
Oresbia, a New South African Genus of the Asteraceae, Senecioneae

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ABSTRACT. *Oresbia heterocarpa* Cron & B. Nordenstam (Asteraceae, Senecioneae) is described as a new genus and species from South Africa. Until now the species has been known as *Cineraria tomentosa* Lessing, although first described as *Senecio lanatus* L. f. Both of these names are illegitimate. Characteristic features of *Oresbia* are the perennial habit with sessile, non-pinnatifid leaves, which are densely tomentose below, and the heteromorphic cypselae with four-winged ray-floret cypselae. The closest affinities of *Oresbia* may be with *Phaneroglossa* B. Nordenstam and possibly also *Lamprocephalus* B. Nordenstam, which have similar distribution ranges in the Western Cape mountains.

Key words: Asteraceae, Compositae, *Oresbia*, Senecioneae, Western Cape Province.

Ongoing taxonomic studies on the genus *Cineraria* L. have revealed the heterogeneous nature of the genus as traditionally circumscribed, and several elements have to be removed in order to achieve monophyly (Cron, 2005; Cron et al., in prep.). Two species are transferred to and another reinstated in *Senecio* L. (Cron, 2005; Cron et al., in press), and a fourth has been matched to *Mesogramma apiifolium* DC. (Nordenstam & Cron, in prep.). Another two are placed in a new genus *Bolandia* Cron, as *B. pedunculosa* (DC.) Cron and *B. argillacea* (Cron) Cron (Cron et al., 2006). The present paper deals with yet another misplaced taxon, which is described as a new monotypic genus.

Oresbia heterocarpa Cron & B. Nordenstam, gen. et sp. nov. TYPE: South Africa. Western Cape: Waterkloof Gorge, W of Ceres, 30 Sep. 1928, J. Hutchinson & N. S. Pillans 576 (holotype, K; isotypes, BM, BOL, PRE). Figures 1–4; Hutchinson, 1946: 116, drawing.

Herba perennis erecta tomentosa vel arancosa. Folia alterna sessilia elliptica-ovata non pinnatifida herbacea,

supra arancosa et glabrescentia, subtus albotomentosa, margine denticulata vel serrata leviter revoluta, apice acuta, basi semiamplexicaulia. Pedunculi terminales mono- vel oligocephali subnudi sparse bracteolati; capitula heterogama radiata sparse calyculata; involucri bracteae subuniseriatae linearilanceolatae venosae acuminatae; receptaculum planum vel subconvexum laeve. Flosculi radii feminei glabri flavi. Cypselae heteromorphae, radii glabrae quadrialatae; pappi setae barbellatae caducae. Flosculi disci hermaphroditi, corolla flava quinquelobata; lobis ovatis apice subcucullatis papillosis; antherae basi sagittatae vel breviter caudatae, collum filamenti basi dilatatum; styli rami intus arcis stigmaticis separatis, apice truncati papillati. Cypselae disci exalatae, costis sex hirsutis; pappi setae numerosae barbellatae albae caducae.

Erect perennial herb, to about 30 cm tall; stems herbaceous, somewhat woody at the base, unbranched or branching sparingly near base, tomentose to cobwebby, glabrescent with age. Leaves cauline, alternate, sessile, narrowly obovate to elliptic or ovate, non-pinnatifid, lamina 16–66(–80) × 4–23(–28) mm, thickly cobwebby to glabrescent above, densely white-tomentose below; apex acute; margin dentate to serrate, revolute; leaf-base clasping, without auricles. Capitula heterogamous, radiate, usually in twos or threes (rarely as many as 11) per stem, occasionally solitary; peduncles 0.5–4 cm to point of branching, as long as 9 cm if unbranched, densely cobwebby, subtended by lanceolate bracts (1–2.5 cm long) and with smaller bracts along their length, distally nude; receptacle flat or slightly convex, glabrous; involucre widely campanulate to cup-shaped, calyculate with 4 to 7 linear-lanceolate calyculus bracts 2–4 mm long; phyllaries subuniseriate, 16 to 20, linear-lanceolate, (5.5–)6.5–7.5 mm long, cobwebby to tomentose, glabrescent toward the apex, 1- to 3-veined, acuminate, margins narrowly scarious. Ray florets 8 to 13, female, glabrous; tube 2.5–3 mm long, cylindrical; limb oblong, 5–12 mm, 4-veined, yellow. Disc florets hermaphroditic, 25 to 42; corolla tubular below, narrowly campanulate above, 5.0–6.2 mm long, yellow; corolla lobes triangular-ovate, 0.5–0.7 mm long, apically subcucul-

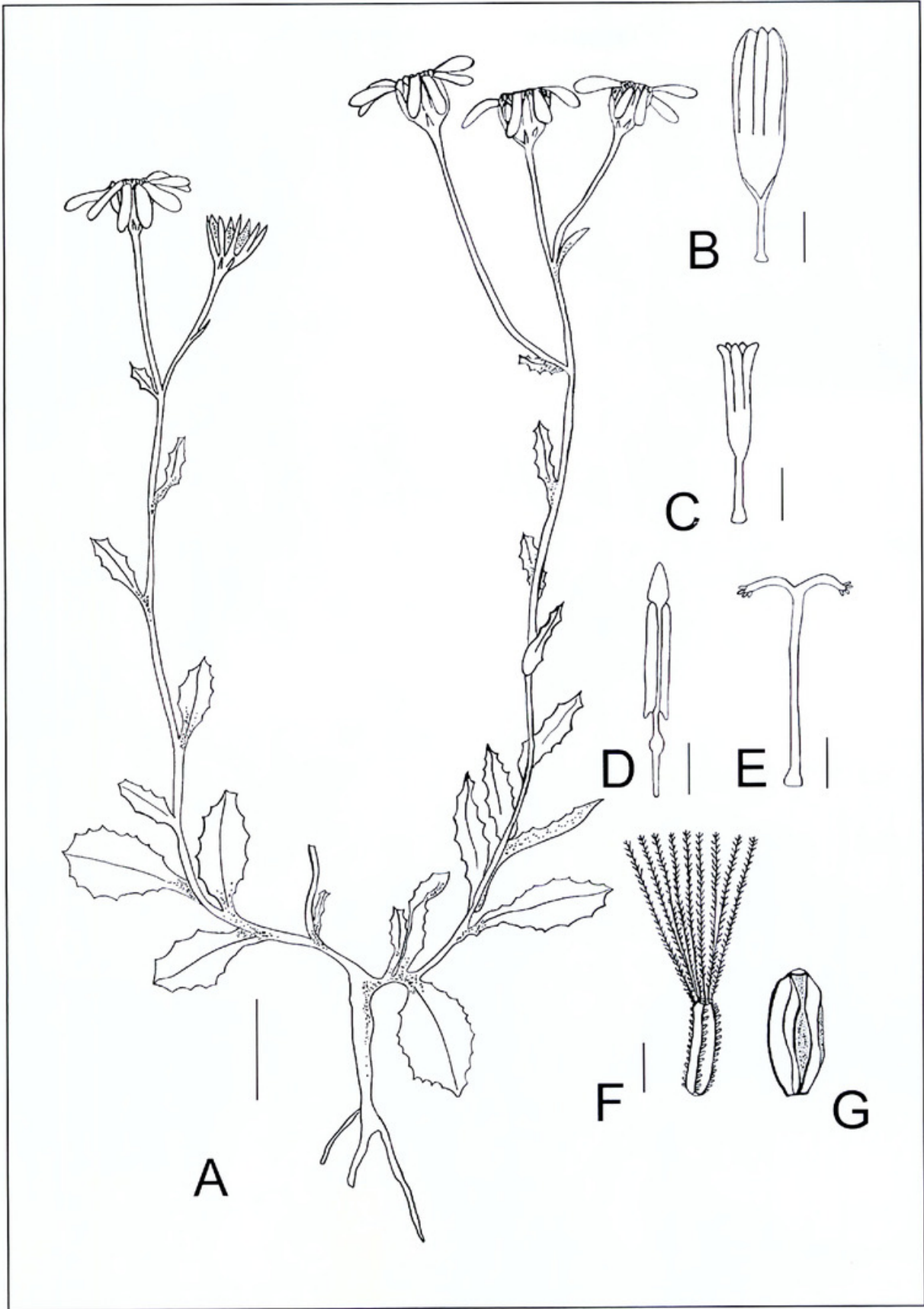


Figure 1. *Oresbia heterocarpa* Cron & B. Nordenstam. —A. Habit. —B. Ray floret. —C. Disc floret. —D. Anther. —E. Style. —F. Disc cypsela with pappus. —G. Ray cypsela (pappus not drawn). Scale bars: A = 16.5 mm; B = 1.8 mm; C, E = 1.9 mm; D = 0.9 mm; F, G = 1.2 mm. Drawn from Cron, Hodgkiss, Stander & Cocks 322 (J).

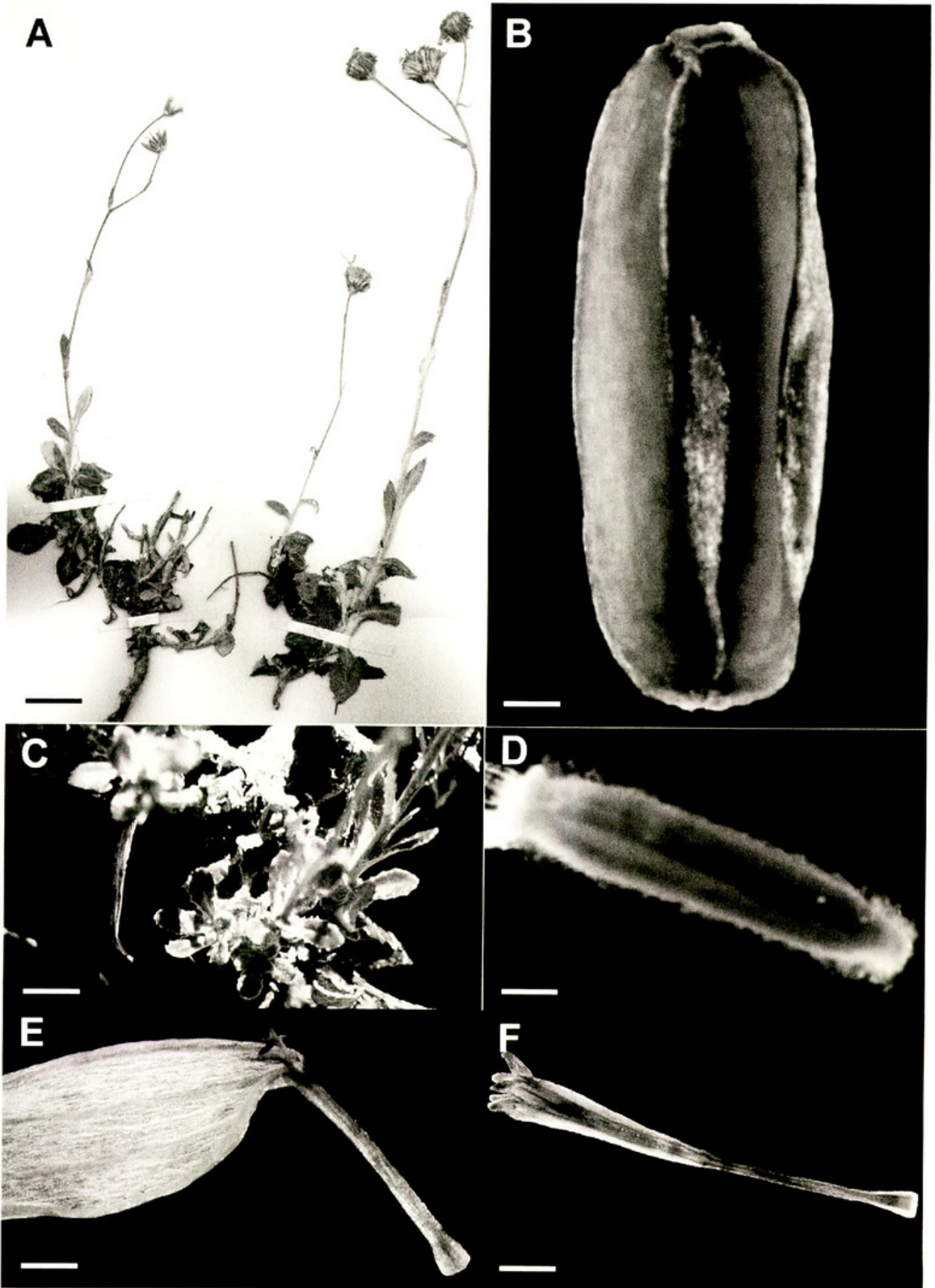


Figure 2. *Oresbia heterocarpa* Cron & B. Nordenstam. —A. Habit. Scale bar = 17 mm. —B. Four-winged ray cypsela. Scale bar = 250 µm. —C. Leaves. Scale bar = 20 mm. —D. Disc cypsela—mucilaginous trichomes have been triggered by wetting. Scale bar = 350 µm. —E. Ray floret tube and base of limb (lacking glandular hairs characteristic of *Cineraria*). Scale bar = 650 µm. —F. Disc floret. Scale bar = 830 µm. From Cron, Hodgkiss, Stander & Cocks 322 (J).

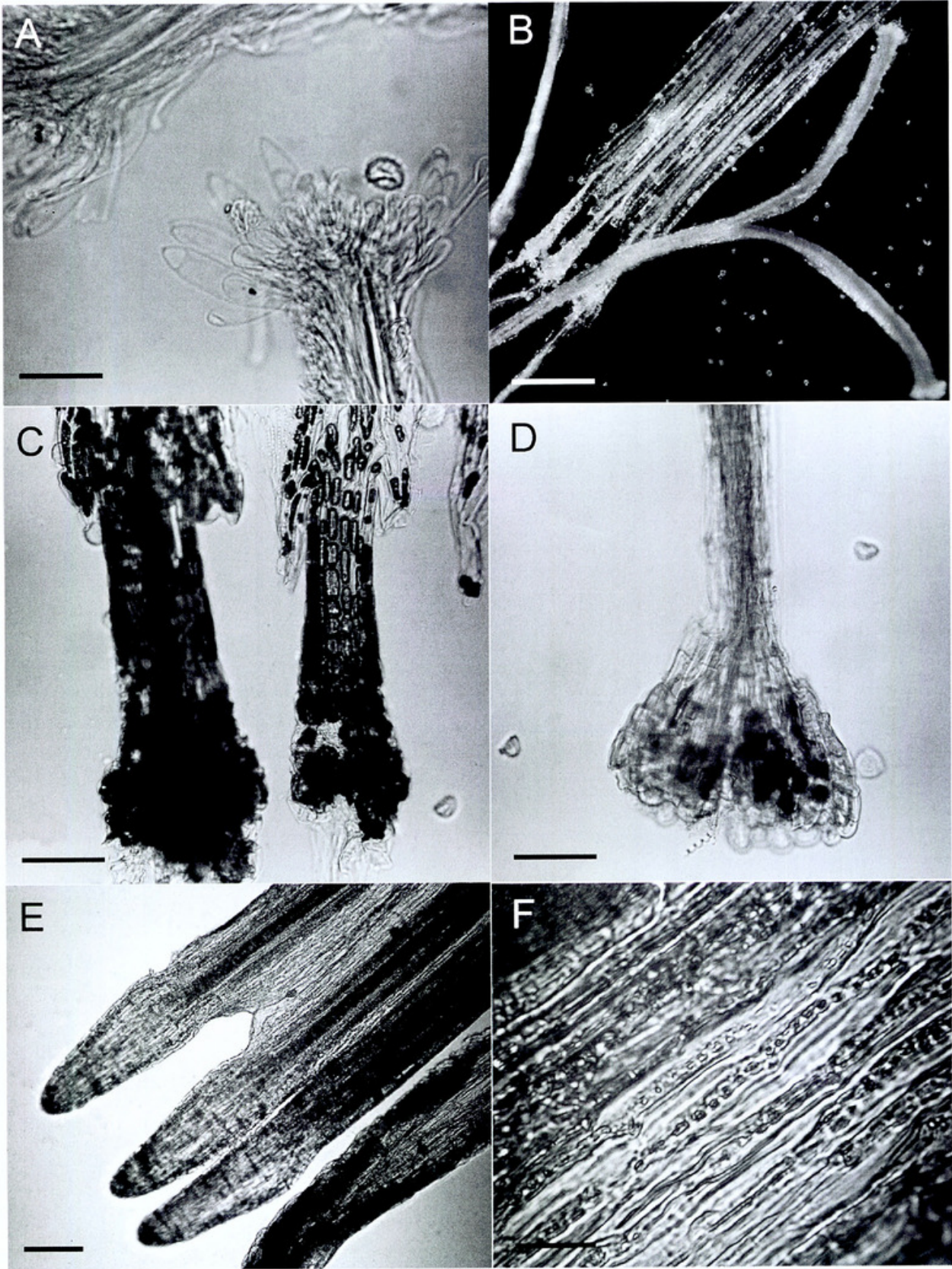


Figure 3. Light micrographs of florets of *Oresbia heterocarpa* Cron & B. Nordenstam. —A. Style apex. Scale bar = 50 µm. —B. Disc floret dissected to show stamens and style. Scale bar = 280 µm. —C. Balusterform filament collar and short anther tails. Scale bar = 150 µm. —D. Style base. Scale bar = 150 µm. —E. Anthers with anther appendages. Scale bar = 150 µm. —F. Endothecial thickening of radial (inner anticlinal) type. Scale bar = 50 µm. From Cron *et al.* 322 (J).

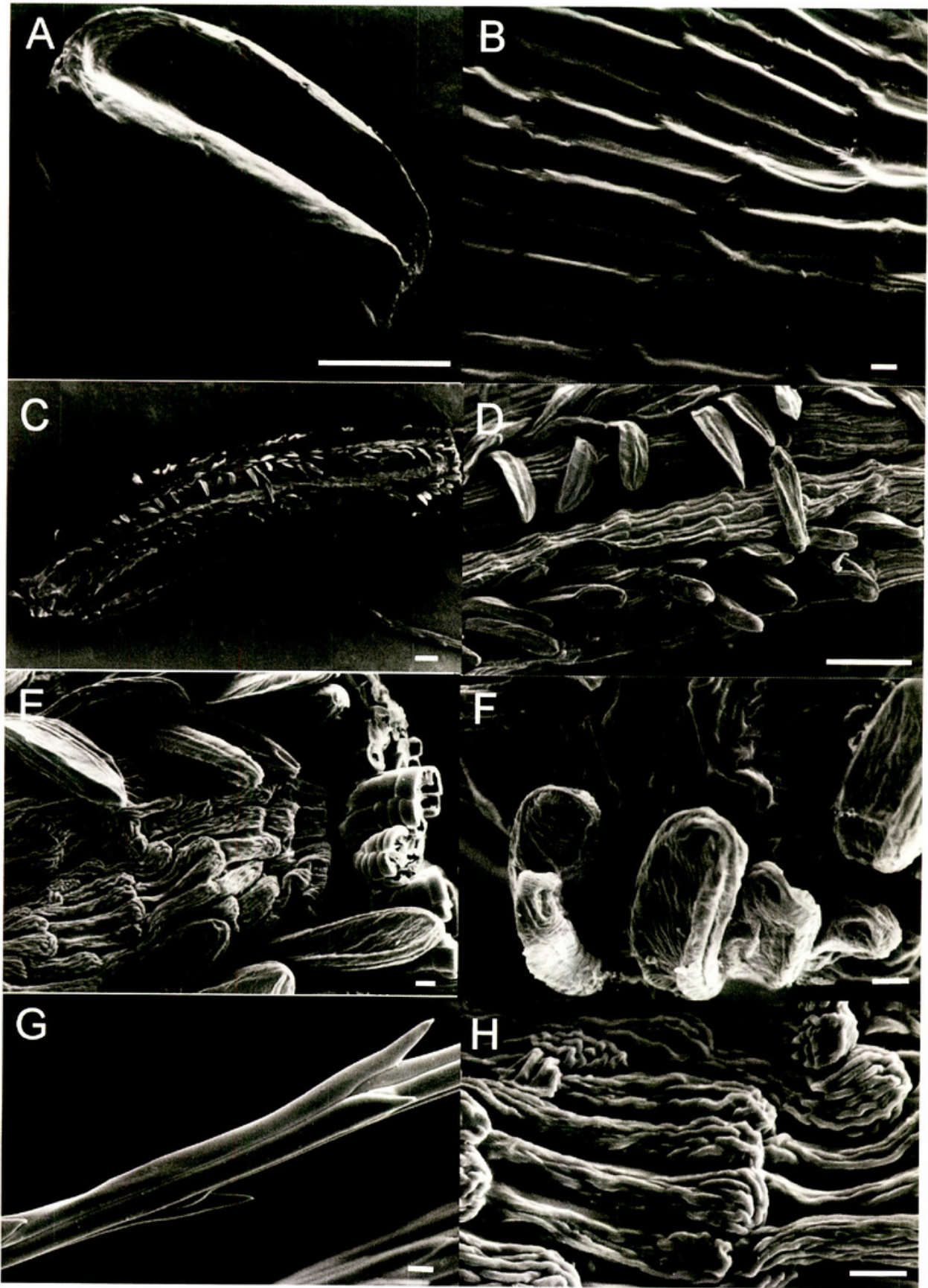


Figure 4. Scanning electron micrographs of cypselae of *Oresbia heterocarpa* Cron & B. Nordenstam. —A. Four-winged ray cypselus. Scale bar = 1 mm. —B. Epicarp surface of ray cypselus: smooth rectangular cells with raised walls. Scale bar = 10 µm. —C. Disc cypselus. Scale bar = 100 µm. —D. Ribs and trichomes of disc cypselus. Scale bar = 100 µm. —E. Stylopodium end of disc cypselus. Scale bar = 10 µm. —F. Base of disc cypselus (no carpopodium evident). Scale bar = 10 µm. —G. Pappus bristles. Scale bar = 10 µm. —H. Detail of epicarp surface of disc cypselus: striate elongate cells with rounded ends. Scale bar = 10 µm. From Cron *et al.* 322 (J).

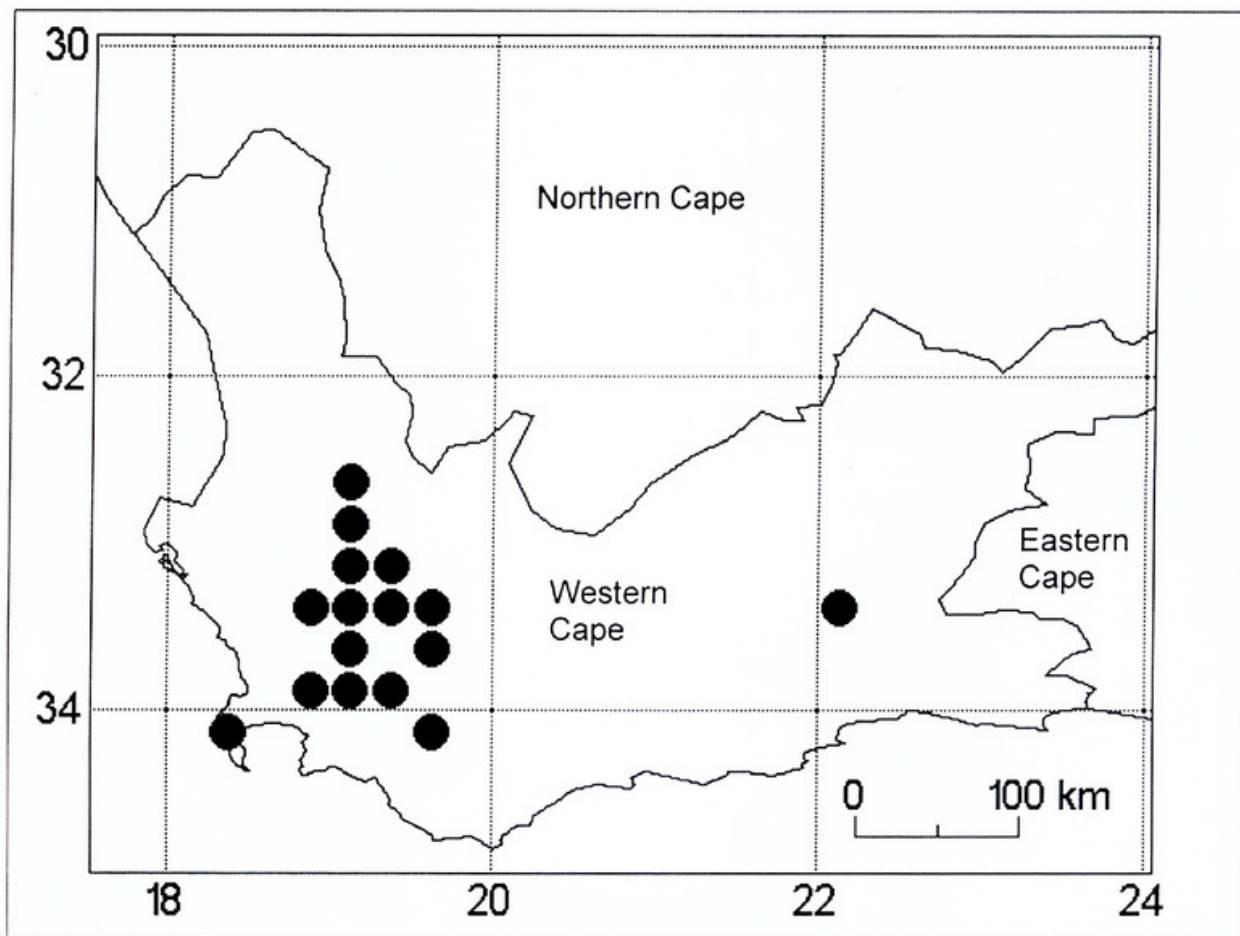


Figure 5. Known distribution of *Oresbia heterocarpa* Cron & B. Nordenstam.

late and minutely papillate; anthers basally sagittate or shortly caudate; apical appendage ovate, obtuse; endothecial tissue radial; filament collar distinctly balusterform; style branches with separate stigmatic areas; apex truncate with short sweeping hairs, outside glabrous. Cypselae heteromorphic: ray cypselae 4-winged, glabrous, brown to reddish brown, 2.0–3.5 mm long; epicarp cells rectangular, smooth with raised ridges; disc cypselae oblong-cylindrical with 6 ribs, not compressed or margined or winged, 1.5–2.2 mm long, with mucilaginous twin hairs on ribs; epicarp cells with rounded ends, striate; carpodium absent or obscure; pappus bristles pluriseriate, 4–5 mm long, barbellate, white, caducous.

Note. *Compton 13850* (NBG) has unusually large leaves (80 × 28 mm).

Phenology, distribution, habitat, and elevation. Flowering September to January, mainly in September and October, occasionally as early as August. Distributed in South Africa in the Western Cape, predominantly in the mountains around Franschhoek, Worcester, Paarl, Ceres, and Clanwilliam (Fig. 5). Growing in

moist areas shaded by rocks or low shrubs, or at the edge of caves, on south-facing or southeastern slopes or below cliffs, on ledges, on Table Mountain Sandstone and on shale bands, 800–1700 m (–2100 m on the Matroosberg).

Conservation status. Not common, occurring in isolated, small populations or as solitary plants at high altitude on mountains. *Oresbia heterocarpa* is probably not threatened because of the altitude at which it occurs, and is considered Least Concern according to the IUCN (2001) criteria (J. Victor, pers. comm.).

Etymology. The generic name is derived from the Greek adjective *oresbius*, meaning “mountain-dwelling,” and the specific epithet alludes to the heteromorphic cypselae.

Both names previously applied to *Oresbia heterocarpa* are illegitimate. The name *Senecio lanatus* was first used by Linnaeus (1759: 1216) for a different taxon (= *Senecio populifolius* L., = *S. halimifolius* L.), and so its use by Linné fil. (1782: 370) for the taxon here treated is illegitimate, as it is for *S. lanatus* Scopoli (1772: 165) and *S. lanatus* (Kunth) DC. (1838:

422) (= *S. tomentolanatus* Govaerts, 1999). Similarly, Miller (1768) first applied the name *Cineraria tomentosa* to a plant now known as *Senecio canadensis* L., which makes Lessing's (1832: 390) use of the name illegitimate. Lessing's (1832: 390) reference to Thunberg in connection with *Senecio lanatus* L. f. is an indirect reference to Linné fil., because Thunberg (1823: 681) refers to both Linné's *Supplementum Plantarum* (1782: 370) and the later *Systema Vegetabilium* per Gmelin (1796: 1229), as well as giving a description and the locality of the type specimen (Thunberg 19593 (UPS)). (Thunberg contributed considerably to the completion of *Supplementum Plantarum* (1782), including about 500 new species from the Cape.)

This taxon is anomalous in *Cineraria* as pointed out by Harvey (1865: 308), who placed it in a subgenus of its own, *Senecioides* Harvey, distinct from his subgenus "*Eu-Cineraria*" by noncompressed glabrous winged cypselae and sessile undivided leaves. Harvey (1865: 308) adds, "quite unlike any other *Cineraria*." We certainly agree.

The new genus is probably most closely related to *Phaneroglossa* B. Nordenstam, which is another senecioid monotypic genus from the Western Cape mountains (Nordenstam, 1978: 66–70). Like *Oresbia*, *Phaneroglossa bolusii* (Oliver) B. Nordenstam has heteromorphic cypselae, those of ray florets being 5- to 6-winged and glabrous, and those of disc florets exalate but ridged and pubescent. In *Phaneroglossa* the capitula are, however, white-rayed, ecalyculate, and borne singly on long scapose peduncles. This close relationship is also supported by molecular evidence emerging in ongoing studies of the tribe (Pelser et al., in prep.). A phylogram based on ITS data places *Oresbia* basally in a supported clade with *Phaneroglossa* and *Dendrosenecio* (Hauman ex Hedberg) B. Nordenstam.

Another possible senecioid relative is *Lamprocephalus* B. Nordenstam, a further monotypic Western Cape genus with a similar distribution (Nordenstam, 1976). *Lamprocephalus montanus* B. Nordenstam is clearly distinct from *Oresbia* in several important characters such as the discoid ecalyculate capitula, strangely appendaged style branches with a continuous stigmatic surface, and homomorphic cypselae without wings or prominent ridges.

Paratypes. SOUTH AFRICA. **Western Cape:** Cederberg, Sneeuwebberg, G. Cron, J. Hodgkiss, M. Stander & M. Cocks 322 (J, S); Piketberg Distr., Twenty-Four Rivers Mts. above Porterville, *Esterhuysen* 16080 (BOL); Malmesbury Distr., Leliefontein, N. S. Pillans 8828 (BOL); Paarl Distr., Berg River Hoek, F. M. Leighton 2047 (BOL); R. H. Compton 13850 (NBG), Compton 18319 (NBG); Swartboskloof, P. Van der Merwe 22–36 (PRE); Jonkershoek, *Esterhuysen* 35489 (BOL, MO, S); Great Winterhoek, Tullbagh, C. W. Thorne

51248 (SAM); Skurfieberg, near Gryboux, Ceres, A. Bodkin 7550 (BOL, K, PRE); Ceres, Gydo Pass, Compton 16224 (NBG); Ceres District, Eland's Kloof, *Esterhuysen* 3284 (BOL, NBG); Tullbagh, C. L. P. Zeyher s.n. sub SAM 16974; Michell's Pass, F. R. R. Schlechter 8940 (BM, K, PRE, WAG); Slab Peak, Michell's Pass, *Esterhuysen* 6158 (BOL), Compton 11956 (NBG), T. P. Stokoe 57074 (SAM); Ceres, M. R. Levyns 4658 (BOL), *Bolus* s.n. (BOL); Waaihoek Mt., *Esterhuysen* 8336 (BOL); Matroosberg, H. W. R. Marloth 2260 (PRE), *Esterhuysen* 14189 (BOL), *Bolus* 3955 (BOL); Slanghoek Needle, *Esterhuysen* 17800 (BOL); Du Toit's Kloof, *Stokoe* 63021 (SAM), C. F. Drège s.n. (P); Drakensteinbergen, Drège 1739 (G-DC, P, S, SAM 50222); Eland's Kloof, off Du Toit's Kloof, *Esterhuysen* 15271 (BOL); Franschhoek, C. P. Thunberg 19593 (UPS-THUNB); Franschhoek Reserve, Compton 5862 (BOL, NBG), Compton 4182 (NBG); Franschhoek Peak, *Stokoe* s.n., sub SAM 60489; Paarl Division, Sebastian's Kloof, *Stokoe* 7270 (BOL); Paarl Division, April Peak, Wemmershoek Mts., *Esterhuysen* 4128 (BOL); Louwshoek Mt., *Stokoe* 60490 (SAM); Saw Edge Peak, P. Goldblatt 4369 (MO, S); Swartberg Pass, Oudtshoorn, *Bolus* 12022 (BM, BOL, K, P, PRE); Swartberg Pass, near Prince Albert, *Bolus* 11557 (BOL, K, PRE); Simonstown Distr., Simonsberg, Drège s.n. (P); Caledon Distr., Wildepaardeberg, *Stokoe* 2750 (BOL); Caledon Distr., Genadendal, R. C. A. Prior s.n. (K). *Sine loc.*: Drège s.n. (BM, MO).

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Literature Cited

- Cron, G. V. 2005. *Cineraria* L. (Senecioneae, Asteraceae)—Its Taxonomy, Phylogeny, Phytogeography, and Conservation. Unpublished Ph.D. Thesis. University of the Witwatersrand, Johannesburg.
- , K. Balkwill & E. Knox. 2006. *Bolandia* (Asteraceae, Senecioneae): A new genus endemic to southern Africa. *Novon* 16: 224–230.
- Gmelin, P. F. 1796. *Caroli à Linné, Systema Vegetabilium*. C. J. F. Gmelin, Lyon.
- Govaerts, R. 1999. *Cineraria tomentolanata* Govaerts, nom. nov. (as "*tomentolanatus*"). *World Checklist Seed Plants* 3(1): 15.
- Harvey, W. H. 1865. *Compositae*. In: W. H. Harvey & O. W. Sonder (editors), *Flora Capensis* 3. Hodges, Smith, Dublin; I. C. Juta, Capetown.
- Hutchinson, J. 1946. *A Botanist in Southern Africa*. P. R. Gawthorn, London.
- IUCN. 2001. IUCN Red List Categories and Criteria Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland.
- Lessing, C. F. 1832. *Synopsis Generum Compositarum*. Dunckeri & Humblotii, Berlin.
- Linnaeus, C. 1759. *Systema Naturae*, Ed. 10. Holmiae, Stockholm. Laurentii Salvii.

-
- Linné, C. von f. 1782. Supplementum Plantarum. Braunschweig.
- Miller, P. 1768. The Gardener's Dictionary. Ed. 8. London.
- Nordenstam, B. 1976. *Lamprocephalus* B. Nord., a new senecioid genus from South Africa. Bot. Not. 128: 323–326.
- . 1978. Taxonomic studies in the tribe Senecioneae (Compositae). Opera Bot. 44: 1–84.
- Scopoli, J. A. 1772. Flora Carniolica. Ed. 2. Vol. 2. I. J. P. Krauss, Vienna.
- Thunberg, C. P. 1823. Flora Capensis. J. G. Cottae, Stuttgart.



Nordenstam, Bertil and Cron, Glynis. 2006. "Oresbia, a new South African genus in the Asteraceae, Senecioneae." *Novon a journal of botanical nomenclature from the Missouri Botanical Garden* 16, 216–223.

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