Philyrophyllum brandbergense *P.P.J.Herman*, sp. nov., *P. schinzii* O.Hoffm. similis, sed capitulis maioribus in corymbis paucicephalis, bracteis involucralibus linearibus, sub-aequalibus, receptaculo disciformi, flosculis radii plus quam 40, flosculis disci plus quam 200, corollarum illorum lobis apicalis 0.5 mm longis, setis pappi cypselarum disci 5(–7), differt.

TYPE.—South West Africa [Namibia], 2114 (Uis): Brandberg, (–BA), waterhole no. 3, 'Hungarob Ecke', 8-8-1956, *Wiss 1505* (PRE, holo.!).

Suffrutex, 0.4–0.6 m high; stems ribbed, covered with soft, longish, erect hairs and glands. *Leaves* alternate, petiolate, broadly triangular, 30–45 × 26–40 mm, base cordate, apex acute, margin biserrate, main and secondary veins prominent, 3 main veins from base of leaf, upper surface glandular, with a few scattered long hairs, lower surface glandular, hairy, hairs similar to that of stem, concentrated on main and secondary veins. *Petiole* 14–16 mm long, with indumentum similar to that of stem. *Capitula* heterogamous radiate, cup-shaped, solitary or up to 4 in open corymb, terminal on branchlets, sessile or shortly pedunculate, apparently elongating in fruiting stage; peduncle with similar indumentum as on stem. *Involucral bracts* numerous, in ± 4 rows, subequal, linear (Figure 17A), outer 8–9 × 0.5–1.0 mm, with long acuminate apex, ciliate on margins, more densely so in upper half, glandular on backs, more densely so apically, inner rows 6.5–7.5 × 0.5–0.8 mm, with prominent main vein forming a keel, margins of inner bracts scarious, ciliate in upper part. *Receptacle* disc-like (Figure 17B), paleate, naked towards centre, paleae similar to inner involucral bracts but narrower. *Ray florets* up to 45, female, fertile, corolla yellow, 8–9 mm long, tube 3.5–4.0 mm long, lamina 4.5–5.0 mm long, 3-lobed at apex, glandular. *Style* 5.0–6.5 mm long, style branches 1.0–1.5 mm long, apex obtuse, stigmatic areas separate, confluent at apex. *Disc florets* up to 240, bisexual, fertile, corolla yellow, glandular, tubular, with slightly wider upper part, 4.5–6.5 mm long, tube 2.5–3.5 mm long, limb 5-lobed, lobes 0.5 mm

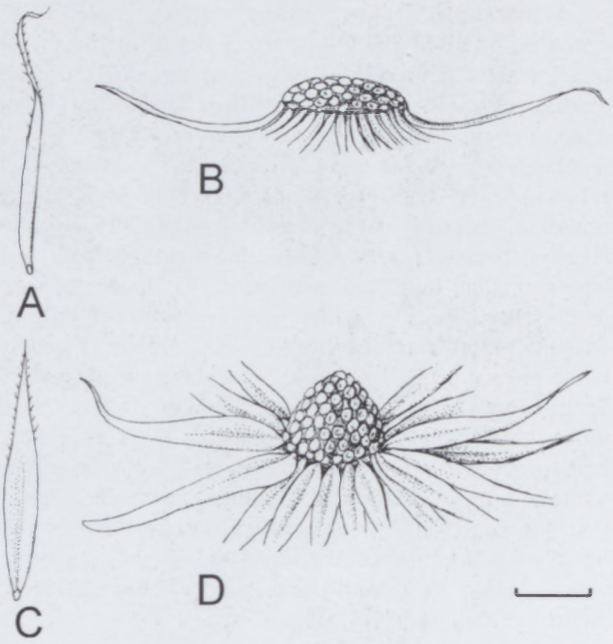

FIGURE 17.—Involucral bracts and receptacles of *Philyrophyllum* species. A, linear involucral bract; B, disc-like receptacle of *P. brandbergense, Merxmüller & Giess 1666* (PRE); C, narrowly elliptic involucral bract; D, conical receptacle of *P. schinzii, Story 5102* (PRE). Scale bar: 2 mm. Drawn by G. Condy.

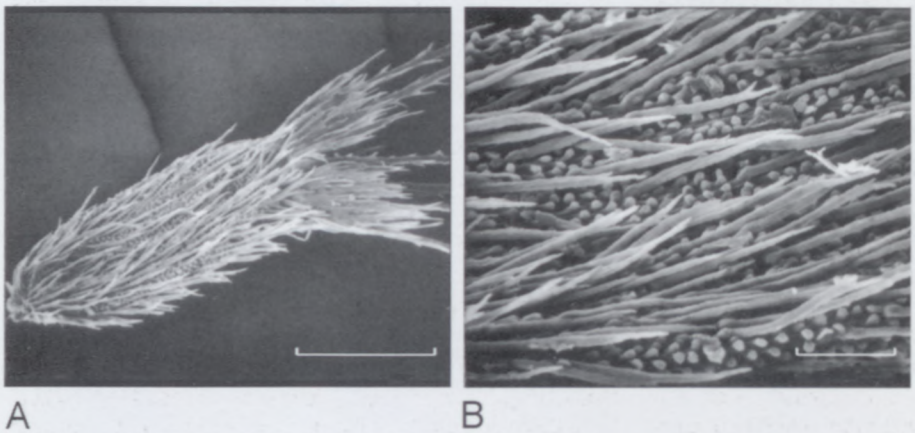

FIGURE 18.—Scanning electron micrographs of *P. brandbergense, Wiss 1505* (PRE). A, cypsela; B, granular surface with twin hairs. Scale bars: A, 500 µm; B, 100 µm.

FIGURE 19.—Holotype specimen of *Philyrophyllum brandbergense, Wiss 1505* (PRE).

long. *Anthers* 2.5–3.5 mm long, calcarate and caudate, apical appendage narrowly triangular. *Style* 5.5–7.0 mm long, style branches 1.0–1.5 mm long, apex obtuse, stigmatic areas separate basally, apically confluent. *Cypsela* cylindric-ellipsoid, 1.2–1.5 mm long, dark brown, surface granular, appressed hairy with twin hairs (Figure 18). *Pappus*: short scales in female florets; in disc florets, an outer row of short scales and an inner row of 5(–7, rarely up to 9) barbellate bristles, feathered at apex. *Flowering time*: coincides with summer rainfall (Giess 1971), August to March. Figure 19.

Distribution: apparently confined to the Brandberg area, Namibia (Figure 20) hence the specific epithet, at an altitude of less than 2 000 m on basalt and granite on the eastern and southern side of the mountain (P. Craven pers. comm.). The Brandberg is known for its many endemics (Giess 1971; Nordenstam 1974; Craven & Craven 2000). The only other *Philyrophyllum* species, *P. schinzii* O.Hoffm. occurs in Namibia, Botswana, Limpopo [Northern Province], North-West; also Angola and Zimbabwe (Merxmüller 1967; Wild 1980; Herman *et al.* 2000). Both Nordenstam (1974) and Craven & Craven (2000) listed *P. schinzii* in their floras of the Brandberg. They did not include the taxon in their list of doubtful species, although a note on Nordenstam's specimen (*Nordenstam 2548*) indicated that he had some reservations on the true identity of his specimen. It seems that the true *P. schinzii* does not occur on the Brandberg. *P. brandbergense* can thus be added to the list of Brandberg endemics of Nordenstam (1974) and Craven &

TABLE 3.—Differences between *P. schinzii* and *P. brandbergense*

Character	*P. schinzii*	*P. brandbergense*
No. capitula	numerous in corymb	1–4 in corymb
Diam. across upper part of involucre	up to 10 mm	15–20 mm
Size of involucral bracts	3.0–5.5 × 0.5–1.2 mm	6.5–9.0 × 0.5–1.0 mm
Shape of involucral bracts	narrowly ovate to elliptic (Figure 17C)	linear (Figure 17A)
Arrangement of bracts	imbricate	subequal
Receptacle	conical (Figure 17D)	disc-like (Figure 17B)
No. ray florets	up to 20	up to 45
Size of ray florets	up to 8 mm	8–9 mm
No. disc florets	up to 60 (118)	up to 240
Length of apical lobes	1 mm	0.5 mm
No. pappus bristles	up to (9)10(–12)	5(–7)
Indumentum on leaves	short, rough	longish, soft

Craven (2000). Considering its limited distribution, this taxon could be classified as VU D2 according to the 1994 IUCN Red List categories (Golding 2002). The endemics of the Brandberg are not as safe from disturbance as explained by Craven & Loots (2002).

Diagnostic characters: this species differs from *P. schinzii* O.Hoffm. by the remarkable larger capitula, single or up to 4 per corymb, with more numerous and differently shaped involucral bracts (Figure 17A), disc-like receptacle (Figure 17B), more numerous and larger ray florets, more numerous disc florets with shorter apical lobes and less pappus bristles in disc floret cypselas. The indumentum of the leaves is also different: longish, soft hairs are found on the leaves of *P. brandbergense*, whereas those on the leaves of *P. schinzii* are short and rough to the touch (Table 3). The leaves of both taxa have a disagreeable odour when crushed.

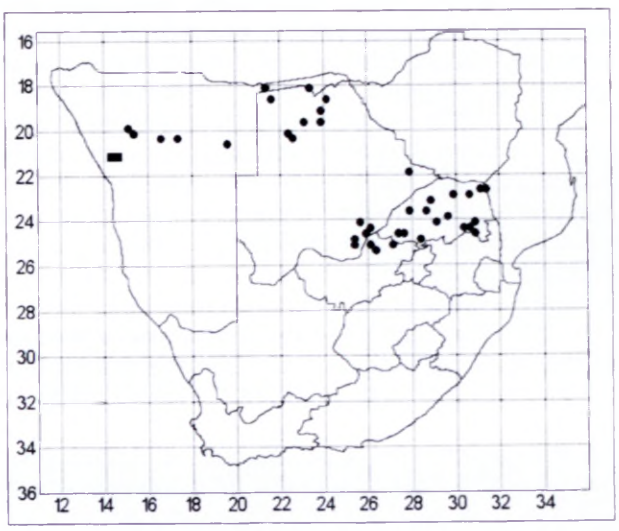

FIGURE 20.—Distribution of *Philyrophyllum brandbergense*, ■, and *P. schinzii*, ●, in southern Africa.

Specimens examined

NAMIBIA.—2114 (Uis): Brandberg, Pager Plain, near Whale Rock, (–AB), *Craven 2492* (WIND!); Sonuseb, (–AB), *Craven 2208* (PRE!, WIND!); Tsisab Valley, (–BA), *Giess 5005* (PRE!, WIND!), *Merxmüller & Giess 1666* (PRE!, WIND!), *Nordenstam 2548* (S, –PRE, photo!), *Strey 2402* (PRE!).

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