Studies in the Ericoideae (Ericaceae). XIII. Three new species of *Erica* from the southwestern Cape

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Keywords: Cape Province, Erica, Ericoideae, new species, taxonomy

ABSTRACT

With the recent inclusion of the genus *Blaeria* under *Erica*, three new species, formerly regarded as 'incertae' in that genus, are now described: *Erica* chiroptera E.G.H. Oliver from the Kogelberg Reserve, *Erica* hermani E.G.H. Oliver and *Erica* ioniana E.G.H. Oliver, both highly localised endemics from Hermanus.

UITTREKSEL

Met die onlangse insluiting van die genus Blaeria by Erica, word drie nuwe spesies wat voorheen onder die 'incertae' van daardie genus behoort het, nou beskryf: Erica chiroptera E.G.H. Oliver van die Kogelberg Reservaat, Erica hermani E.G.H. Oliver en Erica ioniana E.G.H. Oliver, albei uiters beperkte endemiese spesies van Hermanus.

INTRODUCTION

The genus *Blaeria* L. was recognised for over two centuries as separate from *Erica* L. based on the single character difference of four as opposed to eight stamens in the latter. In a recent paper (Oliver in press) it is shown that there is an overlap between the two genera and that there is a clear case for regarding *Blaeria* as polyphyletic. As a result the genus *Blaeria* is being reduced to synonymy under *Erica* (Oliver 1993).

Material which had been placed in the 'incertae' under *Blaeria* and which clearly constituted several new taxa, has remained undescribed because of the problem with the delimitation of *Blaeria*. These taxa are now described in this paper.

Erica chiroptera E.G.H. Oliver, sp. nov. in genere distincta propter antheras quatuor inclusas latissimas dorsiventraliter complanatas, capite aliquorum vespertilionum (Chiropteridae) similes, flores albos ad roseos; affinitate E. equisetifoliae Salisb. sed facie antherarum exsertarum differt.

Fruticulus erectus ad 500 mm altus. Rami erecti vel flexuosi glabri trigoni, cortice griseo. Folia 3-nata, $1.5-3.5 \times 0.5-1.0$ mm, erecta appressa, angusta, sulcata glabra ciliata vel eciliata, breve petiolata. Flores 3-6[9] ad extremis ramorum et ramulorum lateralium; pedicellus 1.5-3.0 mm longus glaber; bractea submediana 0.5-1.3mm longa lineari-oblonga glabra ciliata; bracteolae bracteae similes minores. Calyx 4-lobatus, cyathiformis 0.8-1.5 mm longus, glaber; lobi deltoidei, sulcati, sparse ciliati pilis parvis et glandibus sessilibus. Corolla 4-lobata $2.7-3.6 \times 2.0-2.4$ mm quadrangularis cyathiformis base porcis calyce alternantibus glabra pustulato-rugosa; lobi late rotundati irregulariter crenulati ad subfimbriati. Stamina 4 inclusa; filamenta 0.9-1.6 mm longa recta glabra; anthera $0.9-1.4 \times 0.8-1.4$ mm erecta terminalia late obcuneata dorsiventraliter complanata marginibus strigulosis, thecis patentibus poro rotundato ${}^{1}_{4}$ longitudine thecae appendiculatis, cristis late obcuneatis decurrentibus. *Ovarium* 4-loculare 0.7–1.0 × 0.7–1.0 mm distincte quadrangulare late ellipsoideum ad obovoideum glabrum, nectario reducto vel absenti, ovulis 2 in quoque loculo, ex placenta apicali pendulis, lateraliter compressis; stylus exsertus 2.0–2.5 mm longus teres base expansus glaber; stigma simplex. *Fructus* late ellipsoideus ad obovoideus, septis longitudine ${}^{2}_{/3}$ connatis, valvis ellipsoideis, 1.5 × 1.2 mm, obtusis; semina ellipsoidea, subreticulata. Figura 1.

TYPE. — 3418 (Simonstown): Cape, Caledon District, Kogelberg Forest Reserve, neck at head of the Rooi Els valley near Wynand Louwsbos, 366 m, (-BD), 11 November 1970, *Oliver 3097* (STE, holo.; BM, BOL, E, K, MEL, MO, NY, P, PRE, S, isotypes).

Erect, open or compact shrublet up to 500 mm tall. Branches erect or wiry and flexuose, glabrous, with slight infrafoliar ridges and trigonous when young, bark grey flaking irregularly or mainly below leaves, becoming redbrown. Leaves 3-nate, erect and appressed, subimbricate, narrowly ovate to narrowly elliptic to linear-elliptic, $1.5-3.5 \times 0.5-1.0$ mm, subobtuse to acute, markedly convex abaxially, flat or slightly concave adaxially, sulcate, glabrous, with or without short fine cilia and marginal sessile glands, strigulose at apex; petiole 0.3-0.5 mm long, glabrous. Flowers 3-6[9] at ends of main and short subterminal lateral branchlets or brachyblasts, pendent; pedicel 1.5-3.0 mm long, terete, glabrous, red; bract submedian, linear-oblong, 0.5-1.3 mm long, glabrous, ciliate, sometimes with marginal sessile glands also, lower bracts in an inflorescence larger and sometimes sulcate, others not sulcate; bracteoles 2 just above bract and like bract, 0.3-0.7 mm long. Calyx 4-lobed to half its length, cyathiform, 0.8-1.5 mm long, glabrous; lobes narrowly to broadly deltoid, clasping base of corolla, sulcate in upper half, green, sparsely ciliate with short hairs and sessile glands. Corolla 4-lobed, quadrangular cyathiform, $2.7-3.6 \times 2.0-2.4$ mm, dirty white to very pale pink, 4-ridged at base with ridges alternating with calyx lobes,

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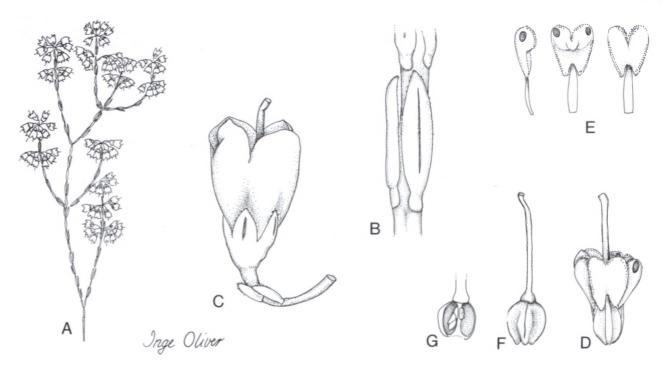


FIGURE 1.—*Erica chiroptera*: A, flowering branch, × 2; B, close-up of branch with leaves; C, flower; D, androecium; E, anther, side, front and back views; F, gynoecium; G, ovary, longitudinal section; B-G, × 25. All drawn from the type, *Oliver 3097* (STE).

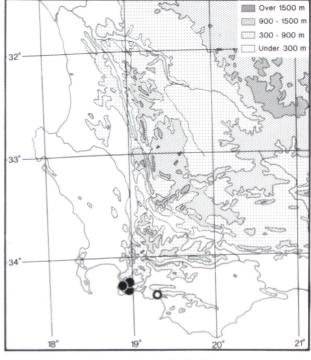
glabrous, pustulate-rugose; lobes erect to slightly spreading, broadly rounded, 1/4 the length of corolla, irregularly crenulate to subfimbriate. Stamens 4 included; filaments 0.9-1.6 mm long, straight, erect, slightly broadening downwards, glabrous; anthers erect, placed just above ovary, terminal, broadly obcuneate, with appendages $0.9-1.4 \times 0.8-1.4$ mm, dorsiventrally flattened, strigulose on edges; thecae spreading in a broadly V-shaped arrangement, 0.5-0.9 mm long; pore rounded, $\frac{1}{4}$ the length of theca; appendages broadly obcuneate, decurrent for just more than half their length. Ovary 4-locular, distinctly quadrangular, broadly ellipsoid to obovoid, $0.7-1.0 \times$ 0.7-1.0 mm, glabrous, nectaries very reduced or absent, septa joined for half their length from base; ovules 2 per locule, pendulous one above other from apical placenta, laterally compressed; style exserted, 2.0-2.5 mm long, terete, enlarging slightly below stigma, occasionally bent at apex, with enlarged basal portion forming a cap on ovary apex, glabrous; stigma simple. Fruit broadly ellipsoid to obovoid, septa joined for 2/3 of their length, valves broadly elliptic, obtuse, 1.5×1.2 mm; seeds ellipsoid, light brown, subreticulate. Figure 1.

E. chiroptera is a very distinct species on account of its very broad, dorsiventrally flattened anthers which are reminiscent of the heads of some bats (Order Chiroptera), hence the name. It is, however, related to the extremely variable species complex which is now referred to as *E. equisetifolia* (Oliver 1993) and which occurs in the same region. This latter species forms smaller, more compact rounded shrublets which can, however, become taller and erect when old. Its flowers are pink in colour, sometimes deeply so, and have exserted anthers which are narrow and elongate with small awns.

The species is confined to the Kogelberg Reserve between Grabouw and Betty's Bay (Figure 2) where it grows in sandy quartzitic ground with short restiads.

Specimens examined

CAPE. — 3418 (Simonstown): Kogelberg Reserve, lower slopes south of Klein Palmiet River, southwest of Somersfontein, 244 m, (-BB), 27-01-1987, Oliver 8999 (BM, BOL, G, K, NY, PRE, STE, W); Palmiet River near Elgin, (-BB), 12-1941, Stokoe 6247 sub SAM 55121 (NBG, PRE, SAM); Kogelberg Reserve, Somersfontein boundary, 275 m, (-BD), 19-11-1969, Boucher 874 (PRE, STE); Kogelberg Reserve, Louws River road, 335 m, (-BD), 11-03-1970, Boucher 1179 (PRE, STE); Betty's Bay, plateau behind Cascades, 450 m, (-BD), 10-02-1956, Levyns 10456 (BOL); Kogelberg Reserve, head of Rooi Els valley near Wynand



20 0 20 40 60 80 100 km

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Louwsbos, 366 m, (-BD), 11-03-1970, Oliver 3097 (BM, BOL, E, K, MEL, MO, NY, P, PRE, S, STE). 3419 (Caledon): Arieskraal, (-AA), 30-12-1944, Leighton 915 (BOL); near Elgin, between Grabouw and the Paardeberg, (-AA), 12-1947, Stokoe sub SAM 62387 (NBG).

Erica hermani E.G.H. Oliver, sp. nov. ex planitie oraria Hermani, distincta propter folia sessilia appressa, flores roseos campanulatos, stamina 8, antheras atras strigosas exsertas mox deciduas; affinitate E. equisetifoliae Salisb. ex eodem loco sed floribus tubulosis, staminibus 4 rare 5-8 (alteris locis) fuscis ad fulvis non deciduis differt.

Fruticulus erectus ad 500 mm altus. Rami erecti, trigoni, infra folia porcati, glabri roseo-brunnescentes, rami veteres cortice frustris griseis. Folia 3-nata sessilia, appressa subimbricata, 1.5-2.8 mm longa, elliptica ad oblongoelliptica, acuta, glabra apice sparse strigulosa glandibus sessilibus marginalibus. Flores 3-9-nati terminales pendentes; pedicellus 2.0-2.8 mm longus, teretus, glaber; bractea mediana, 0.7-1.0 mm longa, naviculata, glabra esulcata, breve ciliata pilis vel glandis sessilibus; bracteolae subapproximatae bracteae similes sed breviores. Calvx 4-lobatus, obconicus ad cvathiformis, 1.2-1.4 mm longus, $\frac{1}{4} - \frac{1}{3}$ connatus, base emarginatus; lobi ovato-deltoidei ad late deltoidei, longe sulcati, ciliati glandis sessilibus atrosanguineis. Corolla 4-lobata $2.4-3.5 \times 2.5-3.0$ mm, obconica ad campanulata, interdum late campanulata et parum quadrangularis, pustulata, pallido- ad atrorosea; lobi longitudine $\frac{1}{4} - \frac{1}{3}$ corollae partes aequantes, late deltoidei et obtusi, erecti ad plus minusve patentes, irregulariter crenato-fimbriati. Stamina 8 exserta; filamenta linearia \pm 3 mm longa, sub anthera angustiora, glabra; antherae bene exsertae, prope base dorsaliter affixae, post anthesin mox deciduae, thecis 1.3-1.5 mm longis, erectis, appressis, suboblongo-ovatis, apice prognathis, obtusis,

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marginibus strigosis ad base barbatis, nigris. Ovarium 4-loculare $0.6-0.8 \times 0.6-0.8$ mm, quadrangulare, late ellipsoideum, glabrum, base nectariis parvis; ovula 7-8in quoque loculo, ex placenta apicali pendentes; stylus exsertus, \pm 5.4 mm longus, anguste cylindraceus basaliter amplificatus, glaber; stigma obconica. Fructus late ellipsoideus, septis longitudine $\frac{2}{3}$ connatis, valvis 1.2 \times 1.0 mm, late ellipsoideis, truncatis ad emarginatis; semina complanata ellipsoidea, subreticulata, hepatica. Figura 3.

TYPE. — 3419 (Caledon): Cape, Hermanus, Fernkloof, sandy lower slopes, 45 m, (-AD), 18 February 1984, Oliver 8412 (STE, holo.; BM, BOL, E, G, K, MEL, MO, NY, P, PRE, S, W, isotypes).

Sparse, erect shrub to 500 mm tall. Branches very fine, erect, mostly leafy, trigonous when young with infrafoliar ridges, glabrous, becoming round and reddish brown when old with grey infrafoliar flakes of bark. Leaves 3-nate, sessile, appressed, subimbricate, 1.5-2.8 mm long, elliptic to oblong-elliptic, acute, glabrous, sparsely strigulose at apex, with a few sessile marginal glands when young. Flowers 3-9-nate at ends of branches, pendent; pedicel 2.0-2.8 mm long, terete, glabrous; bract median, 0.7-1.0 mm long, naviculate, glabrous, without sulca, shortly ciliate with hairs and/or sessile glands; bracteoles subapproximate, like bract but slightly shorter. Calyx 4-lobed, obconical to cvathiform, 1.2-1.4 mm long, joined for $\frac{1}{3}-\frac{1}{2}$ its length, emarginate at base, green to reddish, lobes ovate-deltoid to broadly deltoid, long sulcate, edged with sessile dark red glands. Corolla 4-lobed, $2.4-3.5 \times$ 2.5-3.0 mm, obconical to campanulate sometimes broadly so and somewhat quadrangular, pustulate, light to dark cerise-pink; lobes $\frac{1}{4} - \frac{1}{3}$ the length of corolla, broadly deltoid and obtuse, erect to slightly spreading, irregularly crenate-fimbriate. Stamens 8 exserted; filaments linear,

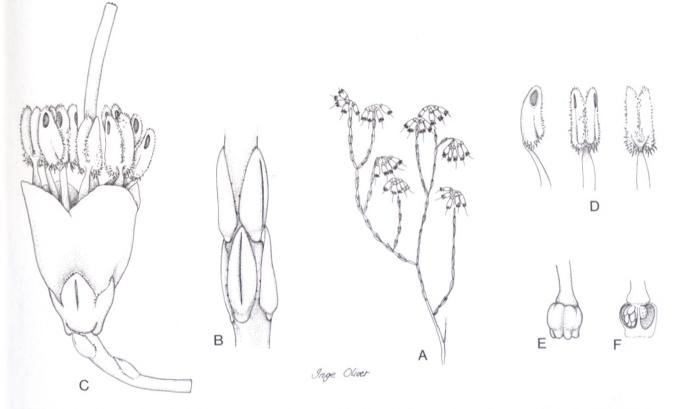


FIGURE 3.—Erica hermani: A, flowering branch, \times 2; B, close-up of branch with leaves; C, flower; D, anther, side front and back views; E, ovary; F, ovary, longitudinal section; B-F, \times 25. All drawn from the type, Oliver 8412 (STE).

 \pm 3 mm long, narrowed below anther, glabrous; anthers well exserted, dorsally attached near base and soon deciduous after anthesis, thecae 1.3–1.5 mm long, erect, appressed, suboblong-ovate, bent forwards at apex, obtuse, strigose edged to bearded at base, black. *Owary* 4-locular, 0.6–0.8 × 0.6–0.8 mm, quadrangular, broadly ellipsoid, glabrous, with very small nectaries at base; ovules 7–8 per locule, pendent from an apical placenta; style exserted, \pm 5.4 mm long, narrowly cylindrical with enlarged base forming a cap to ovary, glabrous; stigma obconical. *Fruit* broadly ellipsoid, septa joined for ²/₃ their length, valves 1.2 × 1.0 mm, broadly elliptic, obtuse to emarginate; seeds flattened ellipsoid, subreticulate, brown. Figure 3.

Erica hermani is allied to the variable and widespread *E. equisetifolia*, formerly *Blaeria equisetifolia* (Salisb.) G. Don and now including *Blaeria dumosa* Wendl. (Oliver 1993). It differs in having constantly eight stamens with black, strigose, muticous anthers which are shed very soon after anthesis; the flowers are also open-campanulate as opposed to tubular. The shedding of the anthers leaves the black-tipped filaments clearly visible in the mouth of the corolla. The anthers of *E. equisetifolia* are variable in shape being mostly long and narrow with decurrent awns in the plants from the Hermanus area. Plants from the inland mountains, formerly referred to *Blaeria campanulata* Benth. and now placed under *E. equisetifolia* (Oliver 1993), have rather similar anthers to *E. hermani* but with decurrent awns.

This species is very restricted, occurring only on the sandy coastal flats near the entrance to the Fernkloof Nature Reserve at Hermanus, hence the specific epithet, (Figure 2) where it is locally common in remnant patches of fynbos. There it co-exists with plants of *E. equisetifolia* which looks remarkably similar, but is easily distinguished on close examination of the flowers.

In the population of the above two species a few plants with slightly different looking flowers were noted and on close examination were found to be intermediates between the two. The possession of nonviable pollen strongly suggested a hybrid origin for these plants.

Specimens examined

E. hermani

CAPE. --3419 (Caledon): Hermanus, Fernkloof, (-AD), 05-1986, Drewe s.n. (STE); ibid., 45 m, 18-02-1984, Oliver 8412 (BM, BOL, E, G, K, MEL, MO, NY, P, PRE, S, STE, W); ibid., 300 m, 12-01-1981, Williams 3109 (BOL, PRE, STE); Mossel River flats, (-AD), Williams sub Baker 3043 (STE).

E. equisetifolia [= Blaeria equisetifolia (Salisb.) G. Don]

CAPE. --3419 (Caledon): Hermanus, sandy lower slopes at Fernkloof, 45 m, (-AD), 18-02-1984, Oliver 4111 (K, MEL, MO, NY, PRE, STE).

E. hermani × E. equisetifolia

CAPE.-3419 (Caledon): Hermanus, sandy lower slopes at Fernkloof, 45 m, (-AD), 18-02-1984, Oliver 8413 (PRE, STE).

Erica ioniana E.G.H. Oliver, sp. nov. ex montibus Hermani in genere distincta propter habitum parvum compactum, flores campanulatos cremeos viscidos in capitibus pendulis occultos, stamina straminea 4 interdum 5; affinitatibus *E. ericoidis* (L.) E.G.H. Oliver et *E. russakianae* E.G.H. Oliver sed inflorescentibus erectis, floribus roseis non viscidis, staminibus fuscis.

Fruticulus compactus ad 150 mm altus. Rami glabri vel sparse pubescentes ad villosi, sterigmatis infrafoliaceis, rami veteres irregulariter porcati cicatricibus griseis. Folia 4-nata, 3.5-5.0 mm longa oblongo-elliptica sparse villosa, breviter glandulociliata; petiolus appressus, 1.2-1.5 mm longus, ciliatus pilis longis et glandibus sanguineis subsessilibus. Flores 12-20 capitis compactis ad extremis ramorum, dependentes, sub planta occultae; pedicellus 1.3-1.7 mm longus, sparse villosus; bractea subapproximata 1.8-2.5 mm longa, linearis ad lineari-spathulata, foliacea in dimidio superno sulcata, sparse villosa, glandulis sessilibus vel subsessilibus ciliata; bracteolae approximatae, 1.3-2.0 mm longae, lineares ad filiformes aliter bracteae similes. Calyx 4-lobatus, 1.4-1.8 mm longus; lobi subliberi anguste oblongo-lanceolati sparse villosi glandulis subsessilibus sanguineis in marginibus et in pagina adaxiali apicem versus, sulcatus. Corolla 4-lobata, 2.5 mm longa, campanulata quadrangularis, glabra, viscida, cremea ad rosea; lobi 1 mm longi expansi ad recurvi. Stamina 4(5); filamenta 3 mm longa, linearia, apice latiore flexo; antherae inclusae ad submanifestae, bipartitae, thecis 0.8 mm longis subellipsoideis, glabris, super ovario impendentibus; porum longitudine 1/3 thecae partes aequans; pollen in tetradis. Ovarium 4-loculare, 0.6 × 0.6 mm, late ovoideum, 4-lobatum, plus minusve emarginatum, glabrum, base nectariis grandibus; stylus 2 mm longus, exsertus; stigma simplex. Fructus globosus vel late ovoideus, valvis $1.0 \times 0.8 - 1.0$ mm late ellipticis, obtusis ad emarginatis; semina ovoideo-ellipsoidea, reticulata, fusca. Figura 4.

TYPE. — 3319 (Caledon): Cape, Hermanus, Mossel Neck at SW end of Vogelgat Nature Reserve, 490 m, (-AD), 22 February 1985, *Oliver 8684* (STE, holo.; BOL, K, MO, PRE isotypes).

Low compact shrublet to 150 mm tall with slightly spreading branches. Branches glabrous or sparsely pubescent to villous when young, with slight infrafoliar ridges when young, bark with slight infrafoliar flakes otherwise flaking irregularly when old. Leaves 4-nate, $3.5-5.0 \times$ 3.0 mm long, oblong-elliptic, sparsely villous all over and sometimes shortly gland-ciliate, becoming strigose; petiole appressed, 1.2-1.5 mm long, ciliate with long hairs and red subsessile glands. Flowers 12-20 in compact heads at ends of branches, facing downwards, hidden under plants and not visible; pedicel 1.3-1.7 mm long, sparsely villous, red; bract subapproximate, 1.8-2.5 mm long, shorter than calyx, linear to linear-spathulate, foliaceous and sulcate in upper half, sparsely villous, edged with sessile to subsessile red glands; bracteoles approximate, 1.3-2.0 mm long, shorter than calyx, linear to filiform, otherwise similar to bract. Calyx 4-lobed, 1.4-1.8 mm long; lobes almost free, narrowly oblong-lanceolate, just shorter than corolla tube, sparsely villous, with subsessile red glands on edges and adaxially towards apex, sulcate, hairy, green turning red. Corolla 4-lobed, 2.5 mm long, campanulate, 4-angled, glabrous, viscid, cream to pale pink; lobes 1 mm long, spreading to recurved. Stamens 4(5); filaments 3 mm long, linear with a broader bent apex; anthers included to just manifest, bipartite, pale yellow

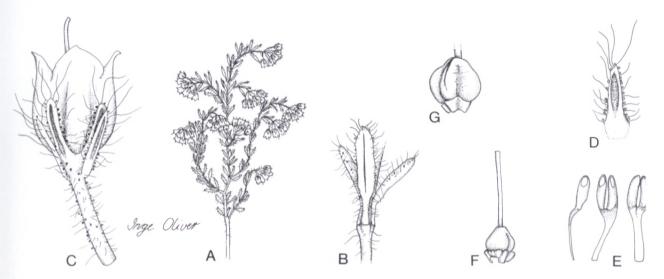
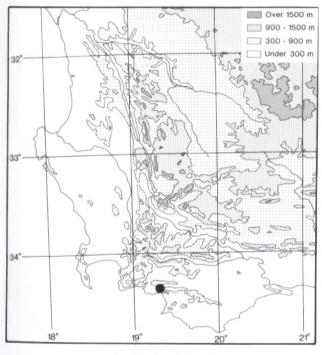


FIGURE 4.—*Erica ioniana*: A, flowering branch, × 2; B, whorl of leaves; C, flower; D, sepal; E, anther, side front and back views; F, gynoecium; G, mature ovary; B–G, × 25. All drawn from the type, *Oliver 8684* (STE).

brown; thecae 0.8 mm long, slightly ellipsoid, glabrous, bent forwards over ovary; pore $\frac{1}{3}$ the length of theca; pollen in tetrads. *Ovary* 4-locular, 0.6 × 0.6 mm, broadly ovoid, 4-lobed, slightly emarginate, glabrous, with welldeveloped nectaries at base; style 2 mm long, exserted; stigma simple. *Fruit* globose or broadly ovoid, valves 1.0 × 0.8-1.0 mm, broadly elliptic, obtuse to emarginate; seeds ovoid-ellipsoid, reticulate, dark brown. Figure 4.

This distinct species was brought to my attention by Dr Ion Williams of Hermanus (after whom the species is named) who is undertaking surveys of his Vogelgat Reserve in the Klein River Mountains above Hermanus. He assumed the plant to be, from the description, *Blaeria affinis* N.E. Br. which is known only from the type collection made in Vogelgat by Schlechter. This latter



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species was reduced to synonymy under *E. ericoides* (L.) E.G.H. Oliver (= *B. ericoides* L.) by Alm & Fries (1924). I have found that Schlechter's collection is just a depauperate form of the common species.

A visit to the area revealed that Williams' populations were a distinct new species with an unusual habit. The plants are low, compact and rounded with the flowers arranged in pendent heads such that they are not easily noticeable when the plants are in full bloom. The pale colour of the corolla and the long hairs of the calvces in the heads of flowers also help to make the flowers less visible. In these respects the species is unlike any other in the area. The other species there with capitate inflorescences, namely E. ericoides, E. russakiana and E. barbigeroides E.G.H. Oliver, have the branches spreading or erect and different, dark brown, basally winged or appendiculate, exserted anthers. The anthers in E. ioniana are pale yellowish brown, muticous, included and are narrowed in at the base. They are very similar to those found in E. multiflexuosa E.G.H. Oliver, a restricted endemic near Steenbras Dam.

The species is restricted to level sandy places in and near the Vogelgat Reserve, Hermanus, (Figure 5) where three populations have so far been found. The unusual habit strongly suggests some form of pollination by creeping insects with the flowers facing downwards only a short distance from the ground.

Specimens examined

CAPE. —3419 (Caledon): Hermanus, Mossel Neck in Vogelgat Reserve, 490 m, (-AD), 22-02-1985, *Oliver 8684* (BOL, K, MO, PRE, STE); ibid., 480 m, (-AD), 9-02-1985, *Williams 3580* (NBG, PRE); Caledon District, north side of Klein River Mtns above Diepgat, 594 m, (-AD), 22-02-1985, *Oliver 8688* (BM, E, K, MEL, NY, PRE, STE); Hermanus, Fernkloof, Mt Pustulata, 610 m, (-AD), 26-02-1984, *Williams 3531* (HER, NBG, PRE, P, S).

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