

# *Striga angolensis* (Scrophulariaceae), a new witchweed from Angola

KAMAL I. MOHAMED AND LYTTON J. MUSSELMAN

Mohamed, K. I. (Department of Biology, State University of New York, Oswego, New York 13126, U.S.A.) and L. J. Musselman (Department of Biological Sciences, Old Dominion University, Norfolk, Virginia 23529-0266, U.S.A.), *Striga angolensis* (Scrophulariaceae), a new witchweed from Angola. *Brittonia* 49: 118–121. 1997.—Revisionary study in the genus *Striga* (Scrophulariaceae) has distinguished a new species from Angola in the section *Pentapleurae*. Restricted to swampy areas, the plant has not been collected for more than fifty years, and its current status is not known.

**Key words:** *Striga*, Scrophulariaceae, parasitic angiosperm, Angola.

## Introduction

The genus *Striga*, with species known in English as “witchweeds,” was erected by Loureiro in 1790. *Striga* is separated from other Rhinanthoideae by its unilocular anthers and bilabiate corollas with a pronounced bend in the corolla tube. This bend distinguishes the genus from the presumably related *Buchnera*. Other features of witchweeds include the herbaceous habit, dust-like seeds, and parasitism. A survey of African witchweeds has revealed an undescribed species from Angola.

***Striga angolensis*** K. I. Mohamed & L. J. Musselman, sp. nov.

TYPE: ANGOLA. Vila Luzo, River Luena, 2 Nov 1932, *R. G. N. Young 1365* (HOLOTYPE, MO).

Caulis erectus rigidus simplex, dense glanduloso-pubescent. Folia grosse dentata trinervia. Bracteae lanceolatae, a foliis abrupte dissimiles, calyce breviores. Calyx 4–5-nerviis, lobis aut 4 inter se similibus aut 5 subaequalibus, calyce subaequilongis. Corolla malvina, apice incurva dilatata.

Stiffly erect perennial herb up to 70 cm tall. Stem unbranched, obtusely square, shallowly furrowed, densely glandular-pubescent. Lower leaves opposite, reduced, 5–10 mm long, 2–4 mm broad, linear, entire, tip acute; upper leaves alternate, ascending,

sessile, narrowly lanceolate, 10–35 mm long, 2–8 mm broad, glandular-pubescent, coarsely toothed, 3-nerved. Internodes 1–5 cm long, the lower ones surpassed by the leaves, becoming shorter above. Inflorescence up to 15 cm long, shorter than the vegetative stem, flowers sessile in pairs, lax-flowered at its base, becoming dense toward apex. Bracts abruptly different from leaves, shorter than calyces, lanceolate, 5–8 mm long, 2 mm wide, entire, tip acute. Bracteoles subulate, 3–5 mm long, 0.5–1 mm wide. Calyx 4–5-ribbed, glandular-pubescent, tubular, 6–8 × 2–3 mm; calyx tube 2.5–4 mm long; teeth 4 equal or 5 subequal, lanceolate, as long as or slightly longer than tube, 3–5 mm long. Corolla mauve, densely glandular-pubescent; corolla tube narrow, 12–13 mm long, 1 mm diam., bent and expanded distally; lobes of lower lip 3, spreading, narrowly obovate, 7–8 mm long, 2 mm broad; upper lip obovate, shallowly notched, or round, 5 mm long, 3 mm broad. Capsule ovate, apiculate, 5 × 2.5 mm, valves reflexed. Style persistent; stigma oblong, broader than style. Seeds brown, 280 × 215 μm.

Specimens examined: ANGOLA. **Benguella:** 12°36'S, 13°20'E, 1910, *Gossweiler 3504* (K). **Catum-bela:** 09°48'S, 16°10'E, Sep 1940, *Faulkner A376* (K). **Moxico District:** Boggy grassland by River Chibamba, 12°40'S, 20°45'E, Sept 1940, *Milne-Redhead 4161*

(K); small river between River Luachi & River Lumaji, 10°10'S, 20°12'E, 2 Nov 1932, *Young 1261* (BM, ODU). **Lunda:** River Cassai, 09°50'S, 19°50'E, 28 Apr 1937, *Exell & Mendonca 1353* (BM). **River Luena:** Vila Luzo, 11°45'S, 19°50'E, 4 Nov 1932, *Young 1347* (BM); 1932, *Young 1365* (BM, MO); 3 May 1937, *Exell & Mendonca 1529* (BM).

The following discussion of infrageneric taxonomy is based on Mohamed (1994). Being root parasitic, Wettstein placed *Striga* in the tribe Buchnereae, subfamily Rhinanthoideae, and considered it among the most derived members of the Scrophulariaceae. He also divided the genus into two sections based on the number of ribs on the calyx tube. *Pentapleurae* have a five-ribbed calyx, and the *Polypleurae* are characterized by approximately 10 ribs. With its five prominent ribs, *Striga angolensis* is in the section *Pentapleurae*. Some time later, Engler (in Mohamed, 1994) described another section, *Tetrasepalum*, to include those species with 15 calyx ribs. However, as Mohamed (1994) notes, the number of ribs in the species usually included in this section varies considerably from 10 to 20.

A cladistic analysis of the genus *Striga* (Mohamed, 1994) in which the character states of leaf size, margin, and shape were polarized indicates that *S. angoliensis* is related to *S. hallaei* A. Raynal, *S. dalzielii* Hutch., *S. klingii* (Engler) Skan, and *S. macrantha* Benth. These five taxa may have originated from a single species, in the section *Polypleurae*.

*Striga dalzielii* (section *Polypleurae*) shares several other features with *S. angolensis*, including a tube that bends near the lip and leaves that are 3-nerved and toothed. Both species lack the stiff hispid hairs with swollen bases that are found in many species (Musselman, unpubl.). *Striga klingii* (section *Tetrasepalum*), resembles *S. angolensis* in its overall features. It shares with *S. angolensis* the toothed, 3-nerved leaves, the presence of 4–5 calyx teeth, and the similar corolla dimensions except that the tube of *S. klingii* is bent just above the calyx. Like *S. angolensis*, *S. klingii* is found in wet areas such as seepage slopes and intermittent streams. *Striga klingii* has a harshly hispid stem with hairs arising from swollen bases; these are lacking in *S. an-*

*golensis*. On the other hand, both *S. dalzielii* and *S. klingii* differ from *S. angolensis* in having leaf-like bracts that are longer than calyces at least at the base of the inflorescence, giving the inflorescence a leafy appearance. Of the species being considered, only *S. dalzielii* has large corollas with tubes of up to 22–25 mm.

*Striga hallaei* is restricted to equatorial Africa from Gabon to Zaire, where it occurs in rain forests (Raynal-Roques, 1969). On the other hand, *S. angolensis* is endemic to swampy lowlands and boggy grasslands in central Angola. As noted above, *S. angolensis* and *S. hallaei* are the only two species among the *Pentapleurae* that possess toothed and nerved leaves, a feature common in at least six species in the section *Polypleurae*. Other shared characters of *S. angolensis* and *S. hallaei* include the simple, unbranched, erect stem and the corolla tube which bends near its top (Fig. 1d). However, *S. hallaei* differs from *S. angolensis* in its presence of petioles, longer bract length relative to calyx, longer calyx teeth relative to the calyx tube, a denser inflorescence, and shorter corolla tubes and lobes.

Like most *Striga* species of no agronomic importance, the hosts of *S. angolensis* are not reported.

Angola, where the type originates, is a poorly collected region. In addition to *S. angolensis*, the following species of *Striga* are known from Angola: *S. aequinoctialis* Chev. ex Hutch. & Dalz., *S. asiatica* (L.) O. Kuntze, *S. bilabiata* (Thunb.) Kuntze subssp. *bilabiata*, *S. elegans* Benth., *S. forbesii*, *S. gesnerioides*, *S. hermonthica* (Del.) Benth., *S. linearifolia* (Schumach. & Thonn.) Hepper, *S. macrantha* Benth., and *S. passargei* Engl. (Mohamed, 1994). This is the richest *Striga* flora in southern Africa.

The present status of *S. angolensis* is unknown. Collectors in Angola should be aware of its presence. Alteration of wetlands could possibly lead to its extirpation. Another distinctive species of moist areas, *S. junodii* Schinz. is endemic to South Africa and adjacent Mozambique. We have not been able to locate extant populations and, like *S. angolensis*, we are unaware of its status.

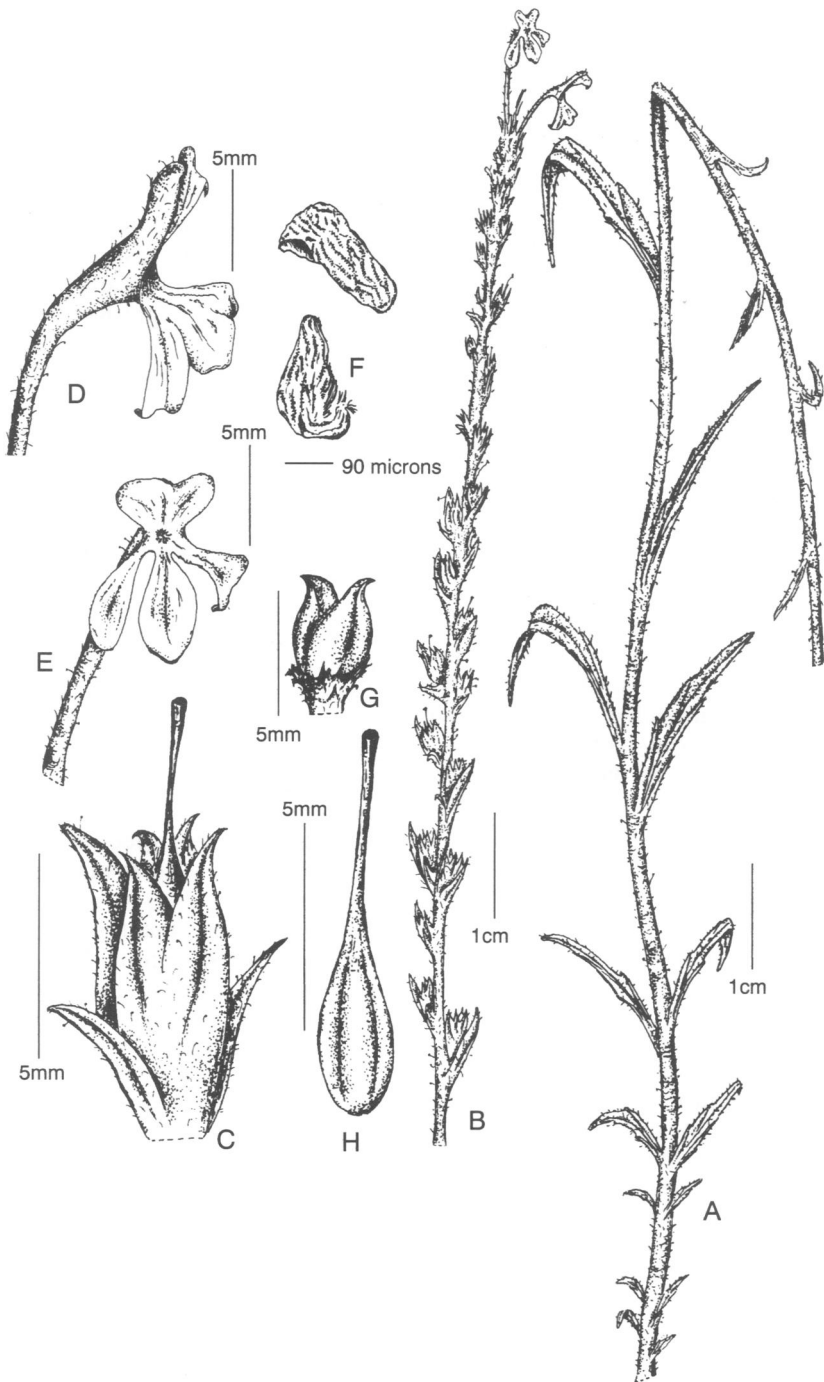


FIG. 1. *Striga angolensis*. A, B. Habit. C. Calyx. The single bract is on the left, the two bracteoles are on the left and right. This calyx has four lobes; some individuals may have five. D. Side view of corolla with bend which is just distal to the lower lobe in this species. E. Face view of corolla. F. Seeds. G. Capsule. H. Pistil with oblong stigma. (R. G. N. Young 1365, MO.)

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versity. The drawings are by Karillos Karillos.

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