

Resurrection of two previously confused species, *Olinia capensis* (Jacq.) Klotzsch and *O. micrantha* Decne. (Oliniaceae)

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Distinction is made between two pairs of previously confused taxa [*Olinia ventosa* (L.) Cufod., *O. capensis* (Jacq.) Klotzsch, *O. micrantha* Decne. and *O. emarginata* Burt-Davy] based on the sizes of their flowers, calyx lobes and bracts and the bracts being either persistent through anthesis or falling at or soon after the onset of anthesis. The effects of galling on floral morphology are discussed and taken into account. A key is provided as a means of identifying between these species and between them and other taxa in *Olinia*. A figure in *Fragm. Bot.* 68, t.103 is selected as an iconotype for the combination *O. capensis* and a neotype is designated for the synonym *O. acuminata*.

Key words: identification key, nomenclature, *Olinia*, taxonomy.

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Introduction

In this paper (which emanates from the preparation of a monograph of the family Oliniaceae), we clarify the taxonomic position of two pairs of previously confused South African taxa [*O. ventosa* (L.) Cufod.; *O. capensis* (Jacq.) Klotzsch; *O. micrantha* Decne. and *O. emarginata* Burt-Davy] and provide a means of distinguishing them from other taxa in *Olinia* and between them. Publication of this clarification will facilitate the recognition of *O. capensis* and *O. micrantha* in the next edition of 'Trees of Southern Africa' (Coates Palgrave 1977) which is currently being revised (M. Coates Palgrave *pers. comm.*).

Taxonomic history

In his account of *Olinia*, Sonder (1862) recognised only one species, *O. cymosa* Thunb. (now a synonym of *O. ventosa*) with three varieties differentiated mainly on the basis of leaf shape: var. *latifolia* Sond., var. *intermedia* Sond. and var. *acuminata* Sond. Sim (1907) also considered *Olinia* to comprise one species with three varieties differentiated on the basis of both leaf shape and dimensions. Hofmeyr and Phillips (1922) recognised *O. cymosa* Thunb. and *O. acuminata* Klotzsch in their treatment of *Olinia*, but used incorrect names. In the publication in which Cufodontis (1960) makes the combination *O. ventosa*, he treats *O. capensis* as a synonym and *O. acuminata* as a distinct species. Coates Palgrave (1977) did not include *O. capensis* and *O. micrantha* as recognised species, nor as synonyms.

O. cymosa var. *acuminata* sensu Sim (1907) is not the same as that of Sonder (1862). Based on nomenclature *O. cymosa* var. *acuminata* sensu Sonder must be *O. ventosa*, although the smaller size of the flowers might have meant that he had *O. capensis* in mind. The smaller size of leaves in *O. cymosa* var. *acuminata* sensu Sim suggests that this taxon is the same as *O. micrantha*. Hofmeyr and Phillips' (1922) recognition of *O. acuminata* Klotzsch was based partly on material belonging to *O. micrantha* which is restricted to the Eastern Cape and partly on material belonging to *O. emarginata* whose range of distribution extends from KwaZulu-Natal into Free State, Mpumalanga, Northern Province and Gauteng. Since Decaisne (1877) published the combination *O. micrantha* it has only been recognised by Engler (1921) and then never taken up in any of the subsequent treatments of *Olinia* in the former Cape Province (Table 1), and as a result the confusion between *O. emarginata* and *O.*

micrantha has persisted. Codd (1957) was unable to separate *O. micrantha* from *O. cymosa* based on the description and locality of the specimen collected by Burchell no. 3592, but it seems he had not seen the specimen.

Interpretation of inflorescence structure

Weberling (1988) classifies the inflorescence of *Olinia* as the 'primitive monotelic' type in which the inflorescence axis ends with a terminal flower, and all the floral branches below the terminal flower end with a terminal flower. In *Olinia* flowers are produced in monochasial cymes, each of 3 flowers only. Three cymes are grouped into a 9-flowered inflorescence unit (Figures 1b and 1c). Inflorescence units terminate secondary inflorescence axes and each of the tertiary inflorescence axes produced at each of 2–4 nodes below the terminal unit. This structure is repeated on the main inflorescence axis (Figure 1a). These inflorescences are produced terminally or in leaf axils.

Interpretation of floral structure

The interpretation of the floral structure in *Olinia* is controversial. The flowers are regular, bisexual and epigynous (see Figures 3 and 5, plate 1260 of Codd 1957). At the throat of the floral tube there are five, sometimes four, coloured lobes alternating with an equal number of incurved scales. Stamens, with highly reduced filaments, are inserted just below the scales. Although there is general agreement on the presence of the hypanthium, there are those who regard the calyx to be extremely reduced and represented by a narrow rim of four or five rudimentary teeth, the coloured lobes as petals and the hooded structures within the hypanthium as scales (Sonder 1862; Hofmeyr & Phillips 1922; Phillips 1951; Codd 1957; Cufodontis 1960; Rao & Dahlgren 1969; Hutchinson 1973; Verdcout 1975 & 1978). Others regard sepals of the calyx to be represented by the coloured lobes and the petals represented by the scales within the hypanthium (Decaisne 1877; Sim 1907; Fernandes & Fernandes 1962). Rao and Dahlgren (1969) provided anatomical evidence in favour of the coloured lobes being petals alternating with the scales and their interpretation of stipular scales is followed here.

Basis for recognition of taxa

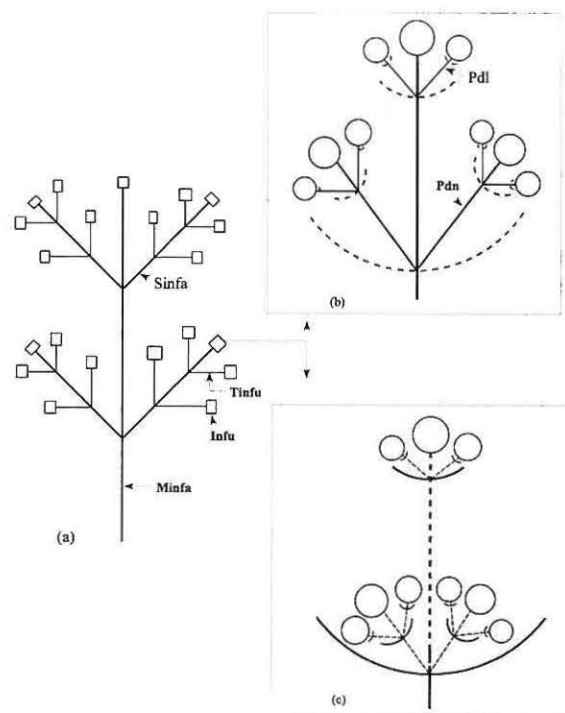
We have found floral characters that reliably separate the two pairs of previously confused taxa *O. emarginata* from *O. micrantha* and *O. capensis* from *O. ventosa*. In *O. capensis* bracts are

Table 1 Taxa recognised in previous accounts of *Olinia*

Date	Author(s)	Area covered	Taxa recognised
1862	Sonder	Southern Africa	<i>O. cymosa</i> Thunb., var. <i>latifolia</i> Sond., var. <i>intermedia</i> Sond. & var. <i>acuminata</i> Sond.
1877	Decaisne	Worldwide	<i>O. acuminata</i> Klotzsch, <i>O. capensis</i> Klotzsch, <i>O. cymosa</i> Thunb., <i>O. micrantha</i> Decne. & <i>O. rochetiana</i> A. Juss.
1894	Gilg	Worldwide	<i>O. cymosa</i> Thunb., <i>O. capensis</i> Klotzsch, <i>O. rochetiana</i> A. Juss. & <i>O. usambarensis</i> Gilg
1907	Sim	Former Cape Province	<i>O. micrantha</i> (as <i>O. cymosa</i> var. <i>acuminata</i>), <i>O. cymosa</i> var. <i>latifolia</i> & var. <i>intermedia</i> <i>O. abyssinica</i> Gilg, <i>O. micrantha</i> Decne., <i>O. acuminata</i> Klotzsch, <i>O. cymosa</i> (L.) Thunb., <i>O. vanguardoides</i> Bak., <i>O. usambarensis</i> Gilg, <i>O. ruandensis</i> Gilg, <i>O. volkensii</i> Gilg, <i>O. macrophylla</i> Gilg & <i>O. rochetiana</i> A. Juss.
1921	Engler	Worldwide	
1922	Hofmeyr & Phillips	South Africa	<i>O. acuminata</i> Klotzsch (which is actually a mixture of <i>O. emarginata</i> & <i>O. micrantha</i>), <i>O. cymosa</i> Thunb. & <i>O. radiata</i> Hofmeyr & Phill.
1926	Burt-Davy	Former Transvaal & Swaziland	<i>O. emarginata</i> Burt-Davy & <i>O. usambarensis</i> Gilg
1950	Adamson	Cape Peninsula	<i>O. cymosa</i> Thunb.
1960	Cufodontis	Worldwide	<i>O. ventosa</i> (L.) Cufod., <i>O. acuminata</i> Klotzsch, <i>O. aequipetala</i> (Del.) Cufod., <i>O. usambarensis</i> Gilg, <i>O. volkensii</i> Gilg, <i>O. vanguardoides</i> Bak., <i>O. macrophylla</i> Gilg, <i>O. ruandensis</i> Gilg, <i>O. radiata</i> Hofmeyr & Phill., <i>O. emarginata</i> Burt-Davy & <i>O. discolor</i> Mildbr.
1962	Fernandes & Fernandes	Angola	<i>O. usambarensis</i> Gilg, <i>O. aequipetala</i> (Del.) Cufod., <i>O. discolor</i> Mildbr. & <i>O. huillensis</i> Welw. ex A. & R. Fern.
1977	Coates Palgrave	Southern Africa	<i>O. ventosa</i> (L.) Cufod., <i>O. radiata</i> Hofmeyr & Phill., <i>O. emarginata</i> Burt-Davy, <i>O. vanguardoides</i> Bak. & <i>O. rochetiana</i> A. Juss.
1978	Verdcourt	Flora Zambesiaca	<i>O. rochetiana</i> A. Juss. & <i>O. vanguardoides</i> Bak.

persistent through anthesis; axes of inflorescence units are reduced so that there are nine flowers (three sets, each of three flowers) clustered at the tips of identifiable axes (Figure 1c) whereas in *O. ventosa*, bracts fall at anthesis and the axes of the inflorescence units are not reduced so that there are three flowers at the tip of each identifiable axis (Figure 1b). The petal lobes in *O. capensis* are reduced, less than 2 mm long and up to 1 mm wide (Figure 2a) whereas in *O. ventosa* the petal lobes are larger, up to 3.3 mm long and 1.5 mm wide (Figure 2c). The two species differ remarkably in the sizes of their flowers, with the hypanthium longer than 3.5 mm in *O. ventosa*, but 2 mm or shorter in *O. capensis* (Figure 3). The differences in the structure of the inflorescence between *O. capensis* and *O. ventosa* are illustrated in Figures 1b and 1c. The persistence of bracts and bracteoles through anthesis in *O. capensis* possibly serves to aid the attraction of pollinators since the hypanthium and petal lobes are reduced and thus not as noticeable as those in *O. ventosa* in which the hypanthium and petal lobes are larger, creamy white and showy. It is possible that these different visual attractants attract different pollinators. These features suggest that *O. capensis* is a species distinct from *O. ventosa*. In order to clarify the considerable confusion that has existed between the sympatric *O. ventosa* and *O. capensis* (Figures 4 and 5), we find it necessary to cite all voucher specimens we have seen.

In recognising *O. acuminata* Hofmeyr and Phillips (1922) cited specimens from the former Transvaal which belong to *O. emarginata* and some from the former Cape and Natal provinces which belong to *O. micrantha*. The bracts which fall at anthesis and the leathery leaves which are broadly elliptic to slightly obovate in *O. micrantha* separate it from *O. emarginata* which has bracts reduced to scales and narrowly elliptic leaves. Leaf apices in *O. emarginata* are retuse to emarginate with a minute extension of the midvein whereas in *O. micrantha* the apices are obtuse to acute with a distinct extension of the midvein. The sec-



Figures 1a–1c 1(a) Diagrammatic representation of the structure of the inflorescence in *Olinia* – ‘infu’ = inflorescence unit, ‘minfa’ = main inflorescence axis, ‘sinfa’ = secondary inflorescence axis and ‘tinfu’ = tertiary inflorescence axis. 1(b) Structure of the inflorescence in *O. ventosa* – dotted curves = caducous bracts and bracteoles, ‘pdl’ = pedicel and ‘pdn’ = peduncle. 1(c) Structure of the inflorescence in *O. capensis* – dotted lines = reduced peduncles and pedicels, solid curves = persistent bracts and bracteoles.



Figures 2a–2d 2(a) Normal uninfected flower of *O. capensis*, $\times 10.5$. 2(b) Infected flower of *O. capensis*, $\times 10.5$. 2(c) Normal uninfected flower of *O. ventosa*, $\times 10.5$. 2(d) Infected flower of *O. ventosa*, $\times 10.5$. Photographs 2(a) & 2(b) taken from Richardson 121, 2(c) from Orchard 574 and 2(d) from Keet 589.

ondary and tertiary veins are inconspicuous on both surfaces of the lamina in *O. micrantha* but prominent on the lower surface and just visible on the upper surface in *O. emarginata*. In both species the inflorescence is produced terminally and in leaf axils, but it is compact in *O. micrantha* and more open in *O. emarginata*. The hypanthium in *O. emarginata* is longer than 3.5 mm and shorter than 3.0 mm in *O. micrantha* (Figure 6). These differences in floral features are sufficient to maintain *O. micrantha* as a distinct species.

Effects of galling on morphology

Olinia flowers are often infected by Hemipteran larvae which affect their size and shape (Decaisne 1877; Hofmeyr & Phillips 1922; Phillips 1926; Cufodontis 1960; Verdcourt 1975 & 1978). This has led to confusion about species limits in *Olinia* as flowers and fruits are often galled so that few or no normal flowers are found which frequently deludes collectors into believing they have found a new taxon (Verdcourt 1978). The discussion of Hofmeyr and Phillips (1922) about galled flowers in *O. acuminata* Klotzsch is irrelevant to *O. capensis* and *O. ventosa*, but relevant to *O. emarginata* and *O. micrantha*. In both *O. capensis* and *O. ventosa* there are normal flowers and abnormal ones due to infection by hemipteran larvae. Infected flowers of *O. capensis* have swollen calyx tubes which are broader and larger than the bracteoles that subtend them, and the petals are narrower and reduced to filiform structures (Figure 2b). In *O. ventosa* the calyx tube also swells up when infected, tends to be twice as long as the normal size (5.7 mm), and the petals become reduced and densely hairy (Figure 2d). When there is no infection, plants produce flowers in abundance once in every three years and this sequence is interrupted when flowers are infected whereby the next full flowering will occur the year after the infection (Phillips 1926). We have dissected and examined flowers of *O. capensis* and *O. ventosa* and have found remnants of larvae exoskeletons as evidence of insect infestations in both species, with styles and the top part of the ovary chewed. Therefore, there are two taxa

involved, *O. capensis* with relatively small flowers (Figure 2a) which set seed and can be infected (Figure 2b) and *O. ventosa* with relatively large flowers (Figure 2c) which also set seed and can be infected (Figure 2d).

Formal taxonomy

Key to distinguish species of *Olinia* in South Africa

- Secondary veins branching from midrib at 45° – 60° and looping more than once before the margins; tertiary veins clearly visible on upper surface *O. rochetiana* complex
Secondary veins branching from midrib at 30° – 44° and looping once before the margins; tertiary veins not clearly visible on upper surface 2
- Bracts reduced to scales, shorter than 0.5 mm, narrower than 1 mm and green; common in KwaZulu-Natal, Mpumalanga, Gauteng, North-West and Northern Province 3
Bracts longer than 1 mm, wider than 2 mm and creamy white; restricted to Western Cape and Eastern Cape 4
- Leaves discolorous. (23–)30–39.5(–44) \times 10–15(–19) mm; inflorescence loose and terminal; hypanthium glabrous. (3.3–)4–5(–6) mm long; style puberulent; petal lobes (1.5–)1.7–2.5(–3); locules 5 *O. emarginata*
Leaves concolorous. (62–)64–76(–79) \times (24–)25.5–30.5(–31) mm; inflorescence dense, and axillary; hypanthium puberulent. 1.5–1.7 mm long; style glabrous; petal lobes up to 1 mm long; locules 4 *O. radiata*
- Bracts persistent through anthesis; 9 flowers clustered at the tip of each identifiable axis *O. capensis*
Bracts falling at or soon after onset of anthesis; 3 flowers at the tip of each identifiable axis 5
- Hypanthium longer than 3 mm; petal lobes (1.5–)2.0–2.9(–3.3) \times 0.9–1.5 mm *O. ventosa*
Hypanthium shorter than 2.6 mm; petal lobes (1.0–)1.2(–2.0) \times 0.5–1.0 mm. *O. micrantha*

Olinia ventosa (L.) Cufod. in Österreichischen Botanischen

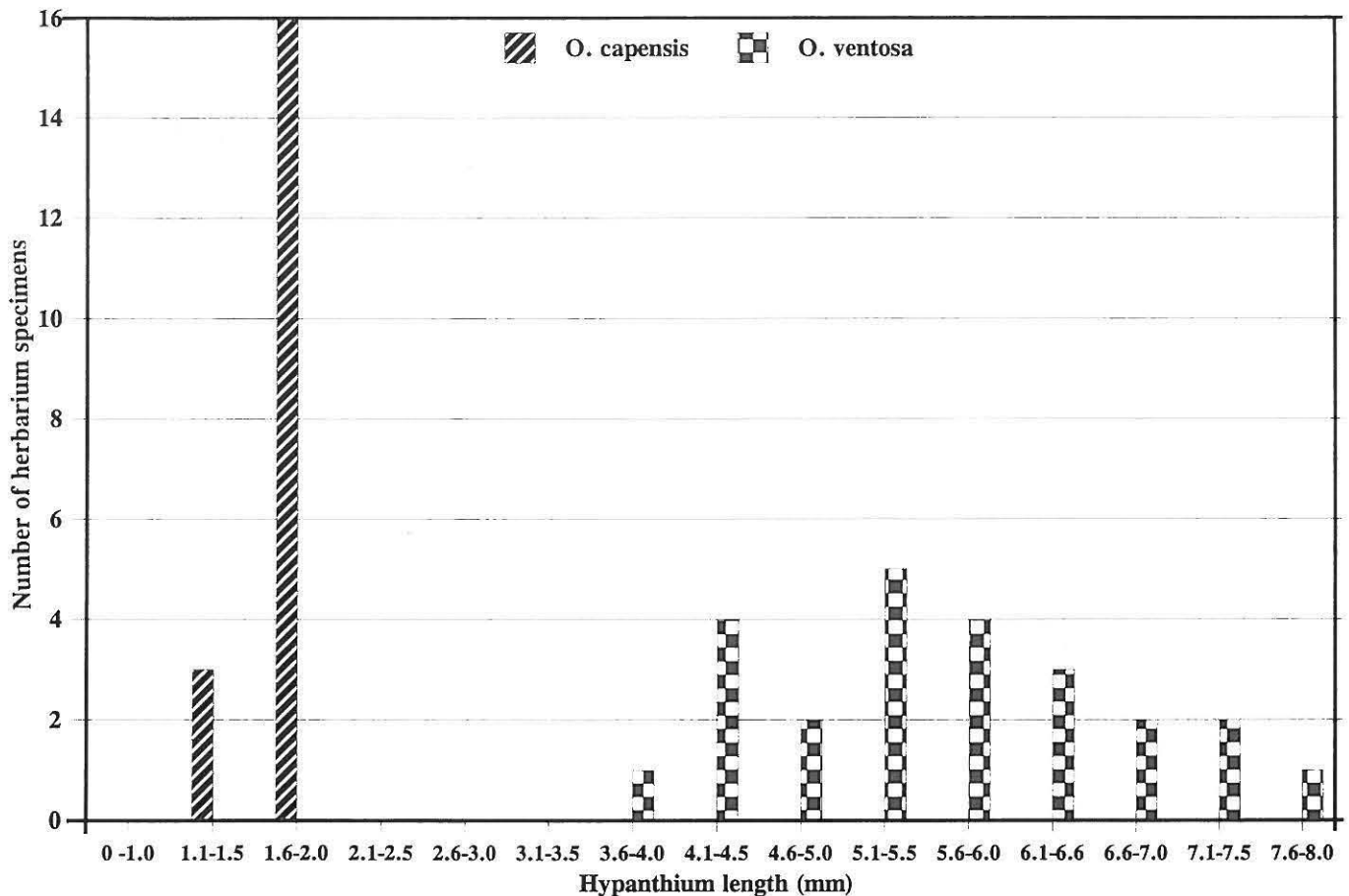


Figure 3 Frequency distribution of hypanthium length in *O. capensis* and *O. ventosa*.

Zeitschrift CVII: 106 (1960); Coates Palgrave: 645 (1977). Lectotype: Caput bona spei; Herb. Linn. No. 277.2 [LINN!, designated by Ross (1975)].

Platonia ventosa L.: 52 (1767); L.: 183 (1771); L.: 232 (1784).

Sideroxylon cymosum L.f.: 152 (1781); L.: 232 (1784); Thunb.: 36 (1794). *Olinia cymosa* (L.f.) Thunb.: 5 (1800); Klotzsch: 27 (1836); Klotzsch: 60, t. 24 (1841b); Sond.: 520 (1862); Sim: 227, t. 70, fig. 14 (1907); Hofmeyr & Phillips: 100 (1922); Adamson: 593 (1950). Lectotype: Caput bona spei, in Tafelberg, Thunberg 5428 (UPS, here designated; seen on microfiche at J & K).

O. cymosa var. *latifolia* Sond.: 520 (1862); Sim: 227 (1907), nom. illeg. (= *O. cymosa* (L.f.) Thunb.).

Large tree, up to 5 m high; bark smooth and greyish; younger branches pink and quadrangular. *Leaves* simple, opposite, decussate, lamina obovate to oblanceolate, petiolate, discolorous, glabrous on both surfaces, (36-)44-69(-80) × (17-)20-29(-35) mm, base cuneate to attenuate, apex acuminate to obtuse in juvenile leaves, slightly emarginate in mature leaves; margin entire, undulate, slightly revolute; venation brochidodromous, midvein slightly sunken, protruding below surface; secondary veins branching at 30°-45° from midrib, looping once before margins; tertiary veins inconspicuous above; petiole pink, pubescent. (3.0-)3.6-6.5(-7.6) mm long; stipules rudimentary, brownish black. *Bracts* caducous, creamy white, obovate, (1.5-)3.5-5(-7) × 1.5-3.5 mm, pubescent on both surfaces; apex acuminate; base decurrent on inflorescence units. *Inflorescences* axillary, dichasial cyme, loose; axes slightly pubescent, (5.5-)6.6-9(-11) mm long; peduncle (3.0-)3.1-4.2(-5) mm long. *Flowers* bisexual, perigynous, pentamerous. *Pedicel* glabrous, 0.5-1 mm long. *Hypanthium* pink, glabrous, (3.0-)4.6-6.8(-7.8) mm long. *Sepals*: lobes rudimentary. *Petals*: lobes creamy

white, elliptic, (1.5-)2.0-3.0(-3.3) × 1.0-1.5(-1.5) mm, inserted at throat of hypanthium, pubescent on lower surface at point of attachment, base sessile, apex rounded, margin entire. *Scales* creamy white, hooded, enclosing stamens, alternating with petal lobes, 0.5-1.0 mm long, pubescent on both surfaces. *Stamens* alternating with petals, attached just below sinuses; filaments highly reduced or absent; anthers hidden by scales above them, dehiscing by longitudinal slits. *Ovary* inferior, five-locular. *Style* glabrous, ± 1 mm long. *Stigma* capitate. *Ovules* campylotropous, bitegmic and crassinucellate. *Fruit* pink to red, globose or ovoid, 5-7 mm in diameter; hypanthium scar/rim 4-5 mm in diameter.

Vouchers

Acocks 18364 (B, K, PRE); *Archibald* 6140 (PRE); *Balkwill et al.* 8769 (J, K); *Barber s.n.* (K); *Bayliss BRI B1485* (B); *Bayliss BRI B1090* (PRE); *Bolus* 1772 (BM, BOL, K); *Boucher* 530 (PRE); *Bowie s.n.* (K); *Britten* 1003, 2639 & 6572 (PRE); *Burchell* 5469, 5475 & 8397 (K); *Carlquist* 4599 (K); *De Kock* 45 (NBG); *Drege a & 3468* (K); *Ecklon & Zeyher s.n.* (BOL); *Ecklon & Zeyher* 10.9 (PRE pro parte); *Esterhuysen* 11494 (PRE); *Fourcade* 2728 (K, NBG, PRE); *Galpin* 88 (PRE); *Gamble* 22011 & 22155 (K); *Gillett* 940 & s.n. (NBG); *Goodman* 815 (BM); *Henderson* 1235 (NBG, PRE); *Hoffmann s.n.* (B); *Humbert* 9827 (K, PRE); *Johnson* 1027 (K, PRE); *Keet* 139 (NBG); *Keet* 500 (PRE), & 589 (BM, NBG, PRE); *Levy et al.* 669 (NBG); *MacOwan* 349 (BM); *MacOwan* 927 (BM, K, NBG, SAM); *MacOwan* 3492 (NBG); *Marloth* 238 (PRE); *McDonald* 779 (K, NBG); *Mund & Maire s.n.* (K); *Olivier* 1036 (NBG); *Olivier* 1071 (NBG, PRE); *Olivier* 1649 (PRE); *Orchard* 574 (K, NBG, PRE); *Pappe* 130 (SAM); *Parker* 4537 (K, NBG, PRE); *Parker* 4731 (K, PRE); *Paterson* 2320 (BOL); *Phillipson* 3680 (PRE); *Rattray sn* (Marloth 11782) (PRE); *Rodin* 1164 (PRE) & 1300 (K); *Rogers* 23219 (PRE); *Rycroft* 3306 (NBG);

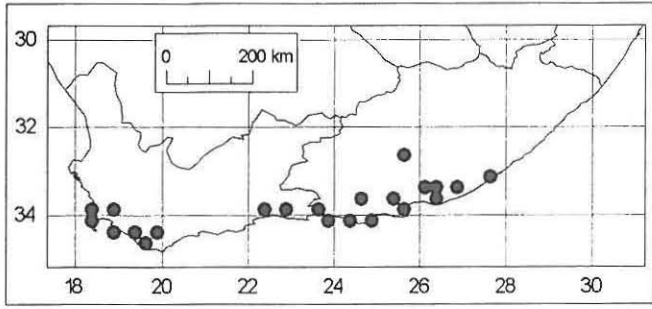


Figure 4 Known distribution of *O. ventosa* (●).

Saliet & Boucher 58 (NBG); *Scharf 1613* (NBG, PRE); *Schonland 818 & 2723* (PRE); *Smuts 1166* (PRE); *Stauffer 5126* (K, NBG, PRE); *Taylor 1254* (PRE); *Taylor 7423* (K, NBG, PRE); *Thode A2588* (K) & *A2597* (PRE); *Van Niekerk s.n.* (K); *Walter s.n.* (B); *Williams 652* (K); *Wright s.n.* (K); *Zeyher 244 & s.n.* (SAM); *Zeyher 2464 & 2465* (K, NBG).

Olinia capensis (Jacq.) Klotzsch in *Allgemeine Gartenzeitung*, 4: 27 (1836); Klotzsch: 6, t. 3 (1840). Iconotype: Jacq. *Fragm. Bot.*, t. 103 (1809), here designated.

Crematostemon capensis Jacq.: 68, t. 103 (1809).

Olinia acuminata Klotzsch: 27 (1836); Klotzsch: 53, t. 21 (1841a); Cufod.: 106 (1960). *O. cymosa* var. *acuminata* (Klotzsch) Sond.: 520 (1862). Neotype: Collected in Berlin Botanical Gardens, origin not recorded, Anonymous (K, *neo.*); here designated; B†, photos at J & PRE).

O. cymosa var. *intermedia* Sond.: 520 (1862); Sim: 227 (1907), nom. illeg. [*O. capensis* (Jacq.) Klotzsch—cited as a synonym].

O. cymosa var. *acuminata* (Klotzsch) Sond.: 520 (1862).

Non. *O. cymosa* var. *acuminata* sensu Sim: 227 (1907); *O. acuminata* sensu Hofmeyr & Phillips: 102 (1922).

Habit as in *O. ventosa*. Leaves as in *O. ventosa*, but (36.3–)46–64(–71) × (16–)21–29(–34) mm; petiole (2.3–)4–7(–8) mm long. Bracts persistent through anthesis, creamy white, linear to elliptic (2–)4–6(–8.5) × 1.0–3.0 mm, pubescent on both surfaces; apex slightly acuminate to apiculate; base decurrent on inflorescence units. Inflorescence as in *O. ventosa*, but compact; axes markedly pubescent, 7.0–9(–10.5) mm long; peduncle (2.3–)3.0–4.7(–5.5) mm long; 9 flowers per inflorescence unit, tightly clustered. Flowers as in *O. ventosa*. Pedicel pubescent, (0.3–)0.4–0.9(–1.0) mm long. Hypanthium red, glabrous, (1.5–)1.6–2.0 mm long. Sepals: lobes as in *O. ventosa*. Petals: lobes creamy white, narrow, linear to spatulate, (1.2–)1.5–2.0 × (0.3–)0.4–0.8(–0.9) mm. Scales as in *O. ventosa*. Stamens as in *O. ventosa*. Ovary as in *O. ventosa*. Style glabrous, reduced. Stigma capitate. Ovules as in *O. ventosa*. Fruit as in *O. ventosa*, 6–9 mm in diameter, hypanthium scar/rim 5–6 mm in diameter. Klotzsch (1836) gave a very short description of a plant in cultivation at the Berlin Botanic Garden, which was regarded as *Plectronia ventosa*, and proposed the combination *Olinia acuminata*. He described it as 'Foliis ellipticis, acuminatis, brevissime mucronatis, intergerrimis'. Later he provided a full description of this plant, making reference to an illustration (Klotzsch 1841a). This illustration compares well with that of Jacquin (1809). The origin of this plant in cultivation at the Berlin Botanic Garden is not known, but there are two sheets at Kew enclosed in a type cover of *O. acuminata* Klotzsch. One sheet contains a solitary leaf in an envelope with the following note 'Folium specimenis a Klotzschio ipso nomine *Oliniae acuminatae* Klotzsch manuscripto notati. Ex horto Botan. Berlin'. The other sheet has two

flowering twigs and the notes 'Specimen manifeste ab eodem frutice Horti Botanici Beroliniensis sumptum a quo specimen typicum Klotzschii natum est. (L. Diels 1924)'. There is also a label (with the information '*Olinia acuminata* Klotzsch, Hort. bot. Berol. 1840') covered by an extract of a letter from Dr Diels dated 28th May 1925 which reads 'In Beantwortung Ihres Schreibens vom 25 Mai 1925 unbersende ich Ihnen heute per Postpaket ein Duplikat-Exemplar der *Olinia acuminata* Klotzsch; bitte behalten Sie es für das Kew Herbarium. Es ist so gut wie ein Co-type'. Since these herbarium specimens seem to be from the plant cultivated in Berlin Botanic Gardens, it follows that they should be considered for typification of *O. acuminata* Klotzsch. On the basis of the description and examination of floral features, we are convinced that Klotzsch's *O. acuminata* is synonymous with *O. capensis*. The leaf dimensions of Sim's (1907) *O. cymosa* var. *acuminata* (25.4–35 mm long) fall more or less within the range of *O. micrantha* (23.3–37.5 mm long), whilst those of *O. latifolia* sensu Sim and *O. intermedia* sensu Sim (50.8–76.2 mm long) are within the ranges of both *O. capensis* (36–71 mm long) and *O. ventosa* (36–80 mm long). Thus, *O. capensis* cannot be confused with *O. micrantha* which has smaller leaves and *O. ventosa* from which it differs in the structure of the inflorescence.

Vouchers

Acocks 11137 & 21207 (K, PRE); *Acocks 21368* (BOL, K, PRE); *Adamson 3671* (PRE); *Adamson s.n.* (SAM); *Bayliss BRI B.134* (K), *BRI. B. 1485* (K, PRE) & *BRI. B 7027* (PRE); *Bean 670* (BOL); *Boucher 321* (K, NBG, PRE); *Bowker s.n.* (K); *Burchell s.n.* (BOL, NBG); *Compton 14444* (BOL, NBG) *Compton 16344* (NBG); *Dregea & s.n.* (K, SAM); *Duthie 618* (BOL, NBG); *Duthie 856* (NBG); *Eckhardt's Nursery PRE 59896* (PRE); *Ecklon sub B8613* (B); *Ecklon & Zeyher 10.9* (B, BOL, PRE *pro. parte*); *Ecklon & Zeyher 70.10* (B, PRE); *Esterhuysen 11494, 15678 & s.n.* (BOL); *Flanagan 2341* (BOL, K, PRE); *Fourcade 843 & 2592* (NBG, PRE); *Goldblatt 2070* (NBG); *Hugo 2624* (NBG, PRE); *Hugo-Brunt sn* (PRE); *Humbert 9633* (PRE); *Johnson 1013* (K, PRE); *Johnson 1027* (BOL); *JR & BR 385* (BOL); *Kapp 113* (K, PRE); *Keet 523* (K, NBG, PRE); *Keet 588* (NBG); *Keet s.n.* (PRE); *Kensit sub Bolus 10748* (BOL, K); *Kerfoot K5273* (K, NBG, PRE) & *K5404* (NBG, PRE); *Leighton 1762* (BOL); *Levyns 669, 751 & 5578* (BOL); *Lucas s.n.* (BOL); *Marais 392* (PRE); *O'Callaghan et al 39* (NBG, PRE); *Olivier 1036* (BOL, NBG); *Olivier 1071* (NBG); *Page 16337* (BOL); *Parker 3825* (K, NBG); *Parker 4072* (BOL, K, NBG); *Paterson 2319 & 2320* (BOL); *Penfola s.n.* (SAM); *Phillips sub J20160* (J); *Pillans s.n.* (BOL); *Rendle 145* (BM); *Richardson 121* (NBG, PRE); *Rodin 1164* (K), *1300* (BOL, PRE); *Rycroft 3321* (NBG); *Salie & Boucher 41 & 72* (NBG); *Scharf 1412 & 1417* (PRE); *Scharf 1589* (NBG); *Story 2687* (PRE) & *3129* (K, PRE); *Strey 749* (K, PRE); *Taylor 3456* (NBG, PRE); *Thode A841 & A2537* (K, PRE); *Toms 6324* (K); *Van*

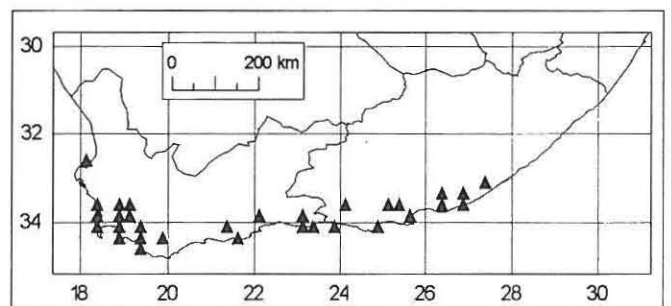


Figure 5 Known distribution of *O. capensis* (▲).

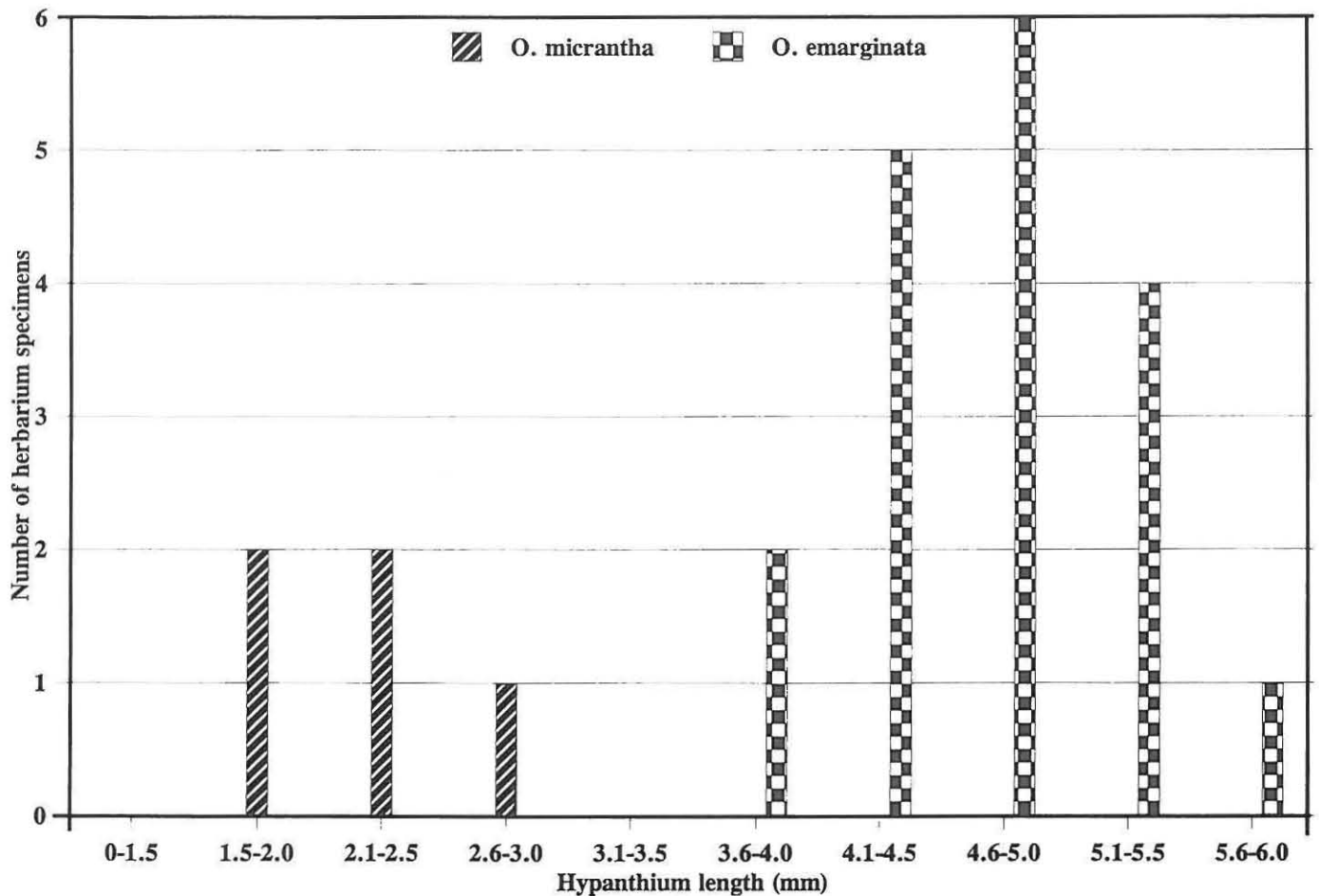


Figure 6 Frequency distribution of hypanthium length in *O. emarginata* and *O. micrantha*.

der Merwe 859 (NBG, PRE); Van Jaarsveld 7805 (NBG); Van Rensburg 2144 (K; PRE); Willemse 378 (NBG, PRE); Williams 2007 (NBG, PRE); Woodvine 26 (NBG); Zeyher s.n. (PRE, SAM); Zeyher 179 (BOL, SAM).

Olinia micrantha Decne. in Sur les caractères et les affinités des Oliniées: 14 (1877); Engler: 625 (1921). Type: Afr. Austr., Catal. Geogr. Plant. Extratrop., Burchell 3592 (K!, isotype).

O. cymosa var. *acuminata* sensu Sim: 227 (1907); *O. acuminata* sensu Hofmeyr & Phillips *pro. parte*: 102 (1922).

Large tree up to 15 m high; bark grey; terminal branches quadrangular and slightly pubescent. *Leaves* simple, opposite, decussate, concolorous, lamina broadly elliptic to obovate, leathery, (23.3–)25.7–36.5(–37.5) × (9.5–)11.8–17.3(–17.7) mm, venation brochidodromous, secondary and tertiary veins inconspicuous above and below; apex obtuse to apiculate, slightly mucronate; margin entire; base attenuate; petiole slightly pubescent on dorsal surface, (1.2–)1.6–2.8 mm long; stipules rudimentary, brownish black. *Inflorescence* axillary and terminal, compact, dichasial cyme; peduncle pubescent, (1.8–)1.9–3.5(–3.8) mm long; bracts subulate, pubescent on both sides, 1.8–2.8 × 1.0–1.5 mm. *Flowers* as in *O. ventosa*; pedicel 0.5–0.9 mm long. *Hypanthium* glabrous to slightly pubescent, (1.8–)1.9–2.7 mm long. *Sepals*: lobes as in *O. ventosa*. *Petals*: lobes brownish, oblanceolate, (1.0–)1.2–2.0 × 0.5–1.0 mm; apex mucronulate to mucronate; base sessile. *Scales* as in *O. ventosa*. *Stamens* as in *O. ventosa*. *Ovary* as in *O. ventosa*. *Style* reduced, glabrous. *Stigma* as in *O. ventosa*. *Fruit* dark red, pericarp soft and fleshy, hypanthium scar visible in young fruits, disappearing in mature fruits.

This species occurs in Eastern Cape, from Grahamstown to the Maclear district (Figure 7), within the range of *O. capensis* and *O. ventosa*. Both *O. micrantha* and *O. capensis* retain their bracts after anthesis but in *O. micrantha*, the bracts are subulate and shorter than 2.8 mm and fall shortly after anthesis, whereas in *O. capensis* bracts are linear to elliptic, up to 8.5 mm long and are persistent throughout anthesis. The two species also differ in the size and shape of their leaves with *O. micrantha* having much shorter (23–37 mm long not 36–71 mm long) and elliptic to obovate (not obovate to oblanceolate) leaves. *O. micrantha* flowers from August to January whereas *O. capensis* and *O. ventosa* flower from May to July.

Vouchers

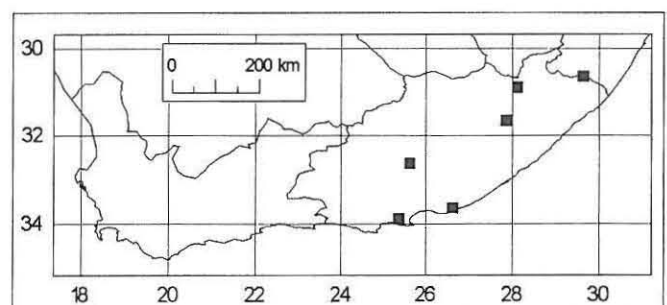


Figure 7 Known distribution of *O. micrantha* (■).

Acocks 12174 (K, PRE); *Bayliss BRI B 514* (PRE); *Borchers sn* (K); *Burchell 3592* (K); *CBS sn* (K); *Flanagan 2687* (K, PRE); *Galpin 6628 & 6229* (PRE, SAM); *MacOwan 349* (K); *Palmer 1081* (PRE).

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