Maerua sebrabergensis (Capparaceae), a new species from Namibia

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Abstract

Maerua sebrabergensis, here described as a new species, has a restricted range and is only known from the Zebra Mountains within the Kaokoveld Centre of Endemism, northwestern Namibia. Diagnostic characters for M. sebrabergensis include a geoxylic suffrutescent habit (rarely a small tree), simple, alternate leaves, petaliferous flowers with the disc not or only slightly produced and smooth, cylindrical, slightly torulose fruit. A comparison of some of the more prominent morphological features to differentiate between M. sebrabergensis and its possible nearest relative, M. parvifolia, are provided.

Introduction

At present twelve described species of Maerua Forsskål (1775: 104) are recognized in the Flora of southern Africa region, six of which occur in Namibia (Germishuizen & Meyer 2003, Swanepoel 2006). One of these, Maerua kaokoensis Swanepoel (2006: 81), is endemic to the Kaokoveld Centre of Endemism, a biogeographical region rich in restricted-range plants and animals in northwestern Namibia and adjacent southwestern Angola (Van Wyk & Smith 2001, Swanepoel 2006). In this contribution, yet another new species of Maerua confined to the Kaokoveld Centre is described. During a botanical expedition to the remote Zebra Mountains in September 2012, the author encountered an unfamiliar Maerua with cylindrical, slightly torulose fruit and a habit ranging from a woody subshrub with shoots ascending from underground runners, to rarely with a ramet developing into a small tree. The plants were in flower, enabling the material to be collected on which this description is based. The new species seems to be closely related to M. parvifolia Pax in Engler (1894: 135) due to similarities in leaf and flower morphology. In the field (at least in southern Africa), however, M. sebrabergensis is quite distinct because of its thin stems arising from underground runners (Figure 1), a habit unlike that of any other member of Maerua in southern Africa. A study of the Maerua holdings in PRE and WIND revealed no earlier collections of the new species.

Taxonomic treatment

Maerua sebrabergensis Swanepoel, sp. nov. (Figs. 1 & 2)

A geoxylic suffrutex ± 1 m tall (rarely up to 2 m tall) related to M. parvifolia, from which it differs in having branches that are not rigid (vs. rigid), not spinescent (vs. spinescent), with dark brown, reddish brown or grey bark (vs. white or grey bark), the leaves alternate (vs. alternate or fasciculate), the lamina usually larger, 8–110 × 3–55 mm (vs. smaller, 4–30 × 1–15 mm), narrowly obovate, ob lanceolate, obcordate or elliptic (vs. obovate-oblong or oblong-elliptic), glabrous (vs. pubescent, papillose), the inflorescences few-flowered corymbose racemes (vs. flowers solitary or paired), the floral disc margin entire, sinuate or with concavities opposite petal bases (vs. entire or denticulate), the sepals and petals consistently 4 (vs. sepals 3–5, petals 0–4), stamens 46–66 (vs. 15–21) per flower, the ovary cylindrical (vs. ellipsoid), the fruit cylindrical, slightly torulose (vs. cylindrical, torulose or moniliform).

Type:—NAMIBIA. Kunene Region: Zebra Mountains, 4 km northwest of Okaoraore, 1713BC, 1320 m, 30 September 2012, Swanepoel 320 (holotype WIND!; isotype PRE!).
FIGURE 1. *M. sebrabergensis* in its natural habitat. A, clonal growth with several ramets in foreground, showing ascending shoots, ± 0.7 m tall; trees in background are *Acacia kirkii* Oliver (1871: 350). B, suffrutex showing flood-exposed runner. Photographs: W. Swanepoel.
Woody subshrub with ascending shoots from underground runners (geoxylic suffrutex), ± 1 m tall, rarely a small tree up to 2 m tall. Trunk of ramets single, short, up to 30 cm long, 80–120 mm in diam., usually buried; stems 10–50 mm in diam. Bark on trunk smooth, khaki-coloured with reddish brown markings or dark to reddish brown; stems dark to reddish brown with numerous, small, whitish lenticels. Branches few, slender, not rigid, glabrous, dark to reddish brown or grey, with whitish lenticels, youngest khaki-green. Leaves simple, petiolate, alternate, glabrous, green; lamina narrowly obovate, elliptic, oblanceolate, or obcordate, (8–)25–70(–110) × (3–)15–40(–55) mm (difference in size not related to position on shoot), coriaceous, apex obtuse, truncate or emarginate, mucronulate, margin entire, base

**FIGURE 2.** *M. sebrabergensis.* A, flower; B, receptacle and disc; C, disc; D, fruit; E, leaves. Scale bar 3 mm (A–C) or 10 mm (D, E). All from *Swanepoel 320.* Artist: Daleen Roodt.
cuneate; midrib conspicuous abaxially, prominently raised especially abaxially, cream-yellow, lateral veins prominent, especially adaxially; petiole short, 2–6 mm long, channelled, cream-yellow, glabrous. Inflorescences few-flowered corymbose racemes, borne terminally or along stems; bracts leaf-like, early caducous, linear-oblong to ovate-oblong, somewhat cuneate, green, glabrous or with short papillate hairs. Flowers pedicellate; pedicel glabrous or with short papillate hairs, 4–6 mm long. Receptacle cylindric-infundibular, slender, 7–9 mm long, 2–3 mm wide at mouth, sometimes slightly flattened, slightly ribbed, glabrous or with short papillate hairs; disc not or scarcely produced, margin sinuate, entire or entire with concavities at base of petals. Sepals 4, elliptic, spreading, 8–11 × 4–5 mm, apex acute, navicular, mucronulate, green, glabrous or with short papillate hairs, margin woollly. Petals 4, obovate, clawed, apex acute or rounded, green, margin irregular towards apex, glabrous. Androphore extending to 0.5–2.0 mm beyond receptacle, 3.9–6.2 mm long. Stamens 46–66; filaments up to 13 mm long, white; anthers oblong, basifixed, 1.1–1.5 × 0.4–0.6 mm long. Gynophore 12.3–13.8 mm long, yellowish green. Ovary cylindrical, 1-chambered, 2.8–3.9 mm long, 0.9–1.1 mm diam., pale green; placentas 2, ovules 6–9 on each; stigma capitately, dark brown. Fruit narrowly cylindrical, slightly torulose, 16–45 mm long, 4–6 mm diam., faintly colliculate, glabrous, green to maroon-green when fully developed. Seeds not seen.

Phenology:—Flowers were recorded in September and October.

<table>
<thead>
<tr>
<th>Character</th>
<th>M. sebrabergensis</th>
<th>M. parvifolia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit</td>
<td>Woody subshrub with ascending shoots from underground runners, ± 1 m tall, or small tree up to 2 m tall</td>
<td>Spreading, virgate shrub 1–2 m tall (southern Africa) or woody herb with ascending shoots from underground runners or bushy shrub up to 5 m tall (tropical Africa)</td>
</tr>
<tr>
<td>Branches</td>
<td>Slender, not rigid, not spine-like</td>
<td>Slender, rigid, branchlets often spine-like</td>
</tr>
<tr>
<td>Leaf position</td>
<td>Alternate</td>
<td>Alternate or fasciculate</td>
</tr>
<tr>
<td>Leaf lamina</td>
<td>Narrowly obovate, oblanceolate, obcordate or elliptic, glabrous, 8–110 × 3–55 mm</td>
<td>Obovate, elliptic, obovate-oblong or oblong-elliptic, pubescent or subglabrous, papillose, 4–30 × 1–15 mm</td>
</tr>
<tr>
<td>Petiole</td>
<td>2–6 mm long</td>
<td>0.5–1.5 mm long</td>
</tr>
<tr>
<td>Inflorescences</td>
<td>Few-flowered corymbose racemes</td>
<td>Solitary or paired</td>
</tr>
<tr>
<td>Flower receptacle</td>
<td>Cylindric-infundibular, slender, 7–9 mm long</td>
<td>Cylindric-subcampanulate, 2–3.5 mm long</td>
</tr>
<tr>
<td>Floral disc</td>
<td>Entire, sinuate or with concavities opposite petal bases</td>
<td>Entire or denticate</td>
</tr>
<tr>
<td>Number of sepals</td>
<td>4</td>
<td>3–5</td>
</tr>
<tr>
<td>Number of petals</td>
<td>4</td>
<td>0–4</td>
</tr>
<tr>
<td>Androphore</td>
<td>3.9–6.2 mm long</td>
<td>2.8–4.0 mm long</td>
</tr>
<tr>
<td>Number of stamens</td>
<td>46–66</td>
<td>15–24</td>
</tr>
<tr>
<td>Gynophore</td>
<td>12.3–13.8 mm long</td>
<td>8–15 mm long</td>
</tr>
<tr>
<td>Fruit</td>
<td>Cylindrical, slightly torulose; glabrous</td>
<td>Cylindrical, markedly torulose or moniliform; minutely puberulous or glabrous</td>
</tr>
</tbody>
</table>

Distribution and habitat:—At present M. sebrabergensis is only known from one valley in the botanically poorly explored Zebra Mountains, south of the Kunene River in northwestern Namibia (Fig. 3) where it is localized and rare. The species may, however, eventually prove to be more widespread in the Zebra Mountains as suitable habitat is not limited to the specific valley where it was found. Maerua sebrabergensis grows on heavy black clay ("cotton") soil derived from weathered anorthosite of the Kunene Complex (Miller & Schalk 1980, Mendelsohn et al. 2002).
It occurs on a valley floor in *Colophospermum-Acacia* woodland in the upper part of the southern Zebra Mountains at elevations of 1310–1330 m, 195 km from the Atlantic Ocean. Average annual rainfall in the area is 250–300 mm (Mendelsohn *et al.* 2002).

**FIGURE 3.** Known distribution of *M. sebrabergensis*.

**Conservation status:**—*Maerua sebrabergensis* is rare and localised with only 16 plants (clones) known from an uninhabited part of the Zebra Mountains. It should be considered as Critically Endangered (CR D) due to the small population size (IUCN 2012).

**Etymology:**—The specific epithet refers to the “Sebraberge” (Afrikaans for “Zebra Mountains”) in the Kaokoveld of northwestern Namibia, the type locality of the new species.

**Notes:**—*Maerua sebrabergensis* differs from *M. parvifolia* in habit as well as in leaf, flower and fruit characters. Plants of *M. sebrabergensis* in southern Africa are markedly different from *M. parvifolia* in being woody subshrubs with ascending shoots (ramets) from underground runners, ± 1 m tall, the ramets rarely developing into small trees up to 2 m tall with branches and branchlets slender and not rigid. *Maerua parvifolia* in southern Africa is a spreading, virgate shrub with slender rigid branches and the branchlets are often abbreviated and spinescent. In tropical Africa, however, *M. parvifolia* has also been described as a suffrutex with many ascending shoots from underground runners (Uganda, Kenya and Tanzania). Some of the more prominent morphological features to differentiate *M. sebrabergensis* and *M.
parvifolia are compared in Table 1. Diagnostic features for *M. sebrabergensis* were determined through examination of fresh material and for *M. parvifolia* from both fresh and herbarium material and the literature (Wild 1960, Elffers et al. 1964, Killick 1969, 1970).

*Maerua sebrabergensis* can be confused with *M. juncea* Pax (1891: 302) subsp. *juncea* due to similarities in the fruit, especially in the Kaokoveld where it is often narrower than is typical for the subspecies (8–10 mm diam. instead of ± 20 mm diam.). The fruit in *M. sebrabergensis*, however, is even narrower (4–6 mm diam.) and the young branches is grey, dark or reddish brown with whitish lenticels instead of green and striated as in *M. juncea*.

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References


