, 4–33 × 1,5–2,5 mm, 7–60-flowered; lemmas obtuse, keeled, imbricate, concealing rachilla; stamens 2.

Roadsides; farmland and other weedy places with *Eleusine indica*, *Heteropogon contortus*, *Pennisetum pedicellatum*, *Eragrostis aspera*, *Andropogon gayanus*, *A. fastigiatus*, *Sporobolus pyramidalis*; sandy soils; river banks; lake shores; scree slopes; pan margins, floodplains; locally common; 0–1940 m alt.

ERAGROSTIS TREMULA

Variable species. The spikelets are remarkable in that they often continue to grow for a long time so that the lowermost florets are fruiting and falling before the uppermost have completed their development (Fl. Zambes. 10/2: 140, 1999).

Native to tropical Africa and Afghanistan-Pakistan-India, W Himalaya, Burma, Vietnam, presence in Saudi Arabia not confirmed. Introduced in Egypt.

The status of *E. multiflora* Trin., non (Forssk.) Aschers, is not clear. In the World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew, the following synonyms are cited under that species: *Poa tremula* Lam., *P. multiflora* Roxb., *Eragrostis lamarckii* Steud., *E. rhachitricha* Hochst. ex Miq., *E. serpula* Chiov.

E. tridentata Cope; Thulin, Fl. Somalia 4: 180, 1995.

Annual grass to 18 cm tall; leaves flat; panicle 0,6–1,3 cm long, densely contracted, capitate, subtended and long-overtopped by the 2–3 uppermost leaves; spikelets elliptic-oblong, 2,2–4,4 mm long, 4–8-flowered, florets loose and divergent; glumes 1,1–1,7 mm long; lemmas 1,6–1,8 mm long, 3-toothed or at least with all 3 nerves excurrent.

Coastal plain on flat open limestone rocks; 50 m alt.

The capitate inflorescence is sunk between the uppermost leaves as in some annual *Juncus*.

Only known from the type collected in 1989.

Near *E. ciliaris*.

E. trimucronata Napper; Sánchez-Ken in Kew Bull. 62: 514, 2007 (in key). – Icon.: Napper, Grasses of Tanganyika, Min. Agric., Forests, Wildlife Bull. 18: pl. 6 p. 120, 1965.

Caespitose perennial grass; basal leaf sheaths white tomentose below; culms 60–90 cm tall, erect; blades 12–45 cm × 2–4 mm, stiff; panicle 20–45 cm long, linear to narrowly oblong, spikelets in little clusters subsessile on the primary branches, these spike-like, distant in lower part of the panicle, 2–9 cm long, usually densely spiculate; the short pedicel of the spikelets bearing a few long white setae almost equalling the spikelet; spikelets ovate, 2,5–3,5 mm long, 4–12-flowered, yellowish brown; glumes acuminate to a brief awn-point.

Damp places on poor sandy soils in *Brachystegia* wooded grassland and thornbush; dominant in shallow sandy clay soil of open drainage valley in *Berlinia*, *Brachystegia* forest; swampy seepage patch in dry thicket; 800–1600 m alt.

Near *E. dentifera* and *E. hispida*.

E. turgida (Schumach.) De Wild., incl. var. *ivorensis* A. Chev. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 193, 1982 (spikelet); van der Zon, Gramin. Cameroun 2: 126, 1992; Poilecot, Boissiera 50: 123, 1995; idem, ibid. 56: 203, 1999; Fl. Eth. & Eritrea 1: 269, 2009; Ibrahim & al., Grasses Mali: 77, 2018; César & Chatelain, Fl. ill. Tchad: 196, 2019 (details).

bas.: *Poa turgida* Schumach.

syn.: *P. rubiginosa* (Trin.) Kunth; *Eragrostis rubiginosa* Trin.; *E. ledermannii* Pilg.; *Briza rubella* Steud.

Annual loosely tufted grass; culms 8–60 cm tall, erect or ascending; leaves mainly basal; blades 4–18 cm × 2–8 mm, flat, sheaths longer than blades; panicle narrowly oblong-ovate, 3–14 cm long, spikelets subsessile on stiff primary branches; spikelets ± rounded, 3–20 × 3–4 mm, 5–80-flowered, straw coloured tinged pink or purple, rachilla persistent; glumes ovate; lemmas ± hemispherical, closely imbricate, keeled, keels puberulous; anthers 3.

ERAGROSTIS TURGIDA

Old farmland, weedy places; moist shaded places in *Terminalia* woodland; dry forests on lateritic plateau with *Loudetia togoensis*, *Pennisetum pedicellatum*, *Sporobolus festivus*, *Microchloa indica*, *Schizachyrium exile*, *Elionurus elegans*, *Digitaria gayana*; degraded soils, fallows; sandy humid places; clayey-sandy soils; roadsides; 700–1200 m alt.

Saudi Arabia uncertain.

Specimens from Ethiopia have many *crateriform glands* on leaves and panicles.

Near *E. exelliana* which has, however, dark green spikelets 1,5–3 mm wide, untidily overlapping lemmas, 2 anthers.

[**E. unioides** (Retz.) Nees ex Steud., incl. var. *ongiemensis* A. Camus and var. *tremula* K. C. Jacob]; Fl. W. Trop. Afr., ed. 2, 3/2: 389, 1972; van der Zon, Gramin. Cameroun 2: 131–132 (map), 1992; Lisowski, Fl. Rép. Guinée 1: 460, 2009. – Icon.: Cope, Fl. Arab. Penins. 5/1: 140, 2007; Fl. China 22, Illustr.: 677, 2007; Ravi & Mohanan, Common tropical & sub-tropical sedges & grasses: 151, 2012; Gandhi & al. in Telopea 15: 90, 2013 (caryopsis); Vivek & al. in Nelumbo 57: 3, 2015 (idem).

bas.: *Poa unioides* Retz.

syn.: *Eragrostis amabilis* auct., non (L.) Wight & Arn. 1834; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual erect tufted grass 5–50 cm tall, culms mostly simple; leaves mostly basal; blades linear-lanceolate, 5–10 cm × 2–3 mm, hairy above and below towards base; panicle oblong-ovate, congested or lax, to 20 × 10 cm, branches and pedicels filiform, scabrid, pedicels to 1 cm long; spikelets ovate-oblong, c. 0,4–1,6 cm long, 10–50-flowered; apex acute, pale white to purplish green (red); anthers 3.

Wayside weed.

Widespread in tropical Asia to Queensland. Established in W. Africa (S Guinea, Sierra Leone, Liberia), Central African Rep., SW Cameroon; also cited from Tanzania, Kilimanjaro (Phytotaxa 501: 227, 2021). Cf. Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 283, 2010 (Libya), Poilecot, Guide to Liberian grasses: 167, 2015. – Citation from S Zaire (coll. Homblé), filed as *E. paniciformis*, is erroneous. Homblé collected the plant in China, Guengxi (Robbrecht & al. in Blumea 66: 86, 2021).

E. usambarensis Napper; Fl. Trop. E. Afr., Gramin. 3: 228, 1974; Prunera-Olivé & al. in Phytotaxa 501: 227, 2021.

Short-lived perennial grass; culms 0,4–1 m tall, geniculately ascending; basal leaf sheaths glabrous; blades linear, 6–25 cm × 2–7 mm, flat; panicle 12–28 cm long, linear; branches *flexuous*, mostly 4–8 cm long, *appressed to main axis*, loosely spiculate; pedicels 2–4 mm long; spikelets oblong, 3,5–9 × 1,5–2 mm, dark greyish green sometimes tinged purple; glumes boat-shaped, subequal, 1,3–1,6 mm long; *florets merely contiguous*; anthers 2.

Common in shade of rock in *Podocarpus*, *Ocotea* forest; roadsides with *Pennisetum*, *Digitaria*, *Asteraceae* in the more open parts of *Podocarpus*, *Ocotea*, *Cryptocarya* rain-forest; 1500–3100 m alt.

Near *E. curvula* which has basal leaf sheaths silky pubescent; resembling *E. schweinfurthii* but with a *flexuous linear* panicle.

E. uzondoiensis Sánchez-Ken – Icon.: Kew Bull. 62: 515, 2007.

Perennial grass forming tussocks; basal leaf sheaths purple, becoming fibrous; culms 18–30 cm tall, erect; leaf blades acicular, 8–11 cm × 0,8–1,2 mm, *convolute*, stiff, *densely hispid* with long hairs on both surfaces; panicle *loosely contracted* and interrupted, 12–17 cm long; peduncles finely scabrellous, lowermost

ERAGROSTIS UZONDOIENSIS

branches 3–4 cm long, ascending, appressed to rachis, axils with few hairs; spikelets few, spaced, on pedicels 3,5–4 mm long, capillary, ascending, *flexuous*, triquetrous, scabrellous; spikelets elliptic, 3,9–5 × 1,3–1,8 mm, 6–8-flowered, grey to bluish, with white hairs; lemmas *scaberulous* and *sparsely hispid*, more at the flanks; anthers 3; caryopsis not seen.

Large seepage area in *Loudetia* grassland; 1550 m alt.

Near *E. hispidula* which has: spikelets clustered at the tips of the branches; glumes and lemmas mostly conspicuously pilose.

Only known from the type collected in 2006.

E. vacillans Rendle; Figueiredo & al. in Phytotaxa 413: 219, 2019 (refers to Francisco Newton's plant collections from Angola, *E. angolensis*, from Bibala July 1883); Figueiredo & Smith in Strelitzia 22: 198 (*E. angolensis*), 199, 2008.

syn.: *E. brachyphylla* Hack. 1902, nom. illeg.; *E. angolensis* Hack. 1903.

Perennial grass with a slender creeping rhizome; culms to 45 cm tall, 0,2 cm Ø, terete, erect from an ascending base, branched; leaf sheaths loose, compressed, purplish; blades linear-lanceolate, c. 2–6,5 cm × c. 4 mm, flat; panicle ellipsoid, to 15 cm long, 7,5 cm Ø, with slender branches to 5 cm long, the lowest sometimes whorled, bearing spikelets or more rarely short branches from the base upwards; pedicels ± the length of the spikelets, filiform, glandular; spikelets ovate, to 4 mm long, c. 2 mm wide, 8–11-flowered, dull brownish-green.

Fields, and “among plantations of *Zea Mays*”; in short thicket-grown sandy pastures.

Very similar to *E. venustula* which has much shorter anthers (0,15–0,3 mm long, not 0,5 mm), and broader spikelets (1,2–1,8 mm, not c. 1 mm).

(**E. variegata** Welw. ex Rendle) in W. P. Hiern, Catalogue of Welwitsch's African plants 2/1: 251–252, 1899.

A grass “of a splendid violet colour when alive, and by far the most elegant grass which he (Welwitsch) collected in Africa” (Hiern, l.c.).

Annual small, very elegant grass up to 20 cm tall; culms slender, spreading, ascending, geniculate, branched, sparsely scabridulous and pilose; leaf sheaths ± pilose; blades linear-lanceolate, acute, to 6 cm × < 3 mm, scabridulous above, pubescent beneath; panicle oblong-pyramidal, 3,8–7,5 cm long, 2–5 cm wide, branches few, short, bearing a congested cluster of 2–6 large, flattened, sessile, ovate-lanceolate to oblong many-flowered spikelets; these c. 1 cm × 5 mm, 20–30-flowered; glumes with keels conspicuously scabrid, apex cuspidate, margins ciliate; glumes c. 3 mm long.

A “very well marked species allied to *E. superba*”, “but spikelets longer and glumes cuspidate”.

On dry low hills (near Villa de Mossamedes) growing plentifully with *Euphorbia* (Welwitsch 2300).

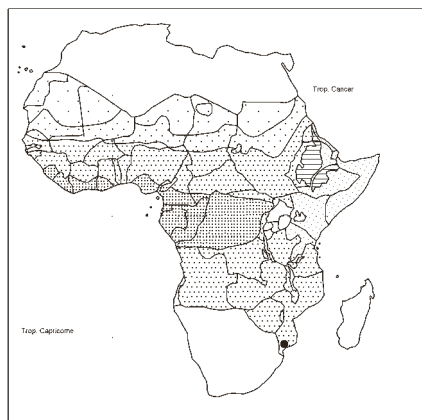
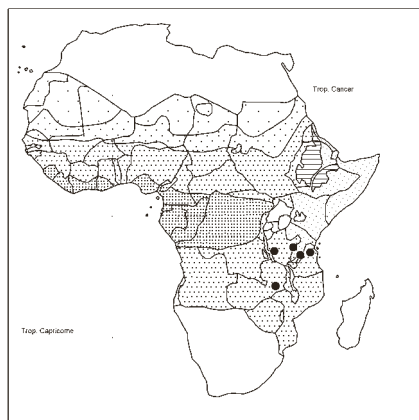
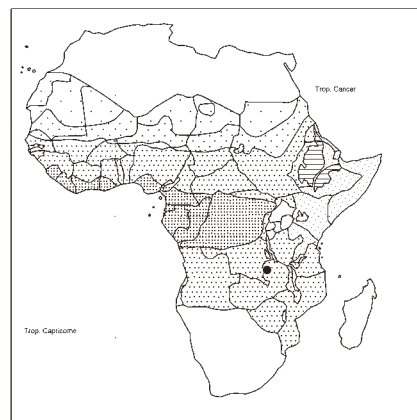
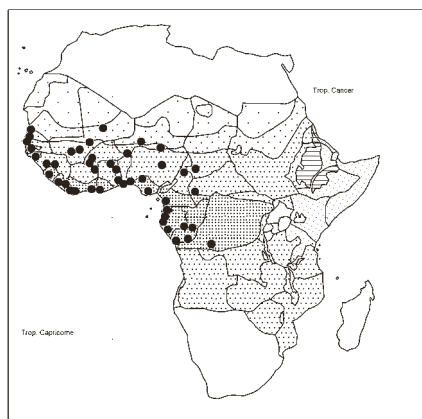
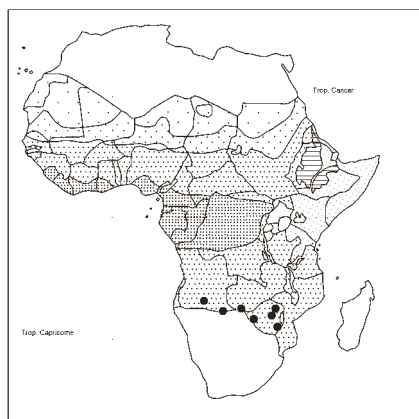
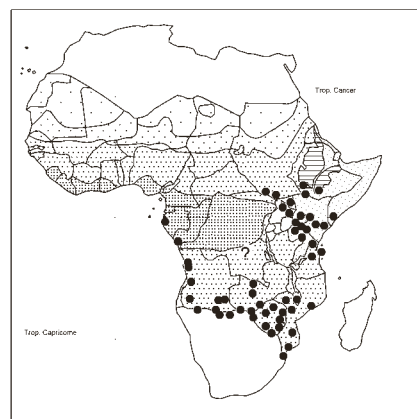
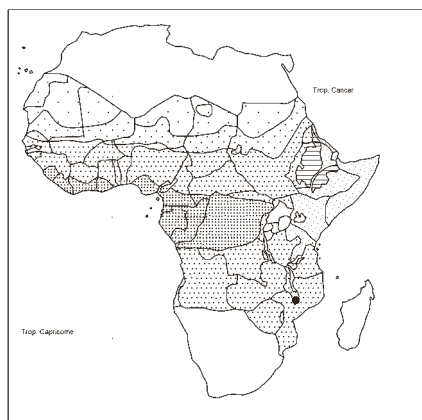
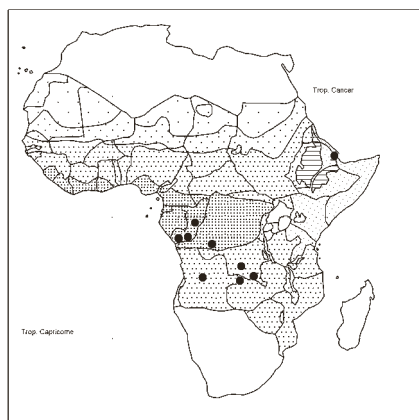
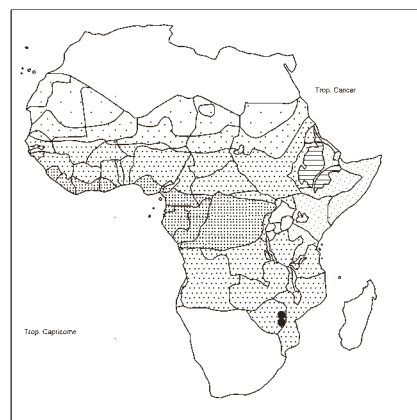
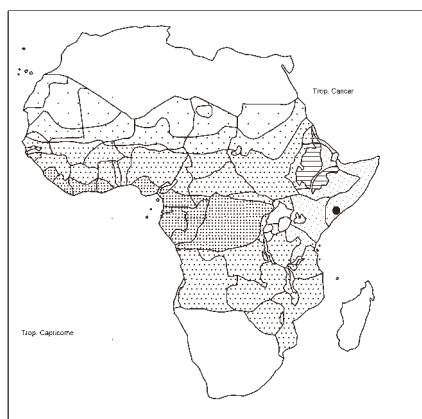
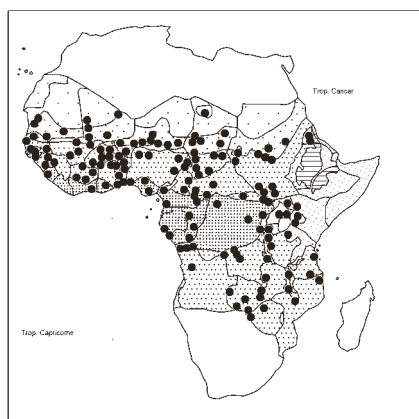
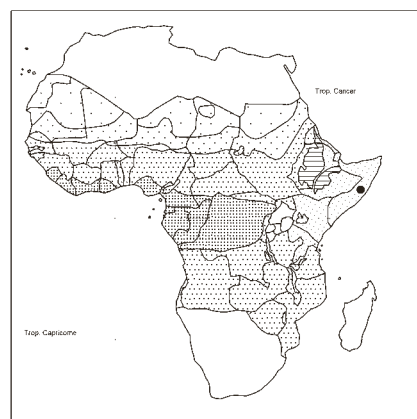
Not cited by Figueiredo & Smith, Plants of Angola in Strelitzia 22: 199, 2008.

Not mapped by us. Moçamedes = 15°20'S × 12°15'E.

E. vatovae Chiov. S. M. Phillips; Cope in Kew Bull. 47: 282, 1992 (in key); Thulin, Fl. Somalia 4: 181, 1995.

bas.: *Acrachne vatovae* Chiov.

Annual grass to 18–20 cm tall; culms slender, nodes glabrous; leaf blades linear, 3–10 cm × 1,5–4 mm, glabrous, margins scaberulous; panicle c. 8 cm long, contracted, branched below, racemose above, branches 5–6 mm long, spikelets clustered on short

*Eragrostis sericata**Eragrostis setulifera**Eragrostis spicigera**Eragrostis squamata**Eragrostis stapfii**Eragrostis superba**Eragrostis sylviae**Eragrostis thollonii**Eragrostis tinctoria**Eragrostis trachyantha**Eragrostis tremula**Eragrostis tridentata*

ERAGROSTIS VATOVAE

pedicels; spikelets ovate-oblong, c. 1,1 cm long, c. 16-flowered, with *markedly serrate outline*; paleas persistent on tough rhachilla, keels scabrid.

Probably bushland; c. 400 m alt.

Known only from the type (Vatova 10) collected in 1937.

Said to be similar to *Acrachne verticillata* (Chiovenda in Atti Reale Accad. Italia, Mem. Cl. Sci. Fis. 11: 66, 1940).

E. venustula Cope; Klaassen & Craven, Checklist grasses Namibia: 48, 2003. – Icon.: Cope in Kew Bull. 53: 161, 1998; Fl. Zambes. 10/2: 58, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 182, 2007.

Loosely caespitose *annual* grass; culms to 35 cm tall, erect or ascending, branched or not, nodes glabrous, often with a ring of coalescent *elongated glands* below nodes and with or without glandular pits scattered along internodes; lower leaf sheaths pilose with tubercle-based hairs, the uppermost glabrous, with a *line of glandular pits* along midnerve; blades $\pm$ linear, 2–8 cm $\times$ 1–3,5 mm, flat, pilose with tubercle-based hairs; panicle 4–14 cm long, oblong-elliptic, loose, open, the spikelets evenly distributed on stiffly diverging branches, somewhat pendulous on stiff, slender pedicels 3–5,5 mm long, these with a *glandular swelling* at about the midpoint, primary branches not whorled; spikelets oblong, 2–3,5 mm long, 5–16-flowered; lemmas with *purple tips* or *flushed with purple throughout*, pilose on either sides of lateral nerves with tubercle-based hairs.

Kalahari Sands in short grassland and forest shade; sandy roadsides; 900–1200 m alt.

Very similar to *E. vacillans* (Angola) but: anthers 3, minute 0,15–0,3(0,5) mm long (not 1 mm), spikelet narrower because of the less widely diverging florets.

[**E. virescens** J. Presl, excl. subsp. *verloovei* Portal (= *E. mexicana* (Hornem.) Link)]; Gibbs Russell & al., Grasses south. Afr.: 163, 1990; Fl. Eth. & Eritrea 7: 122, 1995; Scholz & Ristow in Verh. Bot. Ver. Berlin Brandenburg 138: 24–25, 2006 (in keys); Raab-Straube & Raus in Willdenowia 51: 360–361, 2021. – Icon.: Martini & Scholz in Willdenowia 28: 61, 1998 (caryopsis).

syn.: *Poa virescens* (J. Presl) Kunth; *Eragrostis mexicana* (Hornem.) Link subsp. *virescens* (J. Presl) S. D. Koch & Sánchez Vega; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual laxly tufted grass; culms slender, erect or geniculate, 50–70 cm tall; leaf blades to 25 cm long, 3–7 mm wide, sometimes with pitted glands beneath; panicle open, reaching $\frac{1}{3}$ of culm length, branches spreading (not whorled), pedicels long and slender; spikelets oblong, 4–5 $\times$ 1 mm, 7–9-flowered; caryopsis c. 0,6 mm long, dark brown, with ventral depression and a distinct reticulate pattern.

In SW Ethiopia (Kefa) in weedy places; 1700 m alt. – Not mapped.

Native to S. America, and perhaps SW N. America. As an alien it has been recorded in all continents except Antarctica: S. & E. Africa (Ethiopia), some countries in Asia, Australia, SW N America, almost all countries of S, W and particularly C & N Europe.

E. viscosa (Retz.) Trin., incl. var. *pilosissima* (Hochst. ex A. Rich.) Hochst.; Gibbs Russell & al., Grasses south. Afr.: 163, 1990; Cope, Fl. Arab. Penins. 5/1: 134, 2007; César & Chatelain, Fl. ill. Tchad: 195, 2019. – Icon.: Chippindall in Meredith, Grasses & past. S. Afr.: 181, 1955; van der Zon, Gramin. Cameroun 2: 115, 1992; Fl. Zambes. 10/2: 58, 1999 (spikelet); Ravi & Mohanan, Common

ERAGROSTIS VISCOSA

tropical & sub-tropical sedges & grasses: 153, 2002; Poilecot, Eragrostis Zimbabwe: 68, 2007; Müller, Grasses Namibia, rev. ed.: 215, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 144, 2012; Vivek & al. in Nelumbo 57: 3, 2015 (caryopsis); T. & R. van der Walt, 50 grasses Limpopo Valley: 60, 2021.

bas.: *Poa viscosa* Retz.

syn.: *P. viscosa* var. *pilosissima* Hochst. ex A. Rich.; *Eragrostis mangalorica* Hochst. ex Miq.; *E. retinorrhoea* Steud.; *E. strigosa* Andersson; *E. transvaalensis* Gand.; *E. hirsutissima* Peter; *E. tenella* var. *viscosa* (Retz.) Stapf; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted sticky grass, aromatic when fresh; culms 10–50 cm tall, erect, nodes glabrous; *leaf sheaths* pilose, with *sticky patches* on keel, margins and below the collar; *blades* linear, 4–10 cm $\times$ 2–5 mm, *sticky* on keel and margins towards base; panicle ovate-oblong, 4–15 cm long, rather dense, primary branches not whorled, branches and pedicels sticky from *yellowish glandular patches* to which *sand, grains and debris adhere*, the spikelets evenly, $\pm$ densely distributed on short stiff pedicels to 2 mm long; spikelets elliptic, 1,5–4,5 mm long, 5–15-flowered, yellowish to purplish; *glumes* with *sticky yellow glands on keel*.

Open places on dry or shallow soils; open wooded grassland; dry grassland; granite sandveld; sandy floodplains; dry seasonal pans of mopane woodland in sandy soils and Kalahari Sand; weed of disturbed ground (roadsides), old cuttings; locally common; 600–1800 m alt.

Namibia, Botswana, S. Africa, Swaziland, Lesotho; Socotra, Oman, S Arabian Peninsula, to India (Narain in Ind. J. Forestry 32: 496, 2009), Sri Lanka, W Himalaya, SE Asia to Philippines. Introduced in C. & S. America

E. volkensii Pilg.; Harvey & al., Pl. Bali Ngemba ...: 139, 2004; Strugnell, Checklist spermat. Mt. Mulanje, Malawi: 147, 2006. – Icon.: Fl. Zambes. 10/2: 58, 1999 (spikelet); Poilecot, Eragrostis Zimbabwe: 140, 2007.

syn.: *E. seticaulis* Chiov.

Tufted perennial grass; *culms straggling*, *wiry*, many-nodded, 0,3–1,2 m long; leaves all cauline; *blades reflexed*, linear, 2–8 cm $\times$ 1,5 mm; panicle open, ovate, 3–13 cm long, spikelets on pedicels 1–3 mm long on stiffly spreading primary branches (not whorled) or short secondary branchlets; spikelets ovate, dark, 3,5–7 mm long, 6–13-flowered.

Grassland, often on damp soils; dambos; swampy grasslands along rivers; 920–3300 m alt.

S. Africa.

E. welwitschii Rendle – Icon.: Fl. Eth. & Eritrea 7: 120, 1995 (spikelet); Poilecot, Eragrostis Zimbabwe: 194, 2007; Velayos & al., Fl. Guinea Ecuat. 12: 198, 2015.

syn.: *E. densa* De Wild.

Annual loosely tufted grass; culms 6–60 cm tall, erect or ascending; leaf blades linear, flat, 2,5–15 cm $\times$ 2–3 mm; panicle *ovate*, 2,5–20 cm long, *moderately dense*; branches inserted singly, spikelets spaced on filiform pedicels; spikelets oblong, 3,5–9 $\times$ 1,5–2 mm, 6–30-flowered, (*lemmas*) often tinged *purple*.

Roadsides, old farmland; open grassland; pools on lateritic pans, dambo grasslands; miombo woodland; rocky outcrops; 0–1770 m alt.

Near *E. gangetica* but has larger spikelets. The relationship between the two needs examination.

ERAGROSTIS

Nomina nuda (and unplaced names), Zaire:

Eragrostis dikuluwensis P. A. Duvign. & M. Jacobs in P. Duvigneaud & S. Denaeyer-De Smet, Cuivre et végétation au Katanga. Etude sur la végétation du Katanga et des sols métallifères 7 in Bull. Soc. Roy. Bot. Belgique 96: 169, 190, 191 fig. 12, 192, 193 fig. 13, 212, 214 fig. 16, 1963. Zaire, near Kolwezi.

E. timpermanii P. A. Duvign. & M. Jacobs, ibid.: 169. Zaire, near Elizabethville.

E. tubiformis Hack. ex De Wild., Mission Ém. Laurent 1: 208, 1906. Zaire.

UNPLACED NAMES:

Eragrostis benguelensis Wawra & Peyr., Sertum Benguelense. Aufzählung und Beschreibung der auf der Expeditionsfahrt S^r M. Corvette "Carolina" and der Küste von Benguela von Dr. H. Wawra gesammelten Pflanzen: 43–44, 1860. Cited as possible synonym under *E. fascicularis* Trin. by Rendle, Catalogue of Welwitsch's African plants 2/1: 247, 1899. *E. fascicularis* Trin. is cited as a synonym under *E. prolifera* (Sw.) Steud.

"*E. laetevirens* Höck, Just's Bot. Jahresber. 23: 135, 1895, Tanzania", as cited from World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew. – Höck (l.c.) cites this plant in a review of A. Engler's "Die Pflanzenwelt Ostafrikas und der Nachbargebiete...", Berlin 1895, as "*Eragrostis multiflora* (= *E. laetevirens* K. Sch. in Engler, Gliederung der Vegetation von Usambara)" growing in the beach vegetation on salty sandy soil above the high watermark [Engler, Die Pflanzenwelt Ost-Afrikas und der Nachbargebiete, Theil A. Grundzüge der Pflanzenverbreitung in Deutsch-Ost-Afrika und den Nachbargebieten", Berlin 1895, p. 11].

Clayton in Flora of Tropical East Africa, Gramineae Part 2: p. 244, 1974, cites "*E. laetevirens* Engl." as an imperfectly known species. *E. laetevirens* K. Sch. figures in the list of plants growing on the beach on salty sandy soils in Engler's work "Über die Gliederung der Vegetation von Usambara und der angrenzenden Gebiete" in Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin 1894: p. 12, 1894.

To sum up, there seems to be a confusion about the author of the name *Eragrostis laetevirens*, first cited by Engler 1894: p. 12, as of K. Schum. Its identity is not clear.

SYNONYMS:

Eragrostis abessinica Link, orth. var. = **Eragrostis tef**
abrupens Kabuye = **E. sennii**
abyssinica (Jacq.) Link, incl. var. *alba* Hochst. ex Chiov. and var. *viridis* Hochst. ex Chiov. = **E. tef**
acutissima Jedwabn. = **E. nindensis**
adenocoleos Pilg. = **E. cylindriflora**
afghanica Gand. = **E. pilosa**
agrostioidea Rendle, incl. var. *speciosa* Rendle and var. *viscosa* Rendle = **E. cylindriflora**
airiformis Rendle = **E. rotifer**
alata Ficalho & Hiern = **E. superba**
albensis H. Scholz = **E. pilosa**
albescens Steud. = **E. prolifera**
albida Hitchc. = **E. aegyptiaca**
amabilis auct., non (L.) Wight & Arn. 1834 = **E. unioides**
andongensis Rendle = **E. nindensis**
angolensis Hack. = **E. vacillans**
angusta Hack. = **E. rotifer**
annulata Chiov. = **E. cylindriflora**
araiostachya Chiov. = **E. perbella**
articulata De Wild. = **E. cilianensis**
atherstonei Stapf = **E. cylindriflora**

ERAGROSTIS

atrovirens Lange 1860 = **E. papposa**
atrovirens var. *congesta* Robyns & Tournay = **E. botryodes**
atrovirens var. *fontanesiana* Maire and var. *hesperidum* Maire = **E. atrovirens**
atrovirens auctt. non Trin. & Steud. = **E. inamoena**
atroviridis Maire 1937 = **E. atrovirens**
aulacosperma (Fresen.) Steud., incl. var. *perennis* Schweinf. = **E. papposa**
auriculata Hack. = **E. echinochloidea**
baguiriensis A. Chev. = **E. pilosa**
barrelieri var. *ambigua* Dobignard & Portal, subsp. *ambigua* (Dobignard & Portal) H. Scholz & Valdés, subvar. *pygmaea* Daveau, var. *pygmaea* (Daveau) Dobignard & Portal, subsp. *pygmaea* (Daveau) Portal & H. Scholz = **E. barrelieri**
basilepis Pilg. = **E. caespitosa**
beninensis Steud. = **Megastachya mucronata**
bequaertii De Wild. = **Eragrostis hispida**
beroensis Rendle = **E. rotifer**
bifaria (Vahl) Wight = **Eragrostiella bifaria**
biformis (Kunth) Benth. = **Eragrostis atrovirens**
bipinnata (L.) K. Schum. = **Desmostachya bipinnata**
blastocaulos Pilg. = **Eragrostis schweinfurthii**
blepharoglumis K. Schum. = **E. olivacea**
blepharolepis Hack. = **E. hispida**
boehmii Hack. = **E. racemosa**
bovonei Chiov. = **E. crassinervis**
brachyphylla Hack. = **E. vacillans**
brizoides (L. f.) Nees = **E. capensis**
bromoides Jedwabn. = **E. atrovirens**
buchananii K. Schum. = **E. nindensis**
burchellii Stapf = **E. micrantha**
burttdavii Stent = **E. bicolor**
caespitosa sensu Simon 1971, non Chiov. = **E. castellaneana**
calantha Peter = **E. inamoena**
cambessediana (Kunth) Steud. = **E. gangetica**
capillifolia Nees = **E. curvula**
cephalotes Chiov. = **E. capitulifera**
chalarantha Gilli = **E. homblei**
chalcantha Trin. = **E. racemosa**
chalcantha var. *composita* Jedwabn. and var. *holstii* Engl. & K. Schum. = **E. schweinfurthii**
chalcantha var. *effusa* Rendle, var. *hirsuta* Peter, var. *intermedia* Peter, and var. *neesii* K. Schum. = **E. racemosa**
chariis auct. non (Schult.) Hitchc. = **E. atrovirens**
chaumantha Pilg. = **E. lehmanniana**
chloromelas Steud. = **E. curvula**
cilianensis fa. *nana* Maire & Weiller and subsp. *pooides* (Husn.) Maire = **E. minor**
coelachyrum Benth. = **Coelachyrum brevifolium**
comata Peter = **Eragrostis lappula**
congesta Oliv. var. *cephalantha* Peter, var. *elongata* Peter and var. *penicellata* Peter = **E. congesta**
conradsii Pilg. = **E. racemosa**
curvula (Schrad.) Nees var. *atrata* (Schweinf.) Cufod., var. *conferta* Stapf, var. *decolorans* Rendle and var. *valida* Stapf = **E. curvula**
cylindrispica Rendle = **E. flavicans**
cynosuroides (Retz.) P. Beauv. = **Desmostachya bipinnata**
cyperoides (Thunb.) P. Beauv. = **Cladoraphis cyperoides**
dakarensis A. Chev. = **Eragrostis gangetica**
decidua Hochst. = **E. macilentia**
dekindtii Pilg. = **E. macilentia**
densa De Wild. = **E. welwitschii**

ERAGROSTIS

densiflora Rendle = **E. rotifer**
denudata Hack. = **E. nindensis**
depauperata Andersson = **E. japonica**
devolvens Gand. = **E. aspera**
dieterlenii Hack. = **E. caesia**
diplachnoides Steud. = **E. japonica**
diplostachya Peter = **Disakisperma yemenicum**
dolichostachya Peter = **Eragrostis chapelieri**
domingensis (Pers.) Steud. = **E. prolifera**
dumasiana A. Chev. = **E. gangetica**
dura Stapf = **E. pallens**
eichingeri Pilg. = **E. congesta**
elata Munro ex Ficalho & Hiern = **E. superba**
elegantula Nees ex Miq. = **E. gangetica**
elisabethae Peter = **E. hispida**
elongatocompressa De Wild. = **E. capensis**
emsonii C. E. Hubb. = **E. homblei**
enodis Hack. = **Cladoraphis cyperoides**
fascicularis Trin. = **Eragrostis prolifera**
fasciculata Peter, incl. var. *stenophylla* Peter
= **E. caespitosa**
filiformis (Thunb.) Nees = **E. curvula**
filiformis Link = **E. pilosa**
flamignii De Wild. = **E. gangetica**
fleurii A. Chev. = **E. pobeguinii**
fluvialis A. Chev. = **E. barteri**
frederici Rendle = **E. lappula**
fruticans Jedwabn. = **E. mahrana**
fumigata Peter = **E. paniciformis**
galpinii Stent = **E. inamoena**
geniculata (Durieu) Durieu = **E. cylindriflora**
glanvillei C. E. Hubb. = **E. invalida**
gracilis Peter = **E. mollior**
guingensis Rendle, incl. var. *egregia* Rendle = **E. nindensis**
hackeliana Bornm. & Kneuck. = **E. sarmentosa**
hagerupii Hitchc. = **E. prolifera**
halophila A. Chiov. = **E. squamata**
hararensis Chiov. = **E. mahrana**
hereroensis Hack. = **E. porosa**
hirsutissima Peter = **E. viscosa**
hochstetterii Steud. = **E. japonica**
hockii De Wild. = **E. racemosa**
holstii (Engl. & K. Schum.) Engl. ex Peter, incl. var.
contracta Peter = **E. schweinfurthii**
horizontalis Peter = **E. cylindriflora**
huillensis Rendle = **E. curvula**
hygrophila C. E. Hubb. & Schweick. = **E. homomalla**
insulatlantica A. Chev. = **E. barrelieri**
interrupta var. *diplachnoides* (Steud.) Stapf and var.
namaquensis (Nees ex Schrad.) T. Durand & Schinz
= **E. japonica**
jardinii Steud. = **Megastachya mucronata**
jeffreysii Hack. = **Eragrostis curvula**
kalinaensis Vanderyst = **E. gangetica**
keniensis Pilg. = **E. paniciformis**
kinshasaensis Vanderyst = **E. squamata**
kiwuensis Jedwabn. = **E. schweinfurthii**
kneuckeri Hack. & Bornm. = **E. sarmentosa**
kohorica Quézel = **E. papposa**
kwaensis Peter = **Eleusine multiflora**
kwamouthensis Vanderyst = **Eragrostis mildbraedii**
lamarckii Steud. = **E. tremula**
lamprospicula De Winter = **E. patentipilosa**
lappula var. *divaricata* Stapf = **E. lappula**
lasiantha Stapf = **E. olivacea**
lasiophylla K. Schum. = **E. racemosa**

ERAGROSTIS

laxissima Engl., nom. nud. = **E. macilenta**
ledermannii Pilg. = **E. turgida**
lehmanniana var. *ampla* Stapf = **E. curvula**
lehmanniana var. *chaunantha* (Pilg.) De Winter
= **E. lehmanniana**
leprieurii Steud. = **E. japonica**
linearis (Schumach.) Benth. = **E. prolifera**
linkii (Kunth) Steud. = **E. pilosa**
linozodes Gilli = **E. homblei**
longipaniculata De Wild. = **E. mollior**
lukwangulensis Pilg. = **E. homblei**
lumeneensis Vanderyst = **E. olivacea**
major Host, incl. var. *conferta* Ten. and var. *subbiloba*
(Chiov.) Chiov. = **E. cilianensis**
mangalorica Hochst. ex Miq. = **E. viscosa**
manikensis De Wild. = **E. capensis**
margaritacea Stapf = **E. rotifer**
maritima A. Chev. = **E. japonica**
marlothii Hack. ex Dyer = **Pogonarthria squarrosa**
megastachya (Koeler) Link, incl. var. *cilianensis* (All.)
Asch. & Graebn., var. *compacta* (Regel) Krylov, var.
leersioides (C. Presl) Pant., and fa. *nana* Lorentz &
Niderl. = **Eragrostis cilianensis**
megastachya var. *nana* Trab. and subsp. *poides* Husn.
= **E. minor**
mexicana (Hornem.) Link subsp. *virescens* (J. Presl)
S. D. Koch & Sánchez Vega = **E. virescens**
minima Jedwabn. = **E. aegyptiaca**
monodii A. Camus = **E. cilianensis**
moritzii Jedwabn. = **E. mokensis**
mucronata (L.) Deflers 1887 = **Halopyrum mucronatum**
mucronata (Poir.) Roem. & Schult.
= **Megastachya mucronata**
multiflora (Forssk.) Asch. 1864
= **Eragrostis schweinfurthii**
multiflora Trin. 1830 = **E. tremula**
multiflora var. *biformis* (Kunth) A. Chev. = **E. atrovirens**
multiflora var. *cilianensis* (All.) Maire, var. *glandulifera*
Chiov., var. *insularis* Chiov., and var. *subbiloba* Chiov.
= **E. cilianensis**
multiflora var. *pappiana* Chiov. = **E. minor**
multipilosa Hochst. ex Borzi = **E. cylindriflora**
namaquensis Nees, incl. var. *diplachnoides* (Steud.)
Clayton and var. *robusta* Stapf = **E. japonica**
natalensis Hack. = **E. sclerantha** subsp. *sclerantha*
nebulosa Stapf = **E. planiculmis**
nervosa Hochst. = **E. macilenta**
nigrica A. Chev. = **E. aegyptiaca**
obtus sensu T. Durand & Schinz p.p., non Munro ex
Ficalho & Hiern = **E. echinochloidea**
ovina (A. Rich.) Steud. = **E. gangetica**
owariensis Steud. = **Megastachya mucronata**
palisotii T. Durand & Schinz = **M. mucronata**
pallascens Hitchc. = **Eragrostis prolifera**
panormitana Lojac. = **E. barrelieri**
pappiana (Chiov.) Chiov. = **E. minor**
pappii Gand. = **E. cilianensis**
paradoxa sensu Simon 1971, non Launert = **E. milnei**
parviglumis Hochst. ex Steud. = **E. patula**
passa Rendle = **E. macilenta**
patens var. *congoensis* Franch. and var. *pilosa* Peter
= **E. patens**
pendula Peter = **E. olivacea**
perbella sensu Berhaut 1967, non K. Schum. 1895
= **E. lingulata**
phaeantha C. E. Hubb. = **E. homblei**

ERAGROSTIS

piercei Benth. (“piercii”) = *Coelachyrum piercei*
pilosa subsp. *abyssinica* (Jacq.) Asch & Graebn.
 and var. *tef* (Zuccagni) Fiori = *Eragrostis tef*
platyphylla Rendle = *E. rotifer*
platystachys Franch. = *E. superba*
plumosa (Retz.) Link = *E. amabilis*
poa Stapf = *E. curvula*
podotricha Chiov. = *E. porosa*
poecilantha Stapf = *E. crassinervis*
polysperma Peter = *E. cilianensis*
pooides P. Beauv. = *E. minor*
pooides var. *barrelieri* (Daveau) Fiori = *E. barrelieri*
procerior Rendle = *E. curvula*
pseudobtusa auct., non De Winter = *E. echinochloidea*
pseudohispida Napper = *E. canescens*
pseudonigra Mattei = *E. macilenta*
pseudosclerantha Chiov. = *E. patentipilosa*
pseudoteff Peter = *E. lehmanniana*
puberula Steud. = *Poa leptoclada*
pubiculmis Jedwabn. = *Eragrostis curvula*
pulchella Parl. = *E. ciliaris*
pumila A. Chev. = *E. gangetica*
purpureopedicellata De Wild. = *E. rejuvenescens*
quadriflora Rendle = *E. cylindriflora*
quintasii Gand. = *E. aspera*
racemosa var. *holstii* (Engl. & K. Schum.) Chiov.
 = *E. schweinfurthii*
ramosa Hack. = *E. annulata*
retinorrhoea Steud. = *E. viscosa*
rhachitricha Hochst. ex Miq. = *E. tremula*
rigidifolia Hochst. ex Schweinf. = *E. papposa*
rigidior Pilg. = *E. cylindriflora*
robusta Stent = *E. curvula*
rubiginosa Trin. = *E. turgida*
sapinii De Wild. = *E. thollonii*
schimperii (A. Rich.) Benth. = *Harpachne schimperii*
schweinfurthiana Jedwabn. = *Eragrostis cilianensis*
schweinfurthii Chiov. var. *kiwuensis* (Jedwabn.)
 S. M. Phillips = *E. schweinfurthii*
sclerantha var. *villosipes* (Jedwabn.) De Winter
 = *E. sclerantha* subsp. *villosipes*
sclerochlaena Chiov. = *E. thollonii*
seineri Jedwabn. = *E. cylindriflora*
senegalensis Nees = *E. aegyptiaca*
senegalensis (Desv.) A. Chev. = *E. pilosa*
serpula Chiov. = *E. tremula*
seticaulis Chiov. = *E. volkensii*
 sp. (Aistle 994), 1971 = *E. anacrantha*
 sp. Aistle 3140 = *E. anacranthoides*
 sp. (Aistle 3165) = *E. astreptoclada*
 sp. (Simon 839) = *E. desolata*
 sp. (Simon 1971) = *E. inamoena*
 sp. A. of Fl. Trop. E. Afr., Gramin. 2: 244, 1974
 = *E. prolifera*
speirostachya Coss. & Durieu ex Lange = *E. papposa*
sporoboloides (A. Rich.) Peter = *E. japonica*
sporostachya (Coss. & Durieu) Lange = *E. papposa*
stenoclada J. Presl = *E. gangetica*
stenophylla Hochst. ex Miq. = *E. gangetica*
stenosoma Peter = *E. mollior*
stolzii Gilli = *E. canescens*
strigosa Andersson = *E. viscosa*
subulata Nees = *E. curvula*
sudanica A. Chev. = *E. atrovirens*
tef (Zuccagni) Trotter fa. *spiciformis* Serp., subsp.
spiciformis (Serp.) Portal & H. Scholz = *E. tef*

ERAGROSTIS

tenella (L.) P. Beauv. ex Roem. & Schult. = *E. amabilis*
tenella var. *compacta* Rendle = *E. arenicola*
tenella var. *insularis* C. E. Hubb. = *E. amabilis*
tenella var. *plumosa* (Retz.) Stapf = *E. amabilis*
tenella var. *viscosa* (Retz.) Stapf = *E. viscosa*
tenella sensu auctt., non (L.) P. Beauv. ex Roem. & Schult.
 = *E. lepida*
tenuiflora Rupr. ex Steud. = *E. pilosa*
tenuifolia (A. Rich.) Hochst. ex Steud., incl. var. *polytricha*
 Peter = *E. patula*
tenuissima Schrad. ex Nees = *E. japonica*
thunbergiana Steud., incl. var. *atrata* Schweinf.
 = *E. curvula*
trachyphylla Pilg. = *E. capensis*
transvaalensis Gand. = *E. viscosa*
trepidula C. E. Hubb. = *E. plurigluma*
trichocordia Gilli = *E. exasperata*
trichophora Coss. & Durieu = *E. cylindriflora*
uniglumis Hack. = *E. hierniana*
valida Stent 1923 = *E. curvula*
valida Pilg. 1916 = *E. friesii*
vanderystii De Wild. = *E. nindensis*
vansonii Bremek. & Oberm. = *E. lehmanniana*
verticillata Coss. = *E. papposa*
villosipes Jedwabn. = *E. sclerantha* subsp. *villosipes*
vinicolor A. Chev., incl. var. *pallida* A. Chev.
 = *E. gangetica*
vulgaris subsp. *barrelieri* (Daveau) Douin and var.
barrelieri (Daveau) Douin = *E. barrelieri*
vulgaris var. *sporostachya* Coss. & Durieu
 (“speirostachya”) = *E. papposa*
weberae Peter = *E. castellaneana*
wilmsii Stapf = *E. heteromera*
yemenica Schweinf. = *Disakisperma yemenicum*
yemensis Schweinf. = *D. yemenicum*

(EREMOCHLAMYS)

Eremochlamys arenaria Peter = *Tricholaena monachne*
littoralis Peter = *T. monachne*

[EREMOCHLOA]

Genus of some 12 species in S Asia from India E-wards to China, and Australia.

[*Eremochloa ophiuroides* (Munro) Hack.]; Fl. Trop. E. Afr., Gramin. 3: 842, 1982; Fl. China 22, Texts: 645–646, 2006; Lejoly & al., Cat.-fl. Kisangani & Tshopo: 235, 2010. – Icon.: Fl. China 22, Ill. 898, 2007.

Creeping stoloniferous perennial grass; flowering shoots 15–30 cm tall, leaf blades (1–10 cm × 2–4 mm) flat, with a single erect terminal raceme 4–6 cm long; raceme flattened, spikelets overlapping along one side, disarticulating very tardily.

Used for tropical lawns, “Centipede Grass”; recorded from e.g., N Zaire, S Uganda (U4), SW Kenya (K3), Malawi.

(EREMOPOGON)

Eremopogon foveolatus (Delile) Stapf
 = *Dichanthium foveolatum*
strictus (Roxb.) A. Camus = *D. foveolatum*

(ERIANTHUS)

VASQUEZ, S. I. & al. (2022). Morphometric analysis of the Saccharum complex (Poaceae, Andropogoneae). *Pl. Syst. Evol.* 308/1: §10: 1–20.

WELKER, C. A. D. & al. (2019). Plastome phylogenomics of sugarcane and relatives confirm the segregation of the genus *Tripidium* (Poaceae: Andropogoneae). *Taxon* 68: 246–267.

SYNONYMS:

Erianthus aureus (Bory) P. Beauv. = ***Eulalia aurea***
capensis Nees, incl. var. *angustifolius* Nees, var.
ecklonii (Nees) Hack., and var. *villosus* Stapf
 = ***Miscanthus ecklonii***
ecklonii Nees = ***M. ecklonii***
flavescens K. Schum. = ***M. violaceus***
junceus Stapf = ***M. junceus***
purpurascens Andersson = ***Saccharum ravennae***
ravennae (L.) P. Beauv., incl. var. *binervis* Chiov., subsp.
parviflorus (Pilg.) H. Scholz, and var. *purpurascens*
 (Andersson) Hack. = ***S. ravennae***
repens (Willd.) P. Beauv. = ***Melinis repens***
sorghum Nees = ***Miscanthus ecklonii***
teretifolius Stapf = ***M. junceus***
teretifolius Pilg. = ***M. junceus***
villosus (Spreng.) Steud. = ***Eulalia villosa***
violaceus K. Schum. = ***Miscanthus violaceus***

(ERIOCHAETA)

Eriochaeta densiflora Fig. & De Not.
 = ***Pennisetum pedicellatum*** subsp. ***pedicellatum***
reversa Fig. & De Not. = ***P. pedicellatum*** subsp.
unispiculum
secundiflora Fig. & De Not. = ***P. pedicellatum*** subsp.
pedicellatum

ERIOCHLOA / 7

Genus of some 30 species (34 according to Christenhusz & al., *Plants of the World*: 209, 2017) in warm temperate and tropical regions of the world. According to Kellogg (in K. Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 338–339, 2015) there is only one (= the type) species, viz. *E. distachya* Kunth, S. America.

“Most species previously classified within *Eriochloa* are part of *Urochloa* according to the extensive molecular phylogenetic data of Salariato & al.” (2010).

Eriochloa fatmensis (Hochst. & Steud.) Clayton; Renier, *Flore du Kwango* 1: 36, 1948; Gibbs Russell & al., *Grasses south. Afr.*: 164, 1990. – Icon.: Stent in *Bothalia* 1: 259, 1924 (as *E. fouchei*); Robyns, *Fl. agrost. Congo belge* 2: 79, 1934; *Fl. Trop. E. Afr.*, *Gramin.* 3: 572, 1982; *Fl. Zambes.* 10/3: 87, 1989; van der Zon, *Gramin. Cameroun* 2: 265, 1992; *Fl. Eth. & Eritrea* 7: 219, 1995; Thulin, *Fl. Somalia* 4: 231, 1995; Poilecot, *Boissiera* 56: 399, 1999; Cope, *Fl. Arab. Penins.* 5/1: 213, 2007; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 266, 2012 (inflorescence); Agnew, *Upl. Kenya wild flow.*, ed. 3: pl. 189, 2013; Velayos & al., *Fl. Guinea Ecuat.* 12: 199, 2015; Ibrahim & al., *Grasses Mali*: 77, 2018; César & Chatelain, *Fl. ill. Tchad*: 229, 2019.

bas.: *Panicum fatmense* Hochst. & Steud.

syn.: *Eriochloa annulata* var. *acrotricha* Benth.; *E. barbata* (“barbatus”) (Trin.) Santosh Yadav & Almeida in Almeida, *Flora of Maharashtra VI A*: 145, 2014; *E. punctata* var. *acrotricha* (Benth.) K. Schum.; *E. fouchei* Stent; *E. nubica*

ERIOCHLOA FATMENSIS

(Steud.) Hack. & Stapf ex Thell.; *Digitaria acrotricha* (Benth.) Roberty; *Helopus acrotrichus* Steud., nom. superfl.; *H. nubicus* Steud.; *H. barbatus* Trin.; *Monachne acrotricha* (Benth.) Hayw. & Druce; *World Checklist of Selected Plant Families*, Poaceae, Roy. Bot. Gard., Kew.

Annual loosely tufted grass; culms 0,1–1,2 m tall, erect or geniculately ascending; leaf blades linear, 3–30 × 0,2–1 cm; inflorescence 3–20 cm long, of 3–20 racemes, these 1–5 cm long, bearing paired spikelets on a triquetrous rachis; pedicels commonly setose; spikelets lanceolate, pointed, 2,5–5 mm long, thinly pubescent, with a bead-like swelling at base; lower glume 0; upper lemma with mucro 0,3–1 mm long.

Swampy places; damp depressions; basaltic rocks; especially on black clays; also as a weedy ephemeral on better-drained soils during the rains; bushland and woodland; with *Chloris virgata*, *Panicum subalbidum*, *P. laetum*, *Digitaria horizontalis*, *Eragrostis japonica*, *Elytrophorus spicatus*; 0–2200 m alt.

Annobón; Namibia, Botswana, S. Africa; Madagascar; Gulf States, Oman, Saudi Arabia, Yemen; introduced in S Asia: India (few records) to Burma; New Guinea; S USA.

Intergrading with *E. procera*. Confused with *Brachiaria mutica*.

E. maccounii Stapf; Gibbs Russell & al., *Grasses south. Afr.*: 164, 1990; *Fl. Zambes.* 10/3: 86, 1989.

Annual grass; culms erect, 0,6–1,8 m tall; leaf blades linear, 8–60 × 0,3–1,2 cm; inflorescence 6–25 cm long of 5-many racemes, these 3–6 cm long, rachis pubescent to pilose (rarely puberulous), triquetrous, bearing paired spikelets; these 3,5–5 mm long, lanceolate, pubescent to pilose; lower glume 0, upper attenuate to an awn-point 1–3 mm long.

Damp soils; flood plains; drainage courses; 60–1600 m alt.

N Botswana. Locality in Mozambique Z (Posto Chire), not registered.

E. meyeriana (Nees) Pilg., incl. subsp. *grandiglumis* (Stent & J. M. Rattray) Gibbs Russ. and subsp. *meyeriana*; Darbyshire & al., *Pl. Sudan & S. Sudan*: 131, 2015; Thulin, *Fl. Somalia* 4: 231, 1995; Cope, *Fl. Arab. Penins.* 5/1: 217, 2007. – Icon.: Bosser, *Gramin. pâtur. cult. Madag.*: 344, 1969; Gibbs Russell & al., *Gramin. south. Afr.*: 164, 1990 (subsp. *meyeriana*); *Fl. Eth. & Eritrea* 7: 219, 1995; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 194, 2012; Agnew, *Upl. Kenya wild flow.*, ed. 3: pl. 189, 2013.

bas.: *Panicum meyerianum* Nees

syn.: *P. mite* Steud.; *P. schimperianum* Hochst. ex A. Rich.; *P. meyerianum* var. *grandiglume* Stent & J. M. Rattray; *Eriochloa borumensis* Hack.; *Helopus meyerianus* (Nees) Döll

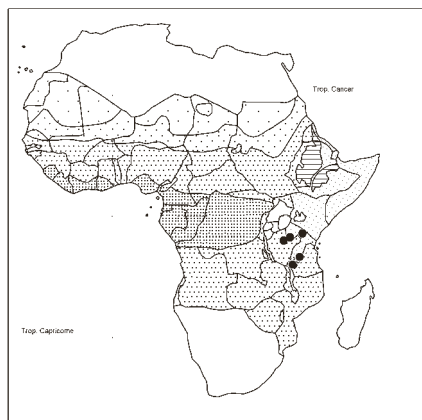
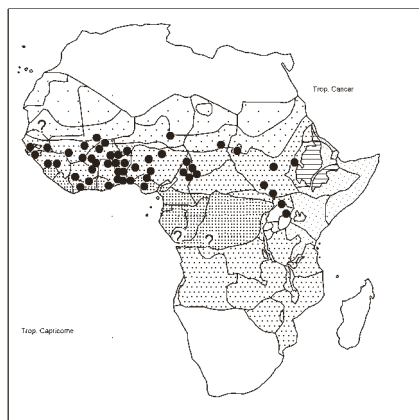
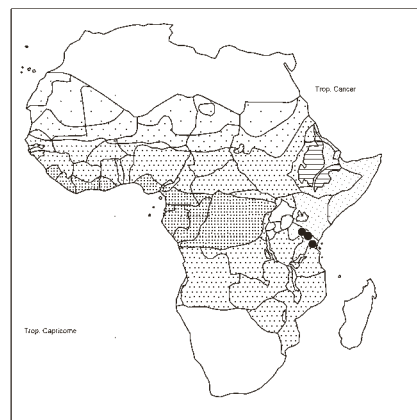
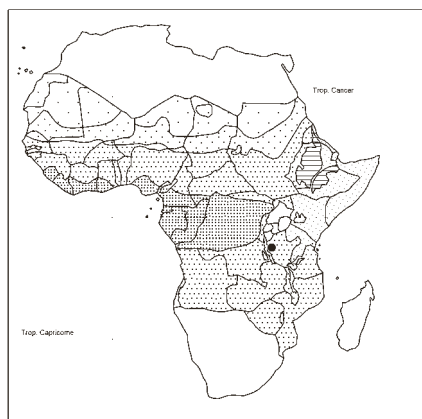
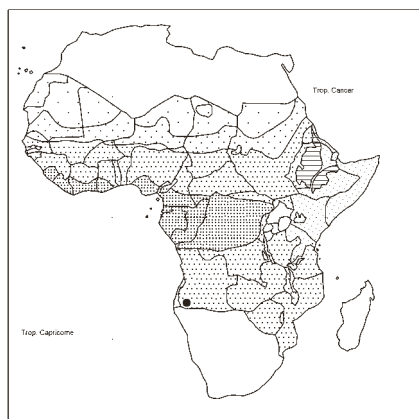
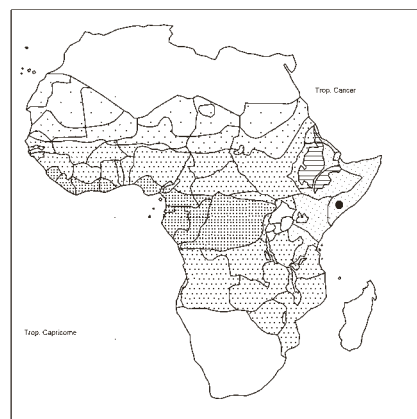
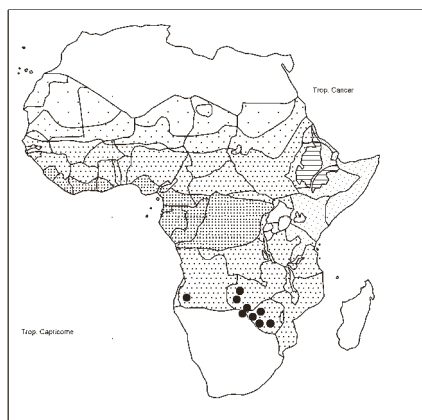
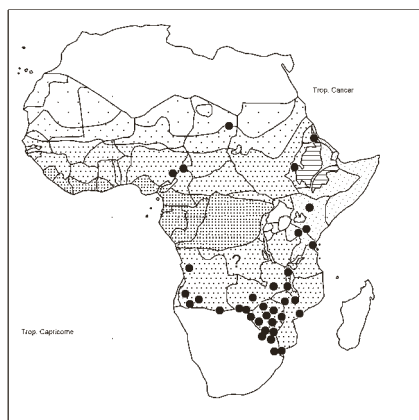
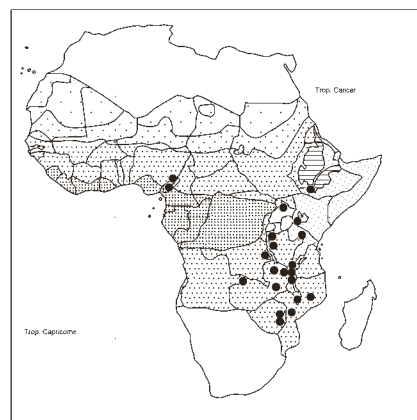
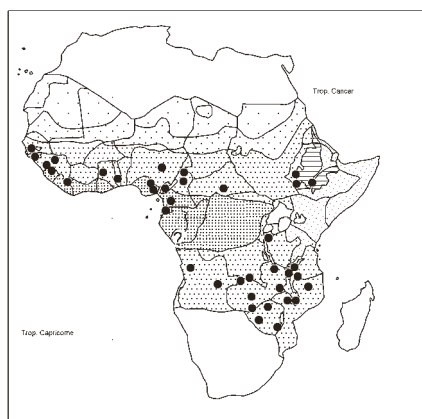
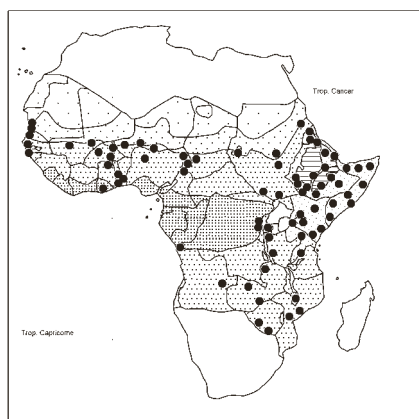
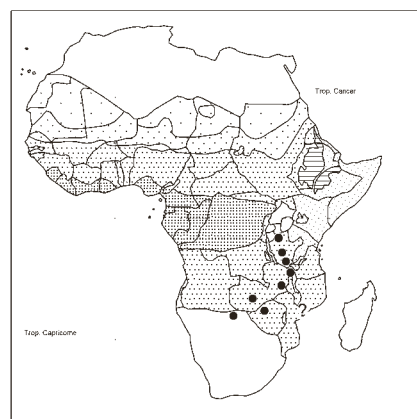
Perennial reed; culms 0,3–2 m long, geniculately ascending, rooting at lower nodes, often scrambling, sometimes almost woody; leaf blades linear, 5–25 × 0,3–1,5 cm; inflorescence an untidy looking panicle 8–18 cm long of complex racemes 2–7 cm long, rachis triquetrous, puberulous, spikelets paired on short secondary branchlets; spikelets elliptic, c. 3 mm long, hairless.

Swampy places; streamsides and by water; marshy and seasonally flooded ground in dry scrubland; in sand or clay; 0–1700 m alt.

Botswana, S. Africa, Swaziland; Aldabra, Madagascar; N Yemen.

The two subspecies described can only be “distinguished on the basis of inconspicuous spikelet characters”.

According to *Flora of Ethiopia* (l.c.) the plant is difficult to place generically, lying on the boundary between *Panicum*, *Brachiaria* and *Eriochloa*. It is very similar to *Brachiaria mutica* which has,

*Eragrostis trimucronata**Eragrostis turgida**Eragrostis usambarensis**Eragrostis uzondoiensis**Eragrostis vacillans**Eragrostis vatovae**Eragrostis venustula**Eragrostis viscosa**Eragrostis volkensis**Eragrostis welwitschii**Eriochloa fatmensis**Eriochloa macclounii*

ERIOCHLOA MEYERIANA

however, plumper elliptic spikelets lacking a basal swelling and borne upon a flattened rachis.

E. parvispiculata C. E. Hubb.; Gibbs Russell & al., Grasses south. Afr.: 165, 1990.

Tufted *perennial* grass; culms 0.3–1.2 m tall; leaf blades lanceolate, 8–30 × 0.3–1 cm; inflorescence 5–15 cm long; racemes 1–7 cm long, rachis puberulous, narrowly winged; spikelets densely imbricate in clusters of 2–4; spikelets 2–2.5 mm long, lanceolate, thinly pubescent; *lower glume* 0, upper acuminate or with a mucro.

Damp places in coastal bushland; near cultivations; 0–300 m alt. Swaziland, S. Africa; Madagascar.

Intergrades with *E. stapfiana*. Often difficult to distinguish from marginal specimens of *E. fatmensis* unless the habit is known (Fl. Trop. E. Afr., Gramin. 3: 570, 1982).

E. procera (Retz.) C. E. Hubb.; Fl. Eth. & Eritrea 7: 218, 1995; Agnew, Upl. Kenya wild flow., ed. 3: 435, 2013. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 81, 1955; Fl. China 22, Ill. 732, 2007; Almeida, ed., Flora of Maharashtra VI A: fig. 46 facing p. 147, 2014; Singh & al. in J. Econ. Taxon. Bot. 39: 112, 2015.

bas.: *Agrostis procera* Retz.

syn.: *Eriochloa ramosa* (Retz.) Kuntze, incl. var. *barbata* Peter and var. *involucrata* Hack.; *Milium ramosum* Retz.; *Panicum annulatum* (Flüggé) A. Rich.; *Paspalum annulatum* Flüggé; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual grass; culms 0.2–1 m tall, erect or geniculately ascending; leaf blades lanceolate, 2–30 cm × 2–4 mm; inflorescence 4–20 cm long, racemes untidy, 2–10 cm long, rachis triquetrous, puberulous, bearing paired spikelets; spikelets 2.5–4 mm long, lanceolate, thinly pubescent; *lower glume* 0, upper *acute to acuminate*; pedicels of spikelets *commonly glabrous*.

Damp places, stream sides; grassy savanna; sandy soils; 200–1700 m alt.

Madagascar; tropical & subtropical Asia E-wards to Australia; introduced to the Pacific islands, S USA, C. & S. America.

Closely similar to *E. fatmensis* and intergrades with it.

A predominantly Asian species, presumably introduced to tropical Africa.

E. rovimensis (Pilg.) Clayton; Fl. Zambes. 10/3: 85, 1989; Darbyshire & al. in PhytoKeys 136: 78, 2019.

bas.: *Panicum rovimense* Pilg.

syn.: *Brachiaria rovimensis* Pilg.; *Eriochloa biglumis* Clayton
Annual grass; culms 45–60 cm tall, geniculately ascending; leaf blades lanceolate, 3–15 cm × 2–8 mm; inflorescence 4–10 cm long, bearing 3–6 secund racemes, these 1.5–3 cm long with rachis triquetrous bearing 1 or 2 spikelets; spikelets 3.5–5.5 mm long, thinly pilose; lower glume $\frac{1}{2}$ as long as the spikelet, *acuminate*, upper acuminate or with an awn-point to 1 mm long.

Shallow soil over rock; 200–500 m alt.

E. stapfiana Clayton; Fl. Zambes. 10/3: 85–86, 1989; Gibbs Russell & al., Grasses south. Afr.: 165, 1990. – Icon.: van Oudtshoorn, Guide grasses south. Afr., ed. 3: 266, 2012 (inflor.).
Perennial robust tufted grass; culms 0.6–1.2 m tall; leaf blades lanceolate, 4–20 cm × 3–8 mm; inflorescence 7–30 cm long, of 6-many racemes, these 2–7 cm long, *rachis* triquetrous,

ERIOCHLOA STAPFIANA

puberulous or pubescent (rarely pilose), bearing spikelets in pairs or on short appressed side branchlets; spikelets ovate, 3–4 mm long, appressedly pubescent; upper glume acuminate or with an awn-point to 1 mm long.

Swampy places, streamsides, also by water; 0–800 m alt.

E S. Africa, Swaziland.

Intergrades with *E. meyeriana*; the latter seldom has hairy spikelets and never an obviously mucronate upper lemma.

SYNONYMS:

Eriochloa acrotricha (Hook. f.) Hack. ex Schinz

= **Panicum acrotrichum**

annulata var. *acrotricha* Benth. = **Eriochloa fatmensis**
barbata (“barbatus”) (Trin.) S. Yadav & M. R. Almeida

= **E. fatmensis**

biglumis Clayton = **E. rovimensis**

bolbodes (Hochst. ex Steud.) Schweinf.

= **Urochloa oligotricha**

borumensis Hack. = **Eriochloa meyeriana**

fouchei Stent = **E. fatmensis**

meyeriana subsp. *grandiglumis* (Stent & J. M. Rattray)

Gibbs Russ. and subsp. *meyeriana* = **E. meyeriana**

nubica (Steud.) Hack. & Stapf ex Thell. = **E. fatmensis**

punctata var. *acrotricha* (Benth.) K. Schum.

= **E. fatmensis**

purpurascens Hochst. ex A. Rich. = **Brachiaria serrata**

ramosa (Retz.) Kuntze, incl. var. *barbata* Peter & var.

involucrata Hack. = **Eriochloa procera**

trichopus (Hochst.) Benth., incl. var. *glabrata* Schweinf.

= **Urochloa trichopus**

ERIOCHRYISIS / 3

Genus of 10 species (Christenhusz & al., Plants of the World: 209, 2017) or 7 species (Welker in Phytotaxa 71: 1–4, 2012) or 12 species (Kellogg in K. Kubitzki, ed., Families & genera vascul. plants 13, Poaceae: 304, 2015) in tropical America, Africa and India (1 sp.).

Tufted perennials characterized mainly by inflorescences with golden-brown to light-brown to reddish hairs.

Eriochrysis brachypogon (Stapf) Stapf, incl. subsp. *australis* J. G. Anderson; Renier, Fl. Kwango 1: 23–24, 1948; Agnew, Upl. Kenya wild flow., ed. 3: 443, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 708, 1982; van der Zon, Gramin. Cameroun 2: 391, 1992; Poilecot, Boissiera 50: 477, 1995; Fl. Eth. & Eritrea 7: 294, 1995 (inflor.); Fl. Zambes. 10/4: 7, 2002.

bas.: *Saccharum brachypogon* Stapf

syn.: *Eriochrysis phaenostachys* Pilg.

Perennial tufted grass surrounded at base by old grey leaf sheaths; culms erect, 0.6–1 m tall, nodes bearded; leaf blades linear, 7–30 cm × 1–3 mm; inflorescence linear to narrowly oblong, 4–14 cm long, often reddish, with 4–16 racemes these 2–4 cm long; spikelets bearded from the callus with a circle of *golden-brown hairs up to 1/2 the spikelet length*; sessile spikelet 4–6 mm long, lower glume shining; pedicellate spikelet 3–4 mm long.

Swamps; marshy grassland; hollows; c. 100–2300 m alt.

S. Africa, Swaziland.

ERIOCHRYSIS

E. pallida Munro; Lye & al. in Lidia 4: 167–168, 2000. – Icon.: Gibbs Russell & al., Grasses south. Afr.: 165, pl. 82 p. 366 (spikelet), 1990; Fl. Eth. & Eritrea 7: 294, 1995; Burrows & Willis, Pl. Nyika Plateau Malawi: 344, 2005.

syn.: *E. munroana* Pilg.; *Saccharum pallidum* (Munro) Benth.; *S. munroanum* Hack. 1889, nom. superfl.

Perennial tufted grass; culms slender, erect, 0.4–1.4 m tall, nodes bearded; leaf blades linear, 6–24 cm × 1–4 mm, hispidulous; inflorescence linear to oblong, 3–14 cm long of 3–14 racemes each 1–4 cm long; sessile spikelet 3.5–5 mm long, callus hairs tawny and longer than spikelet; lower glume shining.

Riverbanks; swampy soil; marshy grassland on black soil; 960–2100 m alt.

Botswana, S. Africa, Swaziland. – Occurrence in Uganda doubtful: only collection made in 1942 (0°22'S × 31°50'E).

E. purpurata (Rendle) Stapf; Renier, Fl. Kwango 1: 23, 1948; Fl. Zambes. 10/4: 6, 8, 2002.

bas.: *Saccharum purpuratum* Rendle

Perennial grass forming dense tussocks; culms 15–60 cm tall; leaf blades linear, 6–15 cm × 1–2 mm; inflorescence creamy-brown with silky feel, 3–8 cm long, ovate to oblong, with 4–7 racemes, these 1–3 cm long; sessile spikelet 5–7 mm long, callus bearded with tawny hairs shorter than spikelet; lower glume *thinly chartaceous*; pedicellate spikelet 3.5–5 mm long.

Wet hollows; swampy places; grassland in damp peaty soil over rocks; 1400–2340 m alt.

SYNONYMS:

Eriochrysis giordaniana Chiov. = **Saccharum narenga**
munroana Pilg. = **S. pallida**
narenga Nees ex Steud. = **S. narenga**
phaenostachys Pilg. = **Eriochrysis brachypogon**
porphyrocoma Hance = **Saccharum narenga**

(ERIOPODIUM)

Eriopodium kraussii Hochst. = **Andropogon eucomus** subsp. **eucomus**

EUCLASTA / 1

Genus of 2 annual species with a discontinuous distribution: tropical Africa – Madagascar; Oman – India [*E. clarkei* (Hack.) Cope], and C. & S. tropical America.

Euclasta condylotricha (Hochst. ex Steud.) Stapf; Renier, Fl. Kwango 1: 25, 1948. – Icon.: Bosser, Gramin. patur. cult. Madagascar: 204, 1969; van der Zon, Gramin. Cameroun 2: 416, 1992; Poilecot, Boissiera 50: 497, 1995; idem, ibid. 56: 536, 1999; Fl. Zambes. 10/4: 49, 2002; Ibrahim & al., Grasses Mali: 78, 2018; César & Chatelain, Fl. ill. Tchad: 250, 2019.

bas.: *Andropogon condylotrichus* Hochst. ex Steud.

syn.: *A. ptiatherus* Hack., incl. var. *erectus* Hack.; *A. condylotrichus* var. *ptiatherus* (Hack.) Chiov.; *Euclasta glumacea* Franch.; *E. graminea* T. Durand; *Dichanthium condylotrichum* (Hochst. ex Steud.) Roberty; *Andropogon doloensis* Vanderyst 1918, nom. provis.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual grass; culms solitary or tufted, erect with stilt roots or weak and rambling, 0.15–2 m tall, nodes bearded; leaf sheaths with

EUCLASTA CONDYLOTRICHA

long hairs at mouth; blades linear-lanceolate, 5–25 × 0.2–1 cm, midrib whitish, prominent, apex setaceous; inflorescence delicate, *nodding*, of 2–17 subdigitate or corymbose racemes, axils bearded; racemes subdigitate, 2–8 cm long, on filiform, flexuous peduncles, with 1–3 pairs of *homogamous spikelets* at base; homogamous spikelets resembling the pedicellate, 3–4 mm long, compressed; awn of upper lemma (sessile spikelet) 2–4 cm long, geniculate.

Wooded grassland or deciduous bushland in partial shade; rocky escarpments; roadsides; degraded sandy soils; under shade; with *Pennisetum unisetum*, *Setaria barbata*, *Rottboellia cochinchinensis*, *Andropogon tectorum*, *Chasmopodium caudatum*; old clearings; well-drained soils; in small stands at forest edges; coral limestone; weed of rice paddies; 0–1900 m alt.

Madagascar, Comoros; Oman, India; Mexico S-wards to S. America.

The best way to recognise the species: the presence of a conspicuously purple-coloured median line down the rachis-internode, contrasting with the silky-white hairs (Fl. Eth. & Eritrea 7: 308, 1995).

SYNONYMS:

Euclasta glumacea Franch. = **Euclasta condylotricha**
graminea T. Durand = **E. condylotricha**

EULALIA / 3

Some 36 species in tropical and subtropical Africa, Asia to Australia.

Inflorescence covered with silky hairs; spikelets similar, in pairs on short-stalked hairy racemes; spikelets (in pairs) with a long awn from the deep apical notch of the upper lemma and also often from the glume tips.

Eulalia aurea (Bory) Kunth; Lye & al. in Lidia 4: 168, 2000. – Icon.: Peter in Repert. Spec. Nov. Regni Veg. Beih. 40/1: Lief. 4: pl. 75, 1936 (as *E. elata*); Troupin, Fl. Rwanda 4: 265, 1988.

bas.: *Andropogon aureus* Bory

syn.: *Pogonatherum aureum* (Bory) Roberty; *Pollinia homblei* De Wild.; *Eulalia elata* Peter, incl. var. *hirsuta* Peter; *E. ferruginea* Stapf; *E. geniculata* Stapf; *Erianthus aureus* (Bory) P. Beauv.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial grass; culms slender, 0.5–1.5 m tall, ascending from a tussock or geniculately decumbent to form a mat; leaf blades linear, 3–15 cm × 3–6 mm, glabrous, acuminate; basal sheaths glabrous or silky pubescent; inflorescence of 2–15 ± digitate racemes each 3–14 cm long, *villous* with *rusty-brown* hairs; spikelets c. 4 mm long, hairy, with (or without) delicate awns to 2 cm long. Seasonal swamps; savannas on deep soils in valleys; 150–1800 m alt.

NE Namibia, N Botswana, S. Africa, Swaziland; Madagascar, Réunion; India, Indo-China to Australia.

E. polyneura (Pilg.) Stapf; Fl. Eth. & Eritrea 7: 295, 1995; Agnew, Upl. Kenya wild flow., ed. 3: 443, 2013.

bas.: *Pollinia polyneura* Pilg.

Perennial tufted grass; culms erect, 0.4–1 m tall, nodes bearded; leaf blades linear, tough, hispid, 10–30 cm × 1–4 mm; inflorescence of 1–6 subdigitate erect racemes on a short axis of up to 3 cm long; racemes 7–15 cm long, glossy golden-brown with

EULALIA POLYNEURA

white or sometimes violet-tinged hairs; spikelets c. 7 mm long; upper lemma with awn 1–1.6 cm long.

Swampy places, wet grassland; local; 1200–3000 m alt.

E. villosa (Spreng.) Nees; Fl. Eth. & Eritrea 7: 295, 1995. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 714, 1982; Gibbs Russell & al., Grasses south. Afr.: 166, 1990; Fl. Zambes. 10/4: 14, 2002. Burrows & Willis, Pl. Nyika Plateau Malawi: 347, 2005; van Oudtshoorn, Grasses south. Afr., ed. 3: 267, 2012 (inflor.).

bas.: *Pollinia villosa* Spreng.

syn.: *Andropogon villosus* Thunb. 1794, non Lam. 1779, nom. illeg.; *Pogonatherum villosum* (Spreng.) Roberty; *Pollinia sericea* Chiov.; *Eulalia sericea* (Chiov.) Stapf; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Tufted perennial grass; culms 0.4–1.2 m tall; leaf blades linear, 5–25 cm × 3–8 mm, held erect, appressedly pubescent, *acute*; inflorescence 5–7 cm long, lanceolate, of 3–12 digitate racemes, each 5–20 cm long, ± silky with *white or violet* hairs; spikelets lanceolate, 5–7 mm long; upper lemma with awn to 1–2 cm long. Rough, usually wet grassland; swamp edges; 1000–2600 m alt. S. Africa, Swaziland; Madagascar; S India, Thailand, S China (Yunnan).

Barely distinct from the Asiatic *E. quadrinervis* (Hack.) Kuntze, which has narrower leaf blades with filiform tips.

SYNONYMS:

Eulalia bequaertii (De Wild.) De Wild.

= **Microstegium fasciculatum**

elata Peter, incl. var. *hirsuta* Peter = **Eulalia aurea**

ferruginea Stapf = **E. aurea**

geniculata Stapf = **E. aurea**

hydrophila Chiov., incl. var. *filiformis* Chiov.

= **Andropogon lima**

paniculata Peter = **A. tenuiberbis**

sericea (Chiov.) Stapf = **Eulalia villosa**

vagans (Nees ex Steud.) Kuntze

= **Microstegium fasciculatum**

EUSTACHYS / I

Genus of c. 15 species in the tropics and subtropics mainly in the New World (Christenhusz & al., Plants of the World: 219, 2017).

Like *Chloris* but with an awned glume.

MUCHUT, S. E. & al. (2020). Uncovering the inflorescence evolution of Eleusininae (Cynodonteae: Chloridoideae: Poaceae). *Bot. J. Linn. Soc.* 192: 208–223.

Eustachys paspaloides (Vahl) Lanza & Mattei, incl. subsp. *africanus* Clayton. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 336, 1974; Thulin, Fl. Somalia 4: 206, 1995; Fl. Eth. & Eritrea 7: 167, 1995; Fl. Zambes. 10/2: 215, 1999; Cope, Fl. Arab. Penins. 5/1: 181, 2007; Müller, Grasses Namibia, rev. ed.: 71, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 229, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 188, 2013.

bas.: *Cynosurus paspaloides* Vahl

syn.: *Chloris equitans* Trin.; *Ch. capensis* (Houtt.) Thell.; *Ch. paspaloides* (Vahl) Hochst.; *Eustachys capensis* Chiov.

Perennial tufted grass with thick horizontal or oblique rhizome; culms 20–80(–100) cm tall, erect or geniculately ascending; leaf sheaths flabellate, in bunches at lower nodes; blades linear, 2–18 cm × 2–5 mm, abruptly acute; inflorescence of 3–10(–15)

EUSTACHYS PASPALOIDES

digitate *golden-brown* racemes 2–9 cm long, one-sided; spikelets very closely packed, c. 2 mm long; upper glume with an *awn* 1–2 mm long.

Deciduous bushland, dry grassland; woodland on doloritic hill-sides and escarpments, on moist red soils; sandveld woodland; dambos; often on limestone slopes; savannas; grassy fixed dunes overlying limestone; common and conspicuous; 10–2500 m alt. Namibia, Botswana, S. Africa; Yemen, Oman.

SYNONYMS:

Eustachys capensis Chiov. = **Eustachys paspaloides**
gayana (Kunth) Mundy = **Chloris gayana**

(EUTRIANA)

Eutriana abyssinica R. Br. ex Fresen.

= **Melanocenchris abyssinica**

EXOTHECA / I

Monotypic genus with disjunct area: tropical Africa / Vietnam (perhaps due to ancient coastal trading). – Kellogg in K. Kubitzki, ed., Families & genera vascul. pl. 13: 309, 2015.

Exothea abyssinica (Hochst. ex A. Rich.) Andersson; Puff & Sileshi, Pl. Simen: 251, 2005. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 820, 1982; Fl. Eth. & Eritrea 7: 354, 1995; Fl. Zambes. 10/4: 135, 2002; Burrows & Willis, Pl. Nyika Plateau Malawi: 347, 2005; Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013.

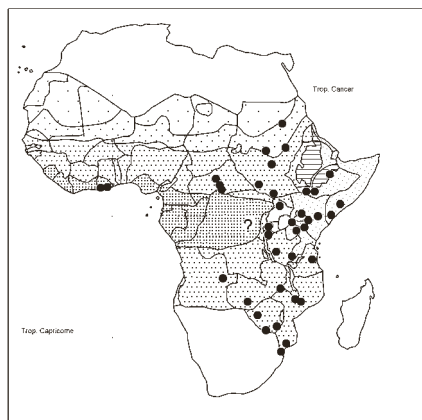
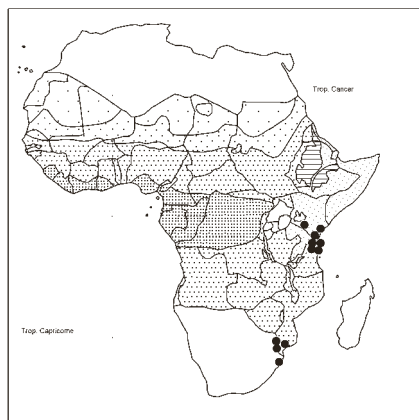
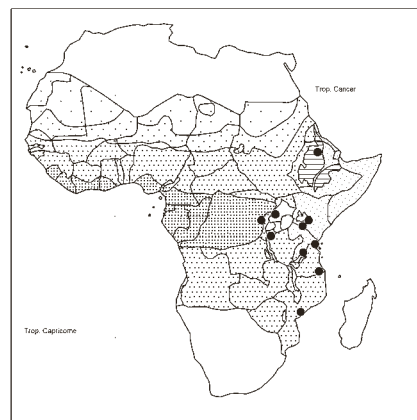
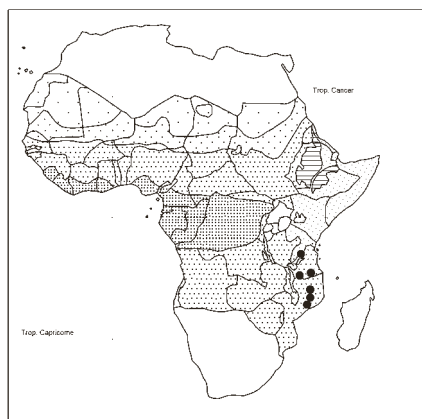
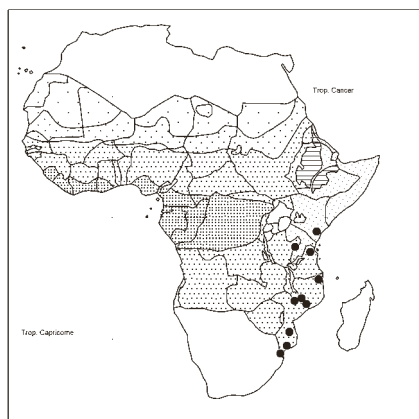
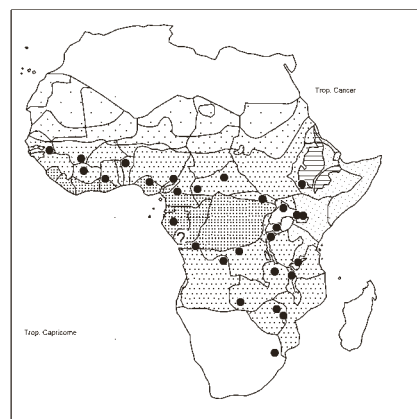
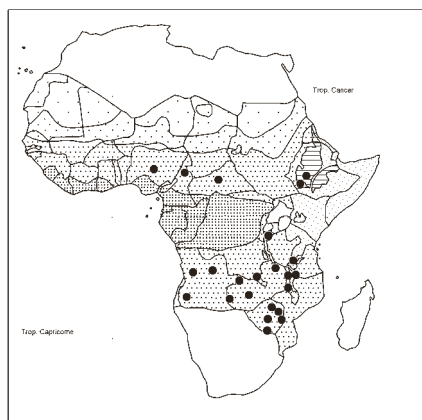
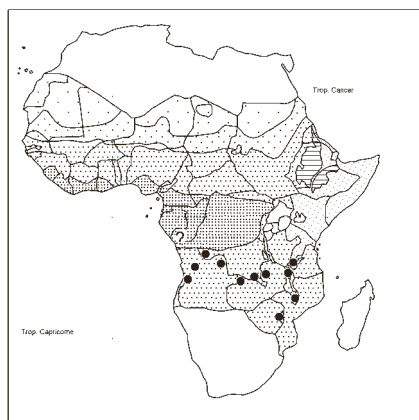
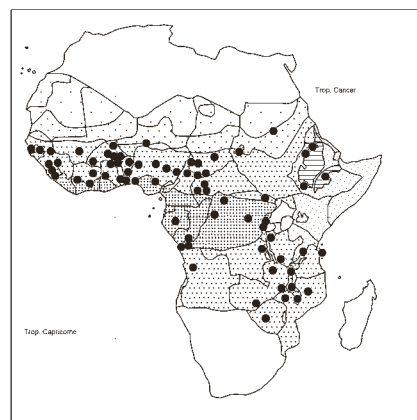
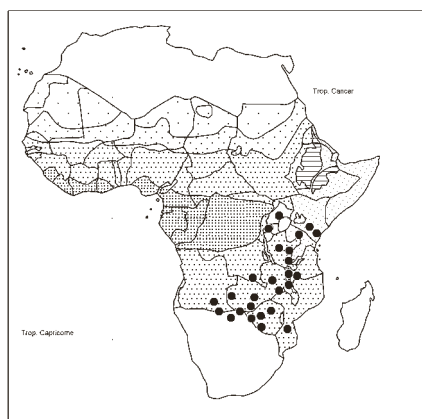
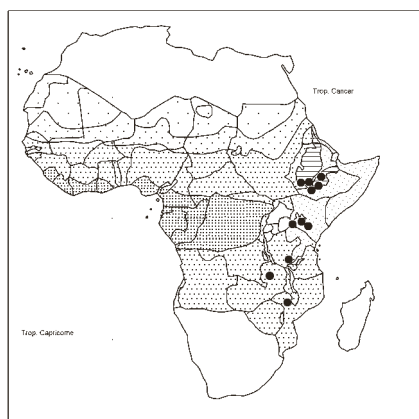
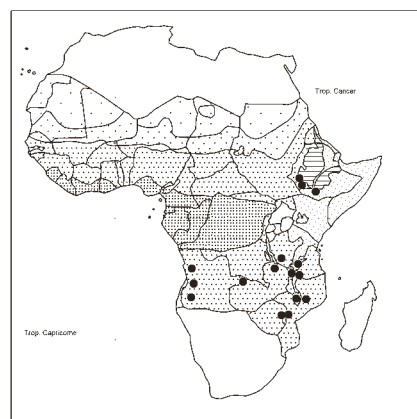
bas.: *Anthistiria abyssinica* Hochst. ex A. Rich.

syn.: *Andropogon monatherus* A. Rich.; *A. exothecus* Hack.; *Hyparrhenia monathera* (A. Rich.) Schweinf., genus not validly published; *H. abyssinica* (Hochst. ex A. Rich.) Roberty; *Exothea chevalieri* (A. Camus) A. Camus ex M. Schmid, no basionym ref.; *Cymbopogon chevalieri* A. Camus; *Sorghum monatherum* (A. Rich.) Kuntze; *S. exothecum* (Hack.) Kuntze

Perennial densely tufted grass; culms erect, 0.3–2 m tall; leaf blades linear, 5–45 cm × 1–4 mm, mouth of sheath produced into narrow auricles 0.3–1.8 cm long; false panicle lax, narrow, of 1–10 distant raceme-pairs, these long-exserted from linear spatheoles 8–12 cm long; racemes 1.5–3 cm long, 2-awned per pair, green tinged with purple; raceme-bases unequal, the lower up to 5 mm long, the upper filiform, 1.5–2.5 cm long; *homogamous spikelets forming an involucre at base of each raceme*; sessile spikelet 1.2–1.5 cm long incl. pungent callus, upper lemma with stout yellow awn 6–10 cm long.

Grassland; moorland; often dominant, with *Andropogon schirensis*, *Monocymbium ceresiiforme*; roadsides in cultivations; opening in forests; penetrating into *Erica* bushland; *Hypericum* scrub; often sufficiently common to form an important constituent of the grazing; 1200–4000 m alt.

Vietnam.

*Eriochloa meyeriana**Eriochloa parvispiculata**Eriochloa procera**Eriochloa rovimensis**Eriochloa stapfiana**Eriochrysis brachypogon**Eriochrysis pallida**Eriochrysis purpurata**Euclasta condylotricha**Eulalia aurea**Eulalia polyneura**Eulalia villosa*

FARRAGO / 1

Monotypic genus, in S Tanzania.

Farrago racemosa Clayton – Icon.: Clayton in Kew Bull. 21: 126, 1967; Fl. Trop. E. Afr., Gramin. 2: 393, 1974.

Tufted annual grass; culms 25–50 cm tall, wiry; leaf blades linear, 3–8 cm × to 1,5 mm; inflorescence *l-sided*, 4–8 cm long, clusters appressed to the axis; vestigial spikelets represented by slender flexuous awns slightly widened near base, the lower 5–9 mm long, the upper 1–1,5 cm long, borne on a slender stalk 1,5 mm long; fertile spikelet 2,5–3 mm long, dark green, lower glume with a slender terminal awn.

Crevices, hollows in rock outcrops; 500 m alt.

FESTUCA / 5

Festuca is a taxonomically complex genus. Although many scientists have tried to revise the taxonomic structure of the genus, so far there is no agreement regarding ranking of certain taxa (Stukonis & al. in Pakist. J. Bot. 47: 1137, 2015). Following Kellogg in K. Kubitzki, ed., Fam. & genera of vascul. pl. 13, Poaceae: 245–246, 2015, there are about 430 species distributed in temperate regions of Eurasia and N. America (this figure corresponds to the “fine-leaved fescues”). Christenhusz & al. (Plants of the World: 208, 2017) cite 620 species.

Festuca is among the largest genera of *Poaceae*, and one of the most complicated taxonomically. “The species concept was drastically changed over time. A century ago, relatively few widely defined taxa were described. Lately, the species concepts have changed to a narrow-defined series of taxa. As a result of these processes, the number of species has increased...” (Angelov & Bednarska in Phytologia Balcan. 23: 399, 2017).

Estimates of species number have been given by other authors, e.g. López & al. (Phytotaxa 319: 201, 2017) cite between 360 and 450 species, Martínez-Sagarra & Devesa (Phytotaxa 395: 251, 2019) 450 perennial species, and more recently Aykurt & al. (Acta Bot. Croat. 81: 61, 2022) 636 species.

Festuca is centered in the Holarctic zone of Eurasia and North America. It is an important component of the temperate and cold-temperate zones, as well as the mountain grasslands of the tropical zone (Ospina & al. in Phytotaxa 223: 3, 2015). “Phylogenetic studies have revealed that the festucoids (subtribe *Loliinae*) are monophyletic and that *Festuca*, as traditionally circumscribed, is not a natural genus but a large paraphyletic assemblage of related lineages, with *Lolium*..., *Vulpia*..., and several other small genera included within it”.

Festuca has a base chromosome number of $x=7$. Approximately 70% of the species in the genus are polyploids. Most polyploids belong to the largest fine-leaved clade. *Festuca* presents striking differences in genome size between the broad- and fine-leaved lineages, showing a trend of reduction from large chromosomes in the broad-leaved group to small chromosomes in fine-leaved species (Ospina & al., l.c.).

Leaf blade anatomy, as seen in cross section, has been widely used in the taxonomy of the genus, also epidermal characters have been considered.

As summarized by Müller & Catalán (Taxon 55: 139, 2006) “*Festuca* is characterized by typical features of the tribe (*Poeae*) such as possession of pooid-type spikelet with short glumes, several florets, and 5-veined lemmas and other specific attributes such as an overall dorsally rounded lemma and linear hilum”.

FESTUCA

MAIRAL, M. & al. (2021). Multiple mountain-hopping colonization of sky-islands on the two sides of Tropical Africa during the Pleistocene: The afroalpine *Festuca* grasses. *J. Biogeogr.* 48: 1858–1974.

NAMAGANDA, M. & K. A. LYE (2008). A taxonomic comparison between tropical African and related European broad-leaved species of *Festuca* L. (Poaceae). *S. Afric. J. Bot.* 74: 295–305 [concerns some species now in *Pseudobromus* and *Lolium*].

NAMAGANDA, M. & al. (2007) [2008]. The species distinction of the narrow-leaved *Festuca* from East Africa based on AFLP fingerprinting and morphology. *Nord. J. Bot.* 25: 85–95.

NAMAGANDA, M. & al. (2009). Leaf anatomical characteristics of Ugandan species of *Festuca* L. (Poaceae). *S. Afric. J. Bot.* 75: 52–59.

SYLVESTER, S. P. & al. (2020). *Festuca drakensbergensis* (Poaceae): A common new species in the *F. caprina* complex from the Drakensberg Mountain Centre of Floristic Endemism, southern Africa, with key and notes on taxa in the complex including the overlooked *F. exaristata*. *PhytoKeys* 162: 45–69.

***Festuca abyssinica* Hochst. ex A. Rich. s. lat.**

A widespread and morphologically polymorphic group whose genetic structure consists of two clusters separated in a west-east distribution (Mairal & al. 2021: 1870): a: western populations in Cameroon and the Albertine Rift in E Africa (from Ruwenzori S-wards); b: the remaining E African populations from N Ethiopia S-wards, but most individual specimens studied are admixed with the western group.

F. abyssinica Hochst. ex A. Rich., incl. var. *acuta* Rendle, var. *intermedia* St.-Yves, var. *keniana* St.-Yves, fa. *aristulata* St.-Yves, var. *supina* St.-Yves, fa. *perpusilla* St.-Yves, fa. *setifolia* St.-Yves; cf. also below for other names; most taxa of the fine-leaved fescues are reported as narrow endemics, and a critical taxonomic revision is needed (Brochmann & al. in Alpine Bot. 132: 77, 81, 2022). – Icon.: Jacques-Félix, Gramin. Afric. Trop.: 186, 1962 (as *Koeleria afromontana* Jacq.-Fél.); Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 193, 1955; Bull. Soc. Bot. France 106: 139, 1959; Fl. Trop. E. Afr., Gramin. 1: 61, 1970; Fl. Zambes. 10/1: 56, 1971; Fl. Eth. & Eritrea 7: 25 (cross sections leaves, *F. abyssinica*, *F. gilbertiana*, *F. macrophylla*, *F. richardii*), 26 spikelets (*F. abyssinica*, *F. macrophylla*), 1995; Namaganda & al. in S. Afric. J. Bot. 75: 53, 2009 (cross sections leaves, *F. abyssinica*, *F. chodatiana*, *F. claytonii*, *F. pilgeri*, *F. richardii*); Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013 (*F. chodatiana*, *F. pilgeri*); Velayos & al., Fl. Guinea Ecuat. 12: 200 (*F. abyssinica*), 201 (*F. chodatiana*), 2015.

syn.: (*F. abyssinica* s. str.): *F. schimperiana* A. Rich. [non *F. schimper* (Hochst. ex A. Rich.) Steud.]; *F. abyssinica* var. *schimperiana* (A. Rich.) St.-Yves; *F. restituta* Steud., nom. superfl.; *F. rigidula* Steud.; *F. gelida* Chiov.; *F. tibetica* Miré & Quezel; *Koeleria afromontana* Jacq.-Fél. (See also list of names below).

Perennial, loosely to densely tufted grass; culms geniculately ascending, 15–80 cm tall, glabrous; leaf blades acicular-filiform, 3–27 cm × up to 3 mm, involute; panicle spike-like, linear, 7–25 cm long, branches short, ± closely appressed to rachis; spikelets 6,5–12 mm long, 2–6-flowered, not gaping, bright to olive-green, sometimes purplish; glumes broad and enveloping; lemmas 6–10 mm long, usually tapering to an awn 1–5 mm long.

Grassland, ericaceous grassland and bushland; dry scrub; forest and forest edges; bamboo thickets; tussock moorland; well-drained gritty or sandy soils in moorland; lava crevices and nearly bare lava on *Senecio johnstonii* level; scattered in *Alchemilletum*; on *Lobelia* and *Hagenia* levels; 1410–4900 m alt.

Bioko/Fernando Poo.

An extremely polymorphic species, sometimes confused with *Koeleria capensis* which has, however, a pubescent to tomentose

FESTUCA ABYSSINICA

rachis. – Numerous taxa have been described based mainly on morphology and anatomy of the leaves. The Alexeevian species of *Festuca* are described mainly based on anatomical characteristics (leaves in cross section), and we should be very critical in accepting them. Later authors, such as Namaganda & al. (2009: 58), consider them to be of low value. Our treatment follows this line. The following taxa are included in our *Festuca abyssinica* s. lat. (epithets in alphabetical order). A few maps are maintained here to illustrate some distribution areas (names within brackets on the map).

Included in our *F. abyssinica* s. lat.: *Festuca acamptophylla* (St.-Yves) E. B. Alexeev (bas.: *F. abyssinica* subsp. *acamptophylla* St.-Yves), Tanzania, Kilimanjaro; *F. camerunensis* E. B. Alexeev, Cameroon; *F. chodatiana* (St.-Yves) E. B. Alexeev (fig. by Velayos & al., Fl. Guinea Ecuat. 12: 201, 2015) (bas.: *F. camusiana* St.-Yves subsp. *chodatiana* St.-Yves), Bioko/Fernando Poo, SW Cameroon, Sudan (Imatong Mts), C Ethiopia S-wards via Rwanda, Burundi to Uganda – Kenya – Tanzania, with longer culms and leaf sheaths; *F. claytonii* E. B. Alexeev, Uganda, Mt Elgon (Lye & al. in Lidia 4: 168, 2000), forming small tussocks and with soft smooth leaves; *F. elgonensis* E. B. Alexeev in Sudan-Uganda/Mt Elgon, cf. Lye & al. in Lidia 4: 168, 2000; *F. gilbertiana* E. B. Alexeev ex S. M. Phillips with few-spiculate panicle, in NW Ethiopia, Semien; *F. hedbergii* E. B. Alexeev [syn.: *F. abyssinica* var. *supina* St.-Yves; *F. pilgeri* subsp. *supina* (St.-Yves) Hedberg] in Tanzania, Kilimanjaro, with acicular leaf blades, on high mountain moor, 4000–4700 m alt.; *F. macrophylla* Hochst. ex A. Rich. (fig.: Fl. Eth. & Eritrea 7: 25, 26, 1995) forming large dense tussocks, with long wiry culms (to 1 m tall) and acicular leaves, in W Ethiopia (See map p. 309); *F. obturbans* St.-Yves (syn.: *F. macrophylla* var. *multiflora* Peter), forming large tussocks, with acicular scabrid leaves and linear panicle (8–30 cm) with short branches appressed to the axis, in moorland of Mt Elgon (Kenya), Kilimanjaro (Tanzania), map on p. 309; *F. pilgeri* St.-Yves, incl. var. *orthophylla* St.-Yves, with leaves harshly scabrid but unmarked by longitudinal striations, and linear panicle, in upland moors (to 4250 m) on Mt Elgon (Uganda-Kenya), Mt Kenya, and S Tanzania (Mbeya); *F. richardii* E. B. Alexeev (syn.: *F. abyssinica* fa. *perpusilla* St.-Yves and fa. *setifolia* St.-Yves) with stiffly acicular and smooth leaf blades (fig. in Fl. Eth. & Eritrea 7: 25, 1995) and few-spiculate panicle, in NW Ethiopia (Gonder, Simen); *F. rigidiuscula* E. B. Alexeev (van der Zon, Gramin. Cameroon 2: 59, 1992, as syn. of *F. abyssinica*), from W Cameroun; *F. sudanensis* E. B. Alexeev (syn.: *F. rigidula* sensu Andrews, Flow. pl. Sudan 3: 461, 1956) from Equatoria, S. Sudan (Imatong Mts), with loosely subramose panicles and racemes with 4–10 spikelets, shortly awned.

(*F. anomala* Hochst., Flora 38: 330–331, 1855).

Small tufted grass; culms 7–10 cm tall; leaves numerous, somewhat hard, curved, glabrous; spike 1–1,5 cm long, rachis densely pubescent; spikes 1–1,5 cm long, on short pedicels; lemma 5-nerved, with short awn.

On one of the highest mountain tops (Simen, Ethiopipia) “with *Danthonia depressa* Hochst.” [= *Pentameris pictigluma* (Steud.) Galley & H. P. Linder]; collected on 30 September 1850, Hb. Buchinger N° 209.

Hochstetter notes that he first wanted to place this grass under *Sesleria*.

Not figuring in Flora of Ethiopia & Eritrea. Genus uncertain.

(*F. arundinacea* Schreb., non Vill.) – See *Lolium arundinaceum* (Schreb.) Darbysh.

FESTUCA

F. caprina Nees

The **F. caprina** complex from southern Africa was treated by S. P. Sylvester & al. in PhytoKeys 162: 45–69 (2020). These authors include *F. caprina* var. *caprina*, var. *irrasa* Stapf and var. *macra* Stapf, *F. drakensbergensis* Sylvester, Soreng & M. D. P. V. Sylvester (S. Africa and Lesotho), and *F. exaristata* E. B. Alexeev (Lesotho). The taxa in the *F. caprina* complex differ from other *Festuca* s. l. in the Flora of S. Africa region by having basal leaf “sheaths entire or splitting into narrow parallel threads; ligules < 1 mm long; blades narrow, involute, (0,2–1,5 mm Ø); panicles are loose or contracted; spikelets 2-several-flowered; awns 0,5–5,5 mm long”.

F. caprina Nees var. **caprina**; Gibbs Russell & al., Grasses south. Afr.: 169, 1990. – Icon.: Fl. Zambes. 10/1: 58, 1971; Alexeev in Bot. Žurn. 71: 1115, 1986; Sylvester & al. in PhytoKeys 162: 59 (var. **caprina**), [61, var. **irrasa**, and 63, var. **macra**], 2020.

syn.: *F. nubigena* subsp. *caprina* (Nees) St.-Yves, and var. *longiaristata* St.-Yves; *F. caprina* var. *curvula* Nees; *F. costata* Nees var. *longiseta* Nees

Perennial densely tufted grass; culms 0,3–1 m tall; *leaf sheaths* mostly *entire*, not splitting into fibres; blades filiform, (4–)20–60 cm × 0,5–2 mm, lower surface *smooth*, rarely scabrous towards apex; panicle 5–20 cm long, narrowly ovate, open, branches scabrous, (with a distinct butter-like smell “upon opening of press papers”); spikelets 1–1,5 cm long, gaping, glabrous, 4–9-flowered; lemma awn 1–4,5 mm long.

Grassland; often in valley bottoms near streams; 1650–3000 m alt. S. Africa, Lesotho, Swaziland.

Comprises 3 vars.: – var. **caprina**; – var. **irrasa** Stapf in S. Africa, Lesotho; – var. **macra** Stapf in S. Africa, Lesotho.

F. costata Nees, excl. var. *longiseta* Nees (= *F. caprina* var. *caprina*) – Icon.: Gibbs Russell & al., Grasses south. Afr.: 169, 1990.

syn.: *F. milanijana* Rendle

Perennial densely tufted grass to 2 m tall when flowering; culms 0,5–1,5 m tall, stiffly erect, from a thickened base *thickly clad in fibrous remains of old leaf sheaths*; but blades filiform, 10–60 cm × 2–4 mm, glabrous, usually involute; panicle 10–25 cm long, *loose*, open, branches 2-nate, flexuous; *spikelets 1–2 cm long*, 3–6-flowered, gaping, often tinged with purple; lemma acute or minutely awned (awn-less).

Grassland; forest clearings; 1800–3000 m alt.

SE S. Africa, Lesotho, Swaziland.

(*F. dubia* A. Rich., Tent. Fl. Abyss. 2: 435, 1850). Not cited in Fl. Eth. & Eritrea.

Does this plant belong to the genus *Festuca*? Richard (l.c.) asked himself this question; he remarked that the outer palea is 3-nerved and bifid at the tip, and that each tip often ends in a short bristle.

A plant with short leaves tufted at base; ligule pilose; spikelets sessile, narrow, 6–8-flowered.

Collected in N Ethiopia, Shire (c. 14°20'N × 38°E), in September (1840?) by R. Quartin Dillon.

F. mekiste Clayton; Fl. Eth. & Eritrea 7: 27, 1995; Namaganda & Lye in S. Afric. J. Bot. 74: 295–305, 2008; Agnew, Upl. Kenya wild flow., ed. 3: 410, 2013. – Icon.: Jacques-Félix, Gramin. Afr. Trop.: 175, 1962 (as *F. gigantea*, details); van der Zon, Gramin. Cameroun 2: 62, 1992.

FESTUCA MEKISTE

Perennial loosely tufted grass with slender rhizomes; culms stout, 0.6–2 m tall, nodes dark purple; leaf sheaths glabrous; blades broadly linear, 25–45 × 0.7–1.8 cm; flat, coarse; panicle narrowly ovate, 20–43 cm long, primary branches flexuous, spreading; spikelets clustered towards branchlet tips; spikelets linear-oblong, 1–1.2 cm long, 3–6-flowered, florets loosely imbricate; lemma scabrous, awned, *awn 9–15 mm long, subterminal*.

Bamboo forest; margins and clearings in forest; meadows; 2200–3000 m alt.

Bioko/Fernando Poo.

Very similar to *Pseudobromus engleri* which has anastomosing venation in leaf blades, obscurely scaberulous lemmas, hairy ovary top.

F. simensis Hochst. ex A. Rich.; Namaganda & Lye in S. Afric. J. Bot. 74: 296, 2008. – Icon.: Troupin, Fl. Rwanda 4: 267, 1987; Fl. Eth. & Eritrea 7: 26, 1995.

syn.: *F. congolensis* St.-Yves

Perennial loosely tufted grass with thin slender rhizomes; culms 0.4–1.4 m tall, ascending at base; leaf blades linear, 10–30 cm × 2–4 mm, flat, with *falcate auricles*; sheaths glabrous; panicle 12–30 cm long, narrow, open, branches few-spiculate, loosely ascending; spikelets 1–1.7 cm long, 2–5-flowered, purple-tinged; lemma with *awn 0.8–1.9 cm long* from just below the hyaline tip.

Shady places, roadsides, stream banks in forest and bamboo thicket; streamsides in grass and scrubland; lava plains with scrub; sclerophyllous forest on old lava plain; 1650–3900 m alt.

Not in Cameroon – confused with *F. chodatiana* (St.-Yves) E. B. Alexeev, of the *F. abyssinica* complex.

SYNONYMS:

Festuca abyssinica A. Rich. subsp. *acamptophylla* St.-Yves = **Festuca abyssinica** s. l.

abyssinica var. *acuta* Rendle = **F. abyssinica**

abyssinica fa. *aristulata* St.-Yves, var. *intermedia* St.-Yves, var. *keniana* St.-Yves = **F. abyssinica**

abyssinica fa. *perpusilla* St.-Yves = **F. abyssinica** s. l.

abyssinica var. *schimperiana* (A. Rich.) St.-Yves = **F. abyssinica**

abyssinica fa. *setifolia* St.-Yves and var. *supina* St.-Yves = **F. abyssinica** s. l.

acamptophylla (St.-Yves) E. B. Alexeev = **F. abyssinica** s. l.

africana (Hack.) Clayton = **Pseudobromus africanus**

anomala Hochst. = ?

arundinacea Schreb. = **Lolium arundinaceum**

barbata L., non Schrank nec Moench

= **Schismus barbatus**

bromoides L. = **Vulpia bromoides**

calycina Loefl. = **Schismus barbatus**

camerunensis E. B. Alexeev = **Festuca abyssinica** s. l.

camusiana St.-Yves subsp. *chodatiana* St.-Yves = **F. abyssinica** s. l.

caprina Nees var. *curvula* Nees = **F. caprina** var. *caprina*

chodatiana (St.-Yves) E. B. Alexeev = **F. abyssinica** s. l.

claytonii E. B. Alexeev = **F. abyssinica** s. l.

congolensis St.-Yves = **F. simensis**

costata Nees var. *longiseta* Nees = **F. caprina** var. *caprina*

cristata L. = **Rostraria cristata**

diaphana Steud. = **Brachypodium flexum**

divaricata var. *memphitica* (Spreng.) Coss. & Durieu

= **Cutandia memphitica**

dubia A. Rich. = ?

FESTUCA

elgonensis E. B. Alexeev = **Festuca abyssinica** s. l.

engleri Pilg. = **Pseudobromus engleri**

flexa (Nees) Steud. = **Brachypodium flexum**

fusca L. = **Diplachne fusca**

gelida Chiov. = **Festuca abyssinica**

gigantea (L.) Vill. var. *africana* Robyns & Tournay

= **Pseudobromus engleri**

gilbertiana E. B. Alexeev ex S. M. Phillips

= **Festuca abyssinica** s. l.

hedbergii E. B. Alexeev = **F. abyssinica** s. l.

kilimanjarica Hedberg = **Poa kilimanjarica**

macra (Stapf) E. B. Alexeev = **Festuca caprina** var.

macra

macrophylla Hochst. ex A. Rich., incl. var. *multiflora* Peter

= **F. abyssinica** s. l.

memphitica (Spreng.) Boiss. ex Coss.

= **Cutandia memphitica**

milanjiana Rendle = **Festuca costata**

mucronata Forssk. = **Odysea mucronata**

myuros L. = **Vulpia myuros**

myuros var. *bromoides* (L.) Wimm. & Grab. and var.

sciuroides (Roth) Coss. & Durieu = **V. bromoides**

nubigena subsp. *caprina* (Nees) St.-Yves and var.

longiaristata St.-Yves = **Festuca caprina** var. *caprina*

obturbans St.-Yves = **F. abyssinica** s. l.

pilgeri St.-Yves, incl. var. *orthophylla* St.-Yves and subsp.

supina (St.-Yves) Hedberg = **F. abyssinica** s. l.

pungens Vahl = **Odysea mucronata**

restituta Steud. = **Festuca abyssinica**

richardii E. B. Alexeev = **F. abyssinica** s. l.

rigidiuscula E. B. Alexeev = **F. abyssinica** s. l.

rigidula Steud. = **F. abyssinica**

rigidula sensu Andrews 1956, non Steud. = **F. abyssinica** s. l.

rubens (L.) Pers. = **Bromus repens** subsp. *repens*

schimperiana A. Rich. = **Festuca abyssinica**

sudanensis E. B. Alexeev = **F. abyssinica** s. l.

sylvatica Huds. = **Brachypodium sylvaticum**

tibetica Miré & Quézel = **Festuca abyssinica**

unioloides Willd. 1803 = **Bromus catharticus**

FINGERHUTHIA / I

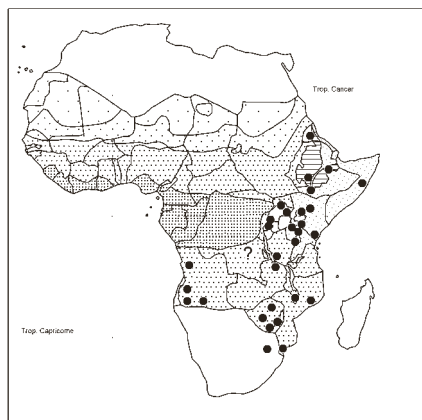
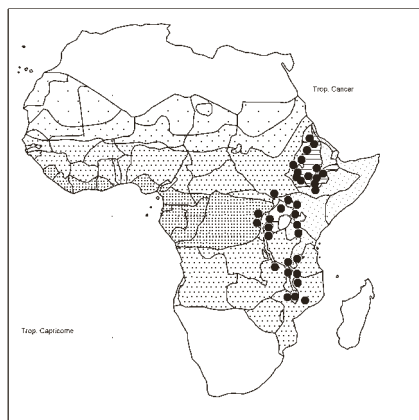
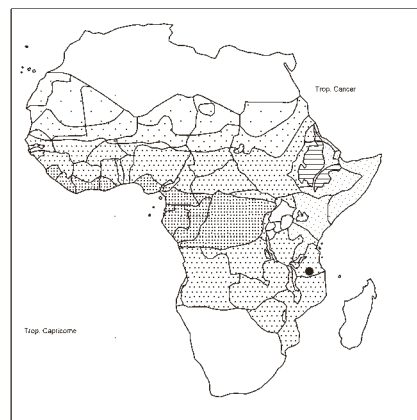
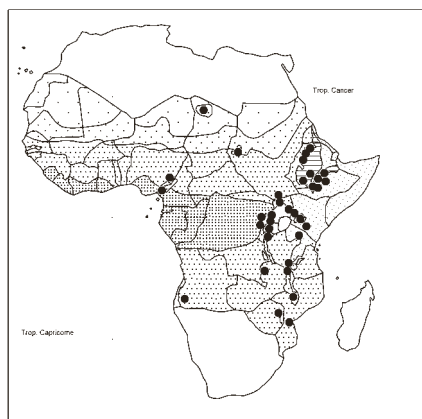
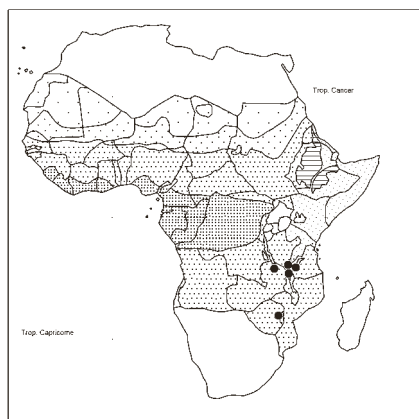
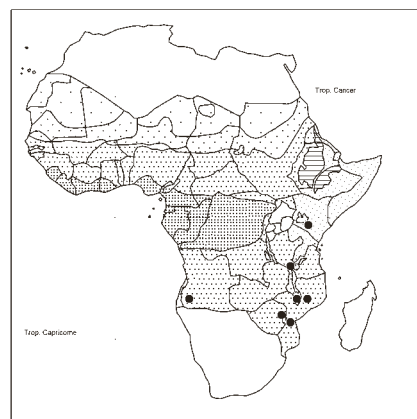
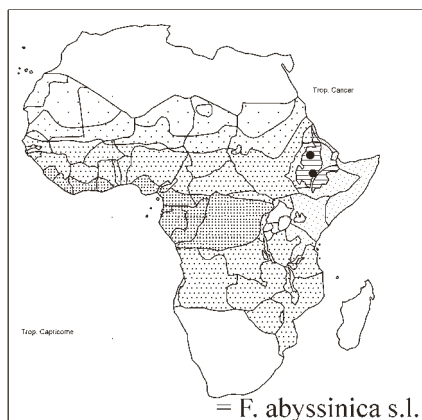
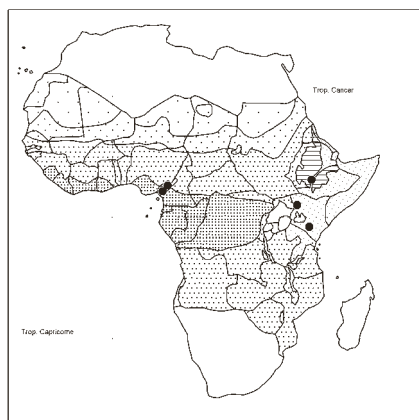
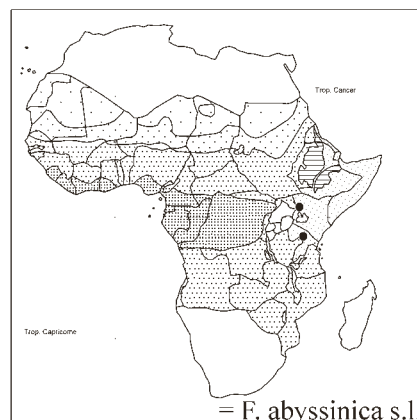
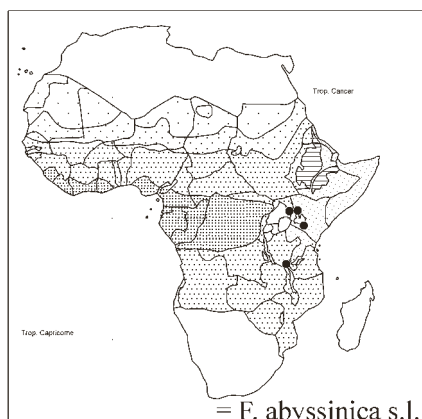
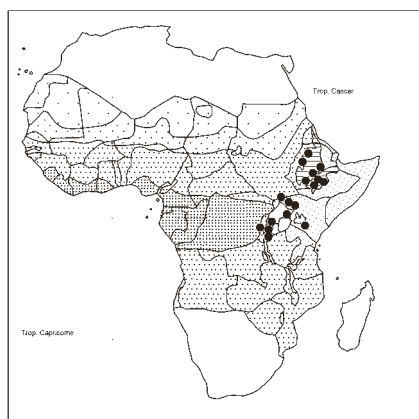
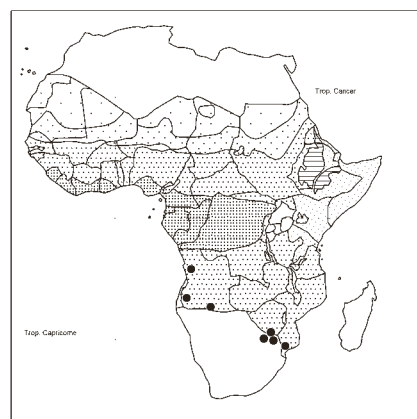
Genus of 2 species occurring in Africa, Arabia, E Afghanistan, W Pakistan.

Fingerhuthia africana Nees, incl. var. *minor* (Nees) Pilg. ex O. Schwarz – Icon.: Gibbs Russell & al., Grasses south. Afr.: 171, 1990; Fl. Zambes. 10/2: 18, 1999; Cope, Fl. Arab. Penins. 5/1: 116, 2007 (inflorescence); Müller, Grasses Namibia, rev. ed.: 33, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 89, 2012.

syn.: *F. capensis* Nees ex Lehm., pro syn.; *F. ciliata* Nees, incl. var. *minor* Nees; *F. affghanica* Boiss.

Perennial densely tufted grass, often with stout oblique rhizome; culms erect, 10–90 cm tall; leaf blades filiform, 3–25–40 cm × 2–5 mm; panicle cylindrical, dense, ovate, 1.5–5 cm long, c. 1 cm Ø, purplish, the spikelets falling from the tip when ripe; spikelets 4–9 mm long; glumes with soft silky hairs on keel and margins, with an awn 2–3.5 mm long; lemma tips rounded.

Grassland; open dry woodland; apparently rare; 300–1030 m alt. Namibia, Botswana, S. Africa, Swaziland; Arabia, Afghanistan, Pakistan.

*Eustachys paspaloides**Exotheca abyssinica**Farrago racemosa**Festuca abyssinica* (s.l.)*Festuca caprina* var. *caprina**Festuca costata**(Festuca macrophylla)**Festuca mekiste**(Festuca obturbans)**(Festuca pilgeri)**Festuca simensis**Fingerhuthia africana*

(GARNOTIA)

Garnotia africana Janowski = ***Panicum anabaptisum***

GASTRIDIDIUM / I

A Mediterranean-palaeotropical genus, “who species number and diversity are still imperfectly known” (Scoppola & al. 2020: 947). Traditionally 2 species are recognised [*G. phleoides*, *G. ventricosum*], but recent research suggests 4 species [to add: *G. lainzii* (Romero García) Romero García, bas.: *G. phleoides* subsp. *lainzii* Romero García in S Spain – N Morocco; and *G. scabrum* C. Presl in NW Africa, E Spain – S France – Italy – Greece and E-wards to W Asia, traditionally considered a synonym of *G. ventricosum* (Gouan) Schinz & Thell.]. However, “Despite an overall morphological uniformity and distinctness..., the taxonomy of *Gastridium* has been particularly challenging in the past and displays a highly complex nomenclatural history, which has not been completely clarified to date” (Scoppola & Cancellieri 2019: 1–2).

Annuals with narrow spike-like panicles with basally swollen glumes (inflated around the fruit), small awns and toothed lemma.

SCOPPOLA, A. (2019). An annotated key to the species of *Gastridium* (Poaceae) with distributional novelties to the Italian territory. *Atti Soc. Ital. Sci. Nat. Museo Civ. Stor. Nat. Milano* 6 (2): 29–36.

SCOPPOLA, A. & L. CANCELLIERI (2019). Comparative morphometry as a diagnostic tool applied to species delimitation in the genus *Gastridium* P. Beauv. (Poaceae). *Nord. J. Bot.* 37/9: e02377.

SCOPPOLA, A. & al. (2020). Phylogentic relationships and taxonomic issues in *Gastridium* (Poaceae) inferred from plastid and nuclear DNA sequence analysis. *Plant Biosyst.* 154: 947–960.

Gastridium phleoides (Nees & Meyen) C. E. Hubb.; Darbyshire & al., Pl. Sudan & S. Sudan: 131, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 1: 101, 1970; Gibbs Russell & al., Grasses south. Afr.: 172, 1990; Fl. Eth. & Eritrea 7: 43, 1995; Boulos, Fl. Egypt 4: 175, 2005; Cope, Fl. Arab. Penins. 5/1: 47, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013; Scoppola (2019): 31, 32 (details); Scoppola & Cancellieri (2019): 3, 11, 12 (details).

bas.: *Lachnagrostis phleoides* Nees & Meyen

syn.: *Agrostis phleoides* (Nees & Meyen) E. Desv.; *Gastridium ventricosum* (Gouan) Schinz & Thell. subsp. *phleoides* (Nees & Meyen) Tzvelev; *G. lendigerum* var. *longiaristatum* Schweinf.; *G. oblongum* Coincy; *G. ventricosum* sensu auctt., non (Gouan) Schinz & Thell.

Annual grass; culms 10–60 cm tall, erect or geniculately ascending; leaf blades linear, 2.5–15 cm × 1–4 mm, rough, acute; panicle linear-oblong, spike-like, 3–18 × 1.5 cm, dense, pale green; spikelets 4–7 mm long, rachilla a short hairy bristle; glumes acute, swollen at base; lemma tiny, densely hairy, with awn 4–7 mm long.

Rocky slopes; open and disturbed places; alluvial soils; locally common in rocky grassland; rocky hillsides; meadows; 1300–2900 m alt.

Mediterranean region; Macaronesia; from Egypt, Arabia (Oman, Edinb. J. Bot. 77: 435, 2020) E-wards to W Iran; introduced in S. Africa, Australia, USA, S. America; in warm temperate regions.

[***G. ventricosum*** (Gouan) Schinz. & Thell.]; Fl. Trop. E. Afr., Gramin. 1: 102, 1970; Fl. Eth. & Eritrea 7: 43, 1995. – Icon.: Scoppola & Cancellieri (2019): 3, 11, 12 (details).

bas.: *Agrostis ventricosa* Gouan

syn.: *A. lendigera* (L.) Brot.; *A. australis* L.; *Gastridium lendigerum* (L.) Gaudin; *G. australe* (L.) P. Beauv.; *G. laxum* Boiss. & Reut.; *Alopecurus ventricosus* (Gouan) Huds.;

GASTRIDIDIUM VENTRICOSUM

World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual grass; culms 10–60 cm tall, erect or ascending; leaves glabrous; panicle cylindrical, 2–12 cm long; spikelets 2–4 mm long, rachilla ± absent; glumes scabrid on keel, swollen at base; lemma sparingly hirsute or glabrous, with awn 3–4 mm long.

Occasionally a garden weed (e.g. Kenya, event. Ethiopia).

Madeira, Canary Isl., Morocco to Libya, Cape Verde Isl., S & W Europe (up to S England), Syria, N Iraq. Introduced in Australia, N. & S. America.

SYNONYMS:

Gastridium australe (L.) P. Beauv. = ***Gastridium ventricosum***
laxum Boiss. & Reut. = ***G. ventricosum***
lendigerum (L.) Gaudin = ***G. ventricosum***
lendigerum var. *longiaristatum* Schweinf. = ***G. phleoides***
oblongum Coincy = ***G. phleoides***
ventricosum subsp. *phleoides* (Nees & Meyen) Tzvelev
= ***G. phleoides***
ventricosum sensu auctt., non (Gouan) Schinz & Thell.
= ***G. phleoides***

(GAZACHLOA)

Gazachloa chimanimaniensis J. B. Phipps
= ***Danthoniopsis chimanimaniensis***

(GIGACHILON)

Gigachilon aethiopicum (Jakubz.) Å. Löve
= ***Triticum aethiopicum***
polonicum (L.) Seidl ex Å. Löve subsp. *turgidum* (L.)
Å. Löve = ***T. turgidum***

GILGIOCHLOA / I

Monotypic genus.

Gilgichloa indurata Pilg. – Icon.: Bot. Jahrb. Syst. 51: 417, 1914; Fl. Trop. E. Afr., Gramin. 2: 414, 1974; Troupin, Fl. Rwanda 4: 271, 1988; Fl. Zambes. 10/3: 205, 1989.

syn.: *G. alopecuroides* Peter

Annual grass; culms 20–90 cm tall, erect or ascending, nodes pubescent; leaf blades lanceolate, 4–15 cm × 3–9 mm; panicle spike-like, 3–15 cm long, 8–12 mm wide; spikelets lanceolate, c. 8 mm long; lower glume c. 4 mm long with capillary awn 4–7 mm long; upper lemma 2-lobed, with hair tufts on margin and at base of awn, central awn 1.4–2 cm long.

Brachystegia wooded grassland; open places in deciduous thicket and bushland; clearings in dry forests; 200–1600 m alt.

GOSSWEILEROCHLOA / I

Monotypic genus of uncertain status, described in the tribe *Arundineae*.

Gossweilerochloa delicatula Renvoize; Figueiredo & Smith in Strelitzia 22: 200, 2008. – Icon.: Kew Bull. 33: 526, 1979.

Perennial tufted grass; culms to 90 cm tall; leaf sheaths shining, persistent; blades linear, 20–40 cm × 2–6 mm; panicle delicate,

GOSSWEILEROCHLOA DELICATULA

30–40 cm long, finely divided; spikelets 4–5 mm long, 4–6-flowered, tinged with purple; *glumes* ovate, membranous, 1-nerved, *acute*; lemma ciliate on nerves, midnerve ending in an awn to 1 mm long.

Ecology not recorded; 1000 m alt.

Known only from the type collected in 1933 (Gossweiler 9858).

Taxonomic status uncertain. Figueiredo & Smith (l.c.) note that the genus may possibly be sunk under *Tridens* Roem. & Schult., an American genus of some 14 species, of which a few are now considered synonyms under *Diplachne*.

(GRACILEA)

Gracilea royleana Hook. f. var. *plumosa* Hook. f.

= *Melanocenchris abyssinica*

GUADUELLA / 6

Genus of 6 species from the W African forests (map by S. M. Phillips in Timberlake & Kativu, eds., African plants: biodiversity, taxonomy and uses: 8, 1999). Probably overlooked by collectors for the leafy culms closely resemble those of *Aframomum* (Fl. Trop. E. Afr., Gramin. 1: 15, 1970).

Guaduellia densiflora Pilg. – Icon.: Fl. Gabon 5: 203, 1962 (as *G. foliosa*); van der Zon, Gramin. Cameroun 2: 26, 1992.

syn.: *G. foliosa* Pilg.; *G. ledermannii* Pilg.

Perennial erect rhizomatous grass; leafy culms 0.4–1.2 m tall, inflorescence (naked) culms 6–35 cm long; leaves elliptic, 10–35 × up to 8 cm, acuminate, glabrous above, glabrous or pubescent beneath, slightly asymmetrical, base attenuate and rounded, false petiole 1–5 cm long; inflorescence a dense raceme 4–8 cm long at end of leafless stem with up to 25 spikelets, these linear, 1.5–4 cm long, light green to chestnut brown; lemmas c. 1 cm long.

Dense humid forest in undergrowth; 1–720 m alt.

G. dichroa Cope

Perennial grass; culms herbaceous, 45–80 cm tall, glabrous; inflorescence terminal with 3–4 leaves; leaf sheaths striate, inflated; *blades* oblong-elliptic, 12–24 × 2.5–8.5 cm, glabrous and *green above*, *reddish-purple* and puberulous *beneath*; inflorescence racemose or paniculate, rachis pubescent; spikelets linear, to 4 cm long, with up to 14 flowers; palea with 2 inter-carinal nerves (not 4).

Humid, shady woods at river; forest floor.

Near *G. marantifolia*.

G. humilis Clayton; Onana & Cheek, Red Data Book flow. pl. Cameroon: 378, 558 (map), 2011; Onana, Fl. Cameroun 40: 242, 2013. – Icon.: van der Zon, Gramin. Cameroun 2: 24, 1992.

Perennial grass with horizontal rhizome, with leafy culms to 50 cm tall and erect leafless culms (inflorescence) 15–26 cm tall; leaf *blades* ovate-elliptic, 2–6 × 3–3.5 cm, acuminate, glabrous, base asymmetric, false petiole short; inflorescence raceme with several subsessile spikelets, these linear-elliptic, 2–3.5 cm long; *palea longer than lemma* (this 8 mm long); *racemes sometimes terminal on leafy stem*.

Evergreen dense forest; 0–400 m alt. Endangered.

GUADUELLA

G. macrostachys (K. Schum.) Pilg.; Sosef & al., Check-list pl. vascul. Gabon: 184, 2006; Sosef & al. in Pl. Ecol. Evol. 152: 101–102, 2019. – Icon.: Bot. Jahrb. Syst. 24: pl. 4, 1897 (under *Microbambus*); van der Zon, Gramin. Cameroun 2: 26, 1992; Velayos & al., Fl. Guinea Ecuat. 12: 203, 2015; Fl. Afr. Cent., N. S., Gramineae... X. Bambuseae: 22, 2017.

bas.: *Microbambus macrostachys* K. Schum.

syn.: *Guaduellia zenkeri* Pilg.; *Puelia guluensis* Vanderyst

Perennial grass with short rhizome, with *leaves and inflorescence borne on the same culm*; culms 30–90 cm tall, base violet; *leaves* 4–9 *per culm*, not including 3–5 leafless sheaths; blades elliptic-(oblong), 10–32 × 2–6 cm, false petiole puberulous 2–3 mm long; inflorescence terminal on a leafy culm, racemose, 3–15 cm long, with 3–8 spikelets; these ellipsoid, 2–5 cm × 5–7 mm, 4–12-flowered; *lemmas imbricate*, pubescent; palea with 4–6 inter-carinal nerves.

In undergrowth of evergreen and semi-evergreen rain-forest; locally abundant along streams; 0–1000 m alt.

G. marantifolia Franch., incl. var. *brevifolia* Franch. and var. *duparquetii* Franch.; van der Zon, Gramin. Cameroun 2: 27, 28–29 (*G. mildbraedii*), 1992; Sosef & al., Check-list pl. vascul. Gabon: 184, 2006. – Icon.: E. G. Camus, Bambusées: pl. 83 fig. B, 1913 (*G. longifolia*); Fl. Gabon 5: 205, 1962; Velayos & al., Fl. Guinea Ecuat. 12: 204, 2015; Vande weghe & al., Pl. à fleurs Gabon: 172, 2016.

syn.: *G. longifolia* E. G. Camus; *G. mildbraedii* Pilg.

Perennial rhizomatous grass with leaves and inflorescence on the same culm 50–60 cm tall; base of culm with sheaths only, well developed *leaves* 2–3(–5) at *top of stem*, petiolate, ovate-lanceolate, 8–20 × 3–9 cm, long-acuminate, false petiole c. 1 cm long, inflorescence terminal, globular or racemose, 5–10 cm long with 3–7 spikelets, these linear, 2–4 cm long, 8–15-flowered; glumes pubescent.

Understorey of dense wet forest; 5–900 m alt.

G. oblonga Hutch. ex Clayton; Sosef & al., Check-list pl. vascul. Gabon: 184, 2006; Lisowski, Fl. Rép. Guinée 1: 461, 2009. – Icon.: Jacques-Félix, Gramin. Afr. Trop. 1: 115, 1962 (Inst. Rech. Agron. Trop. Cult. Vivrières Bull. 8); Fl. W. Trop. Afr., ed. 2, 3/2: 361, 1972; van der Zon, Gramin. Cameroun 2: 24, 1992; Poilecot, Boissiera 50: 67, 1995; Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: Poaceae: 140, 2015; Velayos & al., Fl. Guinea Ecuat. 12: 205, 2015. – Pl. 33.

Perennial rhizomatous grass with leaves and inflorescence borne upon the same culm, erect, 0.3–1.2 m tall; leaves oblong-elliptic, 10–25 × 3–8 cm, *abruptly narrowed to an acuminate tip*, false-petiole 2–3 mm long; inflorescence to 25–30 cm long, with to 19 spikelets, lower branches to 11 cm long; spikelets 4–9 cm long, linear, to 15-flowered; lemmas not imbricate; palea with 1–2 intercarinal nerves.

Humid dense forest in shade; –300–450 m alt.

Bioko/Fernando Poo.

SYNONYMS:

Guaduellia foliosa Pilg. = ***Guaduellia densiflora***
ledermannii Pilg. = ***G. densiflora***
longifolia E. G. Camus = ***G. marantifolia***
mildbraedii Pilg. = ***G. marantifolia***
zenkeri Pilg. = ***G. macrostachys***

(GYMNANTHELIA)

Gymnanthelia commutata (Steud.) Schweinf. & Asch.
= **Cymbopogon commutatus**
nervata (Hochst.) Schweinf. & Asch. = **C. nervatus**
proxima (Hochst. ex A. Rich.) Andersson
= **C. schoenanthus** subsp. **proximus**
sennarensis (Hochst.) Schweinf. & Asch.
= **C. schoenanthus** subsp. **proximus**

(GYMNOPOGON)

Gymnopogon mensensis Schweinf. = **Chloris mensensis**

(GYMNOTRIX)

Gymnotrix adoensis A. Rich. = **Pennisetum sphacelatum**
alopecurus B. D. Jacks. = **P. hohenackeri**
caudata Schrad. = **P. macrourum**
cladodes Hochst. ex Steud. = **P. glaucifolium**
gigantea (A. Rich.) Walp. = **P. macrourum**
glabra Hochst. ex Steud. = **P. sphacelatum**
glaucifolia (Hochst. ex A. Rich.) Walp. = **P. glaucifolium**
hordeoides (Lam.) Kunth = **P. hordeoides**
humilis (Hochst. ex A. Rich.) Walp. = **P. humile**
nitens Andersson = **P. purpureum**
nubica Hochst. = **P. nubicum**
petiolaris Hochst. = **P. petiolare**
polystachya (L.) Sw. ex Trin. = **P. polystachion**
purpurascens Schrad. = **P. thunbergii**
quartiniana (A. Rich.) Walpers = **P. macrourum**
ramosa Hochst. 1844 = **P. ramosum**
riparia (Hochst. ex A. Rich.) Walp. = **P. riparium**
riparioides (A. Rich.) Walp. = **P. macrourum**
schimperii (A. Rich.) Walp. = **P. sphacelatum**
sphacelata Nees = **P. sphacelatum**
uniseta Nees = **P. unisetum**

[GYNERIUM]

Monotypic genus in tropical & subtropical America: West Indies, C. & S. America.

[**Gynerium sagittatum** (Aubl.) P. Beauv.]; Fl. W. Trop. Afr., ed. 2, 3/2: 374, 1972; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 257, 1994; Longhi-Wagner & Baldini in Kew Bull. 62: 392, 2007. – Icon.: Kellogg in Kubitzki, ed., Fam. & genera vascul. pl. 13, Poaceae: 286, 2015.

bas.: *Saccharum sagittatum* Aubl.

syn.: *Arundo sagittata* (Aubl.) Pers.; *Gynerium saccharoides* Humb. & Bonpl.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

A giant cane-like tough dioecious grass to 8 m tall; culms woody, 3–4 cm Ø; leaf blades to 7 cm wide, margins spinulose; inflorescence paniculate to 1 m long; female panicle plumose; female spikelets 2-flowered, c. 4–6 mm long, with long trichomes exceeding the awns; male ones glabrous.

Ornamental when in flower.

Native of C. & S. America, West Indies. Introduced in Ghana.

SYNONYM:

Gynerium argenteum Nees = **Cortaderia selloana**

HABROCHLOA / I

Monotypic genus in C. Africa.

Habrochloa bullockii C. E. Hubb. – Icon.: Hooker's Icon. Pl. 37: pl. 3645, 1967; Fl. Trop. E. Afr., Gramin. 1: 134, 1970; van der Zon, Gramin. Cameroun 2: 105, 1992; Fl. Zambes. 10/2: 24, 1999.

Delicate annual grass; culms 10–25 cm tall, very slender, erect or ascending; leaf blades linear, 3–7 cm × 1–2.5 mm, flat, glabrous or loosely pilose; panicle 2–7 cm long, ovate or oblong, very loose, branches capillary; spikelets 2–2.5 mm long, oblong-cuneate; glumes as long as spikelets; lemma bilobed with awn to 6 mm long from sinus.

Steep river banks; termite mounds; usually in shade; riverine vegetation; pebbly places; 1220–1710 m alt.

HACKELOCHLOA / I

Genus of 2 species: *H. granularis* (L.) Kuntze; and *H. porifera* (Hack.) D. Rhind in tropical and subtropical parts of Asia.

ARTHAN, W. & al. (2016). Re-evaluation of the taxonomic status of Hackelochloa (Poaceae) based on anatomical and phenetic analyses. *Bot. J. Linn. Soc.* 181: 224–245.

Hackelochloa granularis (L.) Kuntze – Icon.: Robyns, Fl. Agrost. Congo belge 1: 60, 1929; Fl. Trop. E. Afr., Gramin. 3: 848, 1982; Gibbs Russell & al., Grasses south. Afr.: 173, 1990; van der Zon, Gramin. Cameroun 2: 538, 1992 (under *Mnesithea*); Fl. Eth. & Eritrea 7: 364, 1995; Poilecot, Boissiera 50: 661, 1995; idem, ibid. 56: 647, 1999; Fl. Zambes. 10/4: 179, 2002; Cope, Fl. Arab. Penins. 5/1: 317, 2007; Lisowski, Fl. Rép. Guinée 2: fig. 539, 2009; Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013; Arthan & al. (2016): 233–235 (anatomy, etc.), 240; Ibrahim & al., Grasses Mali: 78, 2018.

bas.: *Cenchrus granularis* L.

syn.: *Manisuris granularis* (L.) L. f.; *M. polystachya* P. Beauv.; *Tripsacum granulare* (L.) Raspail; *Ryttilix granularis* (L.) Skeels; *Rottboellia granularis* (L.) Roberty; *Mnesithea granularis* (L.) de Koning & Sosef

Annual tufted, branched grass; culms 0.5–1 m tall; leaf blades linear, 2–20 × 0.4–1.5 cm, pilose with tubercle-based hairs on both surfaces, subamplexicaule; inflorescence of several racemes, terminal and axillary, with 1–5 racemes, each raceme subtended by a spatheole; racemes 5–15 mm long, dorsally compressed; peduncle 1–3 cm long; rachis 1–1.5 cm long, flattened, adherent to upper glume of sessile spikelets; sessile spikelet *globose*, c. 1 mm long, lower glume *globular*, tubercular, *pitted*; pedicellate spikelet lanceolate, c. 2 mm long; pedicels completely fused with the adjacent internode.

Weed of disturbed soils around habitations and old farmland; open and wooded grassland; roadsides; weed of alfalfa, cotton, maize; with *Sporobolus pyramidalis*, *Eragrostis ciliaris*; *E. tremula*, *Digitaria horizontalis*, *Pennisetum polystachyon*; at base of dune with humid soils, with *Enteropogon prieurii*, *Setaria verticillata*, *Chloris virgata*, *Dactyloctenium aegyptium*; banded vegetation; sandy and clayey-sandy soils; shady zones and termite mounds in savanna; 0–2100 m alt.

Cape Verde Isl.; Botswana, S. Africa; Madagascar (introduced); Socotra, Oman, Yemen; tropical and subtropical Asia E-wards to New Guinea, China, Japan, Caroline Isl.; introduced in Hawaii, S USA, C. & S. America, West Indies. – The Homblé collection



Plate 32. *Eragrostis atrovirens* (Desf.) Trin. ex Steud., see p. 254
 a: habit; b: ligule; c: inflorescence; d: spikelet; e-f: glumes; g-h: lemma and palea; i: caryopsis.



Plate 33. *Guaduellia oblonga* Hutch. ex Clayton, see p. 309
a: habit ($\times 1$); b: ligule; c: leaf-blade with tessellate venation ($\times 4$); d: inflorescence ($\times 1$) with spikelet ($\times 10$);
e-f: glumes lower and upper; g: fertile floret; h: lemma; i-j: palea (side and ventral view).

HACHELOCHLOA GRANULARIS

from “Zaire, Katanga” refers to China, Guangxi” (Robbrecht & al. in Blumea 66: 87, 2021).

Easily recognised on account of the globose wrinkled sessile spikelets.

HALOPYRUM / 1

Monotypic genus.

Halopyrum mucronatum (L.) Stapf; Phillips in Kew Bull. 37: 146, 1982; Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13, Poaceae: 360, 2015. – Icon.: Hooker’s Icon. Pl. 25: pl. 2448, 1896; Fl. Trop. E. Afr., Gramin. 2: 182, 1974; Thulin, Fl. Somalia 4: 175, 1995; Fl. Eth. & Eritrea 7: 96, 1995; Fl. Zambes. 10/2: 38, 1999; Boulos, Fl. Egypt 4: 249, 2005; Cope, Fl. Arab. Penins. 5/1: 126, 2007 (spikelet); T. P. Almeida, Flora of Maharashtra 6 A, Poaceae...: fig. 47 facing p. 147, 2014.

bas.: *Uniola mucronata* L.

syn.: *Briza mucronata* (L.) Lam.; *Eragrostis mucronata* (L.) Deflers 1887, nom. illeg., non (Poir.) Roem. & Schult. 1817; *Brizopyrum mucronatum* (L.) Wight; *Desmazeria uniolooides* Deflers, nom. superfl.

Perennial robust grass with stolons to form dense tussocks; culms to 1–2 m tall, rigid, woody, branching, producing fascicles of shoots at nodes; leaf blades linear-setaceous, stiff, to 45 cm × 4 mm, glaucous, tips filiform; inflorescence linear, 10–40 cm long, branches appressed to main axis, loosely 3–7-spiculate; pedicels 1,5–6 mm long; spikelets 1,2–2,6 cm long, flat, ovate, coriaceous, 8–25-flowered; florets densely packed; glumes and lemmas coriaceous, midnerve of lemma prominent and extended into a short mucro; callus and rachilla-tip with white hairs 4–5 mm long.

Coastal sand dunes; growing up through successive accretions of sand; a sand binder on coastal dunes; sea-level.

Egypt; Arabian Peninsula, Pakistan, Iran, India, Sri Lanka.

HARPACHNE / 2

Genus of 2 species in E & NE Africa and Arabia... “a well-defined genus on account of its distinctive spicate inflorescence (‘bottle-brush racemes’) of pendulous spikelets and the mode of spikelet disarticulation” (= falling entire with the pedicel attached).

Put in synonymy under *Eragrostis* by Kellogg in K. Kubitzki, ed., Fam. & genera vascular plants 13, Poaceae: 366–367, 2015.

Harpachne bogdanii Kenn.-O’Byrne; Agnew, Upl. Kenya wild flow., ed. 3: 422, 2013. – Icon.: Hooker’s Icon. Pl. 36: pl. 3596, 1962; Fl. Trop. E. Afr., Gramin. 2: 271, 1974 (spikelet).

Densely tufted perennial grass; culms 54–74 cm tall, fairly slender, stiffly erect; leaf blades linear, 14–28 cm × 2,5–4,5 mm, glabrous or sparsely pilose, finely pointed; inflorescence 12–24 cm long, linear-oblong with spikelets loosely arranged; pedicels 0,5–5 cm long, pubescent, those towards the base of inflorescence branching to form lateral racemes with up to 4 spikelets; these 1–1,5 cm long, 11–18-flowered, with a serrate outline, lowermost florets slightly shorter than the rest, purplish, reflexed; lemmas with shortly acuminate tips.

Wooded grassland and bushland; locally frequent; 1230–1270 m alt.

Probably an extreme local offshoot from *H. schimperi*.

HARPACHNE

H. schimperi A. Rich., incl. var. *brachypoda* Peter; Darbyshire & al., Pl. Sudan & S. Sudan: 132, 2015. – Icon.: Fl. Trop. E. Afr., Gramin. 2: 271, 1974; Troupin, Fl. Rwanda 4: 273, 1988; Thulin, Fl. Somalia 4: 184, 1995; Fl. Eth. & Eritrea 7: 131, 1995; Fl. Zambes. 10/2: 153, 1999; Cope, Fl. Arab. Penins. 5/1: 150, 2007; Agnew, Upl. Kenya wild flow., ed. 3: pls. 187, 194, 2013. syn.: *Eragrostis schimperi* (A. Rich.) Benth.

Perennial densely tufted grass; culms 10–52 cm tall, slender, erect or ascending from a decumbent base; leaf blades filiform, to 19 cm × 2–5 mm, densely to sparsely pilose, finely pointed; inflorescence oblong, simple, a “bottle brush”, 2,5–10 cm long; spikelets densely crowded, 1–2 cm long, 6–13-flowered, wedge-shaped, wider at apex with longer flowers, reddish-purple; pedicels 2–7 mm long, villous, forming a hook when shed with the spikelet; tips of lemmas acuminate-artistate.

Grassland, open bushland; often on dry sandy or stony soils; also as a weed of roadsides and waste ground; savannas, meadows on outcrops; disturbed areas; often forming extensive colonies; gravelly hills; savanna with *Acacia*; 500–3000 m alt. – “The spikelets catch in one’s socks”.

Saudi Arabia, Yemen.

HARPOCHLOA / 1

Genus of 2 species in C and southern Africa.

Harpochloa pseudoharpechloa (Chiov.) Clayton – Icon.: Fl. Zambes. 10/2: 224, 1999.

bas.: *Rendlia pseudoharpechloa* Chiov.

Perennial stout rhizomatous grass to 1,2 m tall; culms unbranched above ending in an unbranched inflorescence; leaf blades stiff, filiform, 5–30 cm × 1–2 mm, tightly folded or involute; inflorescence an unbranched one-sided raceme 3–7 cm long, usually curved; spikelets compressed, c. 7 mm long, glumes as long as spikelet, awnless.

River bank; floodplain grassland; sandy soils; 1000–1400 m alt.

The other species, viz. **H. falx** (L. f.) Kuntze, occurs in E S. Africa, Lesotho, Swaziland.

SYNONYM:

Harpochloa altera Rendle = **Microchloa altera**

(HELEOCHLOA)

Heleochoa compacta (Steud.) T. Durand & Schinz

= **Crypsis vaginiflora**

dura (Boiss.) Boiss., incl. subsp. *kuriensis* Vierh.

= **Urochondra setulosa**

myosurus (Nees ex Steud.) T. Durand & Schinz

= **Sprobolus spicatus**

schoenoides (L.) Host = **Crypsis schoenoides**

schoenoides sensu Drar = **C. vaginiflora**

setulosa (Trin.) Blatt. & McCann = **Urochondra setulosa**

HELICTOTRICHON / 6 (± ?1)

Helictotrichon Besser ex Schult. & Schult. f. (Mantissa in vol. tert. syst. veget. Car. a Linné, 1827), cf. Mashau & al. in *Bothalia* 40: 185, 2010.

syn.: *Trisetopsis* Röser & A. Wölk, *Schlechtendalia* 25: 57, 2013.

In its traditional (wide) sense this genus of oat-like grasses comprises c. 100 species (92–102) in temperate regions of Eurasia, especially Europe, from where it extends southwards through the African mountains, with a secondary centre of diversity in southern Africa (Mashau & al. in *Bothalia* 40: 179–183, 2010).

However, “evidence from DNA sequences suggests that African species of *Helictotrichon* should be recognized as a distinct genus, for which the name *Trisetopsis* has been proposed” (Mashau & al. in *Phytotaxa* 458: 15, 2020). The genus *Trisetopsis* Röser & A. Wölk is “mainly characterized by its lemma, which is apically deeply bifid (2-lobed) and not entire as in *Helictotrichon* s. str. ... Single specimens of some species have lemmas which are less deeply cleft or even entire, whereas the other lemmas of the same specimen have typical apical incisions. The ovary is only sparsely ciliate at the apex, not entirely hairy as in *Helictotrichon* s. str. ... (Wölk & Röser in *Schlechtendalia* 25: 57–58, 2013).

Even another genus was recently separated from *Helictotrichon* s. l., viz, *Tzveleviochloa* Röser & A. Wölk, with 4 species recognised in SE Asia (Wölk & Röser in *Taxon* 66: 38, 2017; Prasad & al. in *Nord. J. Bot.* 39/11: 1, 2021).

The present taxonomic treatment (below) follows the World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew, of 2015.

MASHAU, A. C. & al. (2020). A taxonomic treatment of *Trisetopsis* (Poaceae) in southern Africa. *Phytotaxa* 458: 15–68.

WÖLK, A. & M. RÖSER (2013). The new genus *Trisetopsis* and new combinations in oat-like grasses (Poaceae). *Schlechtendalia* 25: 57–61.

WÖLK, A. & M. RÖSER (2014). Polyploid evolution, intercontinental biogeographical relationships and morphology of the recently described African oat genus *Trisetopsis* (Poaceae). *Taxon* 63: 773–788 [details of lemmas, lodicules and ovaries in figs. 4–7 pp. 782–783].

WÖLK, A. & M. RÖSER (2017). Hybridization and long-distance colonization in oat-like grasses of South and East Asia, including an amended circumscription of *Helictotrichon* and the description of the new genus *Tzveleviochloa* (Poaceae). *Taxon* 66: 20–43.

Helictotrichon angustum C. E. Hubb.; Fl. Eth. & Eritrea 7: 33, 1995; Cope, Fl. Arab. Penins. 5/1: 36, 2007. – Icon.: Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

syn.: *Trisetopsis angusta* (C. E. Hubb.) Röser & A. Wölk (2013: 58).

Perennial tufted grass; culms 30–90 cm tall, erect, slender; leaf blades *filiform*, 8–25 cm × < 2 mm, glabrous; panicle *linear*, 7–20 cm long, interrupted, slightly nodding, branches ascending close to rachis; spikelets narrowly oblong, 3–5-flowered, 1–1,4 cm long, florets *well exerted* from glumes; awn geniculate, 1–1,6 cm long, arising from upper third of scabrid lemma.

Grassland; red loam; 2300–2600 m alt.

Local species in Kenya, expected in Ethiopia.

Resembling *H. arctum* Cope in Yemen (syn.: *H. angustum* auct., non C. E. Hubb.).

H. elongatum (Hochst. ex A. Rich.) C. E. Hubb.; César & Chatelain, Fl. ill. Tchad: 182, 2019 (under *Trisetopsis*). – Icon.: Bull. Soc. Bot. France 106: 136, 159 (as *Avena tibestica*); Fl. Trop. E. Afr., Gramin. 1: 90, 1970; Fl. Zambes. 10/1: 78, 1971; Troupin,

HELICTOTRICHON ELONGATUM

Fl. Rwanda 4: 275, 1988; van der Zon, Gramin. Cameroun 2: 70, 1992; Fl. Eth. & Eritrea 7: 32, 34, 1995; Burrows & Willis, Pl. Nyika Plateau Malawi: 347, 2005; Cope, Fl. Arab. Penins. 5/1: 37, 2007. – Pl. 34.

bas.: *Danthonia elongata* Hochst. ex A. Rich.

syn.: *Avena festuciformis* Hochst.; *A. neesii* (Hochst. ex Steud.) Hook. f.; *A. muriculata* Stapf, nom. superfl.; *A. tibestica* Miré & Quézel; *Avenastrum elongatum* (Hochst. ex A. Rich.) Pilg., incl. var. *preussii* Pilg.; *A. rigidulum* Pilg.; *A. humbertii* A. Camus.; *A. quinquenerve* Stent & J. M. Rattray; *Arrhenatherum elongatum* (Hochst. ex A. Rich.) Potztl.; *A. rigidulum* (Pilg.) Potztl.; *A. phaneroneuron* (C. E. Hubb.) Potztl.; *Helictotrichon avenoides* (Baker) A. Camus; *H. rigidulum* (Pilg.) C. E. Hubb.; *H. humbertii* (A. Camus) Henrard; *H. cartilagineum* C. E. Hubb.; *H. maitlandii* C. E. Hubb.; *H. phaneroneuron* C. E. Hubb.; *H. tibesticum* (Miré & Quézel) Holub; *Bromus avenoides* Baker; *Trisetum neesii* Hochst. ex Steud.; *Trisetopsis elongata* (Hochst. ex A. Rich.) Röser & A. Wölk (o.c.: 58, 2013).

Perennial tufted grass; culms 0,3–1,5 m tall, erect or geniculate; basal leaf sheaths usually tinged with orange-brown; blades linear, flat, 15–45 cm × 2–5 mm, prominently and closely nerved; panicle *linear-narrowly oblong*, 10–35 cm long, often loose, nodding; spikelets oblong, 0,8–1,4 cm long, 2–3-flowered, *only tips of florets exerted* from glumes; awn geniculate, 1,4–2 cm long from middle of lemma.

Damp places in forest, open woodland and grassland; often along streams; in drainage channels or river banks; *Hagenia*, *Nuxia* scrub; edge of rain-forest with *Albizia*, *Macaranga*, *Croton*, *Ocotea*; *Loudetia arundinacea* grassland; along road; with *Helichysum monodianum*, *Dichrocephala chrysanthemifolia*: 1520–4500 m alt.

Libya; Madagascar; Yemen.

(***H. imberbe*** (Nees) Veldkamp); Mashau & al. in *Phytotaxa* 458: 40, 41 (fig. under *Trisetopsis* and map p. 42), 2020; fig. in van Oudtshoorn, Guide grasses south. Afr., ed. 3: 102, 2012 (as *Helictotrichon turgidulum*).

bas.: *Trisetum imberbe* Nees

syn.: *Helictotrichon turgidulum* (Stapf) Schweick., etc.; *Trisetopsis imberbis* (Nees) Röser & A. Wölk

Perennial tufted grass; culms unbranched, 0,3–1 m tall; leaves mostly at base; blades linear, 6–15 cm × 2–6 mm; inflorescence 7–30 cm long, often densely contracted; spikelets c. 1 cm long, closely flowered, with several awns.

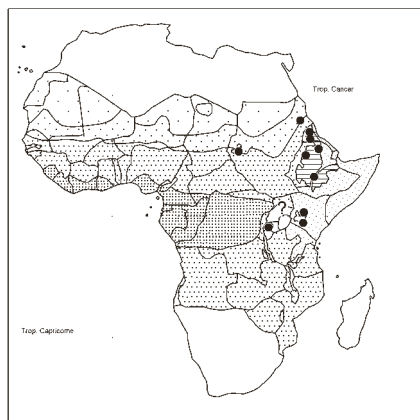
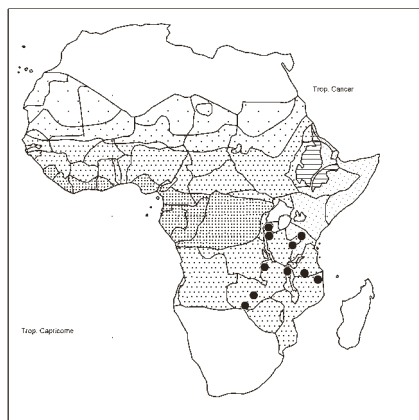
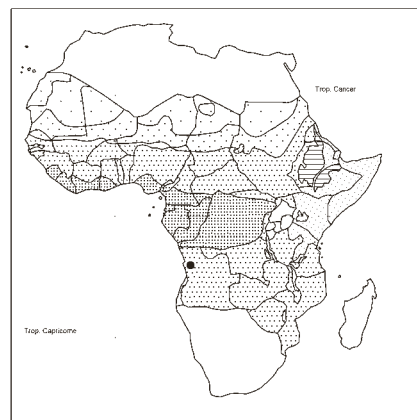
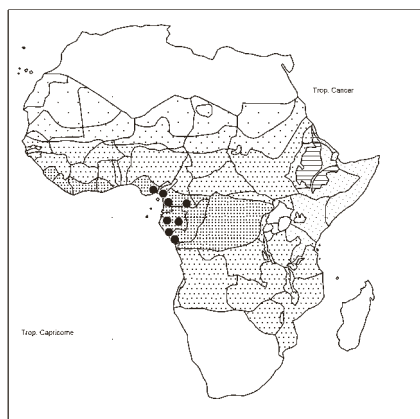
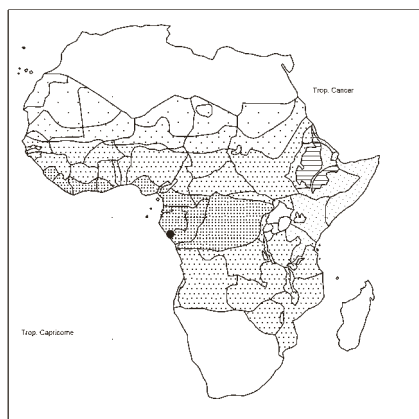
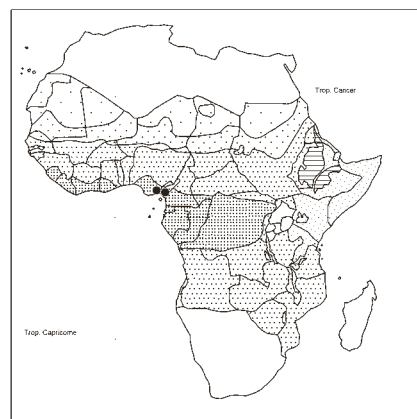
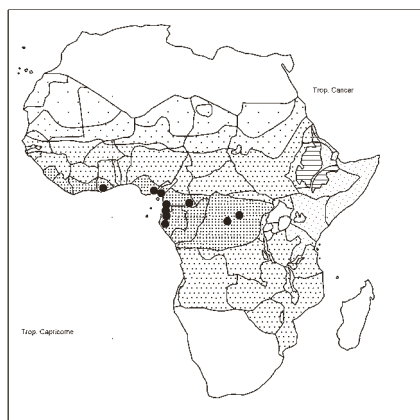
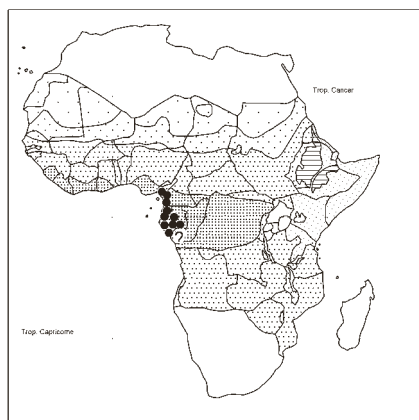
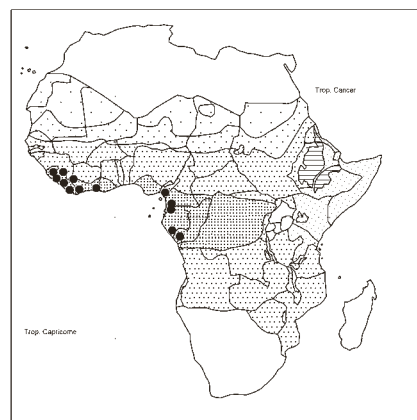
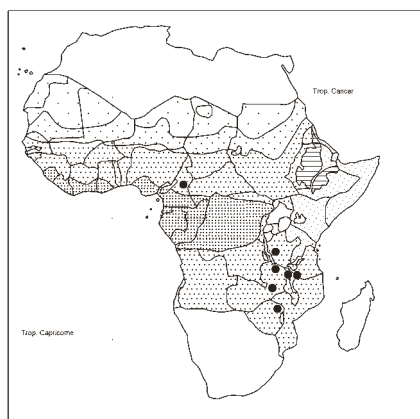
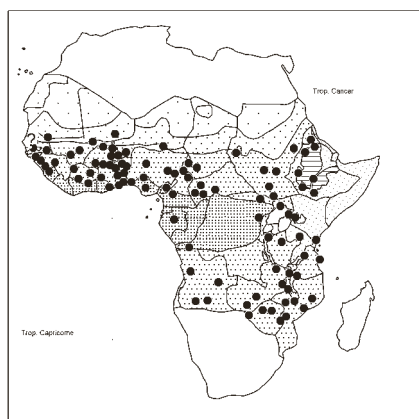
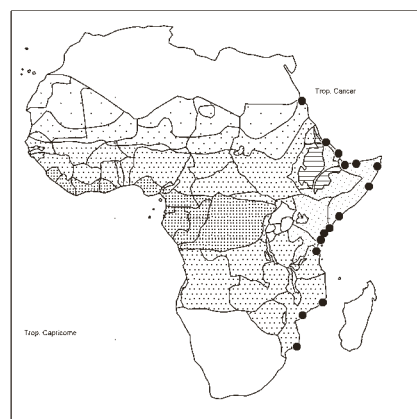
On slopes in wet places, sometimes forming dense stands along roads; in moist soils (S. Africa).

The map published by Mashau & al., l.c., shows an occurrence of the species on the border S-most Zimbabwe – S. Africa; but not cited from Zimbabwe.

H. lachnanthum (Hochst. ex A. Rich.) C. E. Hubb.; Agnew, Upl. Kenya wild flow., ed. 3: 412, 2013. – Icon.: Fl. Eth. & Eritrea 7: 32, 1995 (spikelet).

bas.: *Trisetum lachnanthum* Hochst. ex A. Rich.

syn.: *Avena lachnantha* (Hochst. ex A. Rich.) Hook. f.; *A. rothii* Stapf, nom. superfl.; *Avenastrum lachnanthum* (Hochst. ex A. Rich.) Vierh.; *Arrhenatherum lachnanthum* (Hochst. ex A. Rich.) Potztl.; *Trisetopsis lachnantha* (Hochst. ex A. Rich.) Röser & A. Wölk, o.c.: 59, 2013.

*Gastridium phleoides**Gilgichloa indurata**Gossweilerochloa delicatula**Guaduella densiflora**Guaduella dichroa**Guaduella humilis**Guaduella macrostachys**Guaduella marantifolia**Guaduella oblonga**Habrochloa bullockii**Hackelochloa granularis**Halopyrum mucronatum*

HELICTOTRICHON LACHNANTHUM

Perennial weak-stemmed straggling grass; culms 0,6–1,2 m long, suberect or ascending from a decumbent base; leaf blades filiform, 12–25 cm × 3–5 mm, flat, glabrous; panicle narrowly oblong, 10–25 cm long, loose, flexuous; spikelets oblong-elliptic, 0,8–1,2 cm long, 3–5-flowered, *florets well exerted*, rachilla *internodes bearded*; awns from upper third of lemma, geniculate, > 1 cm long.

Grassland; scrubland; short grass savanna; 1200–3300 m alt.

H. mannii (Pilg.) C. E. Hubb.; Onana & Cheek, Red Data Book flow. pl. Cameroon: 379, 558 (map), 2011; Onana, Fl. Cameroun 40: 243, 2013; Cable & Cheek, Pl. Mt Cameroon: LXVIII, 1998. – Icon.: Fl. Guinea Ecuat. 12: 206, 2015.

bas.: *Avenastrum mannii* Pilg. s. str.

syn.: *Arrhenatherum mannii* (Pilg.) Potztl; *Trisetopsis mannii* (Pilg.) Röser & A. Wölk, o.c.: 59, 2013.

Perennial tuft-forming grass; culms 0,8–1,2 m tall; leaf blades linear, 20–35 × 0,4–1 cm; panicle *narrow*, 25–30 cm long, branches scattered, basal 4–12 cm long; spikelets flattened, 1,4–1,9 mm long, 3–4-flowered, florets long exerted from glumes; lemma with geniculate awn from upper third of back.

Grassland on deep soils; forest; forest-grassland transition; clearings in forest; 800–3000 m alt.

Bioko/Fernando Poo.

H. milanjanum (Rendle) C. E. Hubb.; Agnew, Upl. Kenya wild flow., ed. 3: 412, 2013. – Icon.: Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 183, 1955; Troupin, Fl. Rwanda 4: 275, 1988; Fl. Eth. & Eritrea 7: 32, 1995 (details).

bas.: *Bromus milanjanus* Rendle

syn.: *Avenastrum majus* Pilg.; *A. mannii* var. *angustius* Pilg.; *Arrhenatherum milanjanum* (Rendle) Potztl; *Trisetopsis milanjana* (Rendle) Röser & A. Wölk, o.c.: 59, 2013.

Perennial grass from a slender rhizome; culms 0,5–1,25 m tall, erect or ascending; basal leaf sheaths persistent, golden-brown; blades 8–30 cm × 4–7 mm, flat glabrous; panicle 12–25 cm long, flexuous, *linear*, loose, branches ascending close to rachis; spikelets 1,2–1,5 cm long, narrowly oblong, 3–4-flowered, florets *well exerted*; awn from near the apex of lemma, 1,2–2 cm long, *not or slightly geniculate*, column *scarcely twisted*.

Shady places in open forest and bamboo thicket; often on moist soils; lawn; damp kloofs; clearings in forest; old cultivations; at base of the *Phillipia* level; 1770–c. 4000 m alt.

Madagascar?

(H. newtonii (Stapf) C. E. Hubb.)

bas.: *Avena newtonii* Stapf

syn.: *Arrhenatherum newtonii* (Stapf) Potztl; *Trisetopsis newtonii* (Stapf) Röser & A. Wölk, Schlechtendalia 25: 60, 2013.

From the description in Fl. Trop. Afr. 10/1: 111, 1937, and Bull. Misc. Inform. Kew 1897: 291, 1897:

Probably perennial grass (base unknown); whole plant glabrous; culms rather slender; sheaths of stem leaves shorter than internodes; blades linear, 7,5–12,5 cm × 2–3 mm, flat, minutely scabrous; panicle narrow, erect, c. 15 cm long, branches paired, mostly simple, filiform, the lower up to 6 cm long; spikelets oblong, 1,2–1,4 cm long, 2–3-flowered, pale green; glumes lanceolate, hyaline, the lower c. 7 mm long, the upper c. 11 mm long; awn from middle of the lemma, geniculate, to c. 2 cm long, column loosely twisted.

HELICTOTRICHON NEWTONII

Ecology not recorded.

Known only from the type (Newton 6) collected in S Angola, Mossamedes, Serra da Chela, April 1883 (cf. Figueiredo & al., The vascular plant collections of Francisco Newton, 1864–1909, in Angola – Phytotaxa 413: 219, 2019; cited as *Avena newtonii* Stapf). Not cited by Figueiredo & Smith, Plants of Angola (Strelitzia 22), 2008.

The identity of this plant is uncertain. Not mapped by us.

H. umbrosum (Hochst. ex Steud.) C. E. Hubb., incl. var. *micrantherum* C. E. Hubb.; Gereau & al., Lake Nyasa florist. checklist: 88, 2012. – Icon.: Fl. Eth. & Eritrea 7: 32, 1995 (spikelet); Agnew, Upl. Kenya wild flow., ed. 3: pl. 184, 2013.

bas.: *Trisetum umbrosum* Hochst. ex Steud.

syn.: *T. biflorum* Hochst.; *Avenastrum umbrosum* (Hochst. ex Steud.) Pilg.; *A. elongatum* var. *friesiorum* Pilg.; *Arrhenatherum friesiorum* (Pilg.) Potztl; *A. umbrosum* (Hochst. ex Steud.) Potztl; *Helictotrichon thomasi* C. E. Hubb.; *H. friesiorum* (Pilg.) C. E. Hubb.; *Trisetopsis umbrosa* (Hochst. ex Steud.) Röser & A. Wölk, o.c.: 60, 2013.

Perennial tufted grass from a slender rhizome; culms 40–90 cm tall, erect or ascending; basal leaf sheaths often tinged with orange-brown; blades mostly flat, linear, 10–20 cm × 1–5 mm, sparsely pubescent above; panicle *linear*, 7–20 cm long, branches erect; spikelets narrowly oblong, c. 1–1,6 cm long, 2–4-flowered, florets well exerted; glumes hyaline; awn from just above the middle, 1,3–2 cm long, *strongly geniculate*, column *twisted*.

Margins of bamboo thicket; moor; ravine forest; grassland; 1850–4000 m alt.

In many ways intermediate between *H. milanjanum* and *H. elongatum*; resembling *H. mannii* which has broader glumes.

SYNONYMS:

Helictotrichon avenoides (Baker) A. Camus

= **Helictotrichon elongatum**

cartilagineum C. E. Hubb. = **H. elongatum**

friesiorum (Pilg.) C. E. Hubb. = **H. umbrosum**

humbertii (A. Camus) Henrard = **H. elongatum**

maitlandii C. E. Hubb. = **H. elongatum**

phaneroneuron C. E. Hubb. = **H. elongatum**

rigidulum (Pilg.) C. E. Hubb. = **H. elongatum**

thomasi C. E. Hubb. = **H. umbrosum**

tibesticum (Miré & Quézel) Holub = **H. elongatum**

turgidulum (Stapf) Schweick. = (**H. imberbe**)

(HELOPUS)

Helopus acrotrichus Steud. = **Eriochloa fatmensis**

annulatus (Flüggé) Nees = **E. procera**

barbatus Trin. = **E. procera**

bolbodes Hochst. ex Steud. = **Urochloa oligotricha**

meyerianus (Nees) Döll = **Eriochloa meyeriana**

nubicus Steud. = **E. fatmensis**

trichopus (Hochst.) Steud. = **Urochloa trichopus**

HEMARTHRIA / 2

Genus of 12 or 14 species in tropical and subtropical regions of the Old World. In or near water. Introduced in America.

Hemarthria altissima (Poir.) Stapf & C. E. Hubb.; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 258, 1994; Fl. Zambes. 10/4: 166, 2002; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 302, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 132, 2015. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 204, 1969; Gibbs Russell & al., Grasses south. Afr.: 178, 1990; Fl. Eth. & Eritrea 7: 364, 1995 (spikelet); Poilecot, Boissiera 50: 663, 1995; idem, ibid. 56: 650, 1999; Boulos, Fl. Egypt 4: 346, 2005; Cope, Fl. Arab. Penins. 5/1: 315, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 61, 2012; Ibrahim & al., Grasses Mali: 79, 2018. bas.: *Rottboellia altissima* Poir.

syn.: *R. fasciculata* Lam.; *R. compressa* L. f., non Vanderyst nec Guss. ex Steud., subvar. *capensis* (Trin.) Roberty, var. *fasciculata* Hack., subvar. *fasciculata* (Hack.) Roberty, subvar. *gracilis* (Boiss.) Roberty; *Hemarthria fasciculata* Kunth, incl. subsp. *altissima* (Poir.) Maire ex Zangh., and var. *gracilis* Boiss.; *H. compressa* (L. f.) R. Br. subsp. *altissima* (Poir.) Maire; *H. capensis* Trin.; *H. caudiculata* Steud.; *Rottboellia heterochroa* Gand.; *R. compressa* subvar. *gracilis* (Boiss.) Roberty; *Hemarthria natans* sensu Wickens, non Stapf; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial stoloniferous mat-forming grass; culms 1,5–2,5 m long, 2–4 mm Ø, prostrate, rooting at lower nodes; leaf blades linear, 5–15 cm × 2–6 mm, flat; inflorescence of single racemes 4–10 cm long, embraced by the subtending leaf sheath, borne in the upper axils of the culm; sessile spikelet elliptic-oblong, with lower glume 4–6 mm long, narrowed to an obtuse, often emarginate tip bordered by narrow rounded wings; pedicellate spikelet 4–6 mm long.

Wet soils; dambos; muddy places bordering streams and lakes; flooded clayey soils; in 30–50 cm (shallow) water with *Vetiveria nigritana*, *Hyparrhenia rufa*, *Chloris virgata*, *Sporobolus pyramidalis*, *Panicum fluviicola*, *Imperata cylindrica*, *Setaria sphacelata*; in river bed after water retirement with *Panicum anabaptistum*, *Chloris robusta*, *Cynodon dactylon*, *Digitaria debilis*, *Leptochloa caerulescens*; in small or large stands; 15–2000 m alt.

Caprivi Strip, Namibia, Botswana, S. Africa, Swaziland, Lesotho; Madagascar, Mauritius; shores of the Mediterranean, Egypt; Canary Isl.; Saudi Arabia; isolated records from SE Asia (India, Burma, Thailand) E-wards to Borneo. Introduced in America.

Merges with *H. compressa* (L. f.) R. Br. from India and SE Asia. Determination of marginal specimens uncertain.

H. natans Stapf; ? Renier, Fl. Kwango 1: 22, 1948 (as *H. fasciculata*); Agnew, Upl. Kenya wild flow., ed. 3: 450, 2013. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 852, 1982; Troupin, Fl. Rwanda 4: 277, 1988; Cook, Aquat. pl. book: 150, 1990; Fl. Eth. & Eritrea 7: 364, 1995; Fl. Zambes. 10/4: 167, 2002.

Perennial stoloniferous grass; culms to 2,5 m long, 2–5 mm wide, compressed, rooting at lower nodes; leaf blades linear, 4–15 cm × 2–5 mm, flat; racemes 3–7 cm long, in fascicles of 1–5 in the upper leaf axils, not or scarcely exerted from the axillary sheath; sessile spikelet elliptic-oblong, callus triangular; lower glume 3–6 mm long, acute, long-acuminate; pedicellate spikelet 4–7 mm long.

In shallow water bordering lakes, streams; marshy places; wet soil of river margins; 470–2000 m alt.

HEMARTHRIA

SYNONYMS:

Hemarthria capensis Trin. = **Hemarthria altissima**
caudiculata Steud. = **H. altissima**
compressa (L. f.) R. Br. subsp. *altissima* (Poir.) Maire = **H. altissima**
fasciculata Kunth, incl. subsp. *altissima* (Poir.) Stapf & C. E. Hubb. and var. *gracilis* Boiss. = **H. altissima**
natans sensu auctt., non Stapf = **H. altissima**

(HEMIGYNIA)

Hemigynia arnottiana (Steud.) Stapf, incl. var. *micrantha* Balansa ex A. Camus = **Ottochloa nodosa**
canaliculata (Nees ex Steud.) Alston = **Holcolemma canaliculatum**
fusca Ridl. = **Ottochloa nodosa**
javanica (Poir.) Alston = **Urochloa panicoides**
multinodis Stapf = **Ottochloa nodosa**

HETERANTHOECIA / 1

Monotypic genus.

Heteranthoecia guineensis (Franch.) Robyns; Renier, Fl. Kwango 1: 52, 1948; Lye & al. in Lidia 4: 168–169, 2000; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 235, 2010. – Icon.: Hooker's Icon. Pl. 30: pl. 2927, 1911 (as *Heteranthoecia isachnoides*); Fl. Gabon 5: 113, 1962; Fl. Trop. E. Afr., Gramin. 2: 433, 1974; Adam, Fl. descr. Mts Nimba 6: 2151, 1983; Fl. Zambes. 10/3: 197, 1989; Cook, Aquat. pl. book: 150, 1990; van der Zon, Gramin. Cameroun 2: 352, 1992.

bas.: *Dinebra guineensis* Franch.

syn.: *D. tuaensis* Vanderyst; *Heteranthoecia isachnoides* Stapf
Annual (or perennial) mat-forming grass; culms 10–60 cm long, erect or ascending from a creeping base, rooting at lower nodes; leaf blades lanceolate, 1–3 cm × 2–5 mm, ± stiff; inflorescence erect, 2–8 cm long; spikes spreading or finally deflexed, up to 15, the lower 5–12 mm long, rachis flattened, ciliate, ending in a barren tip; spikelets in 2 rows, ovate, each 1,7–2,3 mm long, gaping; lemmas pubescent.

Seasonally flooded sedge meadow; wet rice fields; (sandy) swamps; in shallow water in streams, lakes; pond margins; sometimes very common; 450–1500 m alt.

(HETEROCARPHA)

Heterocarpha haareri Stapf & C. E. Hubb. = **Dinebra haareri**
schimanniana Schweick. = **Brachychloa schimanniana**

(HETEROCHLOA)

Heterochloa dura (Boiss.) Balf. f. = **Urochondra setulosa**

HETEROPHOLIS / 1

Genus of 2 species, 1 in Madagascar, Sri Lanka, 1 in tropical Africa. Kellogg in K. Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 300 (2015) cites 6 species in the Old World, whereas Christenhusz & al., *Plants of the World*: 209, 2017, indicate 4 species.

Heteropholis sulcata (Stapf) C. E. Hubb. – Icon.: Hooker's Icon. Pl. 36: pl. 3548, 1956; Fl. Trop. E. Afr., Gramin. 3: 850, 1982; Fl. Zambes. 10/4: 177, 2002; Burrows & Willis, Pl. Nyika Plateau Malawi: 349, 2005; Kellogg in Kubitzki, o.c.: 301.

bas.: *Peltophorus sulcatus* Stapf

syn.: *Manisuris sulcata* (Stapf) Dandy; *Rottboellia myurus* (Stapf) Roberty var. *sulcata* (Stapf) Roberty; *Mnesithea sulcata* (Stapf) de Koning & Sosef

Perennial grass arising from a short scaly rhizome; culms 0,6–1,2 m tall; leaf blades linear, 16–60 × 0,3–1 cm, gradually tapering to a flexuous tip; inflorescence a single axillary raceme 5–12 cm long, internodes thickened, clavate, fused to the adjacent pedicel; sessile spikelet *broadly elliptic, strongly muricate*, ± embedded in the internode, with *narrow wings* on either side of apex, lower glume 3–4 mm long; pedicellate spikelet oblong, 3–5 mm long, not areolate.

Brachystegia wooded grassland; miombo woodland; dry wooded ground; 550–1520 m alt.

HETEROPOGON / 2

Genus of 6 or 7 species (7 after reinstatement of *H. allionii* (DC.) Roem. & Schult. by Drisya & Pradeep in *Phytotaxa* 429: 157–160, 2020) in tropical and subtropical regions.

ARTHAN, W. & al. (2021). Complex evolutionary history of two ecologically significant grass genera, *Themeda* and *Heteropogon* (Poaceae: Panicoideae: Andropogoneae). *Bot. J. Linn. Soc.* 196: 437–455.

Heteropogon contortus (L.) P. Beauv. ex Roem. & Schult., here *incl.* var. *allionii* (DC.) Cuénod; but excl. var. *distichus* C. E. C. Fisch. (= *H. fischerianus* Bor, in India); Dobignard & Chatelain, *Index synon. fl. Afr. N.* 1: 302, 2010. – Icon.: Robyns & Tournay, *Fl. spermat. Parc Natl. Albert* 3: 69, 1955; Fl. W. Trop. Afr., ed. 2, 3/2: 474, 1972; Fl. Trop. E. Afr., Gramin. 3: 826, 1982; van der Zon, *Gramin. Cameroun* 2: 507, 1992; Thulin, *Fl. Somalia* 4: 266, 1995; Fl. Eth. & Eritrea 7: 357, 1995; Poilecot, *Boissiera* 50: 507, 1995; idem, *ibid.* 56: 541, 1999; Fl. Zambes. 10/4: 147, 2002; Ravi & Mohanan, *Common trop. & sub-trop. sedges & grasses*: 156, 2002; Burrows & Willis, Pl. Nyika Plateau Malawi: 349, 2005; Müller, *Grasses Namibia*, rev. ed.: 35, 2007; van Oudtshoorn, *Guide grasses south. Afr.*, ed. 3: 64, 2012; Agnew, *Upl. Kenya wild flow.*, ed. 3: 193, 2013; Velayos & al., *Fl. Guinea Ecuat.* 12: 207, 2015; T. & R. van der Walt, *50 grasses Limpopo Valley*: 30, 2021.

bas.: *Andropogon contortus* L.

syn.: *A. contortus* var. *glaber* (Hack.) Hack.; *A. hispidissimus* Steud.; *Heteropogon hirtus* Pers., nom. superfl., non (L.) Andersson; *H. hirtus* var. *glaber* (Hack.) Rendle; *H. hispidissimus* Hochst. ex Steud. pro syn.; *Sorghum contortum* (L.) Kuntze; *Holcus contortus* (L.) Stuck.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Untidy tufted perennial grass; culms 0,2–1 m tall, erect; basal leaf sheaths laterally compressed; blades linear, 3–30 cm × 2–8 mm, tip abruptly narrowed; inflorescence a single raceme 3–10 cm long, long-exserted, solitary or aggregated into a scanty false panicle, the awns twisted together to form a spire at summit of raceme;

HETEROPOGON CONTORTUS

homogamous spikelet pairs 3–17, resembling the pedicellate spikelets; sessile spikelet 0,5–1 cm long, incl. the *ferociously pungent, rufously barbate callus* 2–3 mm long; awn 5–8 cm long, hirtellous; pedicellate spikelet 0,5–1,5 cm long. – The shed spikelet is capable of boring into soil and skin.

Deciduous bushland and savanna; wooded grassland; often dominant species in open grassy places on dry soils; sand dunes; stony hillsides; clayey-sandy, flooded soils; edge of aquatic meadow around pools with *Vetiveria nigriflora*, *Hyparrhenia rufa*, *Hyperthelia dissoluta*, *Panicum pansum*, *P. fluviicola*, *Sporobolus pyramidalis*, *Imperata cylindrica*; sometimes in important stands; alluvial soil; the *Heteropogon contortus* – *Hildebrandtia obcordata* community described from SC Ethiopia (Dalle & al. in *Community Ecol.* 6: 171, 2005, i.e. 570 km S Addis Ababa); 0–2400 m alt.

A most variable species usually subdivided according to the hairiness of the pedicellate spikelet; which seems of no significance as the plant is apomictic.

Namibia, Botswana, S. Africa, Lesotho, Swaziland; Canary Isl.; SC Europe to NW Balkan (Maslo & Milanović in *Phytol. Balcan.* 28: 70–72, 2022, with photos inflorescence); Cape Verde Isl.; Annobón; N. Africa; Arabian Peninsula to the Middle East, E-wards to Australia; Madagascar, Indian Ocean isl.; tropical and subtropical America. Often introduced and naturalised.

H. contortus thought to have been collected by Homblé in Katanga, Zaire, refers to the latter's collections from Guangxi, China (Robbrecht & al. in *Blumea* 66: 85, 2021).

H. melanocarpus (Elliott) Benth.; Renier, *Fl. Kwango* 1: 32, 1948; Darbyshire & al., *Pl. Sudan & S. Sudan*: 132, 2015. – Icon.: van der Zon, *Gramin. Cameroun* 2: 507, 1992; Poilecot, *Boissiera* 56: 540, 1999; Cope, *Fl. Arab. Penins.* 5/1: 311, 2007 (raceme); Müller, *Grasses Namibia*, rev. ed.: 37, 2007; Fl. China 22, Ill. 890, 2007; César & Chatelain, *Fl. ill. Tchad*: 251, 2019 (details).

bas.: *Andropogon melanocarpus* Elliott

syn.: *A. polystictus* Hochst. ex Steud. (as 'polystichus'); *Heteropogon polystictus* (Hochst. ex Steud.) Hochst.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

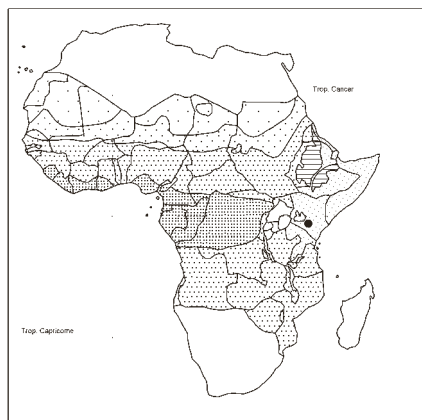
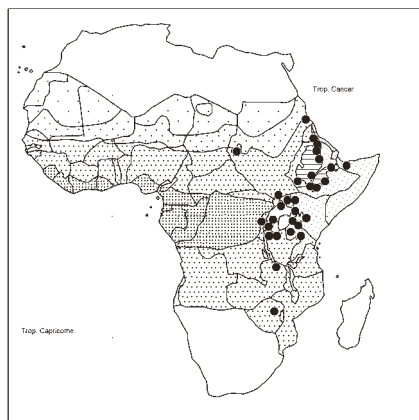
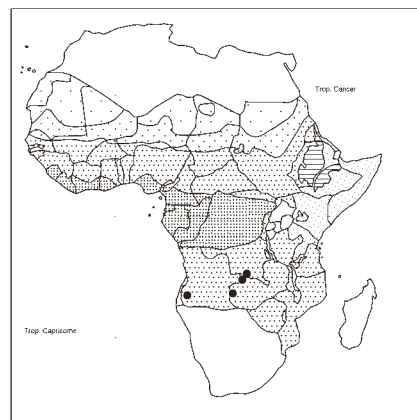
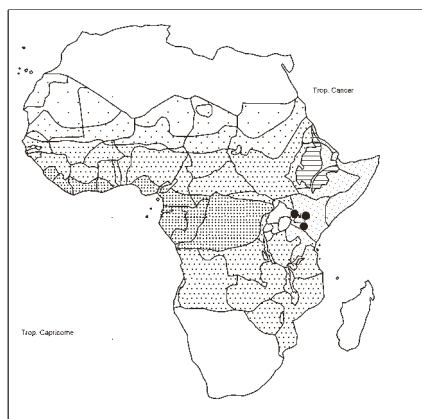
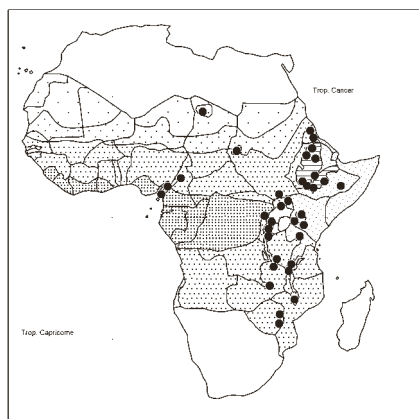
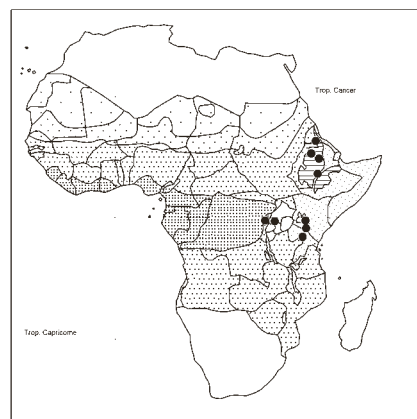
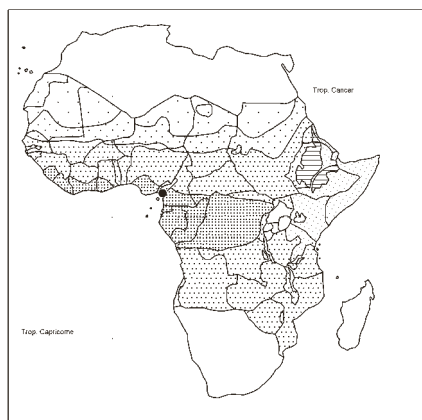
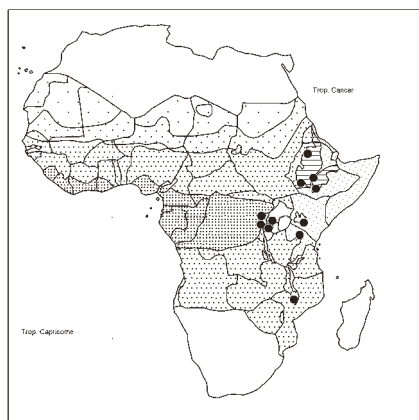
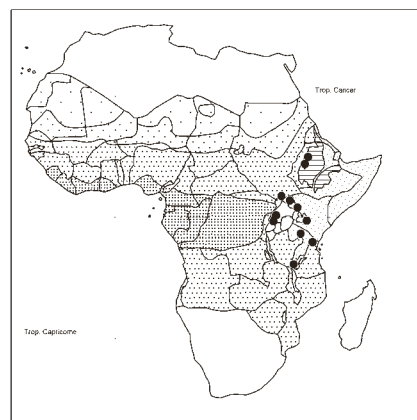
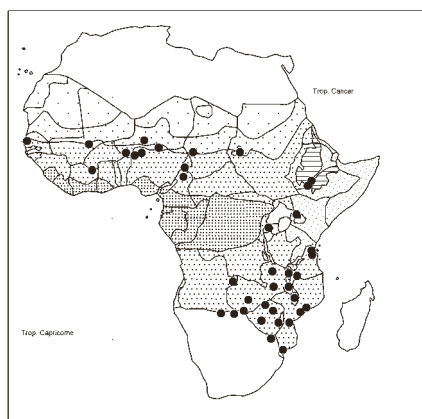
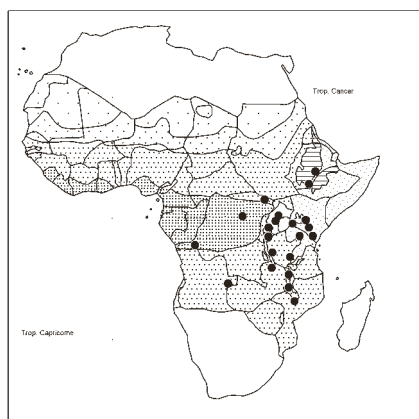
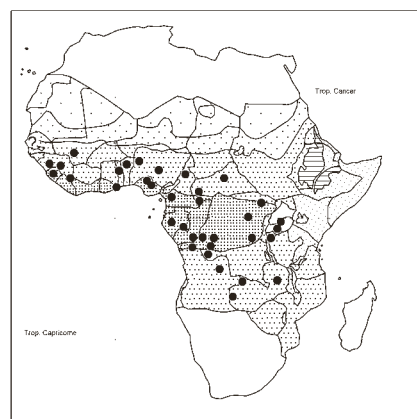
Annual robust grass, reed-like; culms 0,5–2,5 m tall, erect, supported below by stilt-roots; leaf blades flat, to 50 cm long, 1 cm wide, gradually acuminate at apex; inflorescence a false panicle of grouped spike-like racemes 3–6 cm long, emerging from the side of the spatheole; homogamous spikelet pairs 1–3, resembling the pedicellate spikelets; sessile spikelet c. 1 cm long incl. a sharply pungent and rufously barbate callus c. 4 mm. long; lower glume dark brown, densely hispidulous; awn 7–12 cm long, pubescent; pedicellate spikelet 1,5–2,5 cm long, with lower glume glabrous with a *median line of depressed glands* along its length, apex long-acuminate.

Abandoned cultivations; track-sides; in patches in deciduous bushland and *Brachystegia* wooded grassland; riverine formations around hollows with *Pennisetum unisetum*, *P. polystachion*, *Rottboellia cochinchinensis*; clearings in *Acacia*, *Commiphora* woodland; bushed rocky slopes; 0–1600 m alt.

Cape Verde Isl.; N Namibia, Botswana, S. Africa; Madagascar; Oman, E-wards to India, China (Yunnan); subtropical and tropical America.

SYNONYMS:

Heteropogon androphilus (Stapf) Roberty
= **Elymandra androphila**
arrhenobasis (Hochst. ex Steud.) Andersson
= **Hyparrhenia arrhenobasis**

*Harpachne bogdanii**Harpachne schimperi**Harpochloa pseudoharpechloa**Helictotrichon angustum**Helictotrichon elongatum**Helictotrichon lachnanthum**Helictotrichon mannii**Helictotrichon milanjanum**Helictotrichon umbrosum**Hemarthria altissima**Hemarthria natans**Heteranthoecia guineensis*

HETEROPOGON

buchneri (Hack.) Roberty = **Diheteropogon filifolius**
filifolius Nees = **D. filifolius**
grandiflorus (Hack.) Rendle = **D. filifolius**
hagerupii (Hitchc.) Roberty = **D. hagerupii**
hirtus Pers., non (L.) Andersson = **Heteropogon contortus**
hirtus var. *glaber* (Hack.) Rendle = **H. contortus**
hispidissimus Hochst. ex Steud. = **H. contortus**
hochstetteri (Steud.) Andersson = **Diectomis fastigiata**
polystictus (Hochst. ex Steud.) Hochst.
= **Heteropogon melanocarpus**
pubescens Andersson = **Hyparrhenia hirta**
truncatus Nees = **Trachypogon spicatus**

HICKELIA / 1

syn.: *Pseudocoix* A. Camus

Genus of 4 species: 1 in Tanzania, 3 in Madagascar (map by Ohrnberger, The bamboos of the World: 341, 1999).

DRANSFIELD, S. (1994). The genus *Hickelia* (Gramineae: Bambusoideae). *Kew Bull.* 49: 429–443 (with key).

Hickelia africana S. Dransf. – Icon.: *Kew Bull.* 49: 432, 434, 1994; Kellogg in K. Kubitzki, ed., *Fam. & genera vascul. pl.* 13: 187, 2015.

Scrambling bamboo to 3 m tall; culm c. 8 mm Ø, internodes c. 40 cm long; branches many at each node; culm sheaths light green, hairy when young, becoming glabrous, 13–22 cm long, c. 3 cm wide, c. 7 mm at junction of blade; blades light green, lanceolate, 8.5–13.5 × c. 1.5 cm near base, tapering to very long tips, glabrous; inflorescences terminal on leafy or leafless branches, to 8 cm long; spikelets c. 1.5 cm long, comprising 5 transitional glumes, 1 floret and a short hairy rachilla internode.

Wet montane forest along streams; 1750–1800 m alt.

Closely related to *H. madagascariensis* A. Camus (with leaves of young shoots purplish).

(HIEROCHLOE)

For inclusion of *Hierochloe* in *Anthoxanthum*, See under *Anthoxanthum* above.

Hierochloe ecklonii (Nees & Trin.) Nees
= **Anthoxanthum ecklonii**

(HIPAGROSTIS)

Hippagrostis burmannii (Retz.) Kuntze
= **Oplismenus burmannii**
composita (L.) Kuntze = **O. compositus**
hirtella (L.) Kuntze = **O. hirtellus**
loliacea (Lam.) Kuntze = **O. hirtellus**
setaria (Lam.) Kuntze = **O. compositus**
undulatifolia (Ard.) Kuntze = **O. undulatifolius**

HOLCOLEMA / 2

Genus of 3 species: 2 in East Africa, 1 in India, Sri Lanka, NE Australia.

Holcolemma canaliculatum (Nees ex Steud.) Stapf & C. E. Hubb. – Icon.: *Bull. Misc. Inform. Kew* 1929: 245, 1929 (as *H. transiens*); *Fl. Trop. E. Afr., Gramin.* 3: 519, 1982 (idem).

bas.: *Panicum canaliculatum* Nees ex Steud.

syn.: *Setaria transiens* K. Schum.; *Holcolemma transiens* (K. Schum.) Stapf & C. E. Hubb.; *Hemigynia canaliculata* (Nees ex Steud.) Alston; *World Checklist of Selected Plant Families*, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass; culms slender, erect, 60 cm tall; leaf blades linear, to 20 cm × 3–5 mm; panicle spiciform, 5–12 cm long, interrupted, branchlets very short, appressed, lower branchlets reduced to clusters of spreading bristles to 1 cm long, these becoming shorter and inconspicuous in upper part of panicle; spikelets oblong, c. 3 mm long.

Ecology not recorded; “near sea”, “Masai highlands”.

India, Sri Lanka.

H. inaequale Clayton; *Fl. Trop. E. Afr., Gramin.* 3: 518, 1982. – Icon.: Thulin, *Fl. Somal.* 4: 236, 1995.

Perennial loosely tufted grass; culms geniculately ascending from a knotty rootstock, 30–60 cm tall; leaves linear, 4–15 cm × c. 3 mm; panicle subspiciform, 5–17 cm long, interrupted, with very short appressed branchlets terminating in a bristle 2–5 mm long; spikelets lanceolate, c. 3 mm long.

Clayey soils in coastal bushland; degraded bushland; coastal grassland; 10–200 m alt.

(HOLCUS)

Holcus bicolor L. = **Sorghum bicolor**
contortus (L.) Stuck. = **Heteropogon contortus**
distachyos (L.) Roem. & Schult.
= **Andropogon distachyos**
halepensis L. = **Sorghum halepense**
latifolius Osbeck 1757 = **Centotheca lappacea**
liburnicus Scop. = **Andropogon distachyos**
parviflorus R. Br. = **Capillipedium parviflorum**
racemosus Forssk. = **Pennisetum glaucum**
saccharatus L. = **Sorghum bicolor**
serratus Thunb. = **Brachiaria serrata**

(HOMALOCENCHRUS)

Homalocenchrus angustifolius Kuntze = **Leersia angustifolia**
hexandrus (Sw.) Kuntze = **L. hexandra**

(HOMOEATHERUM)

Homoeatherum chinense Nees = **Andropogon chinensis**

(HOMOPOGON)

Homopogon chevalieri Stapf = **Trachypogon chevalieri**

HOMOZEUGOS / 6

Genus of 6 species in Central Africa. Key by Clayton in Garcia de Orta, Sér. Bot. 1: 12, 1973.

GUALA, G. F. (2000). The relation of space and geography to cladogenic events in Agenium and Homozeugos (Poaceae: Andropogoneae) in South America and Africa. In: JACOBS, S. W. L. & J. EVERETT, eds., *Grasses: Systematics and Evolution*: 159–164.

No ecology is recorded for 3 species; 4 species are known only from the type.

Homozeugos conciliatum Guala – Icon.: Novon 12: 197, 2002.

Perennial tufted grass; rhizomes short, knotty; culms c. 1 m tall, nodes villous; leaf blades linear, 13–59 cm × 2–5 mm, *inrolled*, ligule 1,4–5,4 mm long (cf. *H. eylesii*: 4–20 mm); inflorescence of 4–5 racemose segments, each 8,5–14,5 cm long, with 20–35 spikelets, pedicels c. 5 mm long; glumes of spikelets 7–8 mm long; awn 1,5–2,4 cm long, hirsute to villous.

Ecology uncertain; frequent at a single locality; c. 1710 m alt.

Known only from the type collected in 1969.

Resembling *H. eylesii*.

“The name is a plea for peace and reconciliation in Angola”. Collected at the site of the most intense fighting (Huambo).

H. eylesii C. E. Hubb. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 712, 1982; Fl. Zambes. 10/4: 16, 2002; Burrows & Willis, Pl. Nyika Plateau Malawi: 349, 2005.

Perennial tufted grass; culms 1–2 m tall; leaf blades linear, flat, 10–40 cm × 1–4 mm, tip filiform, flexuous, *ligule 4–20 mm long*, adnate to sheath auricles; inflorescence of 1–4 racemes, each 8–20 cm long, white villous; spikelets ± linear; callus 1,5–2 mm long; glumes 6,5–8 mm long, white villous; *awn 1,5–3 cm long*, puberulous.

Brachystegia wooded grassland; open forest; 1220–1750 m alt.

H. fragile Stapf – Icon.: Hooker’s Icon. Pl. 31: pl. 3033, 1915.

Perennial densely tufted grass, innovations intravaginal; culms to c. 90 cm tall, terete, glabrous except towards inflorescences, base surrounded by firm persistent leaf sheaths, these densely silky hairy, nodes densely bearded; auricles 1–3 mm long; blades linear, > 30 cm × 2–5 mm, tapering into a fine point, glabrous above, densely silky beneath, midrib well marked; inflorescence embraced at base by uppermost leaf sheath, of 3–5 subsessile racemes, each 7,5–10 cm long, *very fragile*; spikelets ± linear, *1,5–2 cm long* incl. callus (3–4 mm); glumes lanceolate-oblong, 7–10 mm long, densely silky hairy, hairs increasing in length upwards; awn c. 7,5 cm long.

Ecology not recorded.

Known only from the type (Gossweiler 4029).

H. gossweileri Stapf

Perennial tufted grass; culms to 75 cm tall, *2-noded*; leaf sheaths terete, glabrous or hirsute upwards, uppermost node bearded; blades terete, junciform, to c. 30 cm × < 0,5 mm, hirsute near base; *raceme solitary*, c. 12,5 cm long, exserted, not very fragile; joints c. 8 mm long, glabrous; pedicels shorter, ciliate; spikelets c. 1,3 cm long incl. callus (3 mm long); glumes whitish-villous, hairs 2–4 mm long; awn c. 3 cm long, loosely hairy.

Ecology not recorded.

Known only from the type (Gossweiler 2586).

HOMOZEUGOS

H. huillense (Rendle) Stapf in Hooker’s Icon. Pl. 31: pl. 3033, 1915.

bas.: *Pollinia huillensis* Rendle

syn.: *Pogonatherum huillense* (Rendle) Roberty

Perennial grass from a nodose creeping rhizome; culms 45 cm tall, slender, glabrous, *4–5-noded*; leaf sheaths glabrous, tight, terete, the *uppermost bearded* at nodes; blades junciform, *terete*, to 45 cm × c. 3 mm Ø at base; panicle of 3 *racemes* on a very short common axis, each to 10 cm long; joints ± filiform, c. 4 mm long, ciliate, upper cilia to > 4 mm long; spikelets oblong, c. 7–8 mm long, greyish tinged purple; glumes hairy, 6–8 mm long; awn c. 2,5 cm long, tightly spirally twisted, hairy.

Thicket-grown pastures; very sparingly.

Known only from the type: Welwitsch 2669.

H. katakton Clayton; Fl. Zambes. 10/4: 17, 2002; Guala in Novon 12: 198, 2002.

Perennial tufted grass; culms 1,2–1,9 m tall; leaf sheaths glabrous, with auricles 1–2,5 cm long; blades linear, flat or involute, to 60 cm × 2–6 mm, tip filiform, flexuous; inflorescence of 2–4 racemes, each 16–20 cm long, ± sessile, white villous; spikelets linear, 7–10 cm long, with *callus 3–4 mm long*, pungent; glumes 0,7–1 cm long, pilose; *awn 3,5–7,5 cm long*, hirtellous.

Savanna woodland; 1000 m alt.

HORDEUM / 1

Genus of 32 (30–40) species, annual or perennial, in temperate and arid regions, and also in subtropical mountains of the world. It includes cultivated barley (*H. vulgare* L. 1753), one of the most important crop plants in the world (Allel & al. in S. Afric. J. Bot. 112: 1–10, 2017; Ferrer-Gallego & Fabado in Phytotaxa 536: 92, 2022).

BOTHMER, R. VON & al. (2000). *Hordeum*. The World Biodiversity Database. CD-Rom. Springer Verlag.

EL RABEY, H. & al. (2009). Assessing the phylogenetic relationships in some species of the genus *Hordeum* L. using biochemical and molecular markers. *Taeckholmia* 29: 1–14.

Hordeum murinum L. subsp. **leporinum** (Link) Arcang.; Boulos, Fl. Egypt 4: 207, 2005; Cope, Fl. Arab. Penins. 5/1: 71, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 306, 2010; Phytotaxa 501: 229, 2021 (Tanzan., Kilimanjaro). – Icon.: van Oudtshoorn, Guide grasses south. Afr., ed. 3: 75, 2012; León & al. in Acta Bot. Malacit. 39: 312, 2014 (spikelet); Weber, Invasive plant species of the World, ed. 2: 222, 2017; Anon. in Newsl. Essex Bot. Soc. (Essex Bot.) 13: 11, 2021 (as *H. leporinum*; spikelet).

bas.: *H. leporinum* Link

syn.: World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual tufted grass; culms 10–50 cm tall, erect or geniculately ascending; leaf sheaths auricled; blades 2–15 cm long, 2–8 mm wide, *green* (not glaucous); inflorescence 2–12 cm long, oblong in outline, firmly compressed; spikelets 3 at each node of the rachis, c. 1 cm long; lemma c. 1 cm long, tapering to an awn 1–4 cm long; anthers of central spikelet 0,7–1,4 mm long (not 0,2–0,5 mm). – Data given here within brackets refer to subsp. *murinum*. – The subspecies can only be distinguished through inconspicuous spikelet characters.

Cultivated graras. Occurs as a weed, especially in S. Africa.

HORDEUM MURINUM

Azores, Madeira, Canary Isl., Europe, Mediterranean region, E-wards to C Asia & W Himalaya (map in Weber, l.c.).

EL RABEY, H. (2008). Molecular taxonomy of Egyptian *Hordeum murinum* L. complex as revealed by RAPD-PCR and seed storage protein electrophoresis. *Taekholmia* 28: 57–76.

Not mapped by us.

[**H. vulgare** L.]; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 260, 1994; Fl. Eth. & Eritrea 7: 59, 1995; Boulos, Fl. Egypt 4: 204, 206, 2005; Brink & Belay, eds., Plant resources of tropical Africa 1, Cereals & pulses: 82–83, 2006 (with map of cultivation in Africa); Cope, Fl. Arab. Penins. 5/1: 68, 70, 2007; Dobignard & Chatelain, Index synonym. fl. Afr. N. 1: 306, 2010.

syn.: *H. hexastichon* L.; *H. sativum* Jess.; *H. sativum* Pers.; *H. tetrastichum* Stokes; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Annual grass; culms to 90 cm tall; leaf sheaths glabrous with large overlapping auricles at apex; blades linear-lanceolate, 5–40 × 0,5–1,5 cm; inflorescence a terminal oblong-linear spike 5–30 cm long with groups of 3 spikelets attached alternately; spikelets 1-flowered; fertile lemma c. 1 cm long, ending in an awn to 15 cm long.

Wild barley has been classified as subsp. *spontaneum* (C. Koch) Thell. (bas.: *H. spontaneum* C. Koch), cultivated forms as subsp. *vulgare*. Hybrids between wild and cultivated types are easily obtained and occur naturally where the two grow together (for the barley genome, see Mascher & al. in Nature 544: 427–433, 2017).

Barley was domesticated in W Asia before 7000 BC. Cultivation spread to N Africa, and moving upwards the Nile into Ethiopia where it became one of the major cereals. It has been grown there at least 5000 years (Brink & Belay, l.c.).

Ethiopia is a centre of diversity for barley. It is cultivated also in the oases of Sahara, in N Nigeria and the highlands of E. Africa, Mozambique and Zambia on a small scale (Fl. Zambes. 10/1: 66, 1971).

FULLER, D. Q. & al. (2019). Comparing the tempo of cereal dispersal and the agricultural transition: two African and one West Asian trajectory. In: EICH-HORN, B. & A. HÖHN, Eds., *Trees, grasses and crops*: 119–140. Verlag Dr. Rudolf Habelt GmbH, Bonn [*Hordeum* p. 135].

KOMATSUDA, T. (2014). The genetics of inflorescence architecture in *Hordeum*. *J. Syst. Evol.* 52: 779–782.

SYNONYMS (cited):

Hordeum hexastichon L. = ***Hordeum vulgare***
leporinum Link = ***H. murinum*** subsp. ***leporinum***
sativum Jess. = ***H. vulgare***
sativum Pers. = ***H. vulgare***
spontaneum C. Koch = ***H. vulgare*** (subsp. ***spontaneum***)
tetrastichon L. = ***H. vulgare***

(*HOUZEAUBAMBUS*)

Houzeaubambus borzii (Mattei) Mattei
 = ***Oxytenanthera abyssinica***

HUBBARDOCHLOA / I

Monotypic genus, in central Africa.

Hubbardochloa gracilis Auquier – Icon.: Bull. Jard. Bot. Natl. Belg. 50: 243, 1980; Troupin, Fl. Rwanda 4: 281, 1988; Fl. Zambes. 10/2: 201, 1999.

Annual loosely tufted grass; culms 4–17 cm tall, erect or geniculate ascending, very slender, usually branched from lower nodes; leaf blades pseudopetiolate, linear-lanceolate, 0,6–1,5 cm × 1–5 mm, flat (involute when dry), apex acute; panicle 2,5–3 cm long, obovate; branches delicate, ± spreading, filiform, spikelets often secund; *spikelets 1-flowered*, c. 1,3 mm long; lemma with awn 3,5–7,5 mm long.

Brachystegia woodland on rocky slopes; c. 1400–c. 1700 m alt.

HUMBERTOCHLOA / I

Genus of 2 species: 1 in Tanzania, 1 in Madagascar.

Humbertochloa greenwayi C. E. Hubb. – Icon.: Hooker's Icon. Pl. 34: pl. 3387, 1939; Fl. Trop. E. Afr., Gramin. 1: 37, 1970.

Culms slender, erect, to 1 m tall, minutely pubescent or glabrous, branched upwards; leaf blades ± ovate, acuminate, 6–9 × 1–3 cm, margins stiffly ciliate, auricles 3–6 mm long, obtuse, false petiole c. 2 mm long; inflorescences terminal, unisexual; male inflorescence 2,5–3 cm long, green, primary axis 4–5 mm wide; racemes 7–9, rachis c. 2 mm long; spikelets oblong, 4–5 mm long; female inflorescence 4–7 cm long, green; primary axis 7–10 mm wide; racemes 4–6, rachis 6 mm long; spikelets ± ovate, c. 1 cm long.

Forest with *Olyra latifolia*, in dense shade of secondary evergreen forest on pale red sandy soil; 300 m alt.

Distinguished by the unisexual inflorescences.

Known only from the type collected in 1937.

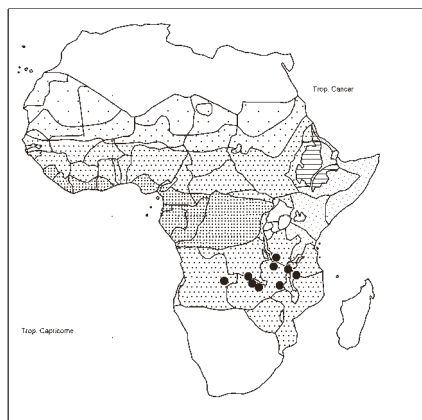
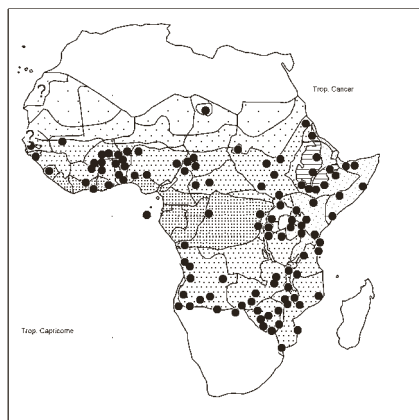
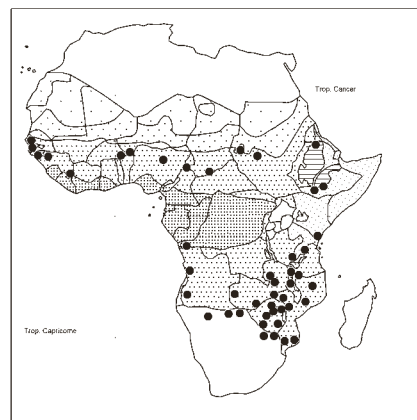
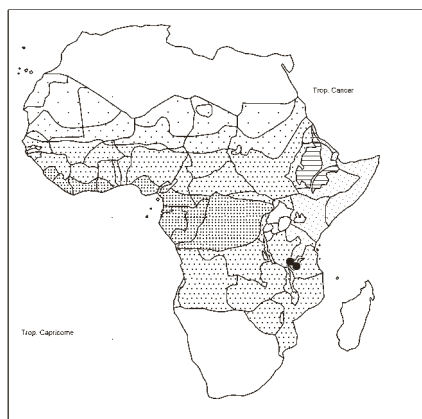
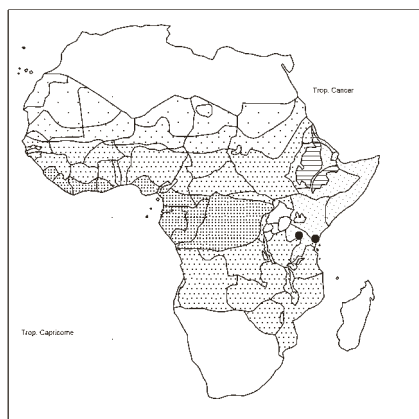
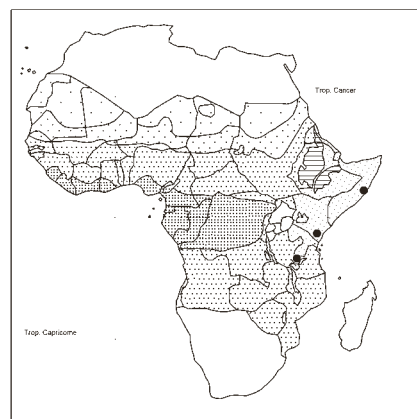
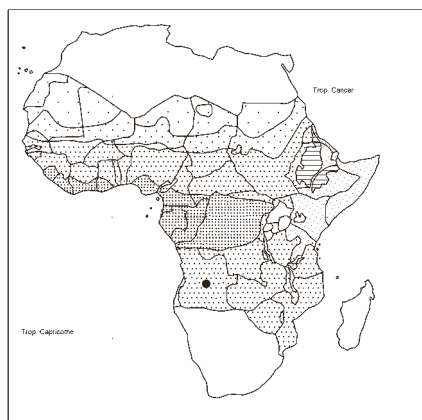
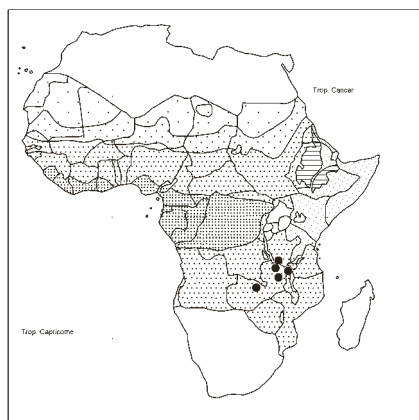
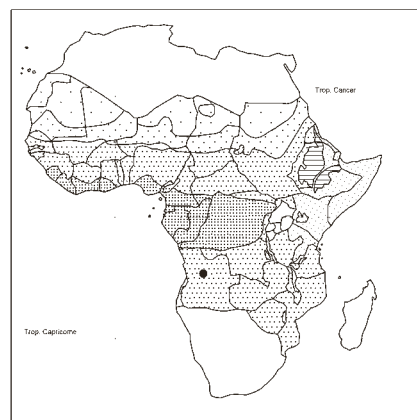
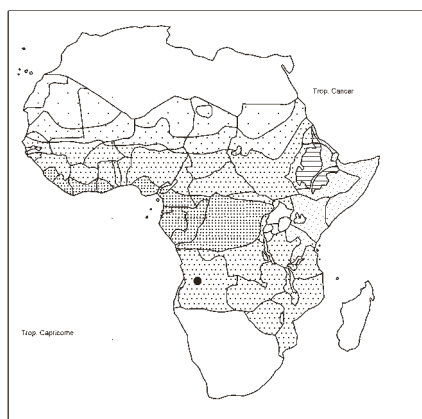
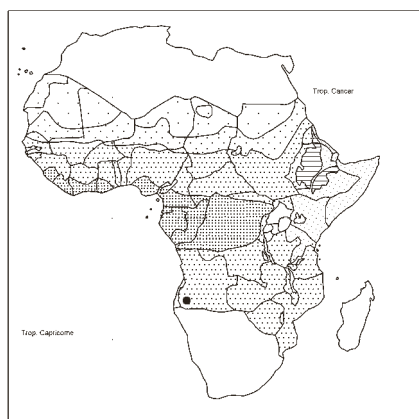
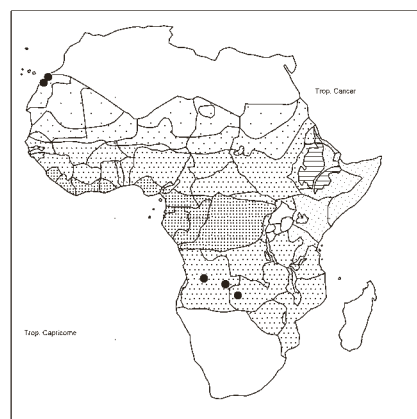
HYDROTHAUMA / I

Monotypic genus related to *Sacciolepis*.

Hydrothauma manicatum C. E. Hubb. – Icon.: Hooker's Icon. Pl. 35: pl. 3458, 1947; Fl. Zambes. 10/3: 47, 1989; Cook, Aquat. pl. book: 151, 1996.

Aquatic annual grass; culms 0,1–1 m long, mostly submerged, branching at lower nodes; leaf blades *floating*, the lower on long (c. 9 cm) false petioles, blades to 10 cm long, 3 mm wide, upper surface raised into sinuous longitudinal lamellae; inflorescence a slender spike-like panicle with paired spikelets, sometimes reduced to a unilateral raceme to 6 cm long; spikelets narrow, 2-flowered, c. 2 mm long.

Shallow pools on rock and ironstone outcrops; among *Bothriocline macrocephala* and *Rotala myriophylloides*; 1200–1650 m alt. (See Lisowski & Malaisse in Symoens, Groupements végétaux... du plateau des Kundelungu, Exploration hydrobiologique ... bassin du Lac Bangweolo, Cercle hydrolique Bruxelles 18/1, 1989).

*Heteropholis sulcata**Heteropogon contortus**Heteropogon melanocarpus**Hickelia africana**Holcolemma canaliculatum**Holcolemma inaequale**Homozeugos conciliatum**Homozeugos eylesii**Homozeugos fragile**Homozeugos gossweileri**Homozeugos huillense**Homozeugos katakton*

HYLEBATES / 2

Genus of 2 species in E Africa. “Outwardly resembling *Panicum*, but it has a shortly awned lower lemma, and a *Digitaria*-like upper lemma whose margins overlap in front of the palea” (Fl. Trop. E. Afr., Gramin. 3: 660, 1982).

Prostrate annuals; base of leaf blades wrapping around the stem; inflorescence with branched branches; spikelets minute, < 2 mm long; glumes thin, membranous (Kellogg in K. Kubitzki, ed., Fam. & genera vascul. pl. 13: 325, 2015).

Hylebates chlorochloe (K. Schum.) Napper – Icon.: Fl. Trop. E. Afr., Gramin. 3: 661, 1982.

bas.: *Panicum chlorochloe* K. Schum.

Perennial scrambling grass; culms 0,9–1,2 m tall; leaf blades narrowed, rounded or subcordate at base, 5–30 × 0,5–4 cm; panicle ovate, 10–30 cm long; spikelets on short pedicels, tending to cluster about primary branches; spikelets often purplish, ± glabrous; lower lemma with awnlet 0,3–1 mm long.

Shady places in forest or bushland; 50–1600 m alt.

H. cordatus Chippind. – Icon.: Fl. Zambes. 10/3: 127, 1989.

Annual straggling grass rooting at lower nodes; culms 0,4–1,5 m long; leaf blades lanceolate, cordate and amplexicaule, 5–20 × 0,5–3,5 cm; panicle ovate, 8–25 cm long, effuse; spikelets on long capillary pedicels; spikelets c. 3 mm long; lower lemma with awnlet 0,5–1 mm long.

Woodland, riverine forest, thickets in shade; 400–1300 m alt.

HYMENACHNE / 1

Genus of c. 10 pantropical grasses found in swampy environments – culms filled with aerenchyma.

Hymenachne wombaliensis Vanderyst in Bull. Agric. Congo belge 10: 249, 1919. – Icon.: Jacques-Félix, Les Graminées d’Afrique tropicale 1: 253, 1962 (I.R.A.T., Bull. Sci. 8), details. – Later published by Robyns in Bull. Jard. Bot. État Bruxelles 9: 183, 1932.

Perennial grass; culms 0,8–1,5 m tall, rooting at lower nodes, then erect, simple, rounded; leaf blades linear, 20–30 × 0,5–1 cm, apex long attenuate; inflorescence a spike-like panicle, erect, lanceolate, glabrous, 20–40 cm long, often interrupted at base; primary branches narrowly appressed to the common axis, the ultimate branchlets filiform with groups of 3–8 spikelets; these ± lanceolate, c. 4 mm long, glabrous.

Swampy ground.

Near *Sacciolepis*.

HYPARRHENIA / 55

Essentially an African genus of some 56–58 species of tall grasses, a few species extending to other tropical or warm temperate regions.

Basic reference: W. D. Clayton, A revision of the genus Hyparrhenia. *Kew Bull., Add. Ser.* 2: 1969.

“*Hyparrhenia* is a genus in which hybridization, apomixy and polyploidy seem to have combined to produce a mosaic of intergrading species. As a result it is often difficult to define sharp

HYPARRHENIA

boundaries between taxa, and intermediate specimens are to be expected” (Clayton & Renvoize, Fl. Trop. E. Afr., Gramineae 3: 788, 1982).

No ecology is recorded for 1 species (*H. neglecta*), and 4 species are known only from the type gathering.

Hyparrhenia anamesa Clayton; Gibbs Russell & al., Grasses south. Afr.: 184, 1990; Fl. Eth. & Eritrea 7: 341, 1995. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 801, 1982; Clayton, Revision: 86, 1989; Fl. Zambes. 10/4: 112, 2002; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 258, 2012 (inflor.); Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013.

Perennial rhizomatous tufted grass; leaf blades linear, to 40 cm × 4 mm, harsh; culms 0,6–1,5 m tall; inflorescence a false loose panicle 15–45 cm long; racemes 1,5–2,5 cm long, 4–7-awned per pair, white-villous; spikelets c. 6 mm long; awn of sessile spikelet 2,5–4 cm long.

Dry soils; open places (grassland, pastures, grassy glades in woodland, tall fired grassland); 0–2500 m alt.

Botswana, S. Africa, Lesotho, Swaziland.

H. andongensis (Rendle) Stapf; Clayton, Revision: 102, 1989.

bas.: *Cymbopogon andongensis* Rendle

syn.: *Andropogon andongensis* (Rendle) K. Schum.

Perennial grass with a creeping branched rhizome; culms 80 cm tall, wiry; leaf blades linear, to 22 cm × 2–4 mm, puberulous above; spathate panicle c. 30 cm long, loose, ± scanty; racemes 2,5 cm long, 4–5-awned per pair; spikelets c. 7 mm long; awn of sessile spikelet c. 2 cm long.

Wooded rocky places.

Known only from the type collected in 1857.

H. anemopaegma Clayton; Clayton, Revision: 154, 1989; Fl. Zambes. 10/4: 129, 131, 2002.

Annual slender grass; culms to 90 cm tall; leaf blades linear, to 25 × 1 cm; false panicle scanty, of 3–10 raceme-pairs in 3–4 distant tiers; racemes c. 2 cm long, 4–6-awned per pair; spikelets 1–1,5 cm long; awns of sessile spikelet 7,5–11 cm long.

Riverine grassland; open areas in *Erythrophleum* woodland on sandy soil; 610–760 m alt.

H. anthistirioides (Hochst. ex A. Rich.) Andersson ex Stapf; Clayton, Revision: 106–110, 1989; Thulin, Fl. Somal. 4: 265, 1995. – Icon.: Fl. Eth. & Eritrea 7: 342, 1995; Fl. Zambes. 10/4: 114, 2002.

bas.: *Andropogon anthistirioides* Hochst. ex A. Rich.

syn.: *Anthistiria pseudocymbaria* Steud.; *A. quinqueplex* Steud.; *Hyparrhenia quinqueplex* (Steud.) Andersson; *H. pseudocymbaria* (Steud.) Stapf; *Sorghum anthistirioides* (Hochst. ex A. Rich.) Kuntze

Annual grass; culms 0,3–2 m tall, geniculate or ascending, often with stilt-roots from lower nodes; leaf blades c. 30 × 1 cm, glabrous; false panicle ample, 20–30 cm long, sometimes reduced to a few pairs of racemes; *spathes and spatheoles brightly streaked with green, yellow or orange-brown*; racemes c. 1 cm long, 3–5-awned per pair; spikelets 5–6 mm long; awns of sessile spikelet 3–4,5 cm long.

A pioneer species of open or disturbed places; common on both volcanic and basement complex soils, especially moist soils or fallow land; waste places; volcanic outcrops; weed of sorghum fields; 700–2400 m alt.

HYPARRHENIA

H. arrhenobasis (Hochst. ex Steud.) Stapf; Clayton, Revision: 154–155, 1969; Fl. Eth. & Eritrea 7: 350, 1995.

bas.: *Andropogon arrhenobasis* Hochst. ex Steud.

syn.: *A. papillipes* var. *major* Hochst. ex Steud.; *Heteropogon arrhenobasis* (Hochst. ex Steud.) Andersson; *Sorghum arrhenobasis* (Hochst. ex Steud.) Kuntze

Perennial tufted grass; culms 0,3–1,6 m tall; leaf blades 10–30 cm × 5 mm, glaucous; panicle spathate, of 2–10 raceme pairs; racemes compact, often branched, 1,5–2,5 cm long, 7–17-awned per pair, bases with yellow bristles; spikelets 5–11 mm long; awn of sessile spikelet 2,5–5 cm long.

Grassland, pastures, stony hillsides; common in the Ethiopian highlands; 2000–3000 m alt.

Introduced in the Canary Isl. (Dobignard & Chatelain, Index synonym. fl. Afr. N. 1, 307, 2010).

Recognised by the *pectinate-margined* homogamous spikelets, the arching yellow-bearded peduncles.

H. bagirmica (Stapf) Stapf; Clayton, Revision: 89–90, 1969; van der Zon, Gramin. Cameroun 2: 478–479, 1992; Schmidt & al., Phytotaxa 304: 116, 2017. – Icon.: Poilecot, Boissiera 56: 614, 1999; César & Chatelain, Fl. ill. Tchad: 260, 2019 (details).

bas.: *Cymbopogon bagirmicus* Stapf

syn.: *C. solutus* Stapf; *Andropogon bagirmicus* (Stapf) A. Chev.; *A. brachypodus* Stapf, nom. nud.; *Hyparrhenia soluta* (Stapf) Stapf

Annual grass; culms erect, 1,5–2 m tall; leaf blades linear, 30–40 cm × 3–5 mm; false panicle 20–80 cm long, with linear reddish spatheoles 5–8 cm long, and of racemes c. 2 cm long, these 6–9-awned per pair; spikelets c. 7 mm long; awn of sessile spikelet 4–8 cm long, with white or fulvous hairs.

Roadsides; old cultivations; savannas on sandy soils; muddy-clayey depression; abundant in Logone and Mid-Chari region, SW Chad.

H. barteri (Hack.) Stapf, *excl.* var. *calvescens* (Hack.) Stapf (= *H. figariana*); Clayton, Revision: 90–92, 1969; Fl. Trop. E. Afr., Gramin. 3: 800, 802, 1982; van der Zon, Gramin. Cameroun 2: 479–480, 1992; Fl. Zambes. 10/4: 110, 2002. – Icon.: César & Chatelain, Fl. ill. Tchad: 261, 2019.

bas.: *Andropogon barteri* Hack.

syn.: *Sorghum barteri* (Hack.) Kuntze

Annual grass; culms 1,5–2 m tall; leaf blades linear, to 30 cm × 4 mm; false panicle narrow, dense, 30–40 cm long of up to 8 fastigiate tiers one above the other; spatheoles linear, 3–4 cm long, reddish-brown; racemes c. 1 cm long, 2-awned per pair; spikelets c. 6 mm long; awn of sessile spikelet 4–4,5 cm long, column with rufous hairs.

Old farmland; roadsides on poor soils; *Brachystegia* wooded grassland; riverine grassland; roadsides; gravelly soils; indurate soils on plateau; deep soils of forest; around big termite mounds; 700–1280 m alt.

Easily recognized by the remarkably long hairs (3–5 mm) on the lower glume of the sessile spikelet.

H. bracteata (Humb. & Bonpl. ex Willd.) Stapf; Fl. Zambes. 10/4: 127–128, 2002; Sosef & al., Check-list pl. vascul. Gabon: 185, 2006; Fl. Eth. & Eritrea 1: 270–271, 2009. – Icon.: Engler & Prantl, Natürl. Pflanzenfam. 14e: 176, 1940.

bas.: *Andropogon bracteatus* Humb. & Bonpl. ex Willd.

HYPARRHENIA BRACTEATA

syn.: *A. nlemfuensis* Vanderyst, nom. prov. (1918) and in syn. (1923); *A. pilosovaginus* De Wild., pro syn.; *A. setifer* Pilg.; *Cymbopogon pilosovaginus* De Wild.; *C. setifer* (Pilg.) Pilg.; *Hyparrhenia contracta* Robyns; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial densely tufted grass; culms 0,6–2,5 m tall, glabrous; leaf blades linear, to 60 cm × 4 mm, rigid, pubescent beneath; sheaths hirsute to villous; spathate panicle narrow, dense, 20–60 cm long, the primary tiers with 3–4 compound rays, these bearing secondary and tertiary tiers; racemes c. 1 cm long, 2–4-awned per pair, dark purple; spikelets 4–7 mm long; awn of sessile spikelet 1–2,5 cm long.

Shallow drainage lines, wet grasslands; peat-bog; river sides in savannas; marshy places in open and wooded grasslands; 100 (Gabon)–2000 m alt.

Native to Africa (Asian collections belong to the closely related *H. newtonii*, fide Fl. Eth. & Eritrea 7: 271, 2009); tropical America from Mexico S to S. America.

Distinguished from *H. newtonii* by the denser panicle, smaller spikelets (4–7 mm long, not 6–10 mm), shorter awns (1–2,5 cm, not 2,2–5,5 cm). Both species have purple racemes framed in yellow hairs.

H. claytonii S. M. Phillips – Icon.: Kew Bull. 49: 541, 1994; Fl. Eth. & Eritrea 7: 342, 1995.

Perennial densely tufted grass from a knotty root-stock, *basal buds conspicuously white-tomentose*; culms slender, stiffly erect, c. 1 m tall; leaf blades cauline, linear, glaucous, 20–30 cm × 6–8 mm; spatheate panicle c. 25 cm long; spatheoles 2,5–3 cm long, *striped brown and yellow*; raceme-pairs 4-awned, white-villous; *sessile spikelets c. 5 mm long, villous*; awn c. 3,5 cm long, column with fulvous hairs.

Frequent in lower parts of S-facing slopes; grassland with evergreen and deciduous xeromorphic trees and shrubs; 2000–2100 m alt.

Known only from the type (Ash 2693).

Resembling *H. anthistirioides*, an annual with ± glabrous spikelets.

H. coleotricha (Steud.) Andersson ex Clayton; Fl. Trop. E. Afr., Gramin. 3: 812–813, 1982. – Icon.: Fl. Eth. & Eritrea 7: 349, 1995 (details); Cope, Fl. Arab. Penins. 5/1: 308, 2007.

bas.: *Andropogon coleotricha* Steud.

syn.: *A. anthistirioides* A. Rich. var. *procerus* Chiov.; *A. comosus* Hochst. ex A. Rich.; *Cymbopogon coleotrichus* (Steud.) Chiov.; *Hyparrhenia comosa* (Kuntze) Andersson ex Stapf; *Sorghum comosum* Kuntze

Annual grass; culms 1–2,5 m tall, base supported by stilt-roots; leaf blades to 30 cm long, 1,7 cm wide; false panicle narrow, loose, 20–30 cm long; spatheoles 4,5–7 cm long, pilose with white hairs; racemes 2–2,5 cm long, 4–8-awned per pair; sessile spikelet 7–9 mm long, white-hairy; awn 5–7 cm long.

Deciduous bushland on hill slopes, dry bushland; path sides, field margins, old cultivations; disturbed areas; 900–2500 m alt. Yemen.

H. collina (Pilg.) Stapf; Clayton, Revision: 130, 1969; Gibbs Russell & al., Grasses south. Afr.: 184, 1990; Fl. Zambes. 10/4: 124, 2002. – Icon.: Troupin, Fl. Rwanda 4: 287, 1987; Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013.

bas.: *Cymbopogon collinus* Pilg.

HYPARRHENIA COLLINA

syn.: *C. scabrimarginatus* De Wild.; *Andropogon scabrimarginatus* De Wild. 1919, nom. inval.; *A. collinus* Pilg. 1910, nom. illeg., non Lojac 1909; *Hyparrhenia scabrimarginata* (De Wild.) Robyns

Perennial loosely clumped grass from a short rhizome; culms 0,3–1,3 m tall, slender, wiry, 1–3 mm Ø; leaves filiform, to 30 cm × 2–5 mm; false panicle narrow, 15–40 cm long, of few racemes on equal stalks; spatheoles 2–4 cm long, ± glabrous; racemes 1–2 cm long, 4–7-awned per pair; sessile spikelet c. 5 mm long; awn 1,5–2,5 cm long.

Grassland, deciduous bushland, wooded grassland; damp soils; alluvial soils; heavy clays; 910–2300 m alt.

S. Africa.

Imperfectly separated from the closely related *H. rudis*, *H. dregeana*, and *H. tamba* (caespitose with culms > 3 mm Ø); cf. Fl. Eth. & Eritrea 7: 347, 1995.

H. confinis (Hochst. ex A. Rich.) Andersson ex Stapf, Fl. Eth. & Eritrea 7: 348, 1995 (3 vars.); Darbyshire & al., Pl. Sudan & S. Sudan: 132, 2015.

bas.: *Andropogon confinis* Hochst. ex A. Rich.

syn.: *Sorghum confine* (Hochst. ex A. Rich.) Kuntze

Annual grass; culms 1–2,5 m tall, supported by stilt root; leaf blades c. 30 cm long, 1,5 cm wide, narrowed at base; spatheate panicle narrow, loose, c. 30 cm long; spatheoles 3–4,5 cm long; racemes 2 cm long, 2-awned per pair, their bases white-setose; sessile spikelet oblong, 8–10 mm long; awn 4–9 cm long.

Heavy clay soils; plain; savanna; 1020–1100 m alt.

Comprises 3 vars. but their true status is uncertain: – var. **confinis**; – var. **nudiglumis** (Hack.) Clayton (bas.: *Andropogon confinis* var. *nudiglumis* Hack.; syn.: *Hyparrhenia petiolata* Stapf), with long raceme-base appendages; – var. **pellita** (Hack.) Stapf (bas.: *Andropogon confinis* var. *pellitus* Hack.), with lower glume of sessile spikelet silky-villous.

A little known species, rarely collected.

Reported by Renier (Fl. Kwango 1: 30, 1948) from Zaire, Kimbulu, Kisuku (? 5°15'S × 15°13'E) but the identity of this plant is unknown.

H. coriacea Mazade, incl. var. *sericea* Mazade – Icon.: Adansonia, Ser. 2, 18: 149, 1978.

Annual erect grass to 2,5 m tall; leaf sheaths glabrous; blades linear, glabrous, to 70 × 1,4 cm; panicle narrow, dense; spatheoles to 9 cm long, reddish, base bearded; racemes thick, 2-awned per pair; sessile spikelet 1,3–1,7 cm long; awn 12–16 cm.

Plateau; inselberg.

Related to *H. involucrata*.

H. cyanescens (Stapf) Stapf; Renier, Fl. Kwango 1: 30, 1948; Clayton, Revision: 120–121, 1969. – Icon.: van der Zon, Gramin. Cameroun 2: 486, 1992; Poilecot, Boissiera 50: 601, 1995; idem, ibid. 56: 615, 1999; Fl. Gabon 5b: 27, 1999; Vande weghe & al., Pl. à fleurs Gabon: 179, 2016; Ibrahim & al., Grasses Mali: 79, 2018; César & Chatelain, Fl. ill. Tchad: 261, 2019 (details).

bas.: *Cymbopogon cyanescens* Stapf

syn.: *Andropogon cyanescens* (Stapf) A. Chev.

Perennial erect or ascending grass from a short rhizome; culms 2–3 m tall, 4–8 mm Ø, sometimes supported by stilt roots; leaves mostly cauline; sheaths sometimes with auricles at mouth; blades linear, 15–50 cm × 3–8 mm, glabrous, greyish-glaucous, tapering at base; spatheate panicle diffuse, 30–60 cm long; spatheoles

HYPARRHENIA CYANESCENS

3,5–5 cm long, linear, glabrous, greyish becoming purple-tinged; racemes 1,7–2,5 cm long, 6–11-awned per pair; sessile spikelet c. 5 mm long; awn 2,8–3,4 cm long (one awnless specimen from Chad, Doba to Guidikou, i.e. Audru 738, known).

Moist alluvial soils often clayey; wooded savannas with *Andropogon gayanus*, *Hyparrhenia involucrata*, *Eragrostis tremula*, *Diheteropogon hagerupii*, *Loudetia hordeiformis*; swampy hollows, flooded areas with *Schizachyrium schweinfurthii*, *Andropogon gayanus* var. *gayanus*, *A. africanus*, *Panicum fluviicola*, *Coelorachis afraurita*, *Setaria sphacelata*.

H. cymbaria (L.) Stapf; Renier, Fl. Kwango 1: 29–30, 1948; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 64, 1955; Clayton, Revision: 110–113, 1969; Masharabu & al. in Adansonia, Sér. 3, 34: 160, 2012. – Icon.: Bosser, Gramin. patur. cult. Madag.: 252, 1969; van der Zon, Gramin. Cameroun 2: 481, 1992; Fl. Eth. & Eritrea 7: 344, 1995; Fl. Zambes. 10/4: 115, 2002; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 48, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013; Chorghé & al. in J. Japan. Bot. 96: 31–33, 2021 (lectotype).

bas.: *Andropogon cymbarius* L.

syn.: *A. lepidus* Nees, incl. var. *intonsus* (Nees) Hack. and var. *viridis* Chiov.; *A. cymbarius* var. *lepidus* (Nees) Stapf; *Cymbopogon elegans* Spreng. 1815, nom. superfl.; *C. lepidus* (Nees) Chiov.; *C. cymbarius* (L.) Thomson; *Hyparrhenia lepida* (Nees) Cufod.; *Anthistiria latifolia* Andersson; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial robust grass, in coarse tufts from a slender creeping rhizome clad in small cataphylls; culms 2–4 m tall, initially slender and rambling, then erect stout (to 8 mm Ø) sustained by stilt roots; leaf blades to 45–60 cm long, 0,6–2 cm wide; false panicle large, dense, much-branched, 20–40 cm long; spatheoles boat-shaped, red when ripe, 1–2 cm long; racemes c. 1 cm long, 3–6-awned per pair; sessile spikelet 3–6 mm long; awn 0,5–2 cm long.

Wooded grassland; open hillsides bordering evergreen forest; grassland, bushland; openings in forest; old lava plains; marshes in woods dried up in winter; stream banks; sometimes straggling among bushes; *Hagenia abyssinica* woodland; cultivated areas; common in tall grass savanna (upland); 480–2800 m alt.

S. Africa, Swaziland; Comoros, Madagascar; India.

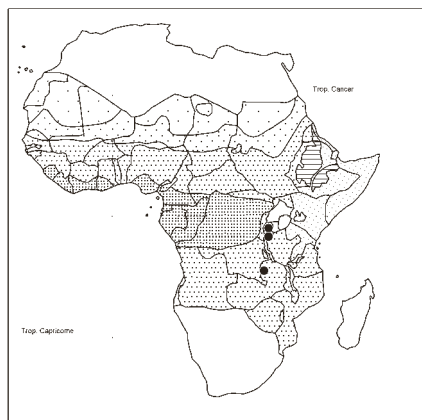
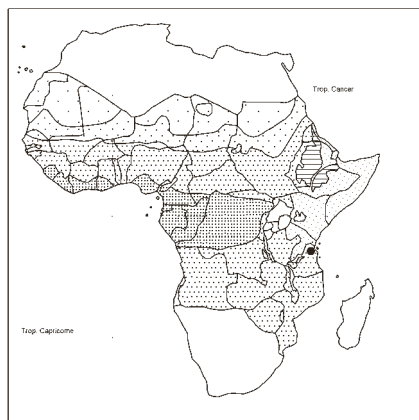
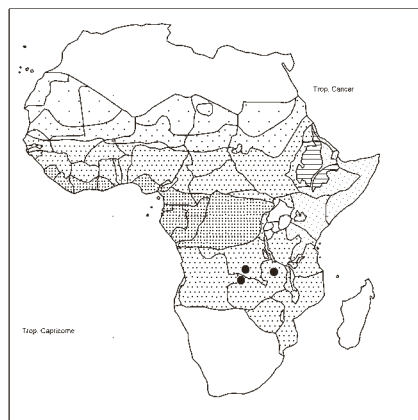
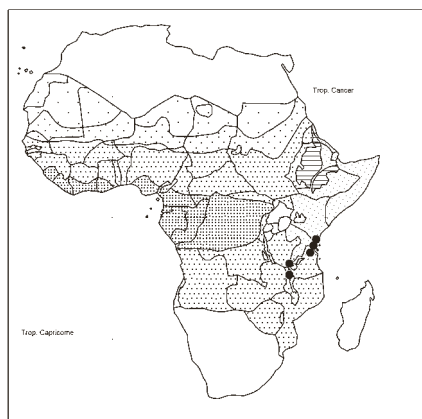
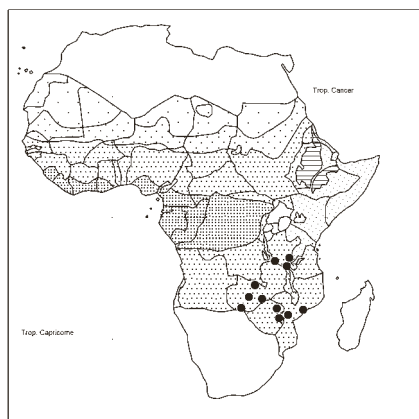
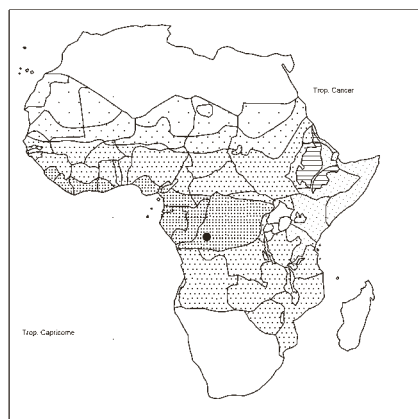
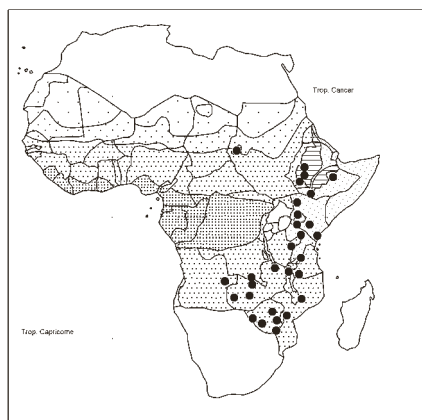
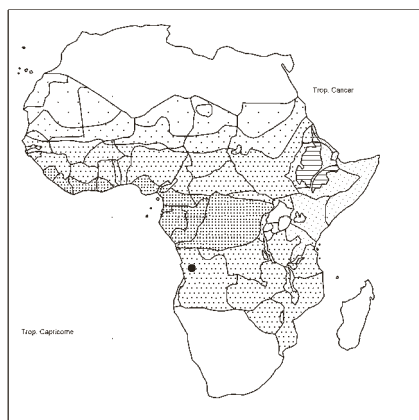
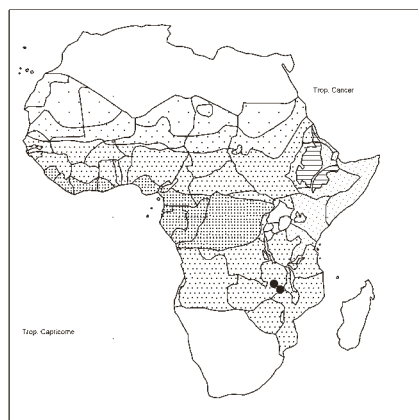
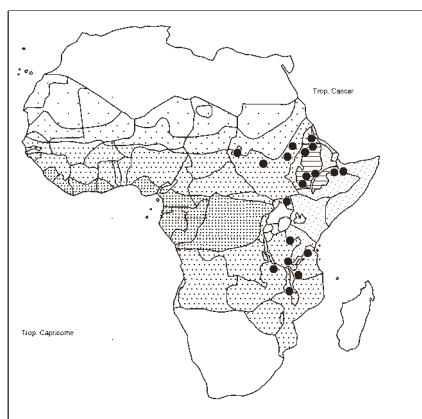
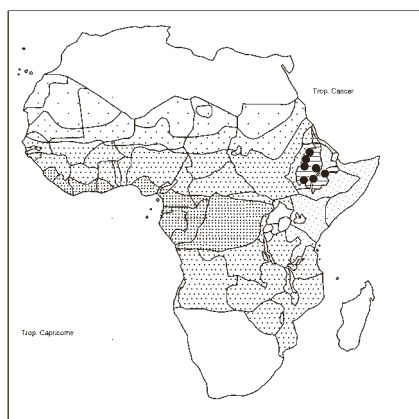
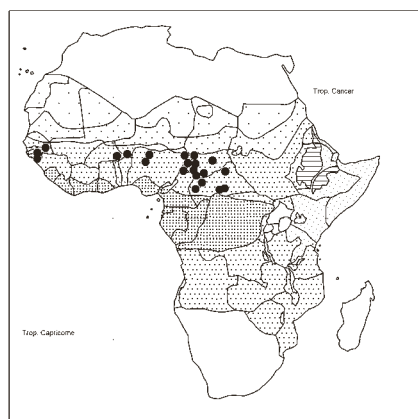
“*H. cymbaria* lies at the centre of an intergrading complex of forms subdivided ... into seven species” (Fl. Eth. & Eritrea 7: 343–344, 1995).

H. dichroa (Steud.) Stapf; Clayton, Revision: 68–69, 1969; Gibbs Russell & al., Grasses south. Afr.: 184, 1990; Lye & al. in Lidia 4: 169, 2000; Fl. Zambes. 10/4: 104–105, 2002. – Icon.: Troupin, Fl. Rwanda 4: 285, 1987; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 258, 2012 (in flor.).

bas.: *Andropogon dichroos* Steud.

syn.: *A. bicolor* Nees, nom. illeg.; *A. luembensis* De Wild., pro syn.; *Sorghum bicolor* (Nees) Kuntze 1891 nom. illeg., non Moench 1794; *Cymbopogon dichroos* (Steud.) Pilg.; *C. luembensis* De Wild.; *Hyparrhenia luembensis* (De Wild.) Robyns; *H. fastigiata* Robyns

Perennial tufted grass; culms to 3 m tall, stout; leaf blades rigid, to 60 cm long, 8 mm wide; false panicle 20–60 cm long, much branched; spatheoles 2–4 cm long, at length reddish; racemes 1–2 cm long, scarcely exerted from spatheole, 6–9-awned; sessile spikelet 4–5 mm long; awn 2–3 cm long.

*Hubbardochloa gracilis**Humbertochloa greenwayi**Hydrothauma manicatum**Hylebates chlorochloe**Hylebates cordatus**Hymenachne wombaliensis**Hyparrhenia anamesa**Hyparrhenia andongensis**Hyparrhenia anemopaegma**Hyparrhenia anthistirioides**Hyparrhenia arrhenobasis**Hyparrhenia bagirmica*

HYPARRHENIA DICHROA

Deciduous bushland, wooded grassland, especially in moist sites; *Brachystegia* woodland; weedy places, roadsides, old fallow land; 0–2500 m alt.

Namibia, Botswana, S. Africa, Swaziland. – Very rare in Uganda.

Very close to *H. rufa* with slightly longer and broader spatheoles.

H. diplandra (Hack.) Stapf, incl. var. *major* Vandyerst and var. *mutica* (Clayton) Cope; Renier, Fl. Kwango 1: 30, 1948; Fl. W. Trop. Afr., ed. 2, 3/2: 495, 1972 (as *H. mutica*); Sosef & al. in Pl. Ecol. Evol. 152: 102, 2019 (var. *mutica*). – Icon.: Clayton, Revision: 163 (*H. mutica*), 166, 170–172 (*H. diplandra*), 1969; Fl. Gabon 5: 183, 1962; van der Zon, Gramin. Cameroun 2: 486, 1992 (*H. mutica*); Poilecot, Boissiera 50: 603 (*H. mutica*), 607 (*H. diplandra*), 1995; idem, ibid. 56: 617, 1999 (idem); Fl. Zambes. 10/4: 133, 2002 (var. *mutica*); Friis & al. in Symb. Bot. Upsal. 35/2: 126, 2011; Vande weghe & al., Pl. à fleurs Gabon: 479, 2016. – Pl. 35.

bas.: *Andropogon diplandrus* Hack.

syn.: *A. osikensis* Franch.; *A. pachyneuros* Franch.; *A. obscurus* K. Schum.; *A. phoenix* (Rendle) K. Schum.; *A. vulgaris* Vandyerst, nom. provis., incl. var. *glaucus* Vandyerst, nom. provis., and var. *major* Vandyerst, pro syn.; *A. eberhardtii* (A. Camus) Merr.; *A. kapandensis* De Wild., pro syn.; *Cymbopogon diplandrus* (Hack.) De Wild.; *C. phoenix* Rendle; *C. kapandensis* De Wild.; *Hyparrhenia pachystachya* Stapf; *H. takaensis* Vandyerst, nom. provis.; *H. mutica* Clayton; *H. eberhardtii* (A. Camus) Hitchc.; *Sorghum diplandrum* (Hack.) Kuntze

Perennial coarse tufted grass; culms 2–3 m tall; leaf blades linear, 20–60 × 0,3–1 cm, midrib broad, white; spatheate panicle narrow, 20–40 cm long; spatheoles reddish, 2–6 cm long; racemes 2–3 cm long, 3–8-awned per pair; sessile spikelet 6–9 mm long; awn 2–5,5 cm long (var. *mutica* awnless).

Moist places on clay in deciduous bushland and wooded savanna; permanent swamp with scattered shrubs, grasses and sedges; stony hillsides; crusts; red sands; gravelly soils; cultivations; 0–2100 m alt.

S. Tomé; Madagascar; S China, SE Asia (Indo-China), Indonesia.

H. mutica was regarded as a separate species on account of the awnless sessile spikelet, and the difference in chromosome number (*H. mutica* 2n = 60; *H. diplandra* 2n = 20). The two variants often occur in mixed populations ± throughout the range of the species (Fl. Zambes. 10/4: 132, 2002).

H. dregeana (Nees) Stapf ex Stent; Clayton, Revision: 124–126, 1969; Fl. Zambes. 10/4: 121–122, 2002; Klaassen & Craven, Checklist grasses Namibia: 50, 2003; Cope, Fl. Arab. Penins. 5/1: 309, 2007; Agnew, Upl. Kenya wild flow., ed. 3: 448, 2013. – Icon.: Fl. Eth. & Eritrea 7: 346, 1995; Burrows & Willis, Pl. Nyika Plateau, Malawi: 351, 2005; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 258, 2012 (inflor.).

bas.: *Andropogon dregeanus* Nees

syn.: *A. pilosissimus* Hack.; *A. acutus* Stapf; *Hyparrhenia acuta* (Stapf) Stapf ex Stent; *H. elongata* Stapf; *H. phyllopoda* Stapf; *H. micrathera* (Pilg.) Pilg. ex Peter; *H. subaristata* Peter; *H. pilosissima* (Hack.) J. G. Anderson; *H. brachychaeta* Peter; *Sorghum pilosissimum* (Hack.) Kuntze; *Cymbopogon micrathetus* Pilg.

Perennial densely tufted grass with basal leaf sheaths silky hairy below; culms robust, 1–3 m tall, to 4 mm Ø; leaf blades filiform, to 60 × 0,3–1 cm, glabrous; false panicle narrow, 20–50 cm long, rather dense; spatheoles 2,5–5 cm long; peduncles 1,5–5 cm long;

HYPARRHENIA DREGEANA

racemes 2–3 cm long, 10–25-awned per pair, densely spiculate; sessile spikelet 4–5 mm long, ± villous; awn c. 1–2,8 cm long.

Grasslands; often in marshy ground; alongside streams; stony hillsides; seasonally damp depressions; meadow; 1000–3000 m alt.

Namibia, S. Africa, Swaziland, Lesotho; N Yemen. – Rare in Uganda (Lye & al. in Lidia 4: 169, 2000).

H. dybowskii (Franch.) Roberty; Clayton, Revision: 157–158, 1969. – Icon.: Jacques-Félix, Les Graminées d'Afrique Tropicale: 305, 1962 (Inst. Rech. Agron., IRAT, Bull. Sci. 8), details.

bas.: *Andropogon dybowskii* Franch.

syn.: *A. seretii* De Wild.; *Cymbopogon princeps* Stapf; *Dybowskia dybowskii* (Franch.) Dandy; *D. seretii* (De Wild.) Stapf

Annual stout grass; culms to ± 2 m tall; leaf blades to ± 30 × 1,2 cm; spatheate panicle c. 30 cm long, of 10–20 raceme-pairs clustered about the axis; spatheoles 6–9 cm long; racemes 3,5 cm long, 2-awned per pair; sessile spikelet linear, 1,6–2 cm long; awn 12–19 cm long.

Ecology unclear: lateritic crusts, or savanna, or near pond; fallows; on sandstone; sandy soils.

Conspicuous by the very large spikelets and stout awns.

H. exarmata (Stapf) Stapf; Clayton, Revision: 60, 1969; Agnew, Upl. Kenya wild flow., ed. 3: 448, 2013. – Icon.: van der Zon, Gramin. Cameroun 2: 473, 1992; César & Chatelain, Fl. ill. Tchad: 264, 2019 (details).

bas.: *Cymbopogon exarmatus* Stapf

syn.: *Andropogon rufus* var. *exarmatus* (Stapf) Stapf

Perennial or annual tufted grass; culms 1–1,5 m tall; leaf blades linear, to 60 cm × 2–4 mm; false panicle narrow, 20–40 cm long; spatheoles 3–6 cm long, reddish, with peduncles as long; racemes 1,5–3 cm long with 12–19 spikelets per raceme pair, awnless; sessile spikelet c. 4 mm long.

Savanna, bordering swampy soils; wooded grassland; flooded plain; hollows; ?–1500 m alt.

Not to be confused with specimens of *H. rufa* in which the awns have been suppressed by smut fungus attack.

H. familiaris (Steud.) Stapf; Renier, Fl. Kwango 1: 29, 1948; Clayton, Revision: 92–94, 1969; Sosef & al., Check-list pl. vascul. Gabon: 185, 2006; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30, 236, 2010; Darbyshire & al., Pl. Sudan & S. Sudan: 133, 2015. – Icon.: Poilecot, Boissiera 50: 591, 1995.

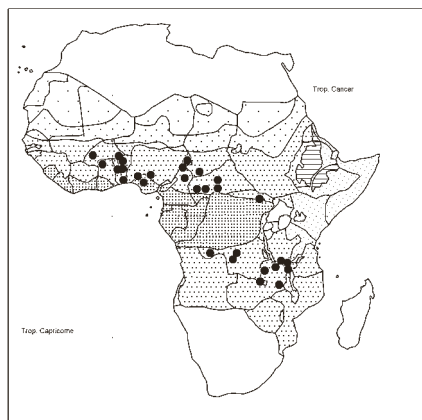
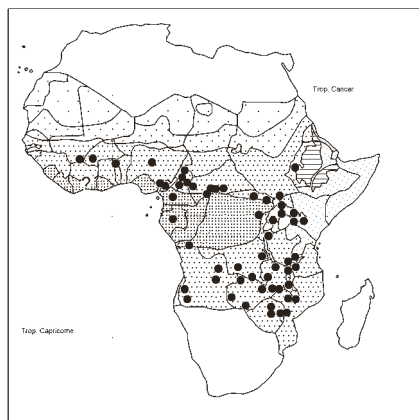
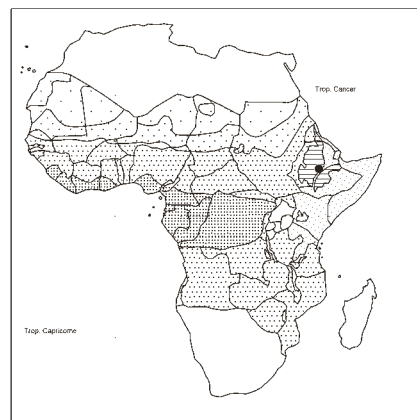
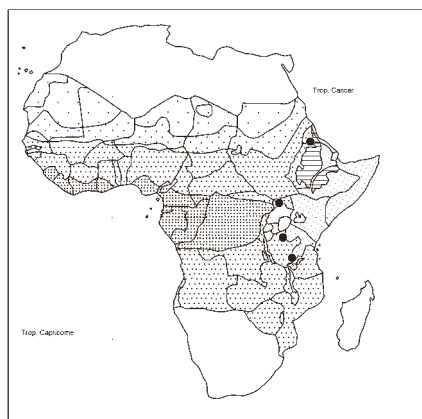
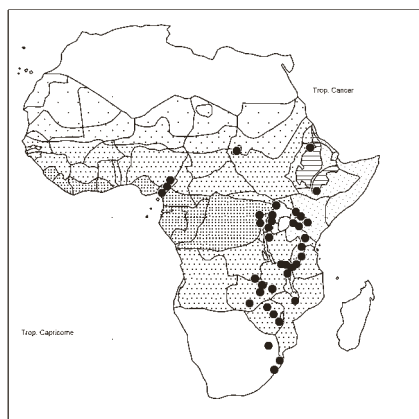
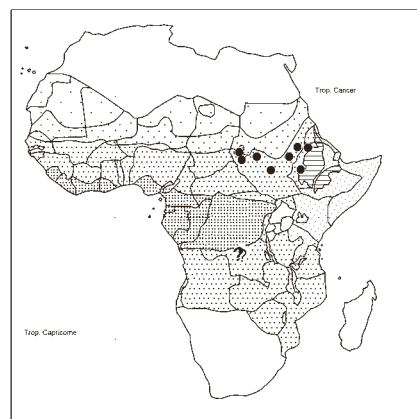
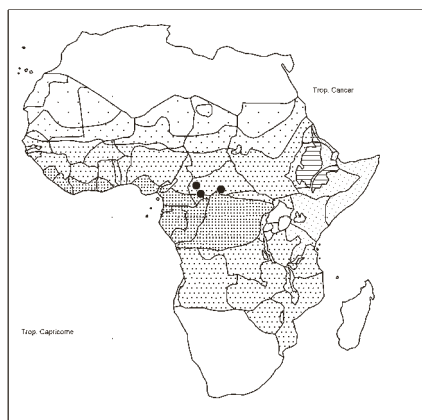
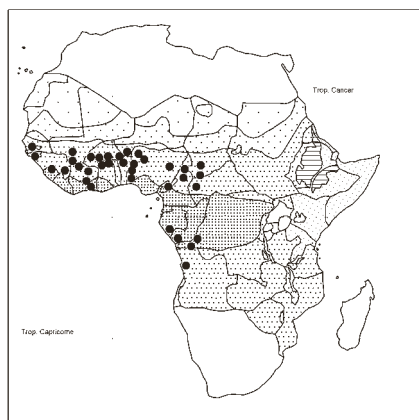
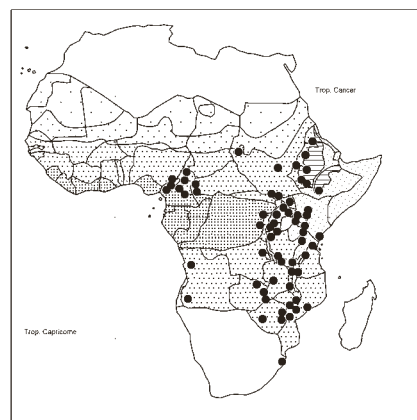
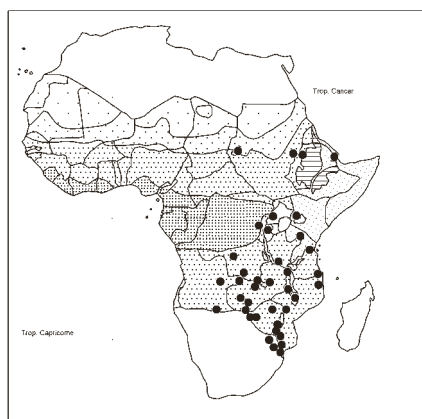
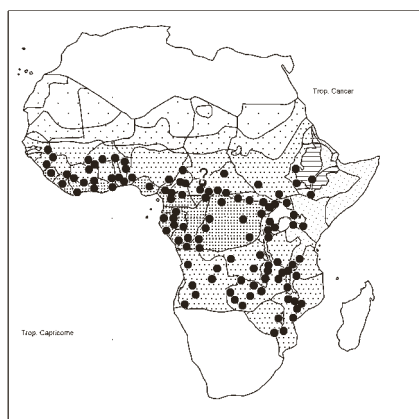
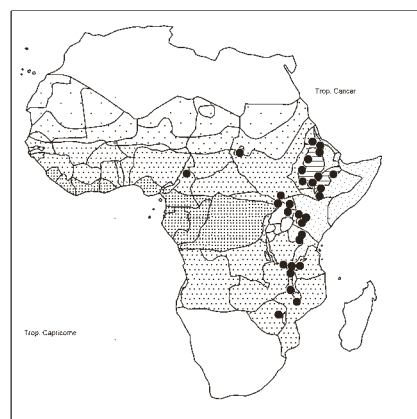
bas.: *Andropogon familiaris* Steud.

syn.: *A. kiwuensis* Pilg.; *A. familiaris* var. *levervilleensis* Vandyerst, nom. provis.; *A. lugugaensis* var. *levervilleensis* Vandyerst, nom. provis.; *Sorghum familiare* (Steud.) Kuntze; *Cymbopogon familiaris* (Steud.) De Wild.; *C. effusus* (Balansa) A. Camus; *Hyparrhenia effusa* (Balansa) A. Camus; *Themeda effusa* Balansa; *Anthistiria balansae* Crevost & Lemarié

Perennial densely tufted grass; culms 0,5–1,5 m tall; leaf blades linear, 30–40 cm × 5–6 mm; false panicle loose, leafy, 50–60 cm long; spatheoles linear, 6–10 cm long, reddish, with peduncles ± as long, tip yellow-bearded; racemes 1–2 cm long, 3–7-awned per pair; sessile spikelet c. 8 mm long, awns 6–9 cm long.

Savanna grassland; open forests; wooded savannas; with *Hyparrhenia diplandra*, *H. smithiana*, *H. subplumosa*, *Andropogon shirensis*, *A. canaliculatus*; old cultivations; light soils; 100–c. 1750 m alt.

Vietnam (introduced).

*Hyparrhenia barteri**Hyparrhenia bracteata**Hyparrhenia claytonii**Hyparrhenia coleotricha**Hyparrhenia collina**Hyparrhenia confinis**Hyparrhenia coriacea**Hyparrhenia cyanescens**Hyparrhenia cymbaria**Hyparrhenia dichroa**Hyparrhenia diandra**Hyparrhenia dregeana*

HYPARRHENIA

H. figariana (Chiov.) Clayton; Clayton, Revision: 94–95, 1969; Lidia 5/5: 133, 2001.

bas.: *Cymbopogon figarianus* Chiov.

syn.: *Andropogon figarianus* Chiov., pro syn.; *A. filipendulus* var. *calvescens* Hack.; *Hyparrhenia barteri* var. *calvescens* (Hack.) Stapf

Annual grass; culms erect, 0,6–2 m tall; leaf blades filiform, to 30 cm × 4 mm; false panicle narrow, 20–60 cm long, 2–5-tiered, usually with the successive tiers densely fastigate; spatheoles linear, 3–7 cm long, the peduncles ± half as long; racemes 1–2 cm long, 2-awned per pair; sessile spikelet 6–10 mm long; awns 4–8 cm long, hirtellus with fulvous hairs.

Deciduous bushland, wooded grassland; waste land, roadsides, fallows; 500–1640 m alt.

Very near *H. filipendula*, a caespitose perennial with scaly rhizomes.

H. filipendula (Hochst.) Stapf, incl. var. *pilosa* (Hochst.) Stapf; Clayton, Revision: 95–102, 1969; Klaassen & Craven, Checklist grasses Namibia: 50, 2003. – Icon.: Bosser, Gramin. patur. cult. Madagascar: 244, 1969; Troupin, Fl. Rwanda 4: 288, 1988; Fl. Eth. & Eritrea 7: 339, 1995; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 53, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013; César & Chatelain, Fl. ill. Tchad: 261, 2019.

bas.: *Andropogon filipendulus* Hochst.

syn.: *A. filipendulinus* Hochst. ex Steud., orth. var.; *Sorghum filipendulum* (Hochst.) Kuntze; *Cymbopogon filipendulus* (Hochst.) Rendle, incl. var. *angolensis* Rendle; *Andropogon barteri* var. *menyharthii* Hack.; *A. filipendulus* var. *pilosus* Hochst.; *A. kimuingensis* Vanderyst, pro syn.; *Hyparrhenia piovani* Chiov.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial ± densely tufted grass with a graceful appearance arising from a short scaly rhizome; culms flexible, 0,6–1,8–2 m tall; false panicle *much branched*, spreading outwards, 30–80 cm long, branches ascending; spatheoles filiform, c. 5 cm long; peduncles flexuous; racemes numerous, c. 1 cm long, *light-coloured*, 2-awned per pair; sessile spikelets 5–7 mm long; awns thin, brown, 3–6 cm long, shaggily hairy.

Open disturbed situations in a wide range of soil and vegetation types; savanna; old lava fields; grassland; juniper forest; swampy *Miscanthus* community; riverine forest edges; 100–2300 m alt.

Namibia, Caprivi Strip, Botswana, S. Africa, Swaziland; Madagascar; SE Asia from Sri Lanka E-wards to Australia.

May be confused with *H. poecilotricha* (which has, however, rufous spikelet hairs).

H. finitima (Hochst.) Andersson ex Stapf; Fl. Eth. & Eritrea 7: 340, 1995; Fl. Zambes. 10/4: 107, 2002; Agnew, Upl. Kenya wild flow., ed. 3: 448, 2013. – Icon.: Troupin, Fl. spermat. Parc Natl. Garamba in Mission H. de Saeger 4: 47, 1956 (as *H. hirta* var. *garambensis*).

bas.: *Andropogon finitimus* Hochst.

syn.: *Cymbopogon finitimus* (Hochst.) Thomson; *Sorghum finitimum* (Hochst.) Kuntze; *Hyparrhenia rhodesica* Stent & J. M. Rattray; *H. hirta* var. *garambensis* Troupin

Perennial tufted grass; culms 1–2,5 m tall, 6 mm Ø, erect; leaf blades linear, to 60 × 0,8 cm; false panicle to 60 cm long, much-branched, contracted; spatheoles linear, 2,5–4,5 cm long, pilose, reddish; peduncles short, included within spatheoles; racemes 1–1,5 cm long, 2–6-awned per pair; sessile spikelet 6 mm long; awn 2,5–4 cm long; pedicelled spikelet with awn to 5 mm long.

HYPARRHENIA FINITIMA

Deciduous bushland; wooded grassland; rocky savanna; *Brachystegia* woodland; often among rocks or on disturbed sites; farmland, roadsides, waste land, farm fallows; 600–2000 m alt. Namibia, S. Africa.

Near *H. gazensis* (with slender culms; without awn on pedicelled spikelet).

H. formosa Stapf; Clayton, Revision: 117–118, 1969; Fl. Zambes. 10/4: 120, 2002; Cope, Fl. Arab. Penins. 5/1: 307, 309, 2007; Agnew, Upl. Kenya wild flow., ed. 3: 448, 2013. – Icon.: Troupin, Fl. Rwanda 4: 288, 1988.

syn.: *Andropogon formosus* Hack.

Perennial grass forming coarse tufts; culms c. 2–3 m tall, sometimes with stilt roots; leaf blades filiform, to 50 × 1,2 cm, scaberrulous; false panicle large, dense, 30–40 cm long, leafy, reddish; spatheoles lanceolate, 1,8–2,6 cm long, peduncles 0,2–1 cm long; racemes 1–1,5 cm long, 6–8-awned per pair; sessile spikelets c. 4 mm long; awns 0,8–1,8 cm long.

Grassland, deciduous bushland; savanna grassland; marshes, along rivers, streams; roadsides; 1000–3000 m alt.

Yemen.

Very near *H. cymbaria* but spatheoles longer and with more numerous awns.

H. gazensis (Rendle) Stapf; Clayton, Revision: 71–72, 1969; Fl. Zambes. 10/4: 106, 2002; Agnew, Upl. Kenya wild flow., ed. 3: 448, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 133, 2015.

bas.: *Cymbopogon gazensis* Rendle

syn.: *Andropogon gazensis* (Rendle) Eyles; *Hyparrhenia snowdenii* C. E. Hubb.

Perennial loosely tufted grass; culms *slender*, 0,5–1,8 m long, 2 mm Ø, weakly erect or geniculately ascending or sprawling; leaf blades 8–20 cm long, 2–5 mm wide, long acuminate; false panicle narrow, open, 10–35 cm long; spatheoles lanceolate, 3–4 cm long; peduncles 1–3,5 cm long, white-hairy; racemes 1–1,5 cm long, 4–5-awned per pair; sessile spikelets c. 5 mm long; awn 2–3 cm long, fulvously pubescent.

Ruderal on poor and overgrazed soils; flooded grassland; *Brachystegia* woodland; 700–1600 m alt.

S. Africa.

Closely resembling *H. dichroa* but distinguished by its weak culms, fewer awns, ± glabrous spikelets.

H. glabriuscula (Hochst. ex A. Rich.) Andersson ex Stapf; Clayton, Revision: 47–48, 1969; Lebrun in Bull. Soc. Bot. France 116: 262, 1969; Chatelain & al., Cartes distrib. pl. Côte d'Ivoire: 251, 2011. – Icon.: J. Agric. Trop. Bot. Appl. 1: 47, 1954 (as *H. amoena*); Rose Innes, Manual Ghana grasses: 163, 1977; Poilecot, Boissiera 50: 589, 1995; Fl. Zambes. 10/4: 99, 2002; César & Chatelain, Fl. ill. Tchad: 260, 2019 (details).

bas.: *Andropogon glabriusculus* Hochst. ex A. Rich.

syn.: *Sorghum glabriusculum* (Hochst. ex A. Rich.) Kuntze; *Hyparrhenia amoena* Jacq.-Fél.

Perennial tufted grass; culms 1,2–2 m tall, erect; leaf blades linear, to 30 × 0,5 cm; false panicle 15–30 cm long, narrow, congested; spatheoles ± linear, 2–3 cm long, glabrous; peduncles ± half the length of spatheoles, glabrous; racemes 1,5–2,5 cm long, 5–7 awned per pair; sessile spikelets c. 5 mm long; awns 1,5–2,5 cm long.

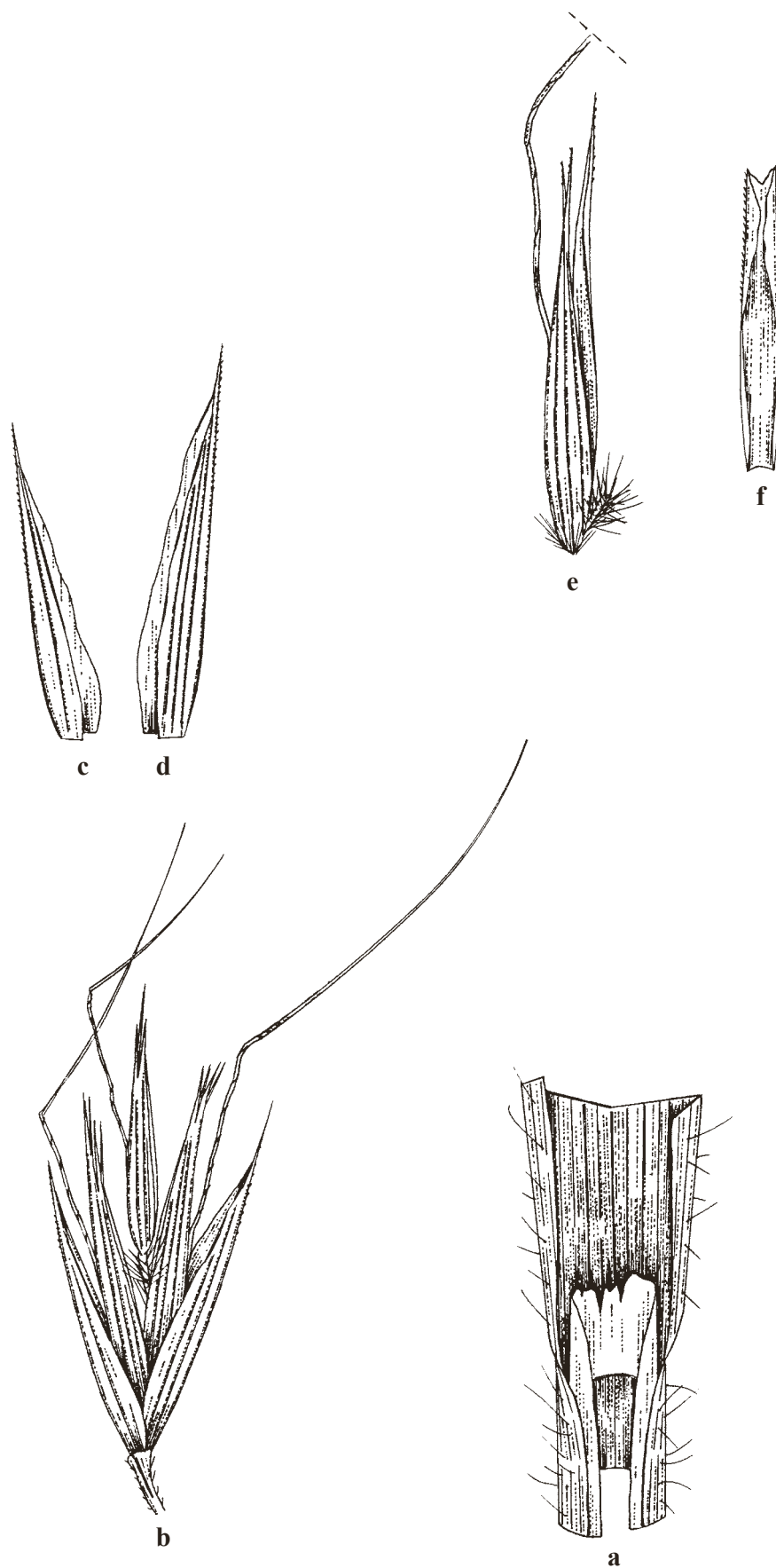


Plate 34. *Helictotrichon elongatum* (Hochst. ex A. Rich.) C. E. Hubb., see p. 314
 a: ligule; b: spikelet ($\times 6$); c–d: glumes lower and upper; e–f: lemma and palea.



Plate 35. *Hyparrhenia diplandra* (Hack.) Stapf, see p. 328
 a: habit; b: ligule; c: inflorescence; d: peduncle; e: spikelet; f: rachis; g: callus; h-i: glumes lower and upper;
 j-k: upper lemma; l: pedicel; m-n: glumes; o: lower lemma.

HYPARRHENIA GLABRIUSCULA

Seasonally wet soils; river flood plains; swampy hollows; often with *Andropogon africanus*, *Panicum fluviicola*, *Coelorhachis afraurita*, *Setaria sphacelata*, *Monocymbium cerasiiforme*; 250–c. 500 m alt. Closely resembling a *Cymbopogon* species, but leaves non-aromatic.

H. gossweileri Stapf; Clayton, Revision: 172–173, 1969; Fl. Zambes. 10/4: 132–134, 2002.

syn.: *Andropogon bequaertii* De Wild. 1919, nom. inval.; *Cymbopogon bequaertii* De Wild.; *Hyparrhenia bequaertii* (De Wild.) Robyns

Perennial tufted grass; culms 1–2 m tall, erect; leaf blades linear, to 30 cm × 3–6 mm; false panicle scanty, lax, 30–60 cm long; spatheoles narrow, 4–7 cm long, reddish-purple; peduncles 1,5–3 cm long; racemes 2,5–3 cm long, 6–12-awned per pair; sessile spikelets c. 0,8 mm long; awns 3,5–5 cm long, column with fulvous hairs.

Dry wooded savana; open thickets; 1340–1590 m alt.

Resembling *H. diplandra*.

Not in Ethiopia: confusion with *H. diplandra* (Fl. Eth. & Eritrea 7: 350, 1995).

H. griffithii Bor; Clayton, Revision: 84–85, 1969; Fl. Zambes. 10/4: 110, 2002; Fl. China 22, Texts: 632–633, 2006.

syn.: *Andropogon griffithii* Munro, nom. nud.

Perennial tufted grass; culms erect, 1–2 m tall; leaf blades linear, to 40 × 0,4–0,8 cm; false panicle lax, narrow, to 35 cm long; spatheoles linear, 4–7 cm long with peduncles ± the same length, flexuous, white-hairy; racemes 1,5–3,5 cm long, deflexed, white-hairy, 5–10-awned per pair; sessile spikelets 6–7 mm long; awns 4–6 cm long.

Evergreen forest edges; dambo; c. 1350–2300 m alt.

Madagascar; Assam, NE India, N Burma, SW Yunnan (China).

Resembling *H. filipendula* in its white-hairy racemes and long numerous awns; also *H. quarrei* but that species has shorter awns (1,8–3,6 cm).

H. hirta (L.) Stapf, incl. fa. *pubescens* (Andersson) Maire & Weiller, var. *pubescens* (Andersson) Ravi, subsp. *pubescens* (Andersson) Paunero, fa. *brachyphylla* Paunero, var. *longiaristata* Rothm. & P. Silva, fa. *podotricha* (Hochst. ex Steud.) Maire & Weiller, var. *podotricha* (Hochst. ex Steud.) Pic. Serm., var. *villosa* Paunero, and subsp. *villosa* Pignatti; but excl. var. *brachypoda* Chiov. (= *H. rufa* var. *rufa*) and var. *rambensis* Troupin (= *H. finitima*). – Clayton, Revision: 75–82, 1969; Gibbs Russell & al., Grasses south. Afr.: 185, 1990; Sosef & al., Check-list pl. vascul. Gabon: 185, 2006; Dobignard & Chatelain, Index synon. fl. Afr. N. 1: 307, 2010. – Icon.: Thulin, Fl. Somalia 4: 265, 1995; Fl. Eth. & Eritrea 7: 339, 1995; Poilecot, Boissiera 56: 613, 1999; Fl. Zambes. 10/4: 108, 2002; Boulos, Fl. Egypt 4: 338, 2005; Müller, Grasses Namibia, rev. ed.: 217, 2007; Cope, Fl. Arab. Penins. 5/1: 308, 2007; Pickering & Roe, Wild flow. Victoria Falls area: 95, 2009; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 52, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 194 (B), 2013; Clarke, Name those grasses: 270–271, 2015; César & Chatelain, Fl. ill. Tchad: 260, 2019 (details); Maslo & Milanović in Phytol. Balcan. 28: 73, 2022.

bas.: *Andropogon hirtus* L.

syn.: *A. podotrichus* Hochst. ex Steud.; *A. hirtus* var. *podotrichus* (Hochst. ex Steud.) Hack.; *A. modicus* De Wild., pro syn.; *A. transvaalensis* Stapf; *Cymbopogon hirtus* (L.) Nees ex Baker; *C. modicus* De Wild.; *C. transvaalensis* (Stapf) Stapf ex Burtt Davy; *Heteropogon pubescens* Andersson;

HYPARRHENIA HIRTA

Hyparrhenia pubescens (Andersson) Chiov.; *H. podotricha* (Hochst. ex Steud.) Andersson; *H. modica* (De Wild.) Robyns; *Trachypogon pubescens* (Andersson) Fourr.; World Checklist of Selected Plant Families, Poaceae, Roy. Bot. Gard., Kew.

Perennial tufted grass from a short underground rhizome; flowering culms wiry, 30–60(–100) cm long, standing over a dense tussock 10–20 cm high; leaf blades linear-filiform, 2–30 cm × 1–3 mm, firm, glaucous; false panicle scanty, 20–40 cm long, with 2–10 raceme pairs; spatheoles linear, 3–8 cm long with peduncles as long; racemes 2–4 cm long, white-hairy, 8–13(–16)-awned per pair; sessile spikelet linear, c. 5 mm long, white-hairy; awns 1–3,5 cm long.

Deciduous bushland; grassland bordering evergreen forest; often on dry grassy slopes; on dry soils in open places; dambos; wadi beds; overgrazed places; among rocks; volcanic ash soils; moist or shady sites; with *Stipagrostis uniplumis*, *Cymbopogon schoenanthus*, *Aristida adscensionis*, *A. mutabilis*; occasional to frequent; 80–2750 m alt.

Cape Verde Isl.; Macaronesia; Mediterranean region; Bosnia & Herzegovina (Phytol. Balcan. 28: 72–74, 2022); Egypt; Namibia, Botswana, S. Africa, Swaziland, Lesotho; Madagascar; Arabian Peninsula, S Asia E-wards to Pakistan. Introduced in Australia, Pacific Isl., Hawaii, C. & S. America.

A widespread and variable species which intergrades with many other species.

Recognised by the scanty panicle of few white-villous long-stalked racemes, the harsh narrow leaves forming a basal tussock.

H. involuocrata Stapf; Clayton, Revision: 158–161, 1969. – Icon.: Poilecot, Boissiera 50: 605, 1995; idem, ibid. 56: 616, 1999 (var. *breviseta*); César & Chatelain, Fl. ill. Tchad: 262, 2019 (details).

Annual robust grass; culms 1–2 m tall; leaf blades linear, to 40 × 0,8 cm, flaccid; false panicle 20–60 cm long, narrow, lax; spatheoles 4–7 cm long, pinkish, with peduncles half as long; racemes 1,5–2,3 cm long, 2–4(–6)-awned per pair; sessile spikelet lanceolate, 7–8 mm long, white-hairy; awns 7–12 cm long; pedicelled spikelets with bristle 1–2 cm long.

Savanna, typically on sandy or gravelly soils; shallow soils over ironstone; stony hillsides; with *Loudetia arundinacea*, *L. simplex*, *Rhytachne triaristata*; sandy, dry soils in old fallows with *Diheteropogon hagerupii*, *Hyperthelia dissoluta*, *Schizachyrium sanguineum*, *Hyparrhenia subplumosa*.

Comprises 2 vars.: – var. **breviseta** Clayton with 2(–4) awns per raceme-pair and pedicelled spikelet to 5 mm long; – var. **involuocrata** [syn.: *Androsceps barteri* Andersson ex Oliv., nom. nud.; *Anthistiria barteri* Munro ex Oliv., nom. nud., non *Hyparrhenia barteri* (Hack.) Stapf; *Hyparrhenia notolasia* Stapf] with 2–4(–6) awns per raceme-pair and pedicelled spikelet 0,8–2 cm long.

H. madaropoda Clayton – Icon.: Clayton, Revision: 135, 1969; Fl. Zambes. 10/4: 125, 2002.

Annual grass; culms 1–3 m tall, stout, to 5 mm Ø, erect or geniculately ascending from lower internodes, with stilt roots; leaf blades to 45 cm long, 1,3 cm wide, glabrous, at base narrowed to a false petiole; false panicle c. 30 cm long, usually copious; spatheoles 2,5–5 cm long; peduncles 4 mm long, white-hairy near apex; racemes 1,5 cm long, 2-awned per pair; sessile spikelets 7–10 mm long; awn 4,5–8 cm long.

Old farmland; deciduous bushland, scrub; disturbed places; moist grassland on clay; c. 300–1500 m alt.

Also in Zaire?

HYPARRHENIA

H. mobukensis (Chiov.) Chiov.; Fl. Eth. & Eritrea 7: 336–337, 1995; Agnew, Upl. Kenya wild flow., ed. 3: 448, 2013. – Icon.: Clayton, Revision: 51, 1969; Troupin, Fl. Rwanda 4: 290, 1988; Fl. Zambes. 10/4: 100, 2002; Burrows & Willis, Pl. Nyika Plateau, Malawi: 349, 2005.

bas.: *Andropogon mobukensis* Chiov.

syn.: *A. scaettae* (“scaettai”) Robyns; *Hyparrhenia absimilis* Pilg.; *Hypogynium absimile* (Pilg.) Roberty; *Cymbopogon tenuis* Gilli

Perennial trailing grass scrambling through bushes; culms wiry, very slender, 0.4–1.6 m long; leaves linear, 4–8 cm × 2–5 mm; false panicle small, of up to 5 distant tiers, each with a simple ray; spatheoles linear, 4–5 cm long with peduncles ± as long; racemes usually paired (rarely single), 1.5–3 cm long, 7–15-awned per pair, softly pilose or stiffly bristly; sessile spikelets 4–5 mm long; awns c. 1 cm long, glabrous.

Evergreen thickets; bogs and wet grounds by rivers and waterfalls; grassland, scrub; margins of evergreen and bamboo forest, extending into the *Erica* zone; forest glades; 1900–3300 m alt.

Unusual in the genus. The other species with trailing habit is *H. pilgeriana* (with yellow-bearded peduncle and longer (1–1.7 cm) pubescent awns).

H. multiplex (Hochst. ex A. Rich.) Andersson ex Stapf, incl. var. *leiopoda* Stapf; Clayton, Revision: 152–154, 1969. – Icon.: Fl. Eth. & Eritrea 7: 352, 1995.

bas.: *Anthistiria multiplex* Hochst. ex A. Rich.

syn.: *Andropogon multiplex* (Hochst. ex A. Rich.) Hack.; *Sorghum multiplex* (Hochst. ex A. Rich.) Kuntze

Annual slender tufted grass (often dwarfed); culms erect, 5–35 cm tall; leaf blades linear, 2–20 cm × 1–4 mm; false panicle sparse, of 1–4 raceme pairs; spatheoles inflated, becoming linear, reddish, terminating in a short blade to 2 cm long; peduncles variable in length and pilosity; racemes c. 1 cm long, 3–11-awned per pair; sessile spikelet 6–8 mm long, hispidulous; awn 4.5–7 cm long, stout, hairy.

Hillslopes, well drained; grassland on volcanic soils; seepage zones, moist sites; 1900–3100 m alt.

The annual counterpart of *H. tuberculata*.

H. neglecta S. M. Phillips – Icon.: Kew Bull. 49: 538, 1994.

Annual slender grass; culms 45–55 cm tall; leaf blades linear, 3–4 mm wide; false panicle loose, sparse, of 5–8 raceme pairs; spatheoles narrow, 5–6 cm long, with peduncles ½ of their length, yellow-hairy; raceme pairs stoutly 4-awned; sessile spikelets linear, 5 mm long, glabrous, margins toothed; awn 5 cm long, geniculate.

Habitat and precise locality unknown.

Known only from the type (Quartin Dillon & Petit 66; they collected in N Ethiopia during 1839–1841). The specimen was ranged under *H. anthistirioides* in the K herbarium.

Resembling *H. niariensis*. Key to annual species of section *Hyparrhenia* in Kew Bull. 49: 539–540, 1994.

H. newtonii (Hack.) Stapf, incl. var. *macra* Stapf and var. *newtonii*; Renier, Fl. Kwango 1: 30, 1948 (as *H. lecomtei*); Clayton, Revision: 148–151, 1969. – Icon.: Fl. Eth. & Eritrea 7: 815, 1982; Fl. Trop. E. Afr., Gramin. 3: 815, 1982; Fl. Zambes. 10/4: 130, 2002; Fl. China 22, Ill.: 883, 2007.

bas.: *Andropogon newtonii* Hack.

HYPARRHENIA NEWTONII

syn.: *A. lecomtei* Franch.; *A. bisulcatus* Chiov., pro syn.; *A. nlemfuensis* var. *villosus* Vanderyst, pro syn.; *Cymbopogon lecomtei* (Franch.) Rendle; *Hyparrhenia lecomtei* (Franch.) Stapf, incl. var. *bisulcata* (Chiov.) Robyns; *H. cirrosula* Stapf; *H. stolzii* Stapf; *H. bisulcata* Chiov.; *H. squarrosula* Peter; *Sorghum newtonii* (Hack.) Kuntze

Perennial densely tufted grass; culms 0.5–2(–3) m tall, erect or geniculate at base; basal leaf sheaths tomentose or glabrous; blades linear, 30–60 × 0.5 cm, pilose (or glabrous above); false panicle narrow, diffuse or scanty, 15–30 cm long; spatheoles narrow, 2.5–5 cm long, yellowish-hairy, with peduncles somewhat shorter; racemes purple, 1.5–2 cm long, 2–4-awned per pair; sessile spikelets 6–10 mm long, purplish, glabrous to pilose; awn 2.5–5.5 cm long, stiff-hairy; pedicelled spikelets with awnlet 1–5 mm long.

Grassland on stony hillsides; wooded grassland in shade beneath *Brachystegia* woodland; dambos; sandy sunny places; inundated meadows; sources of rivers in thickets; sometimes abundant in savanna on clayey sandy or schistose or calcareous soils; 1000–2350 m alt.

S. Africa, Swaziland; Madagascar; Thailand, Vietnam, SE China, Philippines, New Guinea.

The varieties described are based on the hairiness of the sessile spikelet (var. *newtonii* glabrous; var. *macra* pubescent to villous), a variable feature.

H. niariensis (Franch.) Clayton, incl. var. *macrarrhena* (Hack.) Clayton and var. *niariensis*; Clayton, Revision: 140–142, 1969; Fl. Zambes. 10/4: 126, 2002.

bas.: *Andropogon niariensis* Franch.

syn.: *A. viancinii* Franch.; *A. nsoki* Vanderyst, nom. provis., incl. var. *van-houttei* Vanderyst, nom. provis., and var. *violascens* Vanderyst, nom. provis.; *A. confinis* var. *macrarrhenus* Hack.; *Cymbopogon welwitschii* var. *minor* Rendle; *Hyparrhenia macrarrhena* (Hack.) Stapf

Annual grass; culms 1–2.5 m tall supported by stilt roots; leaf blades to 60 cm long, 1.5 cm wide, narrowed at base into a false petiole; false panicle 30–50 cm long, lax, leafy; spatheoles lanceolate, 3–5 cm long with peduncles as long, these yellow-hairy; racemes 1.5–1.8 cm long, 2(–3)-awned per pair; sessile spikelet c. 1 cm long; awn 6.5–10 cm long; pedicelled spikelet with bristle 2–10 mm long.

Wooded grassland, usually on sandy soils; rocky grassland; ferallitic soils; old fallow; roadsides; ?–760–1500 m alt.

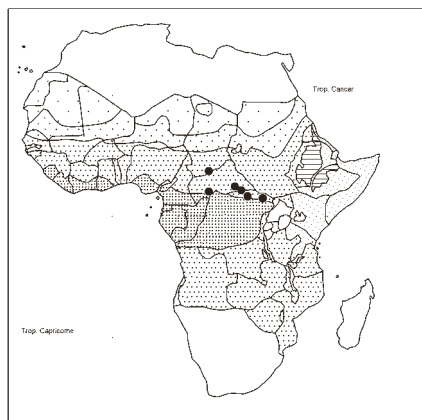
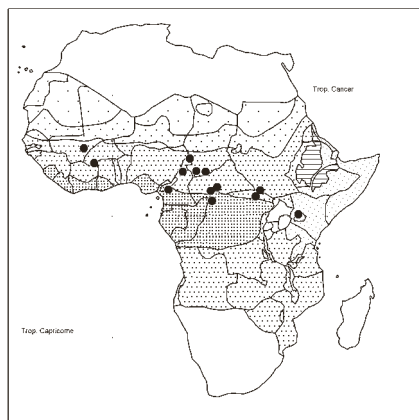
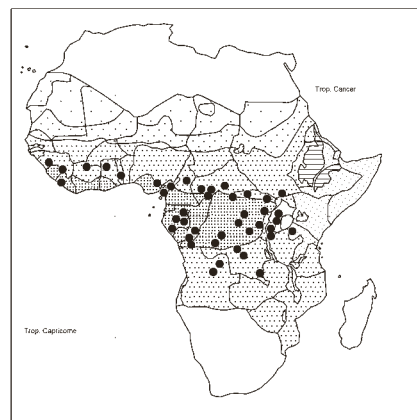
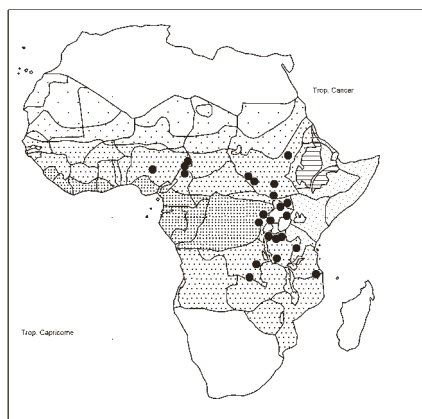
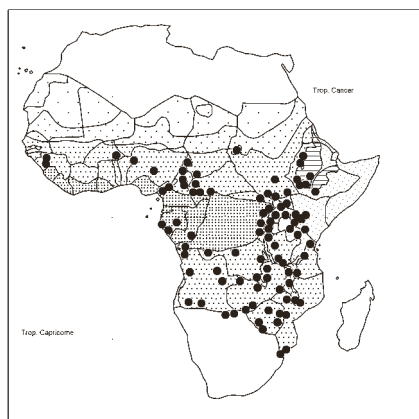
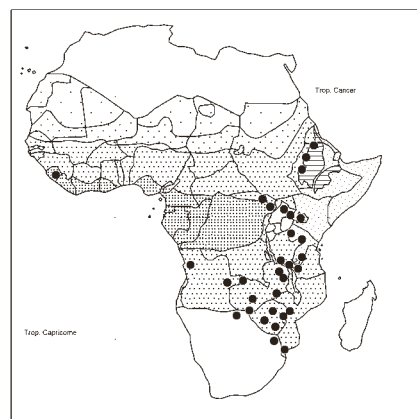
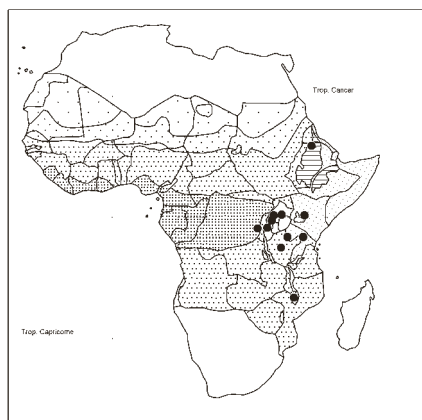
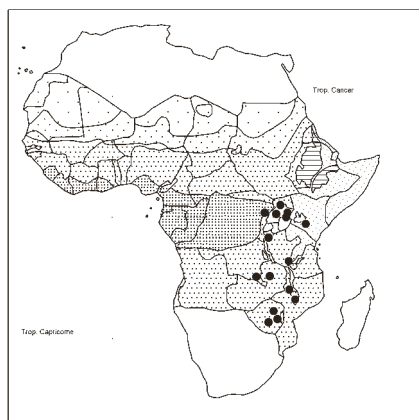
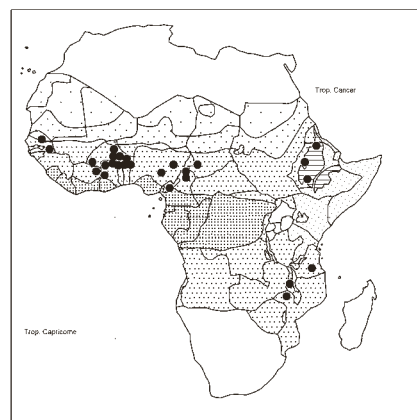
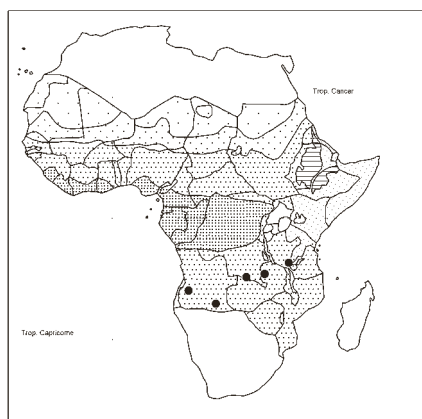
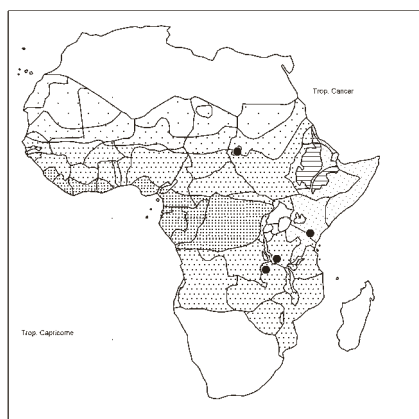
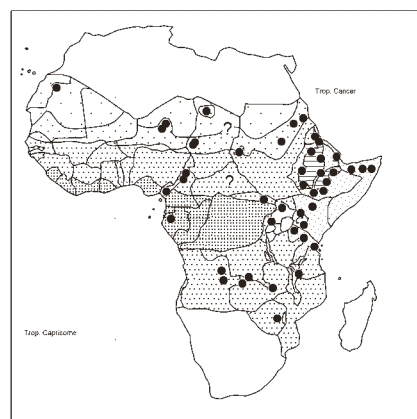
Rare in Uganda (only collection from 1943) and perhaps extinct there (Lye & al. in Lidia 4: 170, 2000).

Somewhat merging with *H. welwitschii*; *H. niariensis* has longer spikelets. Confused with *H. confinis* but terminal bristle of pedicelled spikelet shorter (not 10–14 mm); and the ecology very different.

H. nyassae (Rendle) Stapf; Clayton, Revision: 53–57, 1969; Fl. Eth. & Eritrea 7: 338, 1995; Fl. Zambes. 10/4: 101–102, 2002. – Icon.: Poilecot, Boissiera 50: 593, 1995; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013.

bas.: *Andropogon nyassae* Rendle

syn.: *A. rufus* var. *auricomus* Pilg.; *A. chrysargyreus* (Stapf) Stapf; *A. lasiobasis* Pilg.; *A. lugugaensis* Vanderyst; *A. vanderystii* De Wild., pro syn.; *Cymbopogon nyassae* (Rendle) Pilg.; *C. solutus* fa. *trichophyllus* Stapf; *C. vanderystii* De Wild.; *C. chrysargyreus* Stapf; *Hyparrhenia chrysargyrea* (Stapf) Stapf; *H. vanderystii* (De Wild.) Vanderyst; *H. vulpina* Stapf; *H. schmidiana* A. Camus; *Cymbopogon schmidianus* (A. Camus) A. Camus ex M. Schmid

*Hyparrhenia dybowskii**Hyparrhenia exarmata**Hyparrhenia familiaris**Hyparrhenia figariana**Hyparrhenia filipendula**Hyparrhenia finitima**Hyparrhenia formosa**Hyparrhenia gazensis**Hyparrhenia glabriuscula**Hyparrhenia gossweileri**Hyparrhenia griffithii**Hyparrhenia hirta*

HYPARRHENIA NYASSAE

Perennial tufted grass; culms 0,6–1,5(–2) m tall; *basal leaf sheaths woolly tomentose* with white hairs; blades linear, to 50 cm long, 2–8 mm wide; false panicle 15–45 cm long, lax; spatheoles linear, 3–6 cm long, russet-coloured, with peduncles usually longer, white-hairy; racemes 2–3 cm long, white-hairy, 8–13-awned per pair; sessile spikelets 5 mm long, densely yellow-hairy; awn 2–4 cm long.

Deciduous bushland; wooded grassland; particularly in moist places and swamp edges; may accompany *Loudetia simplex* in swamps; chalky soil; irrigated gardens; termitaria; sandy and gravelly soils; sandstone; scree; 40–2600 m alt.

Botswana, S. Africa; Madagascar; Thailand, Vietnam.

H. nyassae is a segregate from *H. rufa*. They are merging in most features, and if the basal parts are missing the two can be difficult to distinguish.

H. papillipes (Hochst. ex A. Rich.) Andersson ex Stapf; Clayton, Revision: 121–123, 1969; Fl. Eth. & Eritrea 7: 345–346, 1997; Cope, Fl. Arab. Penins. 5/1: 309, 2007. – Icon.: Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013.

bas.: *Andropogon papillipes* Hochst. ex A. Rich.

syn.: *Cymbopogon papillipes* (Hochst. ex A. Rich.) Chiov.; *Hyparrhenia lintonii* Stapf; *Sorghum papillipes* (Hochst. ex A. Rich.) Kuntze

Perennial slender tufted grass arising from a short rhizome; *culms much-branched* below, thin, wiry, 0,3–1 m long; base clad in cataphylls; leaf blades linear, 5–15 cm × 2–4 mm; false panicle scanty, of 2–10 raceme pairs, to 20 cm long; spatheoles linear, 4–7 cm long; peduncles 3–8 cm long, flexuous, yellow-hairy; racemes 2–4 cm long, white-hairy, 9–19-awned per pair; sessile spikelets c. 5 mm long, *silky white-hairy* (glabrous variant in Ethiopia); awn 2–3 cm long.

Deciduous bushland; grassland; often on dry stony slopes; forming cushions or scrambling among other grasses; open woodland; pastures; 1300–3000 m alt.

Madagascar; Yemen.

Specimens from S Sudan (Equatoria) doubtful (Darbyshire & al., Pl. Sudan & S. Sudan: 134, 2015).

Confused with *H. pilgeriana*, but *H. papillipes* has more densely branched, tufted habit.

H. pilgeriana C. E. Hubb.; Burrows & Willis, Pl. Nyika Plateau, Malawi: 350, 2005. – Icon.: Clayton, Revision: 116, 1969; Troupin, Fl. Rwanda 4: 291, 1988; Fl. Eth. & Eritrea 7: 334, 1995 (detail); Fl. Zambes. 10/4: 119, 2002; Agnew, Upl. Kenya wild flow., ed. 3: pl. 193, 2013.

syn.: *H. claessensii* Robyns; *Cymbopogon stolzii* Pilg.

Perennial laxly tufted grass from a short rhizome clad in scaly white cataphylls; culms 30–60 cm high, 1–2 mm Ø, weakly ascending or untidily straggling; leaf blades 5–15 cm long, 2–4 mm wide; false panicle open, scanty, often with only 10–20 raceme pairs; spatheoles narrow, 2–3 cm long, reddish-brown; peduncles 1–3 cm long, tip with yellow or white hairs; racemes 1–1,5 cm long, 4–7-awned per pair; sessile spikelets lanceolate, 4 mm long; awn 0,7–1,7 cm long.

Seasonal swamps; forest margins; grassy slopes; sometimes in deciduous bushland; wooded grassland; old fallow land; moist positions in thickets; forest margins; 800–2800 m alt.

S. Africa.

Distinguished from *H. cymbaria* and *H. formosa* by its slender straggling culms and rather long peduncles.

HYPARRHENIA

H. pilosa Mazade – Icon.: Adansonia, Sér. 2, 18: 139, 141, 1978.

Perennial erect grass forming small tufts; culms erect, to 1,5 m tall; leaf sheaths glabrous; blades linear, glabrous, to 45 cm × 6 mm; false panicle loose, to 60 cm long; spatheoles linear, 7–8 cm long with filiform peduncles as long; racemes 2–3 cm long, densely spiculate, densely reddish-hairy, 5–8-awned per pair; sessile spikelets 7–9 mm long, densely reddish-hairy; awn 4–7,5 cm long.

Savanna.

Known only from the type (Mazade 524).

H. poecilotricha (Hack.) Stapf; Clayton, Revision: 69–71, 1969; Fl. Zambes. 10/4: 105–106, 2002; Klaassen & Craven, Checklist grasses Namibia: 51, 2003; Agnew, Upl. Kenya wild flow., ed. 3: 449, 2013. – Icon.: Troupin, Fl. Rwanda 4: 293, 1988.

bas.: *Andropogon poecilotrichus* Hack.

syn.: *A. buchananii* Stapf; *A. pleiarthron* Stapf; *Cymbopogon pleiarthron* (Stapf) Stapf; *Hyparrhenia buchananii* (Stapf) Stapf ex Stent; *H. familiaris* var. *pilosa* Robyns; *Sorghum poecilotrichum* (Hack.) Kuntze

Perennial grass; culms erect, 0,5–1,5 m tall; leaf blades rigid, linear, to 30 cm × 3 mm; false panicle open, lax, c. 30 cm long; spatheoles linear, 4–8 cm long, with peduncles about as long; racemes 1,5–2 cm long, fulvous, 4–7-awned per pair; sessile spikelets 4–7 mm long with stiff *yellow or reddish-brown hairs*; awn 2,4–4 cm long.

Deciduous bushland, wooded grassland; dambos; fallow land; 0–2000 m alt.

Variable species, may be of hybrid (introgressive) origin; connecting *H. rufa*, *H. nyassae*, *H. filipendula*, *H. familiaris*.

Namibia, S. Africa, Swaziland.

H. quarrei Robyns, Fl. agrost. Congo Belge 1: 171, 1929, and Bull. Jard. Bot. Etat Brux. 8: 234–235, 1930; Clayton, Revision: 82–83, 1969; Fl. Eth. & Eritrea 7: 340, 1995; Fl. Zambes. 10/4: 109–110, 2002; Klaassen & Craven, Checklist grasses Namibia: 51, 2003; Cope, Fl. Arab. Penins. 5/1: 307, 2007; Agnew, Upl. Kenya wild flow., ed. 3: 449, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 134, 2015.

Perennial tufted grass; culms 1–2 m tall; *basal leaf sheaths usually white pubescent*, sometimes glabrous; blades linear, to 40 cm × 5 mm; false panicle narrow to ± dense, 40–80 cm long; spatheoles linear, 3–5 cm long, reddish, with peduncles a little longer, white-hairy; racemes 1,5–2 cm long, white-hairy, 6–10-awned per pair; sessile spikelets c. 5 mm long, white-hairy; awn 1,8–4 cm long.

Deciduous bushland, wooded grassland; margins of evergreen forest; clearings; dambos; old cultivations, roadsides, disturbed sites; rocky opening in forest; 900–3000 m alt.

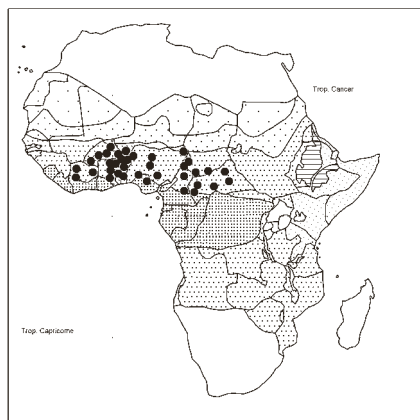
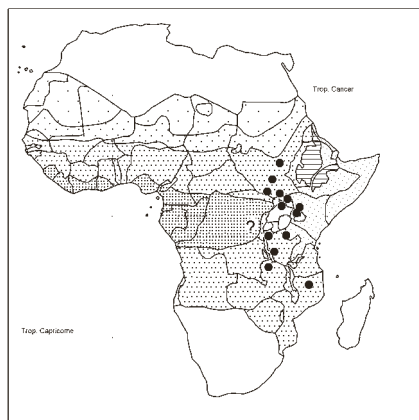
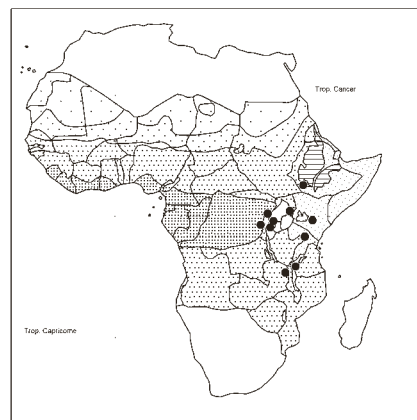
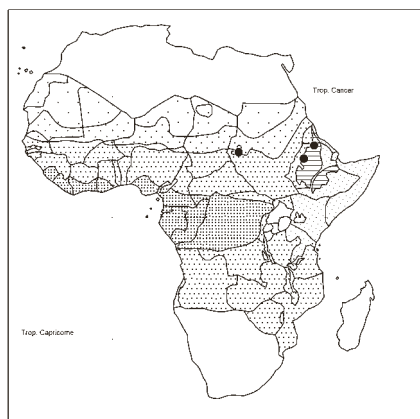
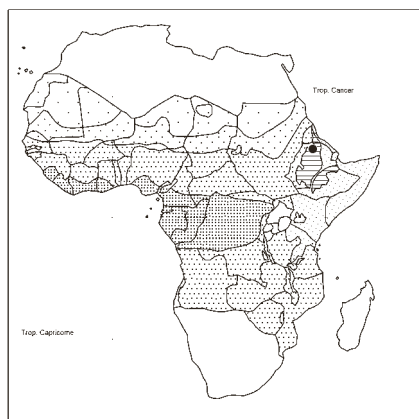
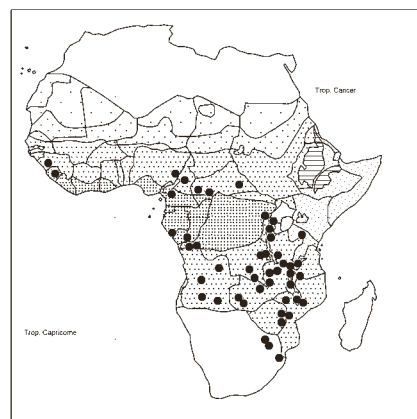
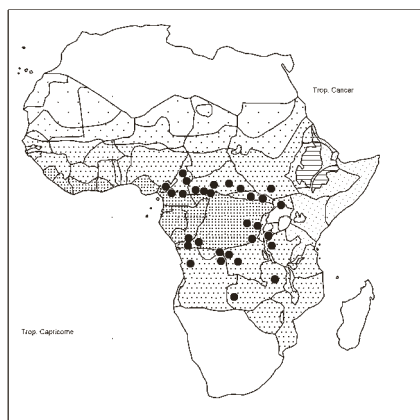
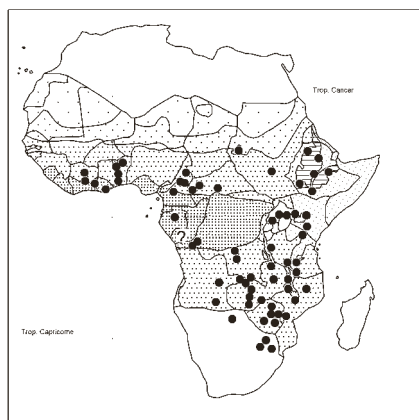
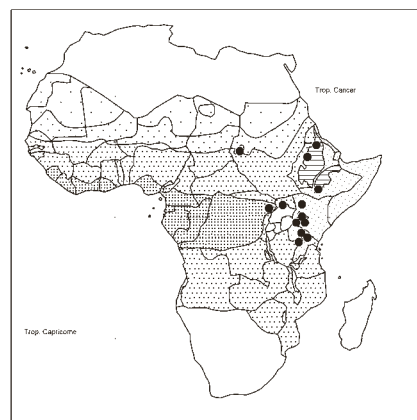
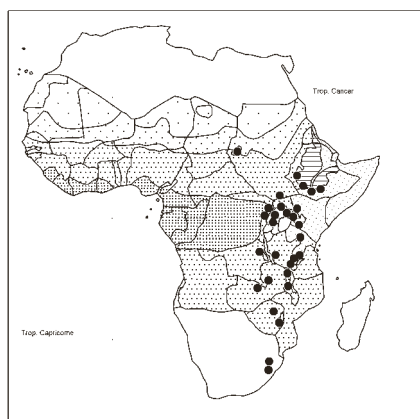
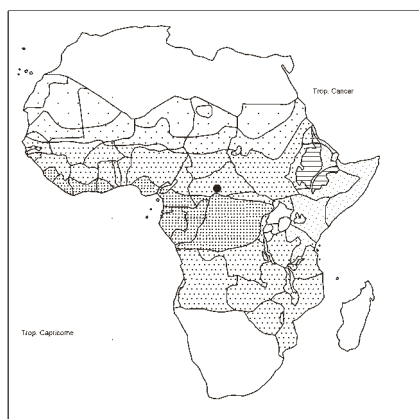
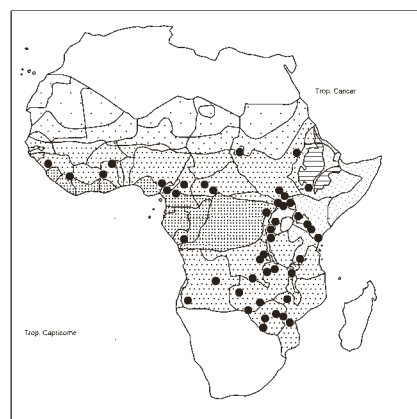
Namibia, S. Africa; Yemen.

Heterogenous species, linking *H. hirta* and *H. nyassae*; and also intergrades with *H. dregeana* and *H. tamba*. Most similar to *H. hirta*, and treated as a synonym under that species by van der Zon, Gramin. Cameroun 2: 482, 1992.

H. rudis Stapf; Clayton, Revision: 128–130, 1969; Lye & al. in Lidia 4: 170, 2000; Fl. Zambes. 10/4: 123–124, 2002; Agnew, Upl. Kenya wild flow., ed. 3: 449, 2013; Schmidt & al. in Phytotaxa 304: 117, 2017. – Icon.: Troupin, Fl. Rwanda 4: 297, 1988.

syn.: *H. acutispathacea* var. *pilosa* Bamps

Perennial robust coarsely tufted grass from a short slender rhizome clad in white cataphylls; culms stout, erect, 2–3 m tall, to 8 mm Ø,

*Hyparrhenia involucreta**Hyparrhenia madaropoda**Hyparrhenia mobukensis**Hyparrhenia multiplex**Hyparrhenia neglecta**Hyparrhenia newtonii**Hyparrhenia niariensis**Hyparrhenia nyassae**Hyparrhenia papillipes**Hyparrhenia pilgeriana**Hyparrhenia pilosa**Hyparrhenia poecilotricha*

HYPARRHENIA RUDIS

usually with stilt roots; leaf blades 30–60 cm long, 3–18 mm wide, stiff, glabrous, margins scabrid; false panicle narrow, 30–50 cm long, $\pm$ loose; spatheoles lanceolate, 2.5–4 cm long turning reddish-brown; peduncles 1–2 cm long, apex white-hairy; racemes c. 1.5 cm long, 4–7-awned per pair; sessile spikelets 5–6 mm long, silky white-hairy; awn 2–4 cm long.

Savanna; rocky situations; gravelly or clayey slopes; grassland; deciduous bushland; favouring moist or alluvial soils; dambos, along streams; open woodland; 910–2500 m alt.

Namibia, Botswana, S. Africa; Madagascar.

Closely related to *H. collina*, but with stout erect culms and longer awns.

H. rufa (Nees) Stapf, incl. var. *fulvicoma* (Hochst.) Chiov., var. *major* (Rendle) Stapf, subsp. *altissima* (Stapf) B. K. Simon; for var. *siamensis* Clayton See Note below. – Gibbs Russell & al., Grasses south. Afr.: 187, 1990; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 266, 1994; Klaassen & Craven, Checklist grasses Namibia: 51, 2003. – Icon.: Robyns, Fl. agrost. Congo belge 1: 167, 1929; Robyns & Tournay, Fl. spermat. Parc Natl. Albert 3: 63, 1955; Fl. W. Trop. Afr., ed. 2, 3/2: 493, 1972; Poilecot, Boissiera 50: 597, 1995; idem, ibid. 56: 612, 1999; Fl. Zambes. 10/4: 103, 2002; Müller, Grasses Namibia, rev. ed.: 219, 2007; Lisowski, Fl. Rép. Guinée 2: fig. 540, 2009; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013; Velayos & al., Fl. Guinea Ecuat. 12: 208, 2015; Ibrahim & al., Grasses Mali: 80, 2018; César & Chatelain, Fl. ill. Tchad: 259, 2019 (details). – Pl. 36 (back cover).

bas.: *Trachypogon rufus* Nees

syn.: *Andropogon xanthoblepharis* Trin.; *A. rufus* (Nees) Kunth, incl. var. *fulvicomus* (Hochst.) Hack., var. *glabrescens* Chiov., var. *ruficomus* Peter, nom. nud., and subvar. *approximatus* (Hochst.) Chiov.; *A. altissima* Hochst. ex A. Braun, nom. illeg.; *A. fulvicomus* Hochst., incl. var. *approximatus* Hochst.; *A. bonangensis* Franch.; *A. yinduensis* Vanderyst, nom. provis.; *A. pendulus* Peter, nom. illeg.; *Hyparrhenia fulvicoma* (Hochst.) Andersson; *H. altissima* Stapf; *H. pendula* Peter; *H. hirta* var. *brachypoda* Chiov.; *H. parvispiculata* Bamps; *H. vulpina* subsp. *longipes* A. Camus; *Cymbopogon rufus* (Nees) Rendle, incl. var. *fulvicomus* (Hochst.) Rendle and var. *major* Rendle; *Sorghum rufum* (Nees) Kuntze; *S. xanthoblepharis* (Trin.) Kuntze

Perennial, sometimes annual, tufted grass; culms 0.3–2.5 m tall; leaf blades rigid, linear, 30–60 cm $\times$ 2–8 mm; false panicle, lax or contracted, (5–)20–80 cm long, yellow to reddish; spatheoles linear, 3–5 cm long with peduncles longer or shorter, glabrous or pilose; racemes 1.5–2.5 cm long, fulvous or rufus, (7–)9–14-awned per pair; sessile spikelets 3–5 mm long, often violet-tinged; awn 2–3 cm long.

“One of the most common species in deciduous bushland and wooded grassland often preferring moist sites but also in frequent-ed places” (Fl. Trop. E. Afr., Gramin. 3: 795, 1982); *Lonchocarpus* woodland; grassland with *Tamarindus*; wooded grassland with *Combretum molle*, *C. collinum*, *Entada abyssinica*, *Erythrina abyssinica*, *Pennisetum purpureum*, *Hyparrhenia rufa* dominant; common in reedy places; sunny thicket-grown places; deciduous bushland; gardens; river banks; under shade; sometimes on dry soils with *Stipagrostis uniplumis*, *Cymbopogon schoenanthus*, *Aristida adscensionis*, *A. mutabilis*; 0–2500 m alt.

Extremely variable.

Bioko/Fernando Poo, Annobón; N Namibia, Botswana, S. Africa, Swaziland; Madagascar, Mascareignes. Introduced elsewhere: Canary Isl. (Collect. Bot. 30: 68–69, 2011), India, Burma,

HYPARRHENIA RUFA

Thailand, Philippines, New Guinea, Australia, Hawaii, S. N. America, C. & S. America, West Indies. – Pantropical. – An invasive weed producing seeds abundantly; forming dense swards displacing native grasses, and establishing well on burned areas. No specific control methods are available. It is also highly grazing tolerant (Weber, Invasive plant species of the World, ed. 2: 229–230, 2017).

Note. Clayton in his revision (1969: 66) described var. **siamensis** Clayton based on material from Thailand and adjacent countries: racemes 6–7-awned per pair, and sessile spikelets 4–5 mm long, etc., “otherwise as in var. *rufa*”. Flora of China 22, Texts: 632, 2006, and, Ill. 883, 2007, treats this plant as **H. yunnanensis** B. S. Sun, from Yunnan, Burma, Thailand: a uniform taxon, a local segregate from the gene pool of the extremely variable, African species *H. rufa*. “The brown color of the spikelet hairs is also distinctive...”.

H. schimperi (Hochst. ex A. Rich.) Andersson ex Stapf; Clayton, Revision: 118–120, 1969; Fl. Zambes. 10/4: 121, 2002; Darbyshire & al., Pl. Sudan & S. Sudan: 134, 2015. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 246, 1969.

bas.: *Andropogon schimperi* Hochst. ex A. Rich.

syn.: *A. schimperi* var. *longicuspis* Hochst. ex A. Rich., pro syn.; *A. formosus* André; *Cymbopogon schimperi* (Hochst. ex A. Rich.) Rendle; *Hyparrhenia viridescens* Robyns; *Sorghum schimperi* (Hochst. ex A. Rich.) Kuntze

Perennial robust grass forming coarse tufts from a short rhizome; culms 2–4 m tall, c. 8 mm $\varnothing$, often with stilt roots; leaf blades lanceolate, to 60 $\times$ 2 cm; false panicle wide, dense, 30–60 cm long, leafy, of short raceme pairs; spatheoles lanceolate, c. 2–3 cm long, glabrous, russet-brown, with peduncles $\frac{1}{2}$ as long; racemes 1.2–1.6 cm long, 6–8-awned per pair; sessile spikelets 4–6 mm long; awn 2–3.3 cm long; pedicelled spikelets sometimes with awn-point to 6 mm long.

Open, often moist places in deciduous bushland and wooded grassland; sumps in savanna; riverine grassland; dambos; old cultivations; roadsides; rocky slopes; field margins; 500–2300 m alt. S. Africa; Madagascar.

“Indistinctly separated from *H. variabilis* of which it is likely to be a tetraploid derivative” (Fl. Zambes, l.c.). The two species have the same distribution. *H. variabilis* has 3–5 awns per raceme pair, *H. schimperi* 6 or more awns.

H. smithiana (Hook. f.) Stapf, incl. var. *major* Clayton; Clayton, Revision: 57–59, 1969; Lebrun in Adansonia, Sér. 2, 12: 606, 1972; Chatelain & al., Cartes distrib. pl. Côte d’Ivoire: 252, 2011. – Icon.: van der Zon, Gramin. Cameroun 2: 473, 1992; Poilecot, Boissiera 50: 595, 1995; César & Chatelain, Fl. ill. Tchad: 259, 2019 (details).

bas.: *Andropogon smithianus* Hook. f.

syn.: *Sorghum smithianum* (Hook. f.) Kuntze

Perennial tufted grass; culms 0.3–1 m tall, 2–3 mm $\varnothing$ at base (var. *smithiana*) or to 1.5–2.5 m, 3–5 mm $\varnothing$ (var. *major*); basal leaf sheaths clothed in a felt of purplish-red hairs; blades linear, to 80 cm $\times$ 2–4–6 mm, hairy, more densely near base; false panicle lax, 30–90 cm long; spatheoles linear, 3.5–7 cm long, reddish, with peduncles as long, hairy; racemes 2.5–3 cm long, fulvous to rufous hairy, 8–14-awned per pair; sessile spikelets 5–6 mm long with rufous hairs; awn 2–3.5 cm long.

Grassland; savanna with *Kotschya lutea*; meadow; grassland, farmbrush grassland; humid savanna with *Eriochrysis*; rocky outcrops, inselbergs; ?–450–2600(–?3000) m alt.

HYPARRHENIA SMITHIANA

Very closely related to *H. nyassae*.

H. subplumosa Stapf; Clayton, Revision: 164–166, 1969; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 267–268, 1994; Fl. Zambes. 10/4: 131 (2002); Sosef & al., Check-list pl. vascul. Gabon: 185, 2006. – Icon.: Poilecot, Boissiera 50: 609, 1995; idem, ibid. 56: 618, 1999; Ibrahim & al., Grasses Mali: 81, 2018; César & Chatelain, Fl. ill. Tchad: 262, 2019 (details).

Perennial robust grass; culms 2–3 m tall; leaf blades lanceolate, 20–60 × 0,3–1 cm, glaucous, margins scabrid; false panicle large, loose, 20–50 cm long; spatheoles 3–7 cm long, glaucous to purplish; peduncles 1–3,5 cm long; racemes 1,5–2,5 cm long, 3–6-awned per pair; sessile spikelets narrow, c. 7 mm long; awn 4,5–7,5 cm long; pedicelled spikelet with bristle 2–7 mm long.

Marshy grassland; *Brachystegia* woodland; riverbanks; dambos; often on poor dry soils; sandy and gravelly soils; often dominant with *Andropogon schirensis*, *A. chinensis*, *Hyparrhenia smithiana*, *Cymbopogon giganteus*, *Hyperthelia dissoluta*, *Schizachyrium sanguineum*; on rocks; soils with an ironstone horizon near the surface; near sea-level–2300 m alt. – A common constituent of savanna in W tropical Africa, scattered through the circum-Congo region.

A tetraploid variant of *H. diplandra*, and they intergrade; to separate the two species is not easy. The awn-hairs are the best distinguishing feature.

H. tamba (Hochst. ex Steud.) Andersson ex Stapf; Clayton, Revision: 126–127, 1969; Fl. Eth. & Eritrea 7: 347, 1995; Fl. Zambes. 10/4: 122, 2002; Agnew, Upl. Kenya wild flow., ed. 3: 449, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 134, 2015. – Icon.: Bothalia 1: 250, 1924 (as *H. glauca*); Gibbs Russell & al., Grasses south. Afr.: 187, 1999; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 54, 2012.

bas.: *Andropogon tamba* Hochst. ex Steud.

syn.: *A. lepidus* var. *tamba* (Hochst. ex Steud.) Hack.; *Hyparrhenia glauca* Stent; *Cymbopogon tamba* (Hochst. ex Steud.) Rendle

Perennial robust, densely tufted grass; culms 1–2(–3) m tall, 4 mm Ø; basal leaf sheaths silky pubescent; blades 25–80 cm, 3–10 mm wide, glabrous, stiff, glaucous; false panicle linear-oblong, loose, 30–60 cm long; spatheoles narrow, 2,6–4 cm long, turning glaucous brown, with peduncles ½–¾ as long; racemes 1,5–2,5 cm long, 5–8-awned per pair; sessile spikelets 5 mm long, white-villous; awn 1,6–2,5 cm long.

Grassland, savanna; along streams; roadsides; 1340–3000 m alt. S. Africa, Lesotho, Swaziland.

Closely related to *H. collina*, *H. dregeana*.

H. tuberculata Clayton – Icon.: Clayton, Revision: 156, 1969; Fl. Eth. & Eritrea 7: 351, 1995.

Perennial tufted grass; culms slender, 40–65 cm tall; leaf blades 10–25 cm long, 2–3 mm wide, glaucous; false panicle sparse, of 1–5 pendant, wedge-shaped, golden-brown raceme pairs; spatheoles narrow, 5–9 mm long, brown, with peduncles c. ¾ as long, golden-hairy, arching from the spatheoles; racemes compact, 1,5–2 cm long, 6–8–11-awned per pair; sessile spikelets c. 7 mm long, stiffly hispid; awn 4–5 cm long, hirtellous.

Dry grassland, among rocks; grassy glades in *Erica* bushland and *Juniperus* woodland; 2400–3000 m alt.

Very close to *H. arrhenobasis* from which it is distinguished by its tuberculate homogenous spikelets, and stouter, hairier awns.

HYPARRHENIA

H. umbrosa (Hochst.) Andersson ex Clayton; Clayton, Revision: 127–128, 1969; Harvey & al., Pl. Bali Ngemba...: 139, 2004; Agnew, Upl. Kenya wild flow., ed. 3: 449, 2013; Darbyshire & al., Pl. Sudan & S. Sudan: 134, 2015.

bas.: *Andropogon umbrosus* Hochst.

syn.: *A. lepidus* subvar. *umbrosus* (Hochst.) Hack.; *Cymbopogon umbrosus* (Hochst.) Pilg.

Perennial grass from a slender rhizome; culms 1–2 m high, slender and rambling below, then becoming thicker, erect, with stilt roots; leaf blades to 60 m long, 1,2 cm wide, glabrous; false panicle narrow, crowded, 20–30 cm long, 4–8 cm wide; spatheoles navicular, 1,5–2,5 cm long, with peduncles 0,3–1,3 cm long, white-hairy; racemes c. 1,5 cm long, 4–7-awned per pair; sessile spikelets 4 mm long, white-hairy; awn 0,7–1,3 cm long.

Grassland; roadsides; old cultivations, disturbed areas; 1400–2500 m alt. – Widely scattered in tropical and South Africa, but not common.

S. Africa; Comoros.

Closely related to *H. cymbaria* and *H. formosa*. Possibly not a distinct species (cf. Fl. Trop. E. Afr., Gramin. 3: 811, 1982).

H. variabilis Stapf; Clayton, Revision: 113–115, 1969; Fl. Eth. & Eritrea 7: 344–345, 1995; Cope, Fl. Arab. Penins. 5/1: 307, 2007. – Icon.: Bosser, Gramin. pâtur. cult. Madag.: 254, 1969; Fl. Trop. E. Afr., Gramin. 3: 806, 1982; Troupin, Fl. Rwanda 4: 291, 1988; Fl. Zambes. 10/4: 118, 2002; Fischer & Killmann, Ill. field guide pl. Nyungwe Natl. Park, Rwanda: 344, 2008; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 258, 2012 (inflor.).

syn.: *H. iringensis* Pilg.; *H. spectabilis* Stapf; *H. acutispathaceae* (De Wild.) Robyns; *Andropogon acutispathaceus* De Wild., nom. inval.; *Cymbopogon acutispathaceus* De Wild.

Perennial robust grass from a short rhizome, forming large clumps; culms 1,5–3 m tall supported by stilt roots, often decumbent at first; leaf blades linear, 15–45 × c. 1,5 cm, firm; false panicle large, dense, 20–40 cm long; spatheoles boat-shaped, 1,4–2,4 cm long, russet-red tinged with yellow and green when mature; peduncles 0,5–1 cm long, white-hairy; racemes 0,8–1,3 cm long, deflexed, 3–5-awned per pair; sessile spikelets c. 5 mm long; awn 1,8–3,2 cm long; pedicelled spikelets with awn point c. 6 mm long.

Open woodland; common on roadsides; abandoned cultivation; deciduous bushland; wooded grassland; on a wide range of soil types; margins of evergreen forest; humid meadows; clearings; along rivers, lakes, swamps; tall grass savanna; common and dominant; *Albizia zygia* woodland; 600–2450 m alt.

S. Africa, Swaziland; Madagascar, Comoros; Yemen; introduced in Java.

Intergrades with *H. cymbaria*. The two taxa occupy the same habitat and distribution range. *H. variabilis* tends to have longer spatheoles and awns. Cf. Clayton in Kew Bull. 30: 517–518, 1975.

H. violascens (Stapf) Clayton, Revision: 88–89, 1969; van der Zon, Gramin. Cameroun 2: 478, 1992; César & Chatelain, Fl. ill. Tchad: 260, 2019.

bas.: *H. soluta* var. *violascens* Stapf

Annual grass; culms erect, solitary, 0,8–1(–2) m tall; basal leaf sheaths glabrous; blades linear, to 40 cm × 6 mm; false panicle lax, scanty, 20–30 cm long; spatheoles linear, 4–7 cm long; peduncles exerted from tip of spatheole, white-hairy at top; racemes 1,5–3 cm long, yellowish-white tinged with violet, 6–9-awned per pair; sessile spikelets ± linear, 5–6 mm long, white-hairy; awn 2,5–4 cm long.

Roadsides; old cultivations; savannas.

HYPARRHENIA VIOLASCENS

Closely resembling *H. quarrei* but annual, and with glabrous leaf sheaths. Also resembling *H. bagirmica*, with intermediate specimens (e.g. van der Zon 4238).

H. welwitschii (Rendle) Stapf; Renier, Fl. Kwango 1: 30, 1948; Clayton, Revision: 142–144, 1969; Lye in Lidia 4: 170, 2000; Fl. Zambes. 10/4: 127, 2002; Lejoly & al., Cat.-fl. Kisangani & Tshopo in Taxonom. 30: 236, 2010. – Icon.: Poilecot, Boissiera 50: 599, 1995; César & Chatelain, Fl. ill. Tchad: 261, 2019 (details).

bas.: *Cymbopogon welwitschii* Rendle

syn.: *Andropogon chrysopogon* Welw. ex Rendle, pro syn.; *A. welwitschii* (Rendle) K. Schum.; *Hyparrhenia gracilescens* Stapf

Annual coarsely tufted grass; culms 0.2–3 m tall, glabrous or with a ring of white or brown hairs at each node, often supported by stilt roots; leaf blades lanceolate, to 60 × 1.5 cm, narrowed at base; false panicle large, loose, leafy, 30–60 cm long, nodes brown-bearded; spatheoles linear, ± reddish, 3–5 cm long, with somewhat shorter peduncles white- to yellow-hairy; racemes c. 1.5 cm long, brownish-hairy, 2–4-awned per pair; sessile spikelets 5–7 mm long, white-hairy; awn 4–7 cm long; pedicelled spikelets with awn point 5–14 mm long.

In light to moderate shade in *Brachystegia* wooded grassland, favouring deep soils with adequate moisture; *Daniellia* savanna woodland; commonly found in gregarious patches; cultivated grassland; often in fallows; occasionally on lighter sandy soils; also on thin, poor soils; clayey-sandy soils; thickets and near edges of woods; 600–1300 m alt.

Comoros.

With some resemblance to *H. niariensis*.

Note by Clayton (1969: 144) on synonymy:

“*H. gracilescens* has been separated on account of its glabrous culm nodes, but I can find no other difference between these two species, and the presence or absence of hairy nodes seems to be uncorrelated with any other character. It is not even a clear-cut character, for some specimens, including one of the syntypes of *H. gracilescens*, have bearded panicle nodes. The bearded culm nodes can be a most striking sight when the sun glints on the brown hairs to form diaphanous halos of golden light at intervals up the culm. No doubt this explains the taxonomic importance accorded to the character, an importance that is not confirmed by a more dispassionate assessment.”

H. wombaliensis (Vanderyst ex Robyns) Clayton in his Revision: 75, 1969; van der Zon, Gramin. Cameroun 2: 483, 1992; Onana, Fl. Cameroun 40: 243, 2013.

bas.: *Andropogon wombaliensis* Vanderyst ex Robyns

syn.: *A. wombaliensis* var. *ciliatus* Robyns

Perennial densely tufted grass; culms slender, 40–60 cm tall; leaf blades very narrow, to 25 cm × 1.5 mm; inflorescence a single pair of racemes borne at summit of culm, sometimes with a second pair of racemes on a long slender branch from penultimate node; spatheoles very slender, 4–10 cm long, with peduncle twice as long; racemes 2–3 cm long, 9–12-awned per pair; sessile spikelets 5–6 mm long; awn 1–2 cm long, shaggy brown-hairy.

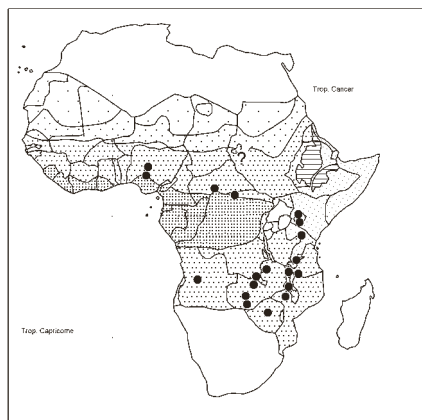
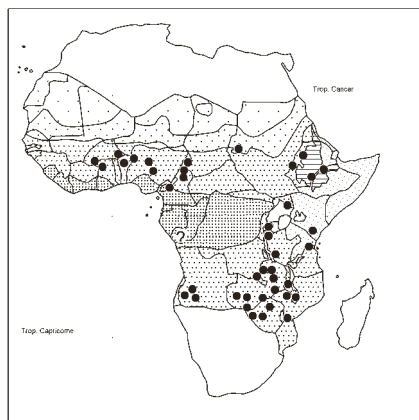
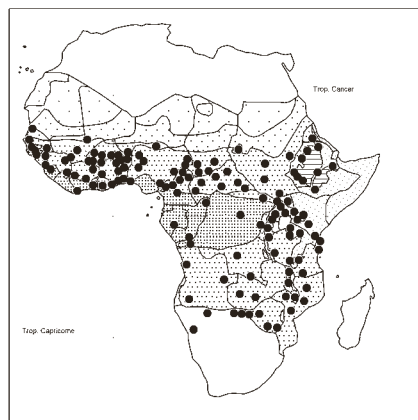
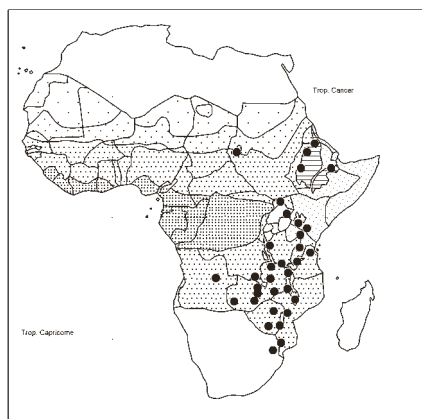
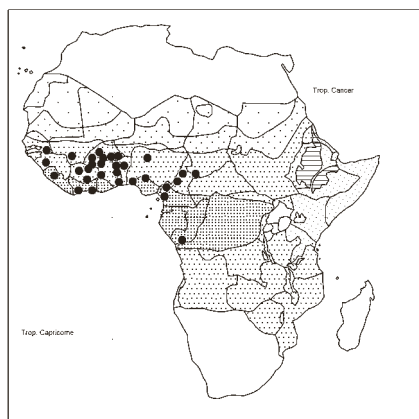
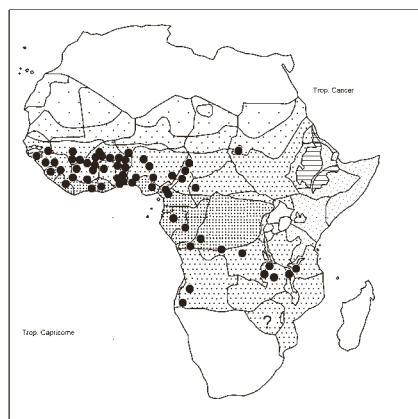
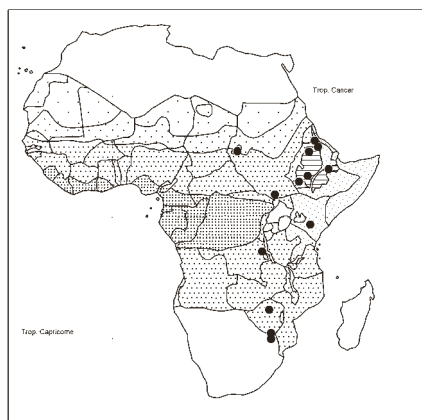
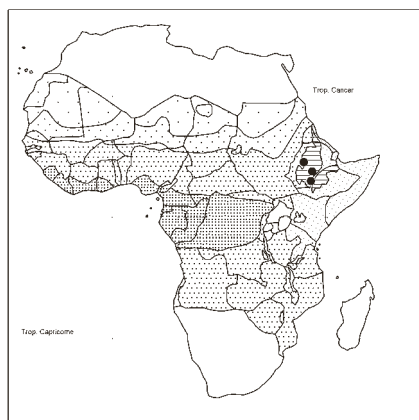
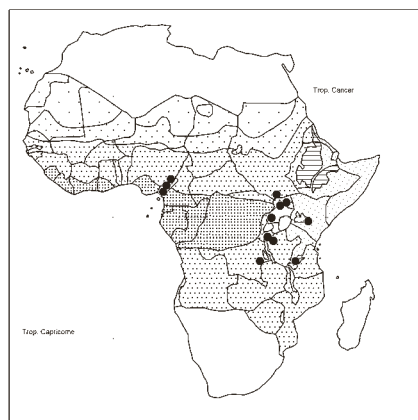
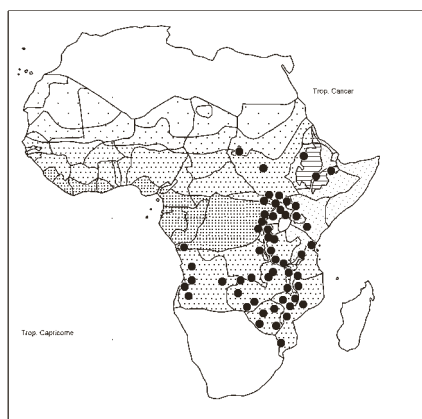
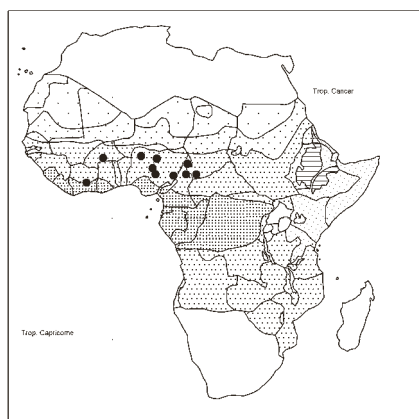
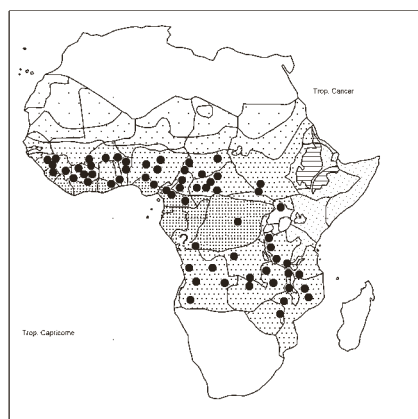
Waterlogged sandy soils along water courses in dense humid forest.

Resembling *H. hirta*, but spikelets glabrous. Easily recognised by the very scanty inflorescence, and thus resembling many *Andropogon* species.

HYPARRHENIA

SYNONYMS:

Hyparrhenia absimilis Pilg. = **Hyparrhenia mobukensis abyssinica** (Hochst. ex A. Rich.) Roberty
= **Exotheca abyssinica**
acutispathacea (De Wild.) Robyns
= **Hyparrhenia variabilis**
acutispathacea var. *pilosa* Bamps = **H. rudis**
altissima Stapf = **H. rufa**
amoena Jacq.-Fél. = **H. glabriuscula**
archaelymandra Jacq.-Fél. = **Elymandra archaelymandra aucta** (Stapf) Stapf ex Stent = **Hyparrhenia dregeana baddadae** Chiov. = **Elymandra grallata**
barteri var. *calvescens* (Hack.) Stapf
= **Hyparrhenia figariana**
bequaertii (De Wild.) Robyns = **H. gossweileri**
bisulcata Chiov. = **H. newtonii**
brachychaete Peter = **H. dregeana**
buchananii (Stapf) Stapf ex Stent = **H. poecilotricha**
chrysargyrea (Stapf) Stapf = **H. nyassae**
cirrosula Stapf = **H. newtonii**
claessensii Robyns = **H. pilgeriana**
comosa (Kuntze) Andersson ex Stapf = **H. coleotricha contracta** Robyns = **H. bracteata**
coriacea var. *sericea* Mazade = **H. coriacea**
cornucopiae (Hack.) Stapf = **Hyperthelia cornucopiae**
diplandra var. *major* Vanderyst and var. *mutica* (Clayton) Cope = **Hyparrhenia diplandra**
dissoluta (Nees ex Steud.) C. E. Hubb.
= **Hyperthelia dissoluta**
djalonica Jacq.-Fél. = **Parahyparrhenia annua**
eberhardtii (A. Camus) Hitchc. = **Hyparrhenia diplandra**
edulis C. E. Hubb. = **Hyperthelia edulis**
effusa (Balansa) A. Camus = **Hyparrhenia familiaris**
elongata Stapf = **H. dregeana**
eylesii C. E. Hubb. = **Elymandra grallata**
familiaris var. *pilosa* Robyns
= **Hyparrhenia poecilotricha**
fastigiata Robyns = **H. dichroa**
filipendula var. *pilosa* (Hochst.) Stapf = **H. filipendula**
fulvicoma (Hochst.) Andersson = **H. rufa**
glauca Stent = **H. tamba**
gracilescens Stapf = **H. welwitschii**
grallata Stapf = **Elymandra grallata**
hirta var. *brachypoda* Chiov. = **Hyparrhenia rufa**
hirta var. *garambensis* Troupin = **H. finitima**
hirta var. *longiaristata* Rothm. & P. Silva = **H. hirta**
hirta var. *podotricha* (Hochst. ex Steud.) Pic. Ser. and fa. *podotricha* (Hochst. ex Steud.) Maire & Weiller
= **H. hirta**
hirta fa. *pubescens* (Andersson) Maire & Weiller, subsp. *pubescens* (Andersson) Paunero, var. *pubescens* (Andersson) Ravi, var. *villosa* Paunero, and subsp. *villosa* Pignatti = **H. hirta**
iringensis Pilg. = **H. variabilis**
jaegeriana (A. Camus) Roberty
= **Parahyparrhenia annua**
lecomtei (Franch.) Stapf, incl. var. *bisulcata* (Chiov.) Robyns = **Hyparrhenia newtonii**
lepida (Nees) Cufod. = **H. cymbaria**
lintonii Stapf = **H. papillipes**
lithophila (Trin.) Pilg. = **Elymandra lithophila**
luembensis (De Wild.) Robyns = **Hyparrhenia dichroa**
macrarrhena (Hack.) Stapf = **H. niariensis**
macrolepis (Hack.) Stapf = **Hyperthelia dissoluta**

*Hyparrhenia quarrei**Hyparrhenia rudis**Hyparrhenia rufa**Hyparrhenia schimperi**Hyparrhenia smithiana**Hyparrhenia subplumosa**Hyparrhenia tamba**Hyparrhenia tuberculata**Hyparrhenia umbrosa**Hyparrhenia variabilis**Hyparrhenia violascens**Hyparrhenia welwitschii*

HYPARRHENIA

micrathera (Pilger) Pilger ex Peter
= **Hyparrhenia dregeana**
modica (De Wild.) Robyns = **H. hirta**
monathera (A. Rich.) Schweinf. = **Exotheca abyssinica**
multiplex var. *leiopoda* Stapf = **Hyparrhenia multiplex**
mutica Clayton = **H. diplandra**
niariensis var. *macrarrhena* (Hack.) Clayton
= **H. niariensis**
notolasia Stapf = **H. involucrata** var. **involucrata**
pachystachya Stapf = **H. diplandra**
parvispiculata Bamps = **H. rufa**
pendula Peter = **H. rufa**
petiolata Stapf = **H. confinis** var. **nudiglumis**
phyllopoda Stapf = **H. dregeana**
pilosissima (Hack.) J. G. Anderson = **H. dregeana**
piovani Chiov. = **H. filipendula**
podotricha (Hochst. ex Steud.) Andersson = **H. hirta**
pseudocymbaria (Steud.) Stapf = **H. anthistirioides**
pubescens (Andersson) Chiov. = **H. hirta**
pusilla (Hook. f.) Stapf = **Andropogon pusillus**
quinqueplex (Steud.) Andersson
= **Hyparrhenia anthistirioides**
rhodesica Stent & J. M. Rattray = **H. finitima**
rufa var. *fulvicoma* (Hochst.) Chiov. and var. *major*
(Rendle) Stapf = **H. rufa**
ruprechtii (Hack.) E. Fourn. = **Hyperthelia dissoluta**
scabrimarginata (De Wild.) Robyns
= **Hyparrhenia collina**
schmidiana A. Camus = **H. nyassae**
smithiana var. *major* Clayton = **H. smithiana**
snowdenii C. E. Hubb. = **H. gazensis**
soluta (Stapf) Stapf = **H. bagirmica**
soluta var. *violascens* Stapf = **H. violascens**
spectabilis Stapf = **H. variabilis**
squarrosula Peter = **H. newtonii**
stolzii Stapf = **H. newtonii**
subaristata Peter = **H. dregeana**
sulcata Jacq.-Fél. = **Parahyparrhenia annua**
takaensis Vanderyst = **Hyparrhenia diplandra**
vanderystii (De Wild.) Vanderyst = **H. nyassae**
viridescens Robyns = **H. schimperi**
vulpina Stapf = **H. nyassae**
vulpina subsp. *longipes* A. Camus = **H. rufa**

HYPERTHELIA / 6

African genus of 6 species. Closely related to *Parahyparrhenia*. Distinguished from *Hyparrhenia* by the long appendage from the tip of its raceme base.

CLAYTON, W. D. (1966). Studies in The Gramineae: XII. Parahyparrhenia, Hyperthelia and Exotheca. *Kew Bull.* 20: 433–449 [with key to species].

LANDGE, S. N. & R. D. SHINDE (2022). A taxonomic revision of the genus Parahyparrhenia (Poaceae: Andropogoneae) in India and review of African and Thai species. *Phytotaxa* 541: 247–260.

Except *Hyperthelia dissoluta*, “the remaining species are endemic to a small area where the Congo (Zaire), Sudan and Central African Republic come together, and which must be regarded as a centre of diversity for the genus” (Clayton o.c.: 438–439).

One species known only from the type.

Hyperthelia colobantha Clayton – Icon.: *Kew Bull.* 20: 440, 1966.

Annual grass; culms to 2 m tall, 4 mm Ø; leaf sheaths with tubercle-based hairs; blades linear, to 45 cm × 3 mm, sparsely pilose; false panicle linear, contracted, 20 cm long; spatheoles narrow, 2,5 cm long, hirsute, with rudimentary blade 0,3–3 cm long; peduncles 1,5 mm long, softly white-hairy; appendage 6 mm long × 1 mm wide; lower raceme 1,2 cm long, with 1 sessile fertile spikelet 9 mm long, bimucronate, awn (solitary) 8 cm long; the upper raceme sterile, 6–7 mm long.

Lateritic plateau.

Known only from the type collected in 1963 by the French veterinarian Dr. Michel Clair, n° 16 (M. Clair, 1940 – 29 October 2017).

H. cornucopiae (Hack.) Clayton in *Kew Bull.* 20: 446, 1966; Darbyshire & al., Pl. Sudan & S. Sudan: 134, 2015. – Icon.: César & Chatelain, Fl. ill. Tchad: 263, 2019 (details).

bas.: *Andropogon cornucopiae* Hack.

syn.: *Hyparrhenia cornucopiae* (Hack.) Stapf; *Sorghum cornucopiae* (Hack.) Kuntze

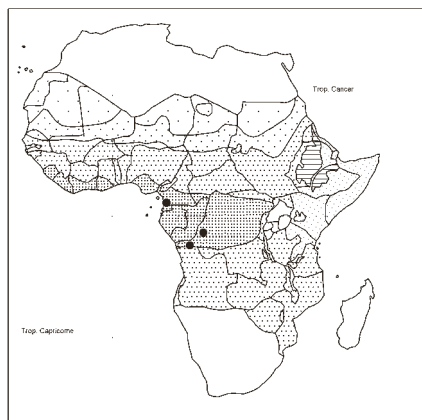
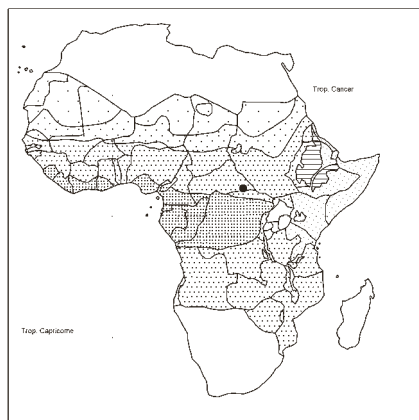
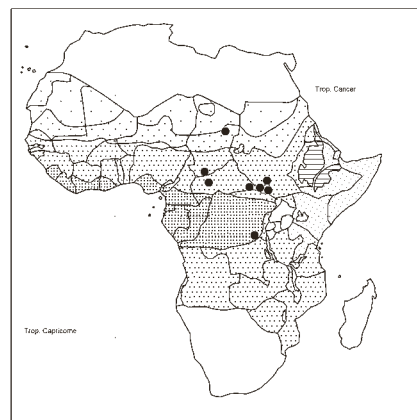
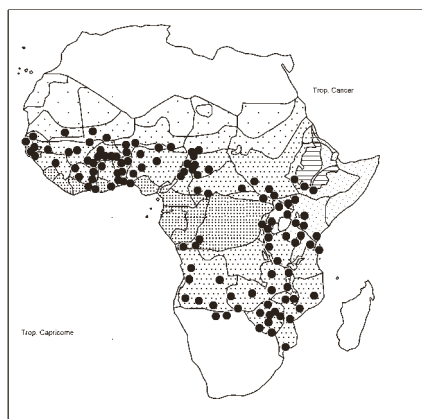
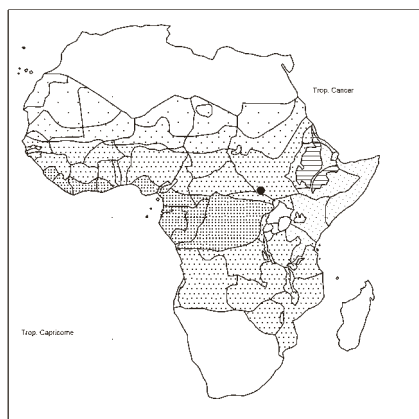
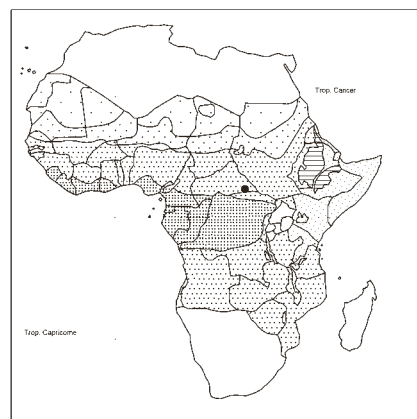
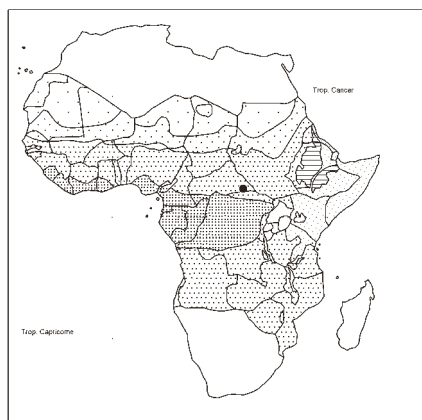
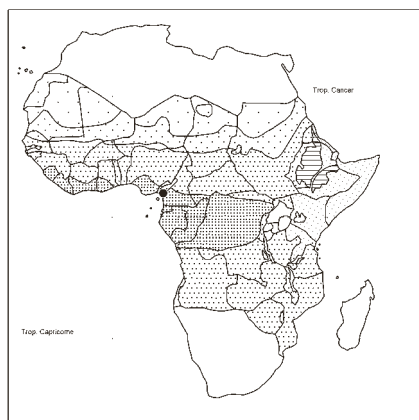
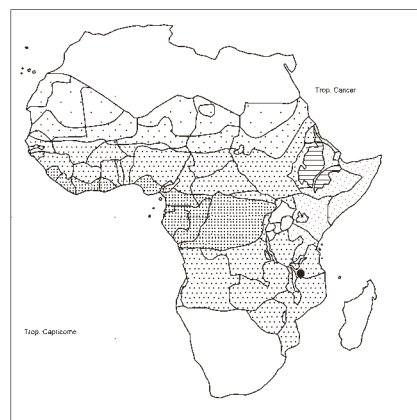
Annual grass; culms 2–4,5 m tall, to 9 mm Ø, with stilt roots at base; leaf blades linear, to 80 × 2,5 cm, narrowed towards base, glabrous; spatheate panicle loose, 30–40 cm long; spatheoles narrow, 5,5–9 cm long, glabrous; peduncles 2–3 cm long, white-bearded below tip; racemes 1,5–4 cm long, 2-awned per pair; appendage 5–10 mm long, 2–4 mm wide, rolled cornucopia-like about base of racemes; homogamous spikelets 0,8–2,5 cm long; sessile spikelets 0,8–1,8 cm long, whitish- to brown-hairy; awn 6–15 cm long; pedicelled spikelets 0,8–2,5 cm long with bristle 0,2–1,5 cm long.

Savanna woodland, sometimes dominant; growing in pure stands.

H. dissoluta (Nees ex Steud.) Clayton; Renier, Fl. Kwango 1: 29, 1948 (as *Hyparrhenia ruprechtii*); Clayton in *Kew Bull.* 20: 441–445, 1966; Burkill, Useful pl. W. Trop. Afr., ed. 2, 2: 269, 1994. – Icon.: Fl. Trop. E. Afr., Gramin. 3: 787, 1982; Gibbs Russell & al., Grasses south. Afr.: 188, 1990; van der Zon, Gramin. Cameroun 2: 498, 1992; Fl. Eth. & Eritrea 7: 334, 1995; Poilecot, Boissiera 50: 599, 1995; idem, ibid. 56: 621, 1999; Fl. Zambes. 10/4: 137, 2002; Müller, Grasses Namibia, rev. ed.: 221, 2007; van Oudtshoorn, Guide grasses south. Afr., ed. 3: 57, 2012; Agnew, Upl. Kenya wild flow., ed. 3: pl. 192, 2013; Ibrahim & al., Grasses Mali: 81, 2018; César & Chatelain, Fl. ill. Tchad: 262, 2019 (details).

bas.: *Anthistiria dissoluta* Nees ex Steud.

syn.: *Andropogon antheasterioides* Rupr. ex M. Martens & Galeotti; *A. macrolepis* Hack.; *A. ruprechtii* Hack.; *A. luteolus* Vanderyst, nom. provis.; *Hyparrhenia dissoluta*

*Hyparrhenia wombaliensis**Hyperthelia colobantha**Hyperthelia cornucopiae**Hyperthelia dissoluta**Hyperthelia edulis**Hyperthelia kottoensis**Hyperthelia polychaeta**Hypseochloa cameroonensis**Hypseochloa matengoensis*

HYPERTHELIA DISSOLUTA

(Nees ex Steud.) C. E. Hubb.; *H. macrolepis* (Hack.) Stapf; *H. ruprechtii* (Hack.) E. Fourn.; *Cymbopogon ruprechtii* (Hack.) Rendle; *Hyperthelia macrolepis* (Hack.) Clayton; *Sorghum macrolepis* (Hack.) Kuntze; *S. ruprechtii* (Hack.) Kuntze

Perennial grass forming thick tussocks, with a predominant yellow appearance, and usually taller than the surrounding grasses; culms 1–3 m tall; leaf blades linear, to 30 × 0,6–1,2 cm, glabrous; false panicle erect, stiff, narrow, 15–40 cm long of 4–6 fastigiate tiers; spatheoles narrow, 5–7 cm long, yellowish-green becoming reddish, with peduncles ± ½ as long, pilose; racemes 2–3 cm long, 2-awned per pair; appendage linear, 4–11 mm long; homogamous spikelets c. 1–1,5 cm long; sessile spikelets 1–1,5 cm long, white-hairy; awn 5–10 cm long, stout, with yellow hairs.

Common in savanna by waysides and in disturbed places; *Acacia*, *Lonchocarpus* grassland; *Acacia* bushland; poor sandy soils; fallows; flat dunes with *Cymbopogon giganteus*, *Andropogon gayanus*, *Aristida sieberiana*, *Schizachyrium exile*, *Diheteropogon hagerupii*; riverbanks; contaminated mining areas with nickel, molybdenum; maritime sands; 0–2500 m alt.

Namibia, Botswana, S. Africa, Swaziland; Madagascar. Introduced in C. & S. America (tropical).

“A distinctive species, usually recognizable from a distance by its yellow colour and fastigiate habit” (Clayton 1966: 445).

H. edulis (C. E. Hubb.) Clayton in Kew Bull. 20: 447, 1966; Darbyshire & al., Pl. Sudan & S. Sudan: 135, 2015. – Icon.: Hooker’s Icon. Pl. 35: pl. 3495, 1950 (under *Hyparrhenia*).

bas.: *Hyparrhenia edulis* C. E. Hubb.

Annual grass; culms to 5,7 m tall, 9 mm Ø, with stilt roots at base; leaf sheaths at mouth with narrow auricles 1,2–2,4 cm long; blades linear, to > 1 m × 3,8 cm, narrowed at base into a false petiole to 16 cm long; false panicle loose, to 1,5 m long; spatheoles lanceolate, 6,5–10 cm long, pruinose, tinged purple; peduncles 1–3 cm long, glabrous; racemes 4,5–6 cm long, 2-awned per pair; appendage 1,5–2 cm long, lobed or dentate, rolled cornucopia-like; homogamous spikelets narrow, 2,5–3 cm long; sessile spikelets 2,5–3,5 cm long, white-hairy; awn 9–14 cm long, fulvously hirtellus.

In pure stands in pockets in rocky hills, often covering a large area. – Not cultivated but harvested for grain.

Sudan: Abu Satta hills (6°06'N × 27°44'E).

Similar to *H. cornucopiae* but larger.

H. kottoensis Desc. & Mazade

Annual erect grass to 1,2–1,8 m tall; tips of basal leaf sheaths hairy; nodes with long silky hairs; leaf blades linear, to 40 × 0,6–1 cm, hairy; false panicle narrow, 20–50 × 10 cm; spatheoles 2–4 cm long, ciliate; raceme bases 0,4–1 cm long; racemes 2-awned per pair; appendage 3,5–5,5 mm long; homogamous spikelets 0,6–1 cm long; sessile spikelets 0,8–1,1 cm; awn 4–6 mm long, short-hairy.

Forest gallery; lateritic crust.

H. polychaeta Clayton – Icon.: Kew Bull. 20: 442, 1966.

Annual grass; culms 2 m long, to 4 mm Ø; leaf sheaths glabrous with auricles 6 mm long at tip; blades linear, c. 40 cm × 2–4 mm; false panicle lax, scanty, 30 cm long; spatheoles linear, 6–10 cm long, glabrous, with peduncles 1–2 cm longer, with white or yellowish hairs towards tip; racemes 3–6 cm long, 4–10-awned per pair; appendage linear, 3–4 mm long, entire or 2-lobed;

HYPERTHELIA POLYCHAETA

homogamous spikelets 1,2–1,5 cm long, glabrous; sessile spikelets 1,2 cm long, glabrous; awn 5–7 cm long, column yellowish hairy. Lateritic sands; ironstone plateau; oozing pan.

Known from very few collections (Clair 18, 34; cf. above under *H. colobantha*).

SYNONYM:

Hyperthelia macrolepis (Hack.) Clayton
= **Hyperthelia dissoluta**

(HYPOGYNIUM)

Hypogynium absimile (Pilg.) Roberty

= **Hyparrhenia mobukensis**

arrectum (Stapf) Roberty = **Anadelphia afzeliana**

ceresiiforme (Nees) Roberty

= **Monocymbium ceresiiforme**

hamatum (Stapf) Roberty = **Anadelphia hamata**

leptocomum (Trin.) Roberty = **A. leptocoma**

macrochaetum (Stapf) Roberty = **A. macrochaeta**

pumilum (Jacq.-Fél.) Roberty = **A. pumila**

schlechteri (Hack.) Pilg. = **Andropogon festuciformis**

spathiflorum sensu auctt. (i. a. Renier 1948,

Fl. Kwango 1: 25) = **A. festuciformis**

trepidarium (Stapf) Roberty = **Anadelphia trepidaria**

trichaetum (Reznik) Roberty = **Anadelphia trichaeta**

trispiculatum (Stapf) Roberty = **Anadelphia trispiculata**

HYPSEOCHLOA / 2

Tropical African genus of 2 annual species. Spikelets 1-flowered, glumes 5-nerved, lemma apically deeply bifid with an awn arising from the apical sinus.

“*Hypseochloa* C. E. Hubbard occupies a somewhat intermediate position between *Agrostis* L. and *Aira* L. From the former it may be distinguished by its 3–5-nerved glumes and rigid indurated 2-toothed lemma, and from the latter by the single florets and 3–5-nerved glumes” (Hubbard in Kew Bull. 36: 62, 1981). One of the 2 species known only from the type.

Hypseochloa cameroonensis C. E. Hubb.; Cable & Cheek, Pl. Mt Cameroon: LXVIII f., 1998; Onana & Cheek, Red Data Book flow. pl. Cameroon: 399, 558 (map), 2011; Onana, Fl. Cameroun 40: 243, 2013. – Icon.: Bull. Misc. Inform. Kew 1936: 299, 1936.

Annual delicate slender grass 10–45 cm tall growing in small tufts; leaf blades to 3,5 cm long; panicle 5–10 cm long, lax; pedicels of spikelets 2–5 mm long, slender; spikelets cleistogamous, 3 mm long; lemma 2,5 mm long with geniculate awn 4–6 mm long.

Frequent between tufts of high grasses and in grassland strewn with boulders; (1000–)2000–3600 m alt.

Closely resembling *Aira caryophyllea* with which it is often found mixed.

H. matengoensis C. E. Hubb., Kew Bull. 36: 62, 1981.

Annual delicate grass 4–16 cm tall; *culms branched*, filiform, geniculately ascending or suberect; leaf blades linear, 1–4 cm × c. 1 mm; panicle ovate, lax, to 2,5 cm long, 2 cm wide, branches capillary; *spikelets* ± oblong, 2–2,5 mm long; lemma 1,6–1,9 mm long with geniculate awn c. 5 mm long.

Damp bank between rock outcrops; 1920 m alt.

Known only from the type collected in 1956.

(HYPUDAEURUS)

Hypudaeurus cenchroides Hochst. ex A. Braun

= ***Anthephora pubescens***

VI. LIST OF PLATES (P. POILECOT)

(Drawn for his manuscript on “Poaceae from Senegal to Tchad”, but never finished when he passed away.)

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VII. INDEX TO GENERA A–H

This Index only gives reference to current names of genera used in the text (not on the maps which are in turn placed as closely as possible to the matching descriptions). Synonyms are sometimes cited (printed in *italics*).

However, many synonyms, but perhaps not all genera figure in the Cumulative Index “Énumération des plantes à fleurs d’Afrique tropicale” present at the end of the fourth volume (1997: pp. 678–712). Readers are invited to consult that index.

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Plate 36. *Hyparrhenia rufa*, see p. 338 and back cover illustration
a: lower part of culm; b: ligule; c: inflorescence; d : lower part of the raceme and common peduncle; e: pair of spikelets;
f: rachis; g-h: glumes lower and upper; i-j: lemma ; k: pedicel; l-m: glumes; n: lemma of the lower floret.

