

## BRUNIACEAE

A NEW SPECIES OF *LINCONIA* FROM WESTERN CAPE

***Linconia ericoides*** E.G.H.Oliv., sp. nov., facie *Ericae* persimile, floribus *L. alopecuroideae* similissimis sed bracteolis 8–10 non 4, ovulis 8–10 non 2 per loculo, sed habitu perparva et foliis brevissimis (5.0–6.5 mm non 15–20 mm) differt; habitu *L. cuspidatae* similissima sed bracteolis 8–10 non 4(6), ovulis 8–10 non 2(4) per loculo, floribus urceolatis 11 mm longis non obconicis 4 mm longis differt.

TYPE.—Western Cape, 3420 (Caledon): Riviersonderend Mtns, eastern end, [5 km] WNW of Stormsvlei, SE main ridge NNW above Farm Hammerdene, 1650 ft [503 m], (–AA), 27 October 1998, *Oliver 11200* (NBG, holo.).

Small sparse woody shrublet up to 100 mm tall, with very gnarled woody spreading stem or rootstock. *Branches*: main branches 1–10, erect to spreading, sometimes pendulous, 30–100 mm long, leafy in upper part only, lateral branches occasionally 1 or 2, up to 10 mm long near apex of main branches, internodes short  $\pm$  0.4 mm long with infrafoliar ridges, puberulous with short hairs in young stages. *Leaves* erect to subspreading, incurved, 5.0–6.5  $\times$  1.3–1.6 mm, obovate to oblong-obovate to oblong-elliptic, gradually reducing to a petiole-like base,  $\pm$  flat adaxially and rounded abaxially with rounded margins, keeled in dry state, irregularly ciliate when very young in upper half with worm-like crisped hairs, otherwise glabrous, apical mucro small, red turning black; stipules  $\pm$  0.3 mm long, simple to bifurcate, black. *Inflorescence* of 1–3(5) flowers in axils of leaves just below tips of main branches and/or subterminal lateral branchlets aggregated into a loose head; pedicel very short,  $\pm$  0.5 mm long, covered by bracteoles; bracteoles 8–10 appressed imbricate, the lowest 1.4  $\times$  1.2 mm, broadly ovate, the upper 3.5  $\times$  2.0 mm broadly elliptic, occasionally with lateral lobes/teeth and a small dark mucro, hard but thin in texture, green with thin transparent marginal zone and red-flecked/striped, shortly ciliate with crisped hairs. *Calyx* 5-lobed, adnate to ovary, broadly conical with a few longitudinal ridges in basal half, glabrous; tube  $\pm$  0.2 mm long; lobes very broadly deltoid, subacute, appressed, very thin and transparent often flecked red. *Corolla* 5-lobed, fused slightly at base for 1.5–2.0 mm, 11  $\times$  6 mm, urceolate to obovoid-urceolate; lobes erect naviculate subapically touching, basally with thickened Y-shaped ridges for  $\pm$   $\frac{1}{3}$  their length, glabrous, hard and wax-like, pale to deep shell-pink with darker minutely cucullate tips. *Stamens* 5, included; filaments adnate to corolla tube at base, otherwise free, 7  $\times$  1 mm, subcylindrical, very narrowed at point of attachment to anther, white to pinkish, glabrous; anthers 2.5  $\times$  1.5 mm, sagittate with paler cap-like upper portion; thecae basally diverging, erect, dehiscing adaxially from large pore in lower  $\frac{1}{2}$ – $\frac{2}{3}$ . *Ovary* 2-locular,  $\frac{1}{3}$  inferior, 2.5  $\times$  1.5 mm, complanate, deeply furrowed laterally between carpels, glabrous, green; ovules 8–10 per locule, subpendulous in two irregular longitudinal rows; placenta in upper  $\frac{2}{3}$ ; styles 2, included, erect, touching apically then diverging for 1 mm, glabrous; stigma simple obtuse. Fruit not seen. Figure 4.

This new species belongs to a genus with only two species recorded thus far, *Linconia alopecuroidea* L. and *L. cuspidata* (Thunb.) Swartz (Pillans 1947). Florally the species is similar to the former, whereas vegetatively it is similar to the latter. A single collection made by Zeyher at Appelskraal near Riviersonderend occurs very near to the type locality of the new species and has not been re-collected since the 1830's. Surprisingly the flowers of that collection are very small for *L. cuspidata*. Powrie (1969) investigated the typification of these species and commented on the identity of this collection, which Pillans (1947) had identified as *L. deusta* (Thunb.) Pillans, which name Powrie regards as a synonym of *L. cuspidata*, being just a small-flowered form, hence the two species recognised to date.

*L. alopecuroidea* has tall erect stems up to 600 mm with numerous long needle-like leaves up to 20 mm long, whereas *L. cuspidata* and *L. ericoides* form small woody shrublets up to 200 mm tall (occasionally up to 400 mm in the latter) growing in rocky places, often rock crevices, and have almost identical small leaves, 5–10 mm long. In the two previously described species the leaves are mostly long-ciliate at the base which is not the case in the new species. *L. alopecuroidea* and *L. ericoides* have large urceolate pink flowers (corolla 9–11 mm long), which in the former are shorter than and hidden by the leaves, and occur in racemes of up to 24 flowers. In *L. ericoides* the flowers are very conspicuous but occur only one to three in an inflorescence, sometimes up to five. In *L. cuspidata* the flowers are small (corolla 2.75–3.5 mm long), broadly obconical and dull white and as such are not very conspicuous on the plant, but are massed in 'heads' of up to 20 flowers.

Several floral differences serve to distinguish the new species from the other two. Both *L. alopecuroidea* and *L. cuspidata* have only two ovules per locule, which has been used as a distinguishing character for the genus, although we have noted up to four in *L. cuspidata*. *L. ericoides* has 8–10 ovules per locule. In the two previously described species there are only 4–6 bracteoles, whereas in the new species there are 8–10.

Material of this new species was sent to us as an unknown *Erica* species by Mr K. Langeveld and Mr L. van der Merwe of Bonnievale, who found the plants growing on the latter's farm. The *Erica* similarity was very obvious and all the more so when we visited the locality with them. Only 25 plants were located growing in fissures on rocky outcrops and small cliffs. The plants were very small and sparsely branched from a very old woody gnarled rootstock or stem that spread along the fissure. There were indications that the plants had sprouted from this rootstock. The branches were either erect to spreading out from the rock face or sometimes pendulous from near vertical faces.

On the slopes leading to the rocks and cliffs there were numerous plants of a shrubby pink-flowered species of *Erica*, *E. ovina*. Several plants of this species

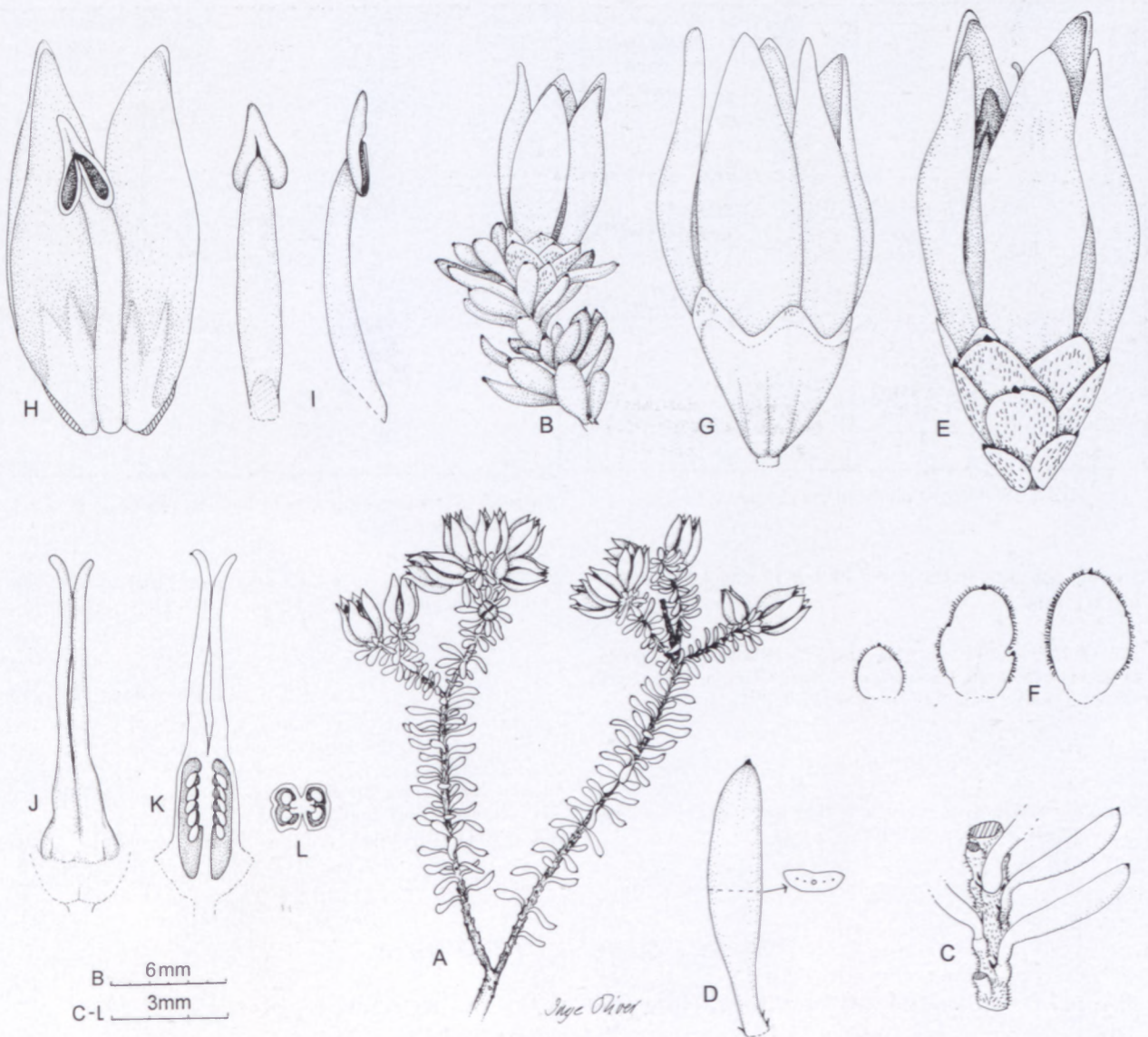


FIGURE 4.—*Linconia ericoides*. A, flowering branch, natural size; B, flowering branchlet; C, stem and leaves; D, leaf and cross section; E, flower; F, bracteoles; G, flower showing calyx; H, stamen, adaxial view, showing position in flower with basal ridges to petals; I, stamen, abaxial and lateral views; J, gynoecium; K, ovary opened laterally; L, ovary, cross section. Scale bars: B, 6 mm; C–L, 3 mm. All drawn from the type collection in the fresh state.

had managed to grow in the rock crevices and from a distance were almost identical to the *Linconia*, hence the specific epithet chosen, *ericoides*.

The habitat of *L. ericoides* raised the question of the biology of the species. With the similarity between the species and *Erica ovina* in the position, size, shape and colour of the flowers, one would postulate that the same pollinator was being used by both species, namely bees. No pollinators were noted visiting the plants at the time of our visit, but bees were seen on the more frequent plants of *E. ovina* lower down the mountain. The dispersal of seeds by wind from the lower populations must be the explanation for the chance germination of the *Erica* in the rock fissures, but not for the *Linconia*. No seeds are known for this species nor for *L. cuspidata*, but an old capsule from a previous season was found on herbarium material of *L. alopecuroidea*. The seeds showed a feature not known in the genus, namely an elaiosome. With the similarity in the flowers of *L. ericoides* and *L. alopecuroidea* it could be postulated that an elaiosome in the former would attract

ants which may take the seeds into fissures in the rocks. This feature of rock-dwelling species has been noted by us in several species in the genus *Erica*.

The new species is known only from a single mountain slope in the eastern Riviersonderend Range (Figure 5) where it is quite separated from *L. alopecuroidea* which is known from a few scattered localities in the Langeberg (Figure 6). The other species, *L. cuspidata* is the most widespread and commonest species in the genus occurring in the southwestern part of the province from Ceres southwards to Hermanus (Figure 6) where it is recorded as growing in rocky places.

Powrie (1969) comments on the polymorphism in *L. cuspidata*. There is one collection which she may have overlooked since she cited only a few South African collections compared with the types. This is *Stokoe SAM66467* (SAM) from Oudebosch near the mouth of the Palmiet River. The flowers are very small with only one ovule per locule. The petals are unusual in being

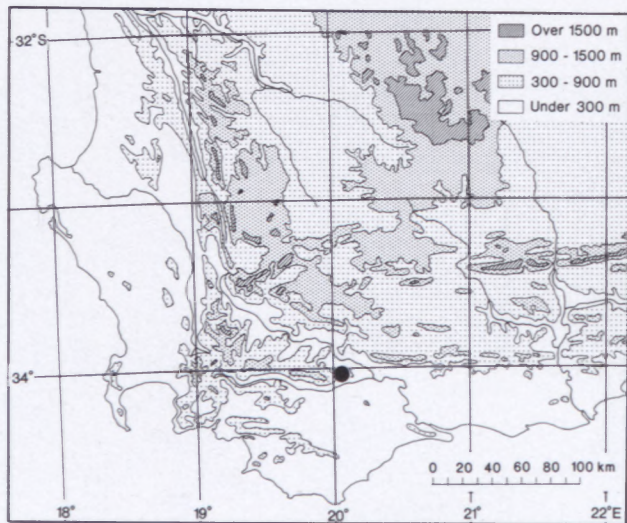


FIGURE 5.—Known distribution of *Linconia ericoides*.

slightly sagittate in the upper half as if they were becoming staminate.

PARATYPE.—Western Cape, 3420 (Swellendam): Stormsvlei, Riviersonderend Mtns, west of village, summit S-facing cliffs, cracks in rocks, (–AA), 15-11-1997, *Langeveld s.n.* (NBG).

#### REFERENCES

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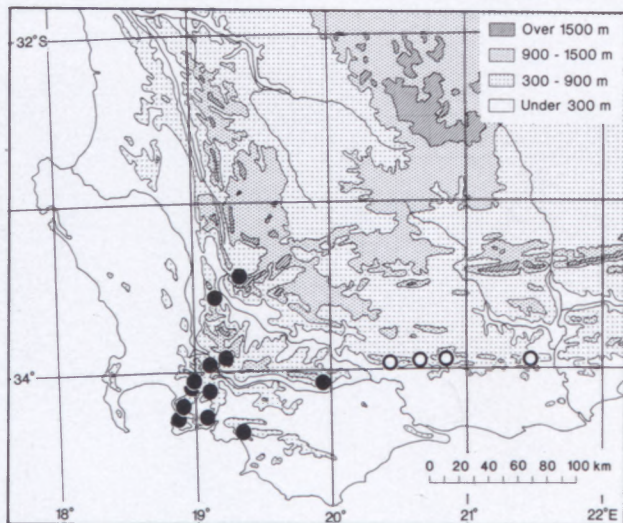


FIGURE 6.—Known distribution of *Linconia cuspidata*, ●, and *L. alopecuroidea*, ○.

POWRIE, E. 1969. Types of Bruniaceae in the Thunberg herbarium. *Journal of South African Botany* 35: 327–339.

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