

NYCTAGINACEAE

TAXONOMIC STATUS OF *COMMICARPUS FRUTICOSUS*

Commicarpus squarrosus (Heimerl) Standl. is endemic to the Kunene, Erongo, Hardap, and Karas regions of Namibia (Struwig 2012). A closely related taxon, *C. fruticosus* Pohnert, is endemic to the Tsaris and Naukluft Mountains (north of the town of Zaris in the Hardap region of Namibia). This name was subsequently treated by Schreiber (1969) as a synonym of *C. squarrosus* in the *Prodromus einer Flora von Südwestafrika* for unspecified reasons. The view of Schreiber is not widely supported and *C. fruticosus* is generally recognized as a separate species (Nowicke 1970; Craven 1999; Germishuizen & Meyer 2003; Klopper *et al.* 2006; African Plant Database 2012).

No workable diagnostic morphological differences have hitherto been documented between *C. fruticosus* and *C. squarrosus*, and even the original descriptions of the two species (Heimerl 1896; Pohnert 1953) are noticeably similar. The exception being that the original description of *C. fruticosus*, Pohnert (1953) suggests that the species produces false whorls in its inflorescence. This was refuted as a diagnostic character (Struwig 2012), as this phenomenon is often present throughout the range of *C. squarrosus*. Although the flowers of *C. fruticosus* were described as white, greyish-white to purple, our collections of *C. fruticosus* from the Naukluft Mountains all had dark purple flowers. Flower colour in the widespread *C. squarrosus* varies from light purple to pink. This suggests that the flower colour of the Naukluft *Commicarpus* species is variable and overlaps with that of *Commicarpus squarrosus*. Flower colour in Nyctaginaceae is generally a weak taxonomic character and not considered useful in distinguishing between species (Struwig 2012).

Anthocarp morphology, on the other hand, is considered to be the most taxonomically useful character in distinguishing genera and species of the Nyctaginaceae (Bohlin 1988; Douglas & Manos 2007) and has been proven effective for the southern African *Commicarpus* species (Struwig *et al.* 2011).

Anthocarp morphology in *Commicarpus squarrosus* and *C. fruticosus* is identical (Struwig 2012); fusiform and ten-ribbed, (4–)5(–6) × (1–)1.8(–2) mm, glabrous, with the apex surrounded by five stalked glands alter-

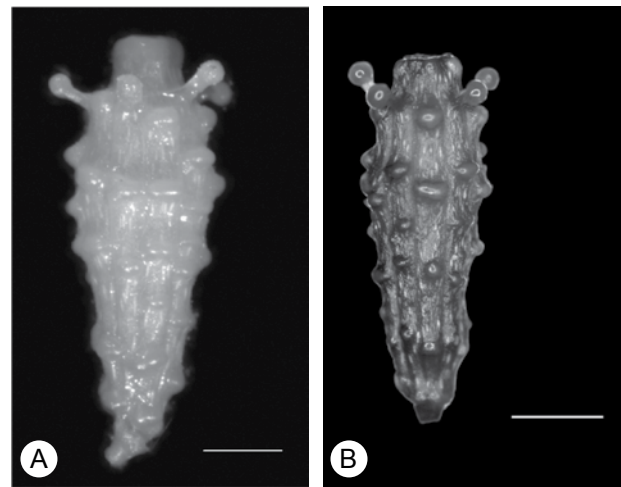


FIGURE 1.—Anthocarps of A, *Commicarpus fruticosus* (Struwig 164); and B, *Commicarpus squarrosus* (Struwig 36). Scale bars 1 mm. Material was collected and preserved in 4% paraformaldehyde and micrographs were taken with a Nikon Digital Camera DXM 1200 F fitted on a Nikon SMZ 1500 stereomicroscope.

nating with five sessile glands and the surface below the apex characterized by scattered sessile glands (Figure 1). *Commicarpus fruticosus* should therefore be re-instated as a synonym of *C. squarrosus* on the basis of similarities in inflorescence structure and anthocarp morphology. Table 1 summarises the presence of the genus *Commicarpus* in southern Africa.

***Commicarpus squarrosus* (Heimerl) Standl.**, in Contributions from the United States National Herbarium 18: 101 (1916). *Boerhaavia squarrosa* Heimerl: 813 (1896). Type: Namibia, ‘Gross-Namaland, Rehoboth’, *Fleck 241A* (Z, holo.—digital image!).

Commicarpus fruticosus Pohnert: 337 (1953). Type: Namibia, ‘Tsarisberge, Zebraschlucht’, *Walter & Walter 2095* (M, holo.—Aluka image!, website accessed 25 Aug. 2011; WIND, iso.!).

Additional specimens

NAMIBIA.—1913 (Sesfontein): Khowarib Rest Camp, hills surrounding rest camp, (–BD), 9 Feb. 2009, *Struwig 45* (PUC, WIND). 2014 (Khorixas): Twyfelfontein Lodge, hillslope behind lodge, SW of

TABLE 1.—*Commicarpus* species occurring in the Flora of southern Africa countries. E, endemic to southern Africa (Struwig 2012).

Taxon	Botswana	Lesotho	Namibia	South Africa	Swaziland	Total number of countries
<i>C. chinensis</i> subsp. <i>natalensis</i>				×		1
^E <i>C. decipiens</i>			×			1
^E <i>C. fallacissimus</i>			×			1
<i>C. helenae</i> var. <i>helenae</i>	×		×	×		3
<i>C. pentandrus</i>	×	×	×	×	×	5
<i>C. pilosus</i>	×		×	×		3
<i>C. plumbagineus</i>	×		×	×	×	4
^E <i>C. squarrosus</i>			×			1
Total number of species: 8	4	1	7	5	2	

main building, high up on slope amongst big boulders, (–CB), 7 Feb. 2009, *Struwig 41* (PUC, WIND). **2114** (Uis): Numas Gorge, high up in kloof, underneath *Acacia montis-usti* behind big boulders, (–BA), 6 Feb. 2009, *Struwig 39* (PUC, WIND); Brandberg Mountain, on top, Baswald Rinne Area, (–BC): 19 May 1977, *Craven 490* (PUC, WIND). **2115** (Karibib): Klein Spitzkoppe, against mountain slope amongst rocks, (–CC), 5 Feb. 2009, *Struwig 36* (PUC, WIND). **2214** (Swakopmund): Swakopmund district, 63 miles SE of Walvis Bay in Namib area, (–DA), 2 Mar. 1965, *Barnard 85* (PRE, WIND). **2215** (Trekopje): Tsaobis Leopard Farm, S of Karibib, (–DD), 21 Feb. 1990, *Hardy 7017* (PRE, WIND). **2416** (Maltahöhe): Naukluft Mountains at Büllspoort, (–AA), 16 Dec. 1947, *Rodin 2833 & Strey 2132* (BOL); C14, Naukluft Mountains, mountain slope behind the river, (–AA), 13 Feb. 2009, 7 Apr. 2010, 8 Apr. 2010, *Struwig 59, 160, 163* (PUC, PRE, WIND); Farm Tsais-Maltahöhe, (–AB), 16 May 1978, *Müller & Tilson 894* (PRE, WIND); C19. Tsaris Mountains, (–AB), 8 Apr. 2010, *Struwig 164* (PUC, WIND); Maltahöhe, Farm Mooirivier MAL 160, on S-facing slopes, (–CA), 11 Apr. 1980, *Müller 1362* (PRE, WIND). **2616** (Aus): Kuibis, (–DD), 1 Mar. 1912, *Range 1283* (BOL).

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M. STRUWIG* and S.J. SIEBERT*

*A.P. Goossens Herbarium, School of Environmental Sciences and Development, North-West University, Private Bag X6001, 2520 Potchefstroom, South Africa.

† Author for correspondence: madeleen.struwig@nwu.ac.za.
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