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Six new species and one new subspecies of *Erica* (Ericaceae) from Western Cape, South Africa

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ABSTRACT

Two new species and one new subspecies belonging in §*Ceramia* of the genus *Erica* L. are described from the western half of the province—*E.* **cavartica** known from a single collection growing in a cave in the Cederberg, *E.* **amalophylla** confined to a shaded rocky overhang and known only from a single collection in the Porterville Mountains and *E. cymosa* subsp. **grandiflora** occurring in the mountains between Ceres and Worcester. Four new species are described from mountains in the Little Karoo area—*E.* **schelpeorum** occurring widespread mostly in dry watercourses in arid vegetation at low altitudes, *E.* **lithophila** found only in dry rock crevices at high altitude in the eastern Swartberg and Kammanassie Mountains, *E.* **umbratica** confined to shaded rocky habitats and known only from a few, very localized small populations at low altitude in Meiringspoort, and *E.* **annalis** restricted to the arid habitats on lower northern slopes of Kammanassie Mountains. Each is provided with a detailed drawing and a distribution map.

SPECIES IN §*CERAMIA*

In §*Ceramia* of the genus *Erica* L. there are many species which are associated with damp, shaded or wet habitats. Most are soft, low shrublets, either erect and compact or diffuse and sprawling, with long delicate main branches and often with open-backed leaves. The section contains a group of species (the *E. planifolia* group) which are closely related due to the position of the bract being on the main stem and leaf-like and not recaulescent on the pedicel (bract = leaf, in our terminology), and to a thickened midrib which is distinctly enlarged towards the distal end of the lamina and/or beyond the lamina apex. Within this group there were collections of herbarium material made by Thomas Stokoe and Elsie Esterhuysen that had not been placed with any certainty within a species and remained unnamed.

The three new taxa have a very similar facies with similar stems, leaves and bract but with differences noted in the corolla size, the presence of anther appendages, the ovary indumentum and the filament shape. They all occur in shaded, damp habitats.

1. **Erica cavartica** *E.G.H.Oliv. & I.M.Oliv.*, sp. nov., bractea non recaulescenti, bracteolis basalibus, corolla ± 9 × 4 mm, filamentis angustis rectis obspathulatis, antheris appendiculatis, ovario glabro, fructu irregulariter rugoso dignoscenda. Figura 1.

TYPE.—Western Cape, 3219 (Wuppertal): Clanwilliam Dist., Cederberg, near Crystal Pool, 4000 ft [1 220 m] (–AC), March 1932, *Stokoe 2600* (BOL, holo.); ibid., as *Stokoe SAM50109* (SAM).

Shrublets soft, sparse, procumbent, single-stemmed reseeders. *Branches*: few old main branches spreading up to 0.75 m long; numerous secondary branches 50–100 mm long, some bearing flowers; stems with mixture of fine, short, simple hairs and slightly longer, gland-tipped hairs, internodes 10–20 mm long on main branches, 3–10 mm long on secondary branches. *Leaves* 3-nate, spreading, broadly oblong, 4.0–6.5 × 15 mm, completely open-backed, flattened very thin, both surfaces and margins with sparse, delicate, gland-tipped hairs with fewer on abaxial surface and with a few, shorter, simple hairs admixed, midrib becoming thickened towards apex and beyond apex forming an apical, non-sticky, gland-tipped seta, ± 0.7 mm long; petiole ± 0.7 mm long with sparse gland-tipped hairs. *Inflorescence*: flowers 3-nate in 1–3 whorls raceme-like on main and secondary branches, subapical to far removed from apex, continuing growth apically; pedicel 10–20 mm long, covered with long and short gland-tipped hairs and short, simple hairs; bract not recaulescent, identical to a leaf on stem; bracteoles 2, near base of pedicel, ± 4.0 × 1.1 mm, otherwise like bract or leaf. *Calyx* 4-partite, oblong-ovate, ± 3.5 × 1.5 mm, green and leaf-like, idumentum as in bract and leaf. *Corolla* 4-lobed, shortly and broadly tubular, ± 9.0 × 4.5 mm, sparsely and finely hairy with simple hairs, colour?; lobes erect, ± 1 × 2 mm, subacute, margins entire. *Stamens* 8, free, just included; filaments elongate narrow-linear with broad, ± elliptic base, glabrous; anthers dorsally attached near base, oblong, ± 1.2 × 0.5 mm in adaxial view, bilobed, muticous; thecae erect adpressed, elliptic-oblong, ± 1.2 × 0.4 mm in lateral view, smooth, brown, pore ± ½ length of theca; pollen shed in tetrads. *Ovary* 4-locular, 8-lobed, oblate-globose, ± 1.2 × 1.4 mm, emarginate, with distinct basal nectaries, glabrous; ovules ± 90 per locule, spreading from placenta the full length of columella; style exserted, ± 9.5 mm long, glabrous; stigma simple truncate. *Fruit* a dehiscent capsule, ± 2.2 × 3 mm, valves splitting ± ½ way down and opening 30°–40°, with large, irregular wrinkles/folds, not hard and woody, septa mostly on valves. *Seeds* ellipsoid, ± 0.4 × 0.3 mm, shiny, ± smooth, orange, testa cells elongate, ± 75–125 × 25 µm, anticlinal walls thin jigsawed, inner periclinal walls with numerous small pits. *Flowering time*: March. Figure 1.

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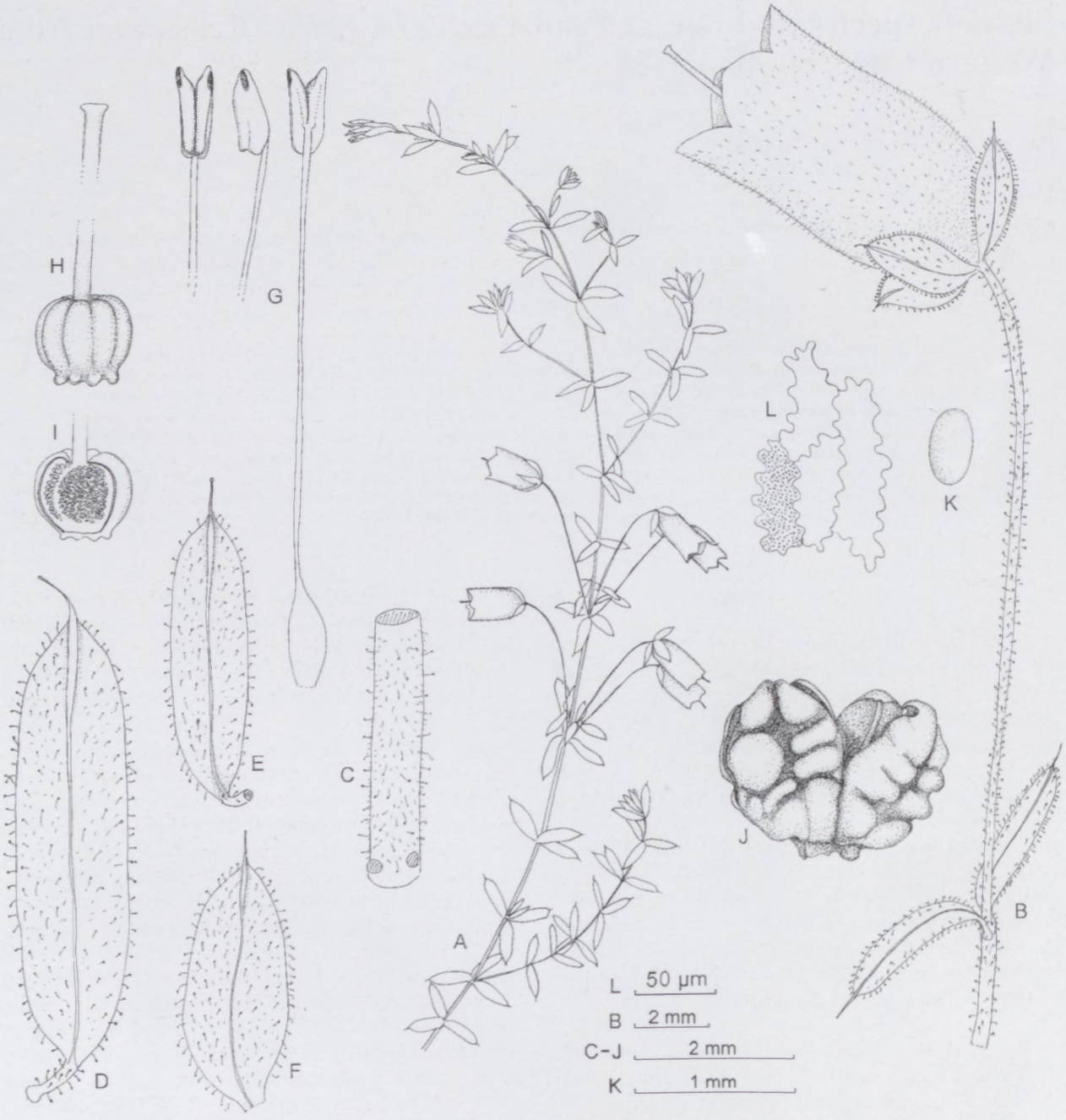

FIGURE 1.—*Erica cavartica*. A, flowering branch, natural size; B, flower; C, stem; D, leaf; E, bract; F, sepal; G, stamen, full in abaxial view, anther in adaxial and lateral views; H, gynoecium; I, ovary opened laterally; J, capsule; K, seed; L, testa cells. All drawn from the type, *Stokoe 2600*. Scale bars: B–J, 2 mm; K, 1 mm; L, 50 µm.

Diagnostic features: bracteoles basal, leaf-like; corolla long, ± 9 × 4.5 mm; filaments narrow straight with spoon-shaped base; anthers muticous; ovary glabrous; fruit with large, irregular wrinkles/folds.

The species is closest to the similar looking *E. cymosa* E.Mey. ex Benth. For differences between this and the other species in this group see Table 1.

Erica cavartica is known only from the type collection made by Thomas Stokoe in the Cederberg (Figure 2). He gave the habitat details to Neville Pillans in the Bolus Herbarium as 'in rock-crevices and on floor of a cave near Crystal Pool'. The name is derived from this habitat preference—*cavarticus* = born or living in caves (Latin). Pillans noted at the time that the main branches were up to 2½ ft [0.75 m] long and procumbent on large plants but on small plants were erect.

2. **Erica amalophylla** *E.G.H.Oliv. & I.M.Oliv.*, sp. nov., bractea non recaulescenti, bracteolis basalibus, corolla ± 3.5 × 3.5 mm, filamentis rectis vel ad apicem sigmoideis, antheris appendiculatis, ovario lanato, valvis fructus laevibus dignoscenda. Figura 3.

TYPE.—Western Cape, 3319 (Worcester): Piketberg Div., rocky plateau on Twenty Four Rivers Mts above Porterville, (–AA), 16 Dec. 1949, *Esterhuysen 16612* (BOL, holo.; BM, K, NBG, NY, PRE).

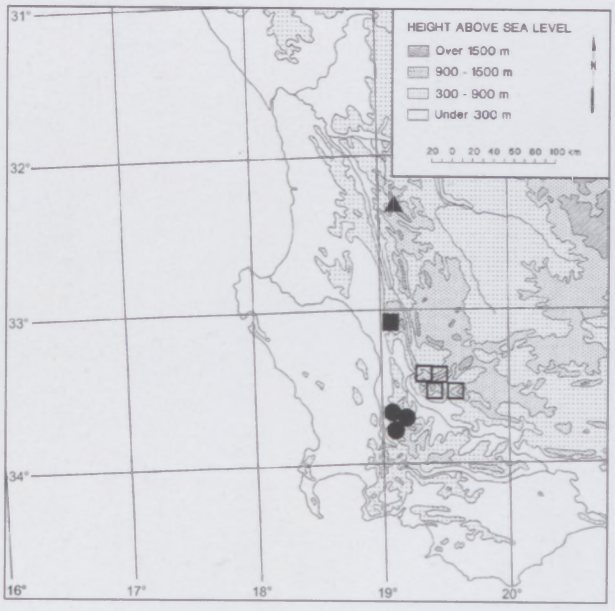

FIGURE 2.—Known distribution of *Erica cavartica*, ▲; *E. amalophylla*, ■; *E. cymosa* subsp. *cymosa*, ●; and *E. cymosa* subsp. *grandiflora*, □.

Shrublets soft, semi-erect to procumbent, 70–12 × 6–36 mm, single-stemmed reseeders. *Branches*: few main branches 100–300 mm long, thin, weak, secondary branches few, ± 20–50 mm long; stems with scattered, long, simple hairs and longer, gland-tipped hairs, internodes (2–)5–10 mm long. *Leaves* 3-nate, spreading, elliptic, 4.5–7.0 × 2 mm, acute, flat and very thin, almost completely open-backed, margins slightly recurved, midrib thickening towards apex and tapering into external simple or sometimes gland-tipped seta, sparsely covered on both sides with long, thin, simple hairs and longer, gland-tipped hairs, margins with a few of same hairs; petiole ± 0.3 mm long, glabrous. *Inflorescence*: flowers 3-nate in 1–3 whorls, raceme-like towards apex of main and secondary branches; pedicel 6–15 mm long, with a few scattered, long, gland-tipped hairs; bract not recaulescent, identical to a leaf on stem; bracteoles 2, near base of pedicel, ± 3 × 0.9 mm, otherwise like a leaf. *Calyx* 4-partite; segments adpressed to corolla, ovate-elliptic, ± 2.5 × 1 mm, otherwise like a leaf. *Corolla* 4-lobed, cyathiform, ± 3.5 × 3.5 mm, thinly textured, white, sparsely hairy with thin, long hairs; lobes erect, broadly rounded, deltoid, ± 0.8 × 1.8 mm, entire. *Stamens* 8, free, included; filaments linear-oblong with slightly broader elliptic base, straight or with slight sigmoid bend below anther, glabrous; anthers bilobed, erect, dorsally attached ± $^1/_3$ up the back, muticous; thecae adpressed with slightly spreading apical portion, yellow, smooth, pore ± $^1/_4$–$^1/_3$ of theca; pollen shed in tetrads. *Ovary* 4-locular, broadly ovoid to broadly ellipsoid, ± 0.8 ×1 mm, emarginate, covered with numerous long, erect hairs, with nectaries around base; ovules ± 15 per locule, suberect from placenta the full length of columella; style included or just beyond corolla mouth, ± 2 mm long, glabrous; stigma subsimple truncate. *Fruit* a dehiscent capsule, valves splitting to base and opening up to 45°, smooth, septa only on valve. *Seeds* ellipsoid, ± 0.4 × 0.2 mm, smooth, orange; testa cells elongate, 60–100 × 20–22 µm, inner anticlinal walls thin, evenly broadly jigsawed, inner periclinal walls with medium-sized pits. *Flowering time*: December. Figure 3.

Diagnostic features: bracteoles basal, leaf-like; corolla short (± 3.5 × 3.5 mm); filaments broadish, straight or with slight S bend subapically, with slight spoon-like base; anthers muticous; ovary woolly; fruit smooth, not wrinkled.

The plants within this alliance of three species are all rather soft and delicate with the leaves thin, flat and open-backed. The name of the species is derived from this feature—*amalophylla* from *amalos* = soft, tender, weak; *phyllon* = leaf (Greek). For species alliances and differences see Table 1.

Erica amalophylla is known only from the type collection made by Elsie Esterhuysen in the mountains southeast of Porterville which drain into the Twenty Four Rivers system (Figure 2). She noted that the plants were 'growing on shaded sandy floor of overhanging rock shelter'—a similar habitat description to that of *E. cavartica*.

3. **Erica cymosa** *E.Mey. ex Benth.* in DC., Prodromus 7: 670 (1839). Type: ad Dutoitskloof prov. Worcester, *Drège 1185* (K!, lecto.; BM!, BOL!, NBG!, P!, TCD!, W), lectotype selected here.

Shrublets soft, sparse, low, erect to spreading, single-stemmed reseeders. *Branches*: main branches 50–400 mm long, occasional secondary branches 20–100 mm long; stems delicate, thin with dense, short, gland-tipped hairs to subglabrous, no infrafoliar ridges, internodes 3–10 mm long. *Leaves* 3-nate, spreading, elliptic-ovate,

TABLE 1.—Diagnostic characters in *Erica cavartica*, *E. amalophylla* and *E. cymosa*

	Bracteoles: position & type	Corolla length	Filaments	Anther appendages	Ovary	Fruit	Seeds
E. cavartica	basal, leaf-like	± 9 mm	narrow, straight, spoon-like	absent	glabrous	wrinkled	smooth
E. amalophylla	basal, leaf-like	± 3.5 mm	broadish, straight or slightly geniculate, spoon-like	absent	hirsute	smooth	smooth
E. cymosa subsp. *cymosa*	subapproximate to approximate, reduced	1.5–2.8 mm	broad, geniculate, not spoon-like	present	glabrous	smooth	shallowly alveolate
subsp. *grandiflora*	$^1/_2$ way to subapproximate, reduced	3.5–5.5 mm	broad, geniculate, not spoon-like	present	sparsely pilose	smooth	shallowly alveolate

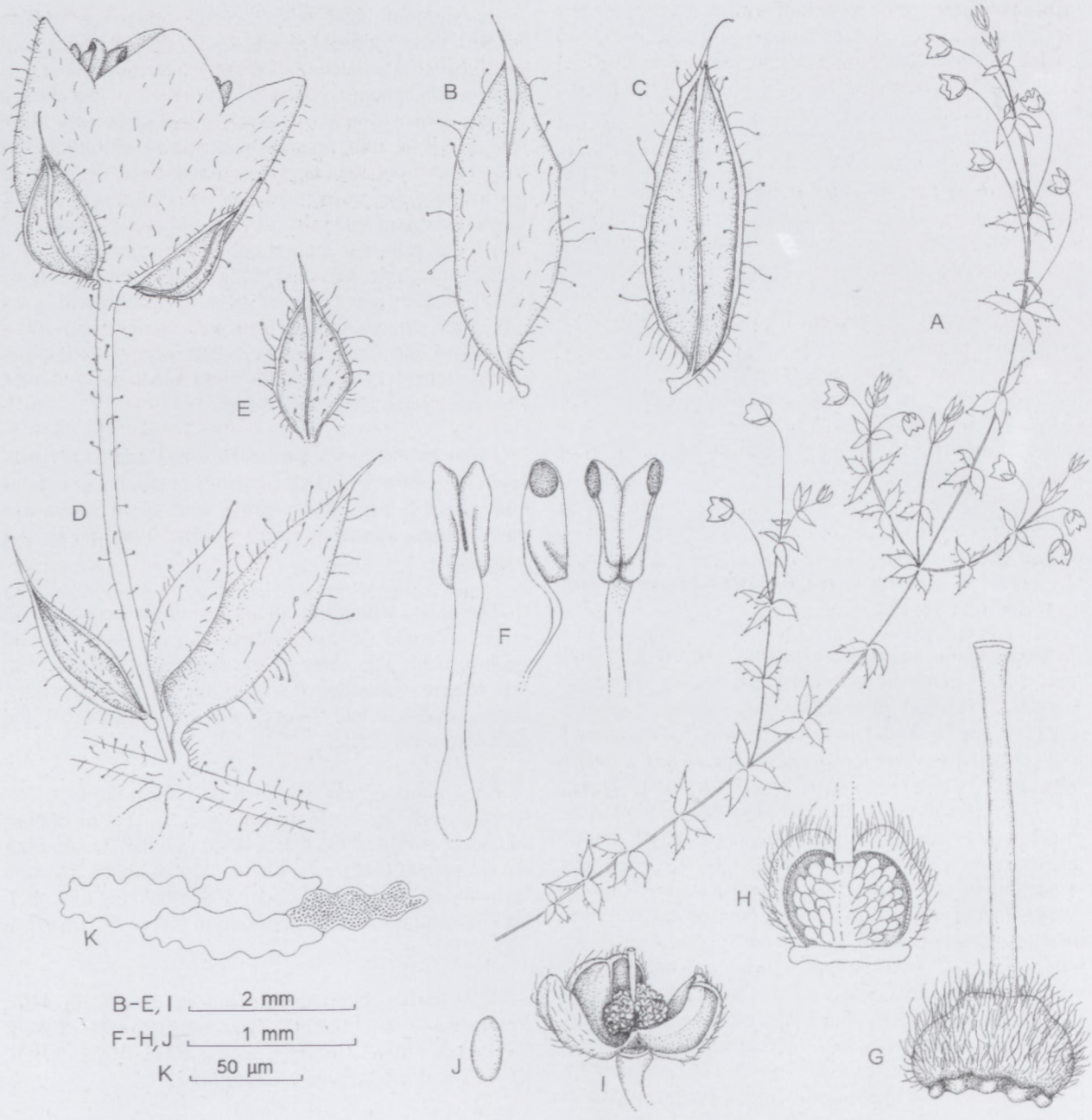

FIGURE 3.—*Erica amalophylla*. A, flowering branch, natural size; B, leaf, adaxial surface; C, leaf, abaxial surface; D, flower; E, sepal; F, stamen, abaxial view, and anther in lateral and adaxial views; G, gynoecium; H, ovary opened laterally; I, capsule with one valve removed; J, seed; K, testa cells. All drawn from the type, *Esterhuysen 16612*. Scale bars: B–E, I, 2 mm; F–H, J, 1 mm; K, 50 µm.

3.5–10.0 × 1–3 mm, open-backed and flat, delicate, adaxially covered with sparse, short, simple hairs and a row of longer, gland-tipped hairs near margins, abaxially with dense, very short, simple hairs and a few scattered, longer, gland-tipped hairs, midrib thickened towards apex and extended into a stout seta terminated by a small gland and very short-haired, sparsely ciliate with gland-tipped hairs; petiole adpressed to spreading, 0.4–1.0 mm long, glabrous to fine-haired. *Inflorescence*: flowers 3-nate in 1–8 whorls, raceme-like towards ends of main and secondary branches, continuing vegetative growth on main branches but often terminating secondary branches; pedicel 4–12 mm long, glabrous or with short, gland-tipped hairs; bract not recaulescent, leaf-like; bracteoles 2, from $^1/_2$ way up pedicel to approximate to calyx, seldom opposite, narrowly ovate to narrowly elliptic, 0.9–2.0 × 0.2–0.4 mm, with indumentum and midvein same as in leaf. *Calyx* 4-partite, ovate to broadly ovate to broadly elliptic, 0.7–2.5 × 0.4–1.1 mm, indumentum and structure like a leaf. *Corolla* 4-lobed, cyathiform to broadly urceolate, 1.5–5.5 × 2.2–4.0 mm, covered with sparse, short, simple hairs, white to very pale pink or tinged with red; lobes 1–2 mm long, rounded to subacute, margins entire. *Stamens* 8, free, included; filaments elongate, very narrowly ovate, 2.0–2.5 × 0.2 mm, with subapical S-bend, glabrous; anthers dorsally attached near base, bilobed, narrowly ovate in adaxial views, appendiculate; thecae erect, adpressed, ovate ± 0.7 × 0.4 mm in lateral view, slightly prognathous at base, smooth, yellow, appendages at base of thecae or partially decurrent along apex of filament, pendulous, narrow, ± $^2/_3$ as long as thecae, pore $^1/_3$–$^1/_2$ length of theca; pollen shed in tetrads. *Ovary* 4-locular, slightly depressed obovoid, 0.6–1.5 × 0.8–1.9 mm, emarginate,

glabrous or covered in upper half with sparse, short, simple hairs, nectaries present around base; ovules 35–50 per locule, spreading from placenta almost full length of columella; style manifest, 1.6–4.0 mm long, glabrous; stigma small, capitellate. *Fruit* a dehiscent capsule, valves splitting open ± 40° for ± $^1/_2$ their length, smooth, septa only on valves. *Seeds* ellipsoid, ± 0.4 × 0.2 mm, rounded to angled, orange, shallowly alveolate; testa cells irregularly elongate, ± 50–75 × 15 µm, anticlinal walls thin, irregularly jigsawed, periclinal walls with numerous fairly large pits.

Diagnostic features: bracteoles positioned $^1/_2$ way up pedicel to approximate to calyx, mainly much reduced but still leaf-like; corolla short to long, 1.5–5.5 × 2.2–4.0 mm; filaments very elongate, narrowly ovate with subapical S-bend, without a basal, spoon-like expansion; anthers appendiculate; ovary glabrous or hairy; fruit smooth not wrinkled.

This species forms a close alliance with the two new species described above. It differs in having the bracteoles placed further away from the bract ($^1/_2$ way up pedicel to approximate to the calyx and not basal) and the stamens with appendiculate anthers and filaments not spoon-like at the base (Table 1).

Variation in characters between the populations of *E. cymosa* are present. The most noticeable is in the size and shape of the corolla. There are however, two clear size groupings which occur in two disjunct distribution areas (Figure 2). These are also coupled with a difference in indumentum of the ovary. We have therefore decided to recognize these two regional variants at subspecific level.

Bentham (1839) described the species based on a Drège collection which had been provisionally named *E. cymosa* by Meyer who worked on and distributed many Drège collections. Bentham saw many collections from Berlin and usually cited these as 'v. s. sp. in herb. reg. Berol.' Since he did not cite this reference for *E. cymosa* he did not see his material there and must have relied solely on the rather scant material at Kew which he annotated. He noted in the protologue that he saw no cymes in the material, and unfortunately he proceeded to use Meyer's manuscript name '*cymosa*' for the species.

3a. subsp. **cymosa**

Guthrie & Bolus: 141 (1905); Dulfer: 77 (1965).

Illustration: Schumann & Kirsten: 122, t.1 (1992).

Diagnostic features: corolla 1.5–2.8 × 2.2–3.0 mm; ovary glabrous.

The typical subspecies occurs in the mountains of the Du Toitskloof/Wellington/Wemmershoek area where it grows in moist places on cliffs (Figure 2). Where we have seen it, the plants grow on a ledge under an overhang in deep shade in a river gorge. *Flowering time*: October to March, one record in June.

3b. subsp. **grandiflora** *E.G.H.Oliv. & I.M.Oliv.*, subsp. nov., a subspecie typica floribus majoribus et ovario puberulo differt. Figura 4.

TYPE.—Western Cape, 3319 (Worcester): Worcester Div.; Blaaskloof, W slopes of Keeromsberg, 5000 ft [1 525 m], (–DA), 23 February 1958, *Esterhuysen 27590* (BOL, holo.; BM, E, K, MEL, MO, NBG, NY, P, PRE, S, W).

Diagnostic features: corolla larger, 3.5–5.5 × 3–4 mm; ovary hairy (Figure 4; Table 1).

This subspecies occurs on the mountains in the Hex River Range just southwest of Ceres to near Worcester and on the Keeromsberg across the Hex River Valley (Figure 2). These populations are cut off from those of the typical subspecies by the much drier, lowland Worcester-Tulbagh Valley.

The plants are all recorded growing in rock crevices on overhanging rocks in shady, moist areas. One collection on Schurfteberg was described as on 'sheltered rather dry slightly earthy cliff face'.

Compton (1953) under the protologue of his *E. monantha*, noted that several collections by Elsie Esterhuysen 'may also belong to this species'. He noted that they possessed open-backed leaves and sepals which could be ascribed to their habitat preferences. These included two collections of this subspecies, *Esterhuysen 14719* & *15202* and the type of *E. amalophylla*. We regard Compton's *E. monantha* as being conspecific with *E. flacca* Benth. *Flowering time*: November to March.

Paratype material for subsp. grandiflora

WESTERN CAPE.—3319 (Worcester): Ceres Div., Schurfteberg, 3500 ft [1 070 m], (–AD), 7-12-1948, *Esterhuysen 14719* (BOL, K, NBG, NY, PRE); Ceres Div., Mitchell Peak, 4000 ft [1 220 m], (–AD), 27-03-1949, *Esterhuysen 15202* (BOL, NBG, PRE); Ceres Div., Waaihoek Peak facing Tarantula Peak, 5800 ft [1 770 m], (–AD), 16-01-1961, *Esterhuysen 28737* (BOL, PRE); Worcester Div., Milner Peak, E side, 5000 ft [1 525 m], (–AD), 18-12-1948, *Esterhuysen 14938* (BOL, PRE); Worcester Div., Audensberg Ridge Peak, 2000 ft [610 m], (–CB), 1-01-1950, *Esterhuysen 16744* (BOL, NBG).

Specimens examined for subsp. cymosa

WESTERN CAPE.—3319 (Worcester): Du Toitskloof, (–CA), *Drège 1185* (K, lecto.; BM, BOL, NBG, P, TCD); ibid., *Drège SAM10592* (SAM); ibid., 2000–3000 ft [600–900 m], October, *Drège s.n.* (BOL); Malbrokskloof, 2500–3000 ft [760–900 m], IIIAe, (–CA), 20-02-1828, *Drège s.n.* (P); Seven Sisters above Groen Kloof, 3500 ft [1 070 m], (–CA), 14-01-1951, *Esterhuysen 18322* (BOL); kloof between Krom River Peak and Krom River Dome, 3000 ft [915 m], (–CA), 30-12-1958, *Esterhuysen 28062* (BOL, K); ibid., 4000 ft [1 220 m], 26-10-1960, *Esterhuysen 28687* (BOL, NBG); Haelhoek Sneeukop overlooking Wemmershoek Valley, 3500 ft [1 070 m], (–CA), 14-03-1959, *Esterhuysen 28225* (BOL, PRE); Klein Drakenstein Mtns, Donkerkloof, ± 3000 ft [915 m], (–CA), 31-06-1960, *Esterhuysen 28435* (BOL, K, PRE); ridge between Witteberg and Molenaarsberg, 4500 ft [1 370 m], (–CA), 27-12-1960, *Esterhuysen 28693* (BOL); Du Toitskloof Mtns, upper Krom River SE of New Year's Peak, 3500 ft [1 070 m], (–CA), 22-12-1959, *Oliver 418* (NBG) [voucher for Schumann & Kirsten: 122, t. 10, 1992]; ibid., 1 000 m, 7-01-1961, *Oliver 1144* (NBG); Seven Sisters, Wellington, (–CA), 10-1931, *Stokoe 6695* (BOL).

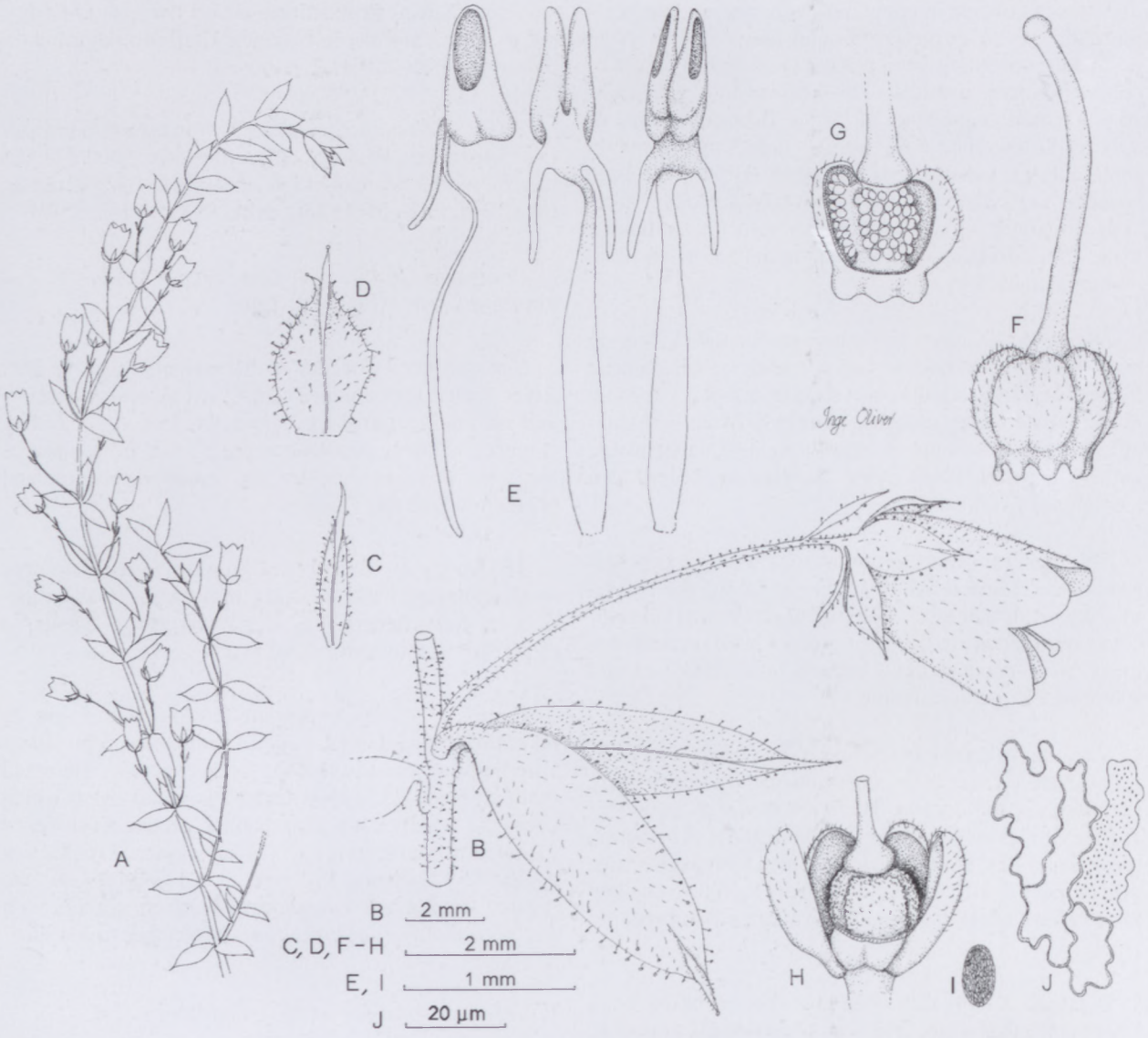

FIGURE 4.—*Erica cymosa* subsp. *grandiflora*. A, flowering branch, with bracteoles mostly in halfway position, natural size; B, flower, with bracteoles subapproximate; C, bracteole; D, sepal; E, stamen, lateral, back and front views; F, gynoecium; G, ovary opened laterally; H, capsule; I, seed; J, testa cells. All drawn from the type, *Esterhuysen 27590*. Scale bars: B–D, F–H, 2 mm; E, I, 1 mm; J, 20 µm.

LITTLE KAROO SPECIES

4. **Erica schelpeorum** *E.G.H.Oliv. & I.M.Oliv.*, sp. nov., foliis 4-natis, ramis, foliis, bractea bracteolisque pilis glandulosis, bractea non recaulescenti, inflorescentibus umbellatis, pedicello longo (5–9 mm), calyce sine glandibus, corolla glabra, antheris exsertis muticis vel calcaribus minutis dignoscenda. Figura 5.

TYPE.—Western Cape, 3321 (Ladismith): Swartberg Mtns, northern foothills due N of highest point of road before descent into Die Hel, 4 000 ft [1 220 m], 6-05-1963, *Oliver STE32108* (NBG, holo.; BM, BOL, K, MO, NY, PRE).

Shrub erect, much branched, twiggy, 0.5–1.5 m tall, grey, single-stemmed reseeder. *Branches*: numerous, main branches 30–120 mm long and secondary branches 10–30 mm long; internodes 2–5 mm long; stem with short, spreading, simple hairs and fewer, long, gland-tipped hairs admixed. *Leaves* 4-nate, subspreading, incurved but not imbricate, oblong, 4–5 × 0.8–1.2 mm, with rounded margins, obtuse, finely short-haired on both surfaces, abaxially with scattered, long, gland-tipped hairs admixed, sulcus narrow, open at base; petiole ± 0.8 mm long, short-haired. *Inflorescence*: flowers 4-nate in 1–4 whorls umbel-like at apex of most main and secondary branches; pedicel 5–9 mm long, finely short-haired with a few, long, gland-tipped hairs admixed; bract not recaulescent, 2–3 × 0.6 mm, otherwise like leaf, green or pinkish red; bracteoles 2, just above mid position on pedicel, 1.5–2.2 × 0.3–0.6 mm, like miniature leaf with long petiole. *Calyx* 4-partite; segments broadly elliptic, ± 3 × 1.5 mm, adpressed to corolla, subacute, margins entire at base, slightly toothed/lobed in upper half, glabrous with upper sulcate region short-haired, purple-red often with green apical portion, sulcus narrow, $^1/_3$ length of segment. *Corolla* 4-lobed, globose-urceolate, 4.0–4.5 × 3–4 mm, glabrous, whitish pink base to dark pink apex; lobes suberect to erect, ± 1 × 1.5 mm, broadly rounded, entire to slightly erose. *Stamens* 8, exserted; filaments free, linear-oblong, ± 2.6 × 0.25 mm, slightly widened towards base, straight or very slightly geniculate subapically, glabrous,

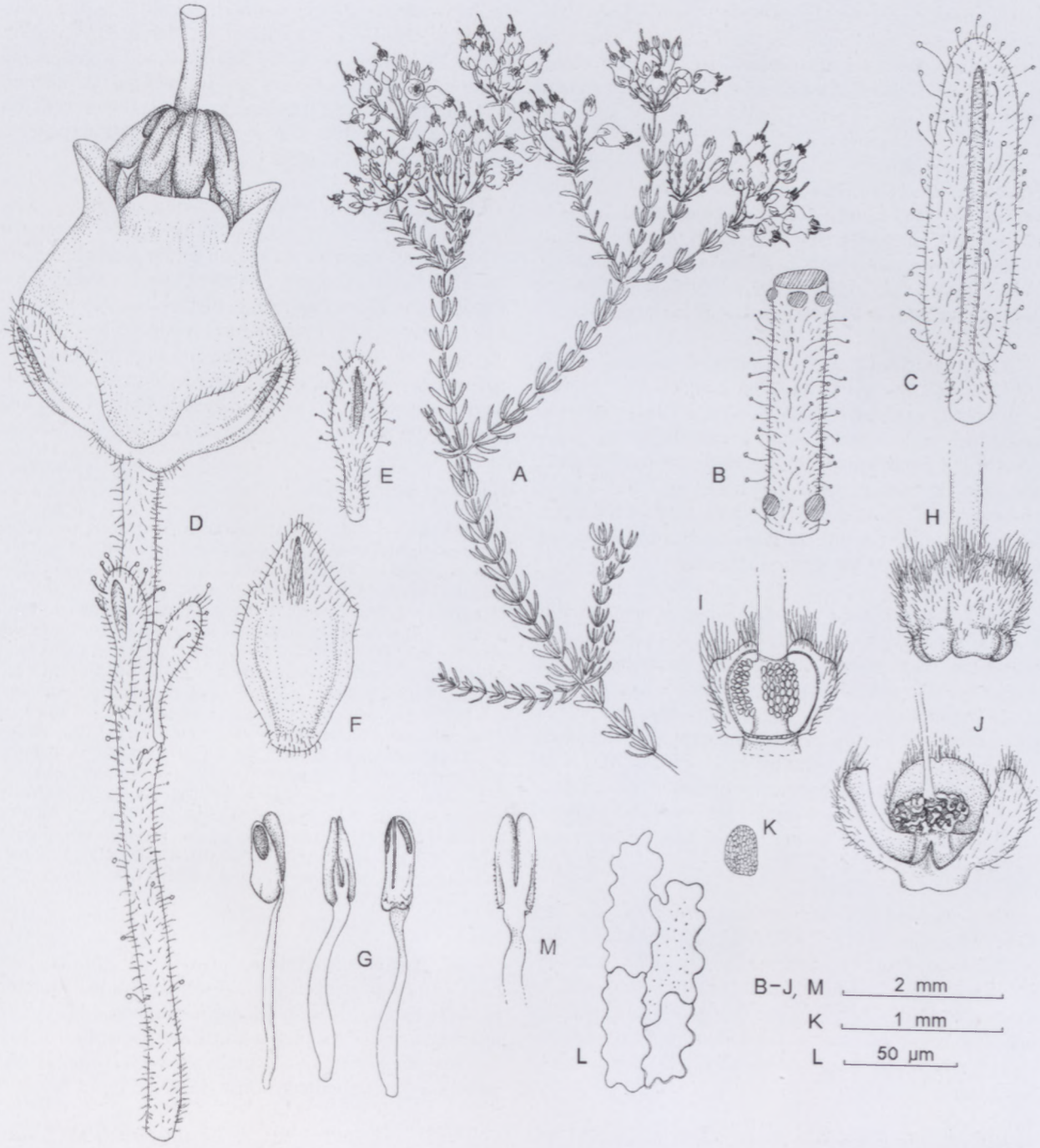

FIGURE 5.—*Erica schelpeorum*. A, flowering branch, natural size; B, stem, with leaves removed; C, leaf; D, flower; E, bracteole; F, sepal; G, stamen, side, back and front views; H, ovary; I, ovary opened laterally to show ovules and placentae; J, capsule with one valve removed; K, seed; L, testa cells; M, anther variant with appendages. A–I drawn from the *Oliver 11863 & 11879*, M from *Vlok 2454*. Scale bars: B–J, M, 2 mm; K, 1 mm; L, 50 µm.

white; anthers dorsally attached near base, lanceolate to oblong in adaxial view, bipartite, minutely appendiculate or muticous; thecae lanceolate in lateral view, ± 1.1 × 0.4 mm, adpressed to slightly spreading, smooth, dark brown, spurs (when present) minute, pore ± $^{1}/_{3}$ length of theca; pollen in tetrads. *Ovary* 4-locular, very broadly obovoid, 1.5 × 1.7 mm, emarginate, 8-lobed, hairy with hairs longer at apex of lobes, with large nectaries around base; ovules 30–40 per locule spreading from placenta in upper $^{3}/_{4}$ of locule; style exserted, ± 5 mm long, glabrous, white; stigma simple truncate. *Fruit* a dehiscent capsule, ± 1.8 × 2.8 mm, valves splitting $^{3}/_{4}$ their length to 45° angle, septa only on valves, placentae large. *Seed* small, obovoid, rounded to sub-angular, ± 0.3 × 0.2 mm, orange; testa shallowly reticulate, not thick, cells 50–70 × 25 µm, anticlinal walls slightly thickened, jigsawed, inner periclinal walls sparsely pitted. *Flowering time*: this would appear to be autumn to early winter (May to July) but can be earlier when summer rains have occurred. This is certainly the case with the Kykoe population which was in full flower for the Viviers & Vlok specimen in July and the Schumann specimen in May but just past peak flowering for us in early March. However, in the latter case only a few of the shrubs had flowered, with the others not having produced any flowers at that stage. Figure 5.

Diagnostic features: leaves 4-nate; gland-tipped hairs on stems, bract and bracteoles but not sepals; bract non recaulescent (bract = leaf); pedicel long, 5–9 mm; corolla glabrous; anthers exserted with no, or only minute appendages.

This new species is allied to several species in §*Ephebus*—*E. hirta* Thunb. (*E. sphaeroidea* Dulfer), *E. perlata* Sinclair, *E. tradouwensis* Compton, and also to *E. armata* Klotzsch ex Benth. (§*Myra*), *E. mitchellensis* Dulfer (§*Orophanes*) and *E. strigosa* Sol. (§*Ceramia*). These species are widely scattered through the current poor, i.e. unnatural, system of sections in the genus.

It is most similar to *Erica hirta*, *E. perlata* and *E. tradouwensis* in having the long pedicels and flowers with slightly exserted anthers. *E. hirta* differs in the short spike-like inflorescence (not umbel-like), the hairy corolla and 3-nate leaves, *E. perlata* in the hairy corolla, the subopen-backed, spreading leaves and the spurred anthers, and *E. tradouwensis* in the 3-nate leaves which are slightly open-backed, the hairy corolla and the eglandular, long hairs on the stems and leaves.

Erica schelpeorum was stated above as being similar to three other species in other sections. With *E. armata* it shares the bract on the main axis (non recaulescent), the 4-nate leaves, similar glands and umbel-like inflorescence but that species has larger, hairy flowers, pedicel shorter than the corolla and longer anther appendages. *E. mitchellensis*, which is similar to *E. armata*, has a recaulescent bract and inflorescence of only a single whorl. *E. strigosa* has the non recaulescent bract and glabrous corolla, but differs in having a spike-like inflorescence and short pedicel.

This species was first collected in 1954 by Mrs Sybella Schelpe (1917–2001) while on a field trip with her husband, Prof. Ted Schelpe (1924–1985), who was the lecturer in taxonomy for both of us during our student years at the University of Cape Town. We thus take this opportunity of honouring them both in naming this species which was discussed with Sybella shortly before her death.

Erica schelpeorum is widespread on mountains and hills in and bordering the Little Karoo (Figure 6). In all cases where we have seen the species, it occurs in dry, arid areas usually associated with a dry watercourse. Despite the high altitude of the type collection, the plants there were growing in arid renosterveld vegetation on the southern slopes of the northern foothills to the main range of the Great Swartberg. In the Kykoe locality which was shown to us by Jan Vlok and which is the same population as *Viviers & Vlok 184* and *Schumann 684*, the plants were growing in renosterveld vegetation on shale/clay with a thin overlay of quartzite pebbles washed down in a small dry watercourse.

All the species mentioned as being similar in some respects, do not occur sympatrically with *E. schelpeorum*, they all occur in the region to the southwest from the Hex River Mountains to the Cape Peninsula eastwards as far as the Langeberg, just east of Swellendam. *Erica hirta* and *E. tradouwensis* are both low altitude species with the former growing on clay/gravel slopes sometimes on the border between dry fynbos and renosterveld vegetation in the Malmesbury, Stellenbosch and Genadendal areas.

Paratype material

WESTERN CAPE.—3321 (Ladismith); Swartberg, in ravine between Kliphuisvlei and Gamkaskloof, 1 200 m, (–BD), 7-05-1989, *Vlok 2112* (NBG); Calitzdorp area, Gamka Mountain Reserve, upper Tierkloof, 500 m, (–DB), 7-05-1983, *P. & J.Cattell 240* (BM, BOL, K, MO, NBG, NY, PRE, S); ibid., N slopes of Dwarsberg, 900 m, (–DB), 8-09-1987, *Allardice 1730* (NBG). 3322 (Oudtshoorn): Swartberg Pass, N side, 3500 ft [1 060 m], (–AC), 12-02-1954, *A.S.L.Schelpe 98* (BOL); Great Swartberg, Meiringspoort, 2 100 ft [640 m], (–BC), 23-06-1997 (fruiting), *Oliver 10820* (NBG); Groot Swartberg, eastern end at N base of Snyberg, 4000 ft [1 220 m], (–BD), 12-03-1991, *Vlok 2454* (BOL, NBG); Kammanassie Mtns, Klein Plaas River Valley, 3600 ft [1 100 m], (–DA), 10-08-1983, *Mathews 1170* (K, NBG, P, PRE); Ghwernaberg, above Kykoe, 600 m, (–DD), 11-01-2001, mainly in bud, *Oliver 11863* (NBG); ibid., 7-03-2001, *Oliver 11879* (NBG); Potjiesrivierhoogte Pass, southern foot, 550 m, (–DD), 25-05-1989, *Schumann 684* (NBG); ibid., next to national road on southern slope, (–DD), 3-07-1987, *Viviers & Vlok 184* (BM, K, NBG, NY, PRE). 3323 (Willowmore): Antoniesberg, S side, ± 1 000 m, (–AD), 10-03-2001, *Van Wijk 2302* (NBG, SCHG).

5. **Erica lithophila** *E.G.H.Oliv. & I.M.Oliv.*, sp. nov., *Ericae kirstenii* E.G.H.Oliv. proxima sed fruticulo parvulo, ovulis 20–30 in quoque loculo non ± 60, erectis non effusis vel pendulis, antherarum calcaribus angustioribus, testa parietibus anticlinalibus pertenuibus non percrassis multo undulatis dignoscenda. Figura 7.

TYPE.—Western Cape. 3322 (Oudtshoorn): Swartberg at Meiring's Poort, 5000 ft [1 524 m], (–BC), 16 October 1955, *Esterhuysen 24865* (BOL, holo.; K!).

Small, brittle, delicate shrublets, 20 × 20–80 × 50 mm, rarely 120 mm in diam., erect and compact to slightly

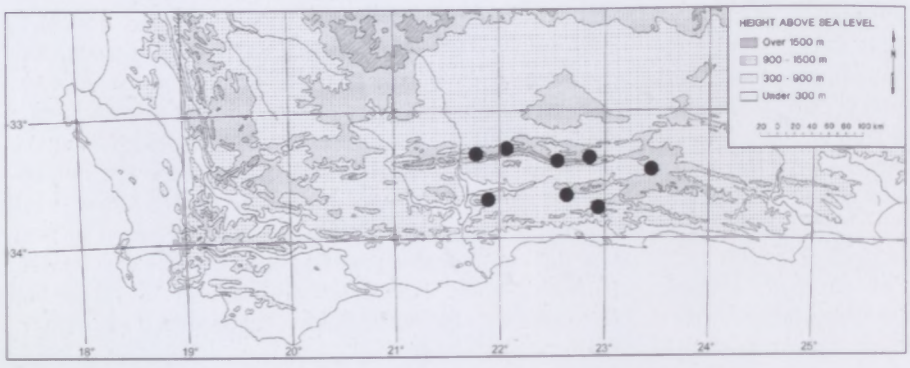

FIGURE 6.—Known distribution of *Erica schelpeorum*.

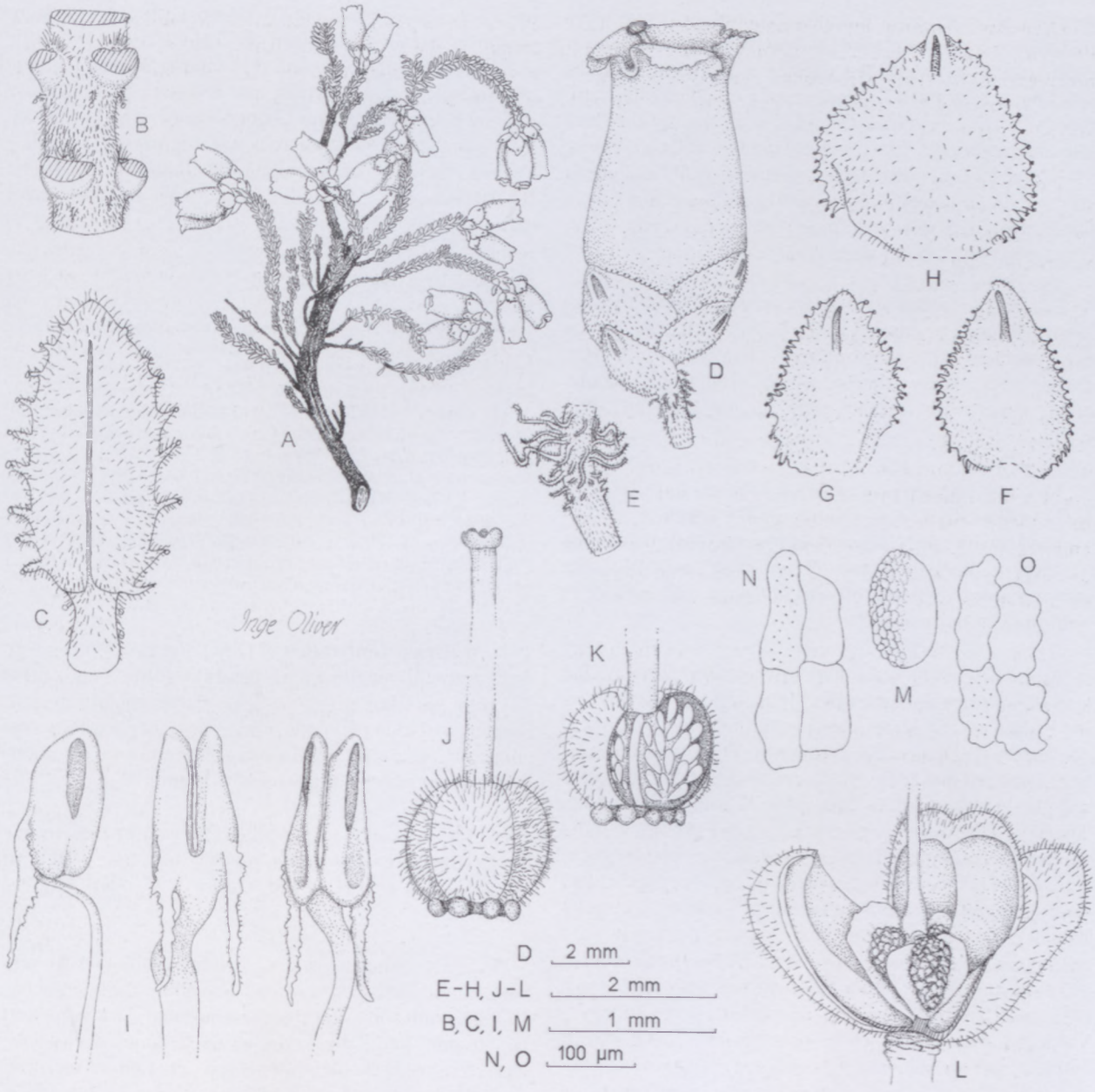

FIGURE 7.—*Erica lithophila*. A, flowering branch, natural size; B, stem with leaves removed; C, leaf; D, flower; E, pedicel; F, bract; G, bracteole; H, sepal; I, stamen, side, back and front views; J, gynoecium; K, ovary partially opened laterally to show ovules; L, capsule with one valve removed; M, seed; N, outer portion of anticlinal testa cell walls; O, inner portion of anticlinal testa cell walls. A–K, drawn from *Vlok 2476*; L–N, from *Oliver 11552*; O from *Oliver 11833*. Scale bars: B, C, I, M, 1 mm; D, E–H, J–L, 2 mm; N, O, 100 µm.

spreading, single-stemmed reseeders. *Branches*: thick, woody, basal stem with numerous main branches, 10–15 mm long, secondary branches few, ± 2 mm long; stems with white, short, dense, simple hairs and a few plumose hairs; internodes very short. *Leaves* 2- or 3-nate, imbricate, subspreading, elliptic, 2.5–3.0 × 0.8 mm, abaxially rounded, adaxially flattened, covered with dense, grey-white, short, simple hairs, margins with short, plumose, gland-tipped hairs, sulcus narrow open at base; petiole ± 0.4 mm long, short-haired to sparsely hairy, margins with simple hairs and/or short, gland-tipped hairs. *Inflorescence*: flowers 1–3 in 1 whorl at ends of main branches and very rarely, secondary branchlets; pedicel ± 2 mm long, red, covered with very short, fine hairs and in upper half also with stouter, white, crisped, plumose hairs, 0.4–1.0 mm long, these with or without an apical gland; bract partially recaulescent about $^2/_3$ up pedicel, ovate, ± 2.2 × 1.7 mm, subacute, pink, sparsely covered with very short, fine, simple hairs, unevenly toothed, teeth gland-tipped, sulcus narrow, ± $^1/_3$ length of bract; bracteoles 2, approximate to calyx, slightly lopsided, otherwise same as bract. *Calyx* 4-partite, segments imbricate, broadly ovate, ± 2.8 × 2.8 mm, subacute, pink, otherwise like bract. *Corolla* 4-lobed, urceolate, ± 7.5 × 4 mm, pink, glabrous; lobes recurved, broadly rounded, ± 1.8 × 0.7 mm, erose sometimes with very broad, plumose hairs at base. *Stamens* 8, included, free; filaments linear, ± 3 × 0.4 mm, slightly geniculate below theca, white, glabrous; anthers bipartite, ovate in adaxial view, appendiculate; thecae oblong, 0.9–1.2 × 0.9 mm in lateral view, dark brown, smooth, appendages elongate, narrow-lanceolate, ± 1 mm long, strigulose, irregularly toothed, pore ± $^1/_2$ length of theca; pollen shed in tetrads. *Ovary* 4-locular, subsphaeroid, ± 1.8 × 1.5 mm, emarginate, completely covered with longish, spreading, simple hairs, with well-developed nectaries around base; ovules 25–30 per locule,

erect to suberect on a complete central placenta; style included, ± 6 mm long, straight, glabrous; stigma manifest capitellate. *Fruit* a dehiscent capsule, ± 3 × 4.2 mm, valves splitting to base and 45°, septa mainly on columella, hard, woody. *Seeds* ellipsoid, ± 0.7 × 0.4 mm, slightly flattened laterally; testa colliculate, yellow-orange, cells ± oblong, 70–100 × 50 µm, outer part of anticlinal walls straight to slight undulate, inner part irregularly undulate, inner periclinal walls sparsely and finely pitted. *Flowering time*: August to November. Figure 7.

Diagnostic features: shrublets very small with flowers relatively large compared to the plant and leaves; leaves grey; pedicel with long, plumose hairs in upper part; anther appendages narrow; ovules 20–30 per locule, erect; seeds with delicate testa having thin anticlinal walls.

This new species is most closely related to *E. kirstenii* E.G.H.Oliv. (Oliver & Oliver 2000) which is distinguished by the much larger stouter shrubs, leaves ± twice as long, pedicel long and curved with short plumose hairs all over, ovules ± 60 and not erect and testa cells with thick anticlinal walls.

Erica lithophila occurs on the eastern parts of the Great Swartberg Range in the Meiringspoort area and on the Kammanassie Mountains just to the south where it is confined to high altitudes (Figure 8). The species is easily overlooked due to the small size of the plants with very old gnarled plants often only 30 × 30 mm and growing. The habitat is rock crevices in large rocks usually with no soil and north-facing. The largest plant we have seen was growing in some humus in a vertical crack facing east and was open and ± 120 mm in diameter. In these dry, rocky habitats, the shrublets are often cryptic, melting in with the lichen-covered rock. In younger plants the flowers at ± 7.5 mm long, are rather disproportionately large for a plant only 20 mm in diameter. The habitat preference provides the specific epithet for the species—*lithos* = rock (Greek), *-philos* = loving (Greek).

Erica kirstenii is confined to rocky places on the Klein Swartberg in the region of Ladismith and Seweweekspoort ± 100 km to the west of the distribution range of *E. lithophila*.

There are several other species that grow in rocky places and that have similar flowers with large, petaloid bracts, bracteoles and sepals edged with teeth or stout plumose hairs—*E. taylorii* E.G.H.Oliv. & I.M.Oliv. (Oliver & Oliver 2001) and *E. modesta* Salisb. The former occurs in two very disjunct regions, the Cederberg and the Klein and central Groot Swartberg and produces large spreading mats on rocks at high-lying altitudes, whereas the latter occurs along the summit ridges in the Riviersonderend Mountains and forms a taller, erect shrub up to 0.75 m.

Paratype material

WESTERN CAPE—3322 (Oudtshoorn): Swartberg, Spitzkop neck to the east, 1 600 m, (–AD), 15-04-2000 (fruiting), *R. Taylor s.n.* (NBG); ibid., 5000 ft [1 524 m], 9-03-1991 (fruiting), *Vlok s.n.* (NBG); Blesberg, 6000 ft [1 828 m], (–BC), 17-10-1955, *Esterhuysen 24934* (BOL); ibid., N & E slopes, 2 060 m, 13-07-2000 (flowers & fruiting), *Oliver 11552* (NBG); Swartberg Mtns, N slopes above Vrolikheid E of Meiringspoort, 5200 ft [1 584 m], 16-08-1991, *Vlok 2476* (NBG); Kammanassie Mtns near Mannetjiesberg, 1 700 m, (–DB), 7-11-1995, *Hitchcock K73* (NBG); Mannetjiesberg Peak, N slopes, 6200 ft [1 890 m], (–DB), 2-10-1971, *Oliver 3612* (NBG); Kammanassie Mtns due N of Buffelsberg, 1 500 m, (–DB), 9-01-2001 (fruiting), *Oliver 11807* (NBG); Kammanassie Mtns, Molenrivier 114, W of Mannetjiesberg, 1 840 m, (–DB), 9-01-2001 (fruiting), *Oliver 11833* (NBG).

6. **Erica umbratica** *E.G.H.Oliv. & I.M.Oliv.*, sp. nov., fruticulo tenello fragili pendulo, foliis 3-natis effusis, pilis brevibus glandulosis et glande magno apicali, floribus viscidis, pedicello longo, sepalis glandibus sessilibus marginalibus, calcaribus antherarum longis undulatis, ovario pubenti dignoscenda. Figura 9.

TYPE.—Western Cape, 3322 (Oudtshoorn); Meiring's Poort, northern end near Wadrif, 600 m, (–BC), 5 January 2001, *E.G.H. & I.M. Oliver 11757* (NBG, holo.; K, PRE).

Shrublet delicate, brittle, pendulous, 200–500 mm long, single-stemmed reseeder. *Branches*: main branches 200–400 mm long, with numerous secondary branches, 10–80 mm long, these not at each node, occasional, short, tertiary branchlets; stems sparsely hairy with short, spreading, simple hairs and stalked glands. *Leaves* 3-nate, subspreading to spreading to 90°, 5–7 × 0.8 mm, rounded on both sides, margins rounded to slightly acute, sulcus narrow, sparsely hairy on both surfaces with short-stalked glands on margins, apex tipped with solitary large gland, open at base, with occasionally at base of each lateral branch, 1–3(–5) whorls of small brown bract-like leaves; petiole ± 0.6 mm long, hairy on both

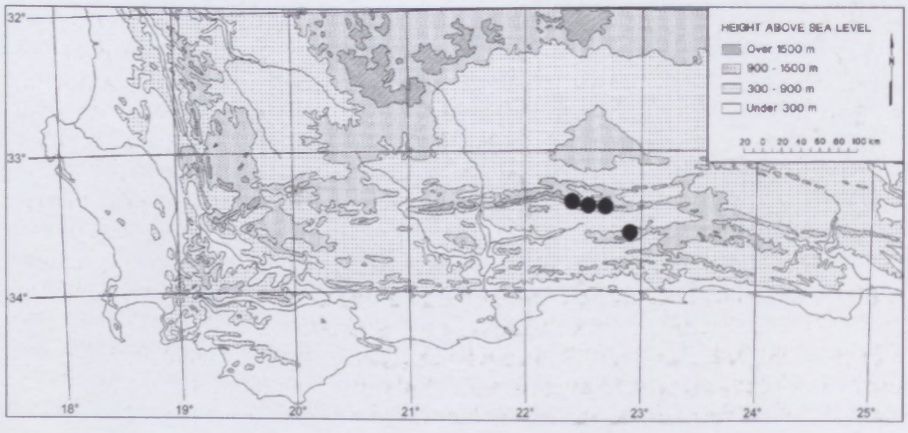

FIGURE 8.—Known distribution of *Erica lithophila*.

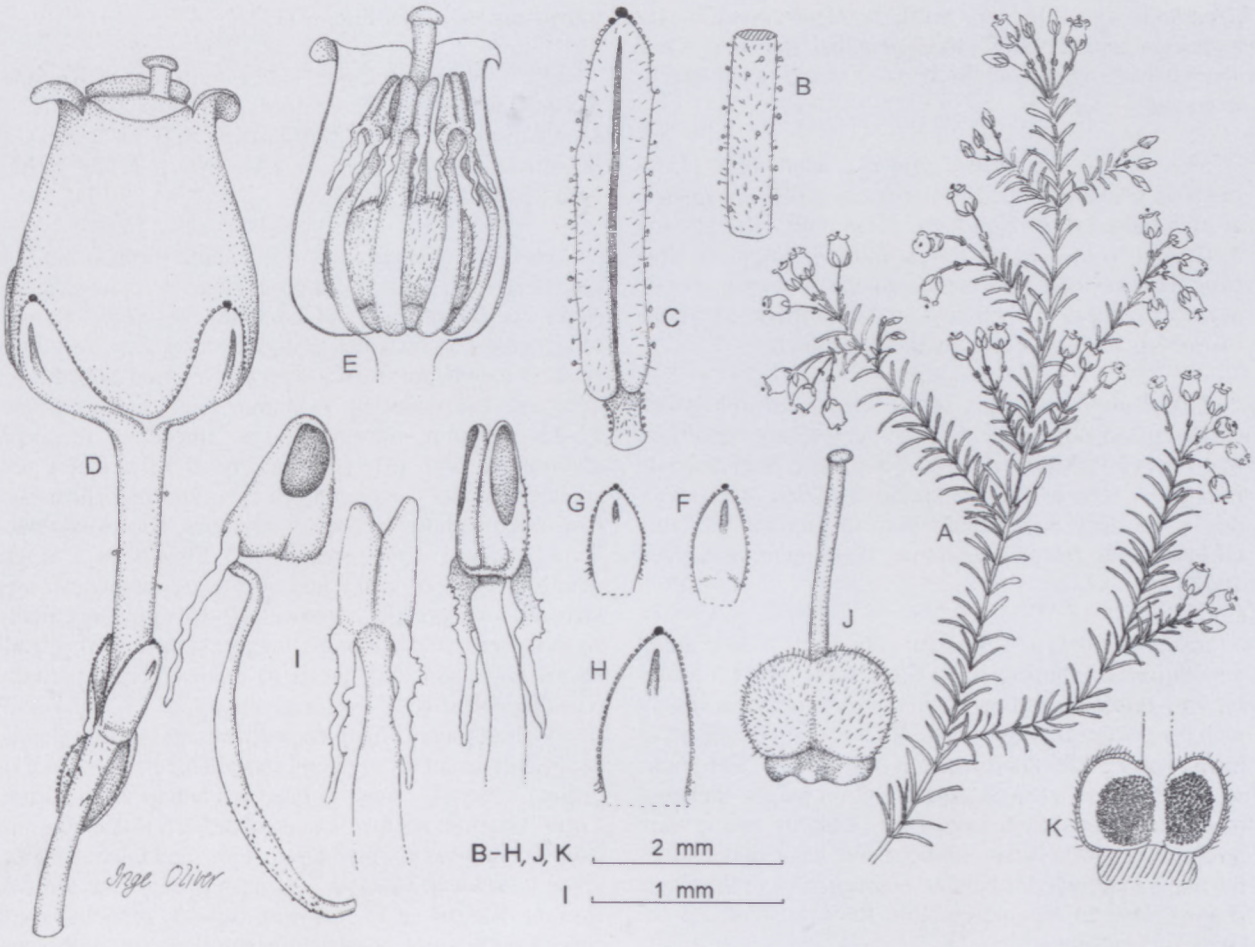

FIGURE 9.—*Erica umbratica*. A, flowering branch, natural size; B, stem; C, leaf; D, flower; E, flower opened laterally; F, bract; G, bracteole; H, sepal; I, stamen, side, back and front views; J, gynoecium; K, ovary opened laterally to show ovules and placentae. All drawn from the type collection, *Oliver & Oliver 11757*. Scale bars: B–H, J, K, 2 mm; I, 1 mm.

sides, glands on margins. *Inflorescence*: flowers 3-nate in 1 or 2 whorls, umbel-like at ends of main and secondary branches; pedicel 6–7 mm long, pink, glabrous with a few scattered short-stalked glands and simple hairs at attachment of bract and bracteoles; bract partially recaulescent, ± $^1/_4$ way up pedicel, ovate, ± 1.2–1.4 × 0.6 mm, margins lined with sessile glands, apex with larger, red gland, otherwise glabrous, greenish; bracteoles 2, $^1/_3$–$^1/_2$ way up pedicel, ± 1.4 × 0.6 mm, otherwise like bract. *Calyx* 4-partite, adpressed to corolla; segments ovate, ± 2 × 1 mm, margins lined with sessile very viscid glands, the terminal one larger and dark red, otherwise glabrous, green. *Corolla* 4-lobed, ovoid, ± 4 × 3 mm, glabrous, viscid, white; lobes recurved, ± 0.7 × 1.2 mm, rounded, margins entire. *Stamens* 8, included, free; filaments linear, ± 5 × 0.5 mm, slightly widened at base, subapically geniculate, spiculate near base, otherwise glabrous; anthers bipartite, dorsally attached near base, lanceolate to oblong in adaxial view, appendiculate; thecae ovate in lateral view, ± 1.8 × 1.1 mm, finely spiculate, orange-yellow, appendages elongate, narrowly lanceolate, ± 2.2. × 0.2 mm, slightly zigzagged, sparsely toothed and with a few short, simple hairs, pore ± $^1/_2$ length of thecae; pollen in tetrads. *Ovary* 4-loculate, spherical, ± 1.5 × 1.8 mm, emarginate, short-haired, with large basal nectaries; ovules 80–100 per locule, lateral and spreading on large, bulbous placenta the full length of locule; style ± 2.4 mm long, just exserted, glabrous; stigma capitellate. *Fruits* not seen. *Flowering time*: this is variable and possibly determined by rainfall, which is mainly in winter but also as summer showers. Flowers do not seem to be profuse on the plants. Figure 9.

Colour illustrations: Schumann & Kirsten: 251, t. 10 & t. 11 (1992).

Diagnostic features: delicate, brittle, pendulous shrublet; leaves 3-nate, spreading (up to 90°), delicate; pedicel long (6–7 mm); flowers viscid; anther appendages long, narrow, zigzagged and irregularly toothed; ovary short-haired.

This new species shares similarities with a range of viscid-flowered species such as *E. carduifolia* Salisb., *E. nubigena* Bolus, *E. ixanthera* Benth., *E. wittebergensis* Dulfer, and two undescribed species—one from the Kouga Mountains (*Esterhuysen 10673, 27097*), the other from the northern side of the Swartberg Pass (*Schumann 798* and *Vlok 2502*). With these it shares long, 3-nate leaves mostly with sticky glands, often spreading and caducous, bract-like leaves at base of flowers and side branches, long pedicel with few to many glands, similar sized and positioned bract and bracteoles, large sessile marginal glands on the sepals, long anther appendages, and ovary with large placenta bearing numerous ovules producing small seeds. It differs in its growth form, being

pendulous with thin, very brittle branches, much longer zigzagged and irregularly toothed anther appendages and short-haired ovary. Each of the species has rather specific leaves.

Most of the other species grow in shaded, moist places often on southern slopes, *E. nubigena* and *E. carduifolia* at high altitudes, *E. ixanthera*, *E.* sp. nov. (Kouga) and *E. umbratica* at a much lower altitude. *Erica* sp. nov. from the Swartberg Pass is the odd one out as it grows on dry, rocky slopes in open veld on the northern side of the Swartberg and forms erect, woody shrublets.

Erica umbractica has rather viscid flowers which easily collect dirt on them in the very windy conditions that prevail in Meiringspoort. This made Schumann in frustration, refer to this new species as *Erica* "puer-sordidus"—the dirty boy, when trying to produce perfectly clean material for photographing (Schumann & Kirsten 1992).

Erica umbratica is known only from a few small populations in Meiringspoort (Figure 10) where it grows on very large, shaded rocks, just above the main stream which runs through the poort. It could be postulated to have evolved with the formation of the poort. The plants we have studied grow in cracks and on ledges sheltered under overhangs on a large rocky outcrop where they receive very little direct sunlight. We have thus chosen the name to reflect this habitat, *umbraticus* = of the shade (Latin). Due to the inaccessible location, material for study is very limited.

The discovery of this rare species was made by Jan Vlok who has an eye for recognizing unusual and interesting plants—the plants look so unlike an *Erica* species. and more like some members of the family Asteraceae such as *Stoebe*.

Paratype material

WESTERN CAPE.—3322 (Oudtshoorn): Swartberg Mtns, Meiringspoort, 550 m, 8-08-1987, (–BC), *Schumann 548* (NBG); ibid., near Herriesklip, (–BC), 15-04-1986, *Vlok 1460* (NBG; PRE); ibid., near Waterfall picnic area, (–BC), 1 900 ft [580 m], 26-06-1990, *Vlok 2312* (NBG).

7. **Erica annalis** *E.G.H.Oliv. & I.M.Oliv.*, sp. nov., a speciebus nobis notis bene distincta, foliis 4-natis paucis spiculis, inflorescentia non spicata, pedicello comparate longo (10–15 mm), bractea bracteolisque parva remota, corolla perpubenti, filamentis styloque sparse pilosis dignoscenda. Figura 11.

TYPE.—Western Cape. 3322 (Oudtshoorn): Kammanassie Mountains, Perdekloof, northern foothills of Mannetjiesberg above Buffelsklip, 820 m, (–DB), 3 September 2001, *E.G.H. & I.M. Oliver 11929* (NBG, holo.; BOL, K, NY, PRE).

Sparsely branched, erect to spreading shrub, 0.2–1.0 m tall, often with gnarled old basal stems/branches, single-stemmed. *Branches*: main branches 50–100(–200) mm long; secondary branches vestigial; stems grey, very finely short-haired, sometimes with a few gland-tipped hairs admixed; internodes up to 5 mm long. *Leaves* 4-nate, 12–15 × 1 mm, subspreading to spreading, recurved, glabrous or with a few, sparse, basal hairs and a few spicules abaxially, ± circular in cross section, sulcus narrow, open at base; petiole 1 mm long adpressed, fine-haired, yellow. *Inflorescence*: 1–3 flowers in a single whorl at ends of main and secondary branches, subspreading to spreading; pedicel 10–15 mm long, finely short-haired with numerous longer, stalked, red, gland-tipped hairs admixed, green to reddish; bract partially recaulescent in basal position, oblong, ± 1.7 × 0.4 mm, finely short-haired, margins with minute sessile glands, green-brown, sulcus minute; bracteoles 2 in lower half of pedicel, otherwise same as bract but sulcus often absent. *Calyx* 4-partite; segments lanceolate, ± 5 × 0.4 mm, not laterally imbricate, fine-haired with glandular margins, green to reddish; sulcus ± $^1/_2$ length of segment, narrow. *Corolla* 4-lobed, ± 25 × 4 mm, tubular, funnel-shaped, curved with slight constriction above ovary, with scattered, short and a few longer, simple hairs, bright orange-red; lobes ± 3 × 3 mm, subacute, margins entire, spreading to recurved. *Stamens* 8, free, manifest to exserted; filaments linear, straight, very sparsely pilose, white with pale red apex; anthers bilobed, dorsally attached ± $^1/_3$ way up, narrowly oblong-elliptic in adaxial view, muticous; thecae narrowly oblong and ± 5 × 0.6 mm in side view, smooth, golden brown to reddish brown, pore ± $^1/_3$ length of theca; pollen in tetrads. *Ovary* 4-locular, cylindrical to narrowly ellipsoid, ± 3.3 × 2.2 mm, 4-lobed with rounded apex, covered with dense, long, erect hairs, nectaries present around base; ± 35 ovules per locule, spreading from full-length placenta; style ± 27 mm long with a few hairs towards base, white, reddish towards apex; stigma truncate simple, reddish. *Fruit* a dehiscent capsule, ± 5 × 4.5 mm, obovoid, hard and woody, valves splitting 35° for $^3/_4$ their length, placenta whole length of capsule, septum mostly on valve. *Seeds* ± 1 × 0.7 mm, broadly ellipsoid with one side slightly flattened, brown; testa slightly alveolate, cells ± hexagonal ± 100 × 75 µm, anticlinal

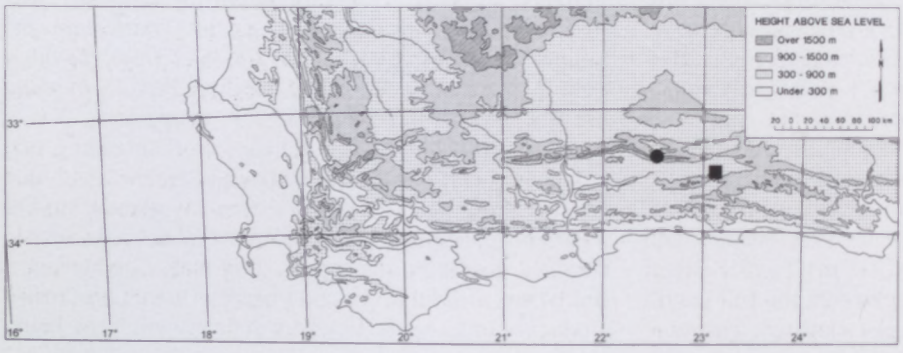

FIGURE 10.—Known distribution of *Erica umbratica*, ●; and *E. annalis*, ■.

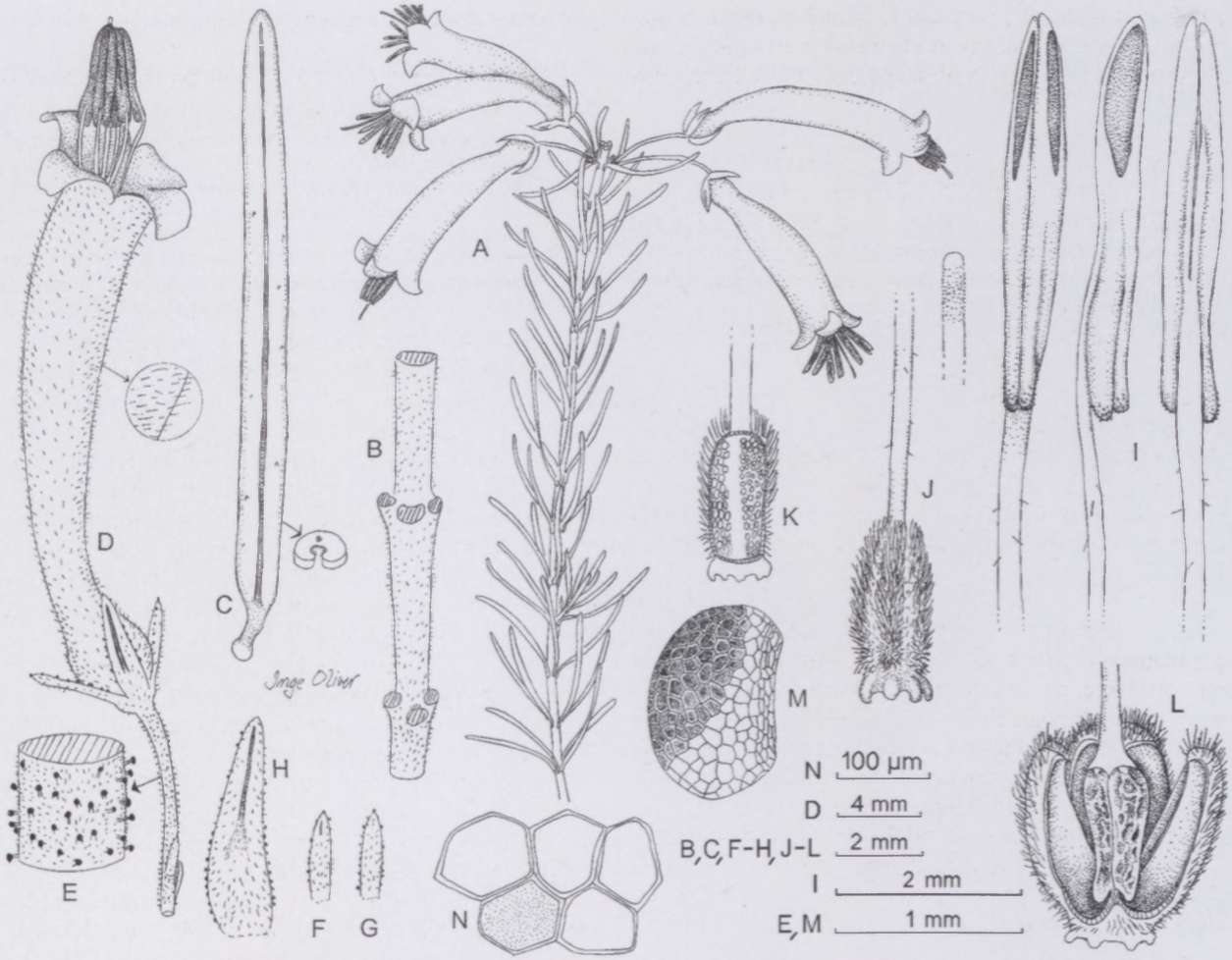

FIGURE 11.—*Erica annalis*. A, flowering branch, natural size; B, stem with leaves removed; C, leaf; D, flower; E, pedicel enlargement; F, bract; G, bracteole; H, sepal; I, anther, front, side and back views; J, gynoecium; K, ovary, opened laterally; L, capsule, with one valve removed; M, seed; N, testa cells. All drawn from the type collection, *Oliver & Oliver 11929*. Scale bars: B,C, F–H, I–L, 2 mm; D, 4 mm; E, M, 1 mm; N, 100 µm.

walls thin straight inner periclinal wall with numerous small pits. *Flowering time*: July to October, but probably at other times depending on summer rains as evidenced by old flowers on flowering material. Figure 11.

Diagnostic features: leaves 4-nate; corolla hairy with a distinct swelling at the base; bract and bracteoles small, remote; anthers well exerted, muticous, long and narrow; sparse hairs on filaments and style; pedicel relatively long, 10–15 mm, with small, sticky, red glands; ovary densely hairy, cylindrical; leaves with very few sclereids.

E. annalis could be related to several long-tubed species that occur in the region—*E. wendlandiana* Klotzsch, *E. densifolia* Willd. and *E. abelii* E.G.H.Oliv. and to a lesser extent *E. maximilianii* Bolus. The first three species have the narrow, elongated anthers which are included to slightly manifest, but these are appendiculate, they have the narrow cylindrical ovary but all of them are glabrous, and the hairy corolla. *E. wendlandiana* has the hairy filaments and style which can be present in *E. densifolia* but these are lacking in *E. abelii*. *E. abelii* differs in having a long bract and bracteoles which are approximate to the calyx, not small and remote. All three species differ from *E. annalis* in having 3-nate leaves and no similar basal swelling of the corolla. *E. densifolia* has spike-like synflorescences on the main stems. *E. wendlandiana* is remarkable in the genus for the large swelling at the base of the style and *E. maximilianii* differs in having a glabrous corolla and a glabrous, broadly obovoid ovary.

This new species is known only from the type locality where it was found during a survey of water catchments in the Kammanassie Mountains by a local Nature Conservation officer, Jan de Jaar. The plants are confined to rock faces, either facing south or north in a single side kloof running east-west. They grow in crevices in the quartzitic rock. On the hot, dry, north-facing cliffs they are the only *Erica* species present but on the cooler, south-facing slopes they grow on steep sheet-rock with small plants of *E. viridiflora* subsp. *primulina*, which is widespread in similar situations in the surrounding mountains (Oliver & Oliver 2002). The surrounding vegetation is arid scrub with no elements of fynbos, which only starts appearing ± 300 m higher up the slopes.

The epithet for this new species honours the discoverer, the Nature Conservation field officer, Jan de Jaar. We have used the word, *jaar* = year (Afrikaans), *annalis* = relating to a year (Latin), even though his name is probably derived from De Jager, the hunter (Afrikaans/Dutch).

Paratype material

WESTERN CAPE—3322 (Oudtshoorn): Uniondale, Buffelsklip, in side kloof next to Buffelskliprivier, 775 m, (–DB), 30-08-2000, *De Jaar 508* (NBG).

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