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CHAPTER 7

TAXONOMIC TREATMENT

7.1 CIRCUMSCRIPTION OF THE GENUS

Lachnaea [*Van Royen*] L., *Genera plantarum* edn 2: 165, n. 382 (1742); L.: 169, n. 441 (1754); Crantz: 128 (1766); Juss.: 77 (1789); Lam.: 373 (1792); Willd.: 434 (1799); C.F.Gaertn.: 195 (1807); W.T.Aiton: 415 (1811); Meisn.: 408 (1840); Meisn.: 574 (1857); Baill.: 108 (1880); Bentham & Hooker: 196 (1880); Gilg: 240 (1894); C.H.Wright: 18 (1915); Domke: 136 (1934); R.A.Dyer: 395 (1975). Lectotype species: *L. eriocephala* L. vide Domke: 136 (1934).

Lachara (lapsu typogr.?) Van Royen ex L., *Systema naturae*, edn 2: 22 (1740)

Cryptadenia Meisn. in *Linnaea* 14: 404 (1840); Meisn.: 573 (1857); Bentham & Hooker: 195 (1880); Gilg: 239 (1894); C.H.Wright: 15 (1915); Domke: 136 (1934); R.A.Dyer: 395 (1975). Lectotype species: *C. grandiflora* (L.f.) Meisn. (= *Lachnaea grandiflora* (L.f.) Baill.) vide Domke: 137 (1934).

Radojitskya Turcz. in *Bulletin de la Société Impériale des Naturalistes de Moscou* 25:176 (1852); Turcz.: 742 (1853). Type species: *R. capensis* Turcz. (= *Lachnaea axillaris* Meisn.) selected here.

Gonophylla Eckl. & Zeyh. ex Meisn.—*nom. nud.* in De Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 574 (1857) in synonymy.

Calysericos Eckl. & Zeyh. ex Meisn.—*nom. nud.* in De Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 573 (1857) in synonymy.

Erect to decumbent, slender to compact shrubs or shrublets, single-stemmed or multistemmed at base. *Branches* terete or ridged below leaf bases, glabrous or variously pubescent. *Leaves* alternate or decussate, imbricate to scattered, adpressed to patent,

sessile, epistomatic or amphistomatic, glabrous or occasionally margins ciliate or apex tufted, linear to ovate to obovate, occasionally orbicular, coriaceous, occasionally slightly fleshy, adaxially $\pm$ flat to concave, usually white-punctulate, abaxially $\pm$ flat to convex, enervate, subkeeled to keeled or ribbed. *Inflorescence* a terminal capitulum, bracteate or ebracteate umbel, or one-flowered. *Flowers* sessile or pedicellate, subactinomorphic to strongly zygomorphic. *Hypanthium* with circumscissile articulation above ovary, basal portion persistent, enclosing expanding fruit and not ruptured by it, narrowly ovoid to obovoid, usually glabrous within, glabrous or variously pubescent outside, upper portion cylindrical-obconical to widely obconical, narrowly funnel-shaped to funnel-shaped, cup-shaped, cup-shaped narrowing into a tube at base or occasionally cup-shaped with a basal invagination, glabrous or variously pubescent within and outside. *Petals* absent. *Sepals* four, ascending to patent, $\pm$ equal to unequal, narrowly elliptic to oblate, narrowly ovate to widely depressed ovate or obovate to widely obovate, adaxially and abaxially variously pubescent or glabrous. *Stamens* 4 + 4, all exserted, or outer whorl exserted and inner whorl semi-exserted or included; outer, antisepalous whorl inserted on sepals, usually near base, to a third-way down upper portion of hypanthium, inner, antipetalous whorl inserted at rim to two-thirds down upper portion of hypanthium, often shorter than outer whorl; anthers basifixed, introrse, ellipsoid to depressed spheroid, occasionally oblong, occasionally with broad connective tissue abaxially. *Scales* eight, exserted or included, inserted in a single whorl below stamens and alternating with them, at various levels in upper portion of hypanthium, usually basally but occasionally abaxially attached to hypanthium, linear to oblong, narrowly obovoid to widely obovoid, or narrowly ellipsoid to subglobose, usually glabrous, translucent and white to yellow in fresh state, sometimes secretory. *Ovary* superior, sessile, narrowly ellipsoid to ellipsoid, or ovoid to obovoid, glabrous to pubescent, unilocular with single, pendulous, anatropous ovule. *Style* lateral, linear to linear-obconical, glabrous to pubescent. *Stigma* brush-like, capitate and papillate or conical and papillate. *Fruit* an achene, enclosed in persistent basal portion of hypanthium; pericarp dry, thin; seedcoat thick, crustaceous.

A genus of 40 species endemic to the Cape Floristic Region.

7.2 KEY TO THE SPECIES

Note: Flower measurement given is hypanthium length plus sepal length.

- 1a. Flowers three to more than 50 in terminal capitula or umbels 11
- 1b. Flowers solitary, terminal (may appear axillary when much reduced lateral branches comprise one pair of leaves) 2
- 2a. Leaves alternate 10. *L. ruscifolia*
- 2b. Leaves opposite 3
- 3a. Upper portion of hypanthium funnel-shaped (stalked); floral scales exerted 9. *L. laxa*
- 3b. Upper portion of hypanthium not stalked, obconical or cup-shaped; floral scales included 4
- 4a. Flowers more than 11 mm long; floral scales semiterete, abaxially attached to hypanthium wall 5
- 4b. Flowers less than 9 mm long; floral scales terete, basally attached to hypanthium wall 6
- 5a. Basal portion of hypanthium covered outside with blunt hairs 1. *L. uniflora*
- 5b. Basal portion of hypanthium covered outside with acicular hairs 2. *L. grandiflora*
- 6a. Hypanthium glabrous outside 6. *L. axillaris*
- 6b. Hypanthium pubescent outside 7
- 7a. Flowers dark red, borne on short branches and facing downwards 5. *L. pudens*
- 7b. Flowers cream or pink to dark pink, if borne on short branches then not facing downwards 8
- 8a. Upper portion of hypanthium cup-shaped, with or without basal invagination 9
- 8b. Upper portion of hypanthium narrowly obconical with basal invagination 10
- 9a. Stigma conical, papillate 3. *L. filicaulis*
- 9b. Stigma capitate, papillate 4. *L. gracilis*
- 10a. Basal portion of hypanthium glabrous outside; stigma conical 7. *L. leipoldtii*
- 10b. Upper half of basal portion of hypanthium pubescent outside, trichomes obtuse; stigma linear-conical 8. *L. pusilla*

- 11a. Inflorescence a capitulum—flowers sessile, borne on thickened floral axis 12
- 11b. Inflorescence an umbel—flowers pedicellate 17
- 12a. Upper portion of hypanthium not stalked, obconical 13
- 12b. Upper portion of hypanthium stalked, funnel-shaped 14
- 13a. Capitulum globose with many open flowers at a time; upper portion of hypanthium widely obconical; sepals patent, tomentose on outside; floral scales exerted 16. *L. densiflora*
- 13b. Capitulum with few open flowers at a time; upper portion of hypanthium obconical; sepals ascending, sericeous on outside; floral scales included 15. *L. capitata*
- 14a. Sepals unequal, anterior sepal at least twice the length of other three 15
- 14b. Sepals equal to slightly unequal, anterior sepal never much longer than other three 16
- 15a. Capitula pompom-like, leaves narrowly ovate to obovate, amphistomatic ($\pm$ punctulate ad- and abaxially when dry) 13. *L. filamentosa*
- 15b. Capitula daisy-like, leaves obovate, epistomatic ($\pm$ punctulate adaxially when dry) 12. *L. macrantha*
- 16a. Capitula 25–55 mm in diameter; hypanthium more than 15 mm long, narrowly funnel-shaped; sepals equal; leaves amphistomatic 14. *L. pomposa*
- 16b. Capitula 15–25 mm in diameter; hypanthium less than 10 mm long; sepals equal to unequal; leaves epistomatic 11. *L. alpina*
- 17a. Umbel ebracteate 18
- 17b. Umbel pseudobracteate or bracteate 25
- 18a. Leaves alternate 19
- 18b. Leaves opposite 24
- 19a. Leaf margin crisped-ciliate 22. *L. striata*
- 19b. Leaf margin glabrous or only apex tufted 20
- 20a. Upper portion of hypanthium funnel-shaped 21
- 20b. Upper portion of hypanthium obconical; floral scales semiterete, abaxially attached to hypanthium wall 21. *L. stokoei*



21a. Leaf apex tufted	20. <i>L. ericoides</i>
21b. Leaf apex glabrous.....	22
22a. Stigma capitate, papillate.....	19. <i>L. diosmoides</i>
22b. Stigma brush-like	23
23a. Basal portion of hypanthium hairy on outside; trichomes obtuse or subacute	17. <i>L. nervosa</i>
23b. Basal portion of hypanthium usually glabrous on outside, if hairy then trichomes acicular.....	18. <i>L. sociorum</i>
24a. Trichomes on outside of basal portion of hypanthium obtuse, sepals dorsally (outside) sericeous	24. <i>L. burchellii</i>
24b. Trichomes on outside of basal portion of hypanthium acicular, sepals dorsally (outside) tomentose.....	25. <i>L. glomerata</i>
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- 32a. Inflorescence pseudobracteate, flowers 3.3–5.5 mm long; outer stamen whorl exserted, inner whorl semi-exserted or included 30. *L. greytonensis*
- 32b. Inflorescence bracteate, flowers 7.0–9.5 mm long; both stamen whorls exserted 32. *L. oliverorum*
- 33a. Antisepalous stamens arising in lower third of sepals 29. *L. marlothii*
- 33b. Antisepalous stamens arising at base of sepals 34
- 34a. Upper portion of hypanthium and sepals outside villous-tomentose 28. *L. villosa*
- 34b. Upper portion of hypanthium and sepals outside sericeous 35
- 35a. Umbel pseudobracteate, with up to four open flowers at a time; style glabrous 27. *L. elsieae*
- 35b. Umbel bracteate, with one open flowers at a time; style covered in upper half with silky ascending hairs 34. *L. penicillata*
- 36a. Leaves glaucous, naviculoid (boat-shaped) 36. *L. naviculifolia*
- 36b. Leaves not as above 37
- 37a. Involucral bracts or bract-like leaves ciliate 38
- 37b. Involucral bracts or bract-like leaves eciliate 39
- 38a. Low straggling shrublet up to 0.2 m tall; umbel pseudobracteate, with 3–5 open flowers at a time 37. *L. rupestris*
- 38b. Slender, erect shrub up to 0.6(–0.9) m tall; umbel bracteate, with up to 14 open flowers at a time 38. *L. globulifera*
- 39a. Pedicels linear in outline, villous; flowers 4.2–25.0 mm long 39. *L. montana*
- 39b. Pedicels narrowly obovate to obovate in outline, adaxially sericeous, abaxially villous, apex usually emarginate; flowers 2.4–8.2 mm long 40. *L. pedicellata*

7.3 SPECIES TREATMENT

1. ***Lachnaea uniflora* (L.) Crantz** in *Institutiones rei herbariae* 1: 130 (1766); Beyers: 45 (1997). *Passerina uniflora* L. *Species plantarum* edn 1: 560 (1753); P.J.Bergius: 128 (1767) pro parte; Thunb.: 75 (1794); Poir.: 42 (1804) pro parte; ? Poir: t. 291, f. 1 (1804) [illustration could be the narrow leafed-form of *L. grandiflora*]; Wikstr.: 344 (1818); Thunb.: 376 (1823); Speng.: 239 (1825). *Cryptadenia uniflora* (L.) Meisn., *Linnaea* 14: 406 (1840); Hooker: 71, t. 4143 (1845); Meisn.: 573 (1857); C.H.Wright: 22

(1915). Syntypes: *Burm. Rariorum africanarum plantarum*: 131, t. 48, f. 1 (1739), lecto.! here designated; *Burm. Rariorum africanarum plantarum*: 131 t. 48, f. 2 (1739).

Note: Two specimens, *herb. LINN 504.8* and *504.9* in LINN are not original material. *Herb. LINN 504.8* lacks the correct corresponding *Species plantarum* number (4 in this case) which is the requisite proof that it was in Linnaeus' possession in 1753. It therefore has to be considered a post 1753 addition to the Linnaean herbaria and is thus not eligible for lectotypification. Similarly *herb LINN 504.9* could not have formed the basis of the name as it is not even annotated by Linnaeus but by his son and is regarded as a 1772 specimen. The only original elements therefore are the two Burman plates. The plate, an illustration of the complete plant, is chosen as the lectotype since there can be no question of its identity. The other plate, t. 48, f. 2, is somewhat ambiguous, illustrating only a piece of the upper portion of the plant with broader leaves which appears to be better matched with the species concept of *L. grandiflora*. It is also the lectotype of *L. uniflora* var. *alba* P.J. Bergius which has been placed in synonymy under *L. grandiflora*.

Passerina uniflora var. *angustifolia* Burm.f., *Flora indica*: 12 (1768). Type: *Burm. Rariorum africanarum plantarum*: 131, t. 48, f. 1 (1739) (icono!).

Passerina uniflora var. *purpurea* Bergius, *Descriptiones plantarum ex Capite Bonae Spei*: 128 (1767); *Poir.*: 42 (1804). Type: *Burm. Rariorum africanarum plantarum*: 131, t. 48, f. 1 (1739) (icono!).

Thymelaea ramosa, linearibus foliis angustis, flore solitario Burm. *Rariorum africanarum plantarum*: 131, t. 48, f. 1 (1739).

Erect, lax, moderately branched shrub to 0.45 m tall, single-stemmed at base when a reseed, or multistemmed at base when a resprouter. *Branches* ascending, slender, flexuose, ridged below the leaf bases, glabrous or sparsely adpressed hairy, occasionally sericeous, leafy, later becoming glabrous and naked with prominent leaf scars. *Leaves* decussate, adpressed to ascending, scattered, internodes half to as long as leaves, distal two pairs subverticillate, sessile, epistomatic, narrowly elliptic or lanceolate, 3.3–6.7(–12.0) × 0.6–1.0 mm, coriaceous, glabrous, adaxially concave, enervate, dull, ± white-punctate, abaxially convex, subkeeled or only subkeeled in upper half, glossy, smooth or faintly

nervate, apex acute to acuminate, base obtuse or rounded, margin membranous, narrow. *Inflorescence* terminal, one-flowered, villous at floral articulation. *Flowers* sessile, subactinomorphic, pink to pinkish mauve, occasionally white, unscented. *Hypanthium* 6.8–12.0 mm long, circumscissile a quarter to a third from base, upper portion narrowly obconical to obconical, outside sericeous or sericeous-villose, trichomes acicular, within densely hairy to sparsely hairy below scales, hirtellous on prominent ridges formed by adnate filaments of antisepalous stamens, in vicinity of scales glabrous, basal portion narrowly ellipsoid to ellipsoid, narrowly oblong or obovoid, outside sericeous, trichomes broad, obtuse or acute, twice as broad as those above circumscission zone, within adpressed hairy to glabrescent. *Sepals* spreading, subequal (two inner ones slightly smaller than outer two), elliptic, ovate or occasionally narrowly ovate, 5.0–9.5 × 3.0–5.5 mm, apex subacute or rounded, abaxially sericeous, adaxially glabrous or occasionally sparsely adpressed hairy at apex. *Stamens* with outer, antisepalous whorl adnate to upper portion of hypanthium and becoming free at rim to one-sixth way down hypanthium, exserted or semi-exserted, inner, antipetalous whorl adnate to upper hypanthium and becoming free a fifth to a third-way down hypanthium, semi-exserted or included; filaments filiform, 0.3–1.5 mm long; anthers ellipsoid, 0.8–1.5 mm long, abaxially without broad connective tissue. *Scales* included, inserted a quarter to midway up from circumscission zone on upper portion of hypanthium, 0.2–0.8 mm long, semiterete, abaxially adnate to hypanthium, narrowly elliptic or oblong in outline, glabrous. *Ovary* narrowly ellipsoid to ellipsoid, 1.2–2.0 mm long, glabrous. *Style* linear-obconical, 4.5–9.8 mm long, glabrous. *Stigma* narrowly conical, narrowly ellipsoid to ellipsoid or occasionally subcapitate, elongate-papillate (Figure 7.1).

Distribution, ecology and variation

Lachnaea uniflora has been recorded from Darling southwards to the Peninsula and as far east as Somerset West, and inland from Twenty-four River Mountains southeast to Wolseley and the mountains around Franschhoek, at altitudes from sea level to 860 m (Figure 7.2).

Two distinct entities based on regeneration can be distinguished. Form A is a reseed, growing in sandy flats from Darling to the Peninsula and eastwards to Somerset West at altitudes below 300 m. Form B, on the otherhand, is a resprouter occurring inland,

at altitudes between 300 and 860 m, favouring sandy to sandy, stony soil. Numerous collections, old and recent, have been recorded from the Franschhoek area, whereas Drège's collection from Twenty-four Rivers Mountains and Schlechter's collection from Ceres Road (Wolseley) are single collections from the respective areas, collected in the nineteenth century. Flowering has been recorded from July to March.

Conservation status: Vulnerable (VU A1c). Most of the populations on the sandy flats north of the Cape Peninsula and on the Cape Peninsula in the vicinity of Wynberg and Constantia have disappeared.

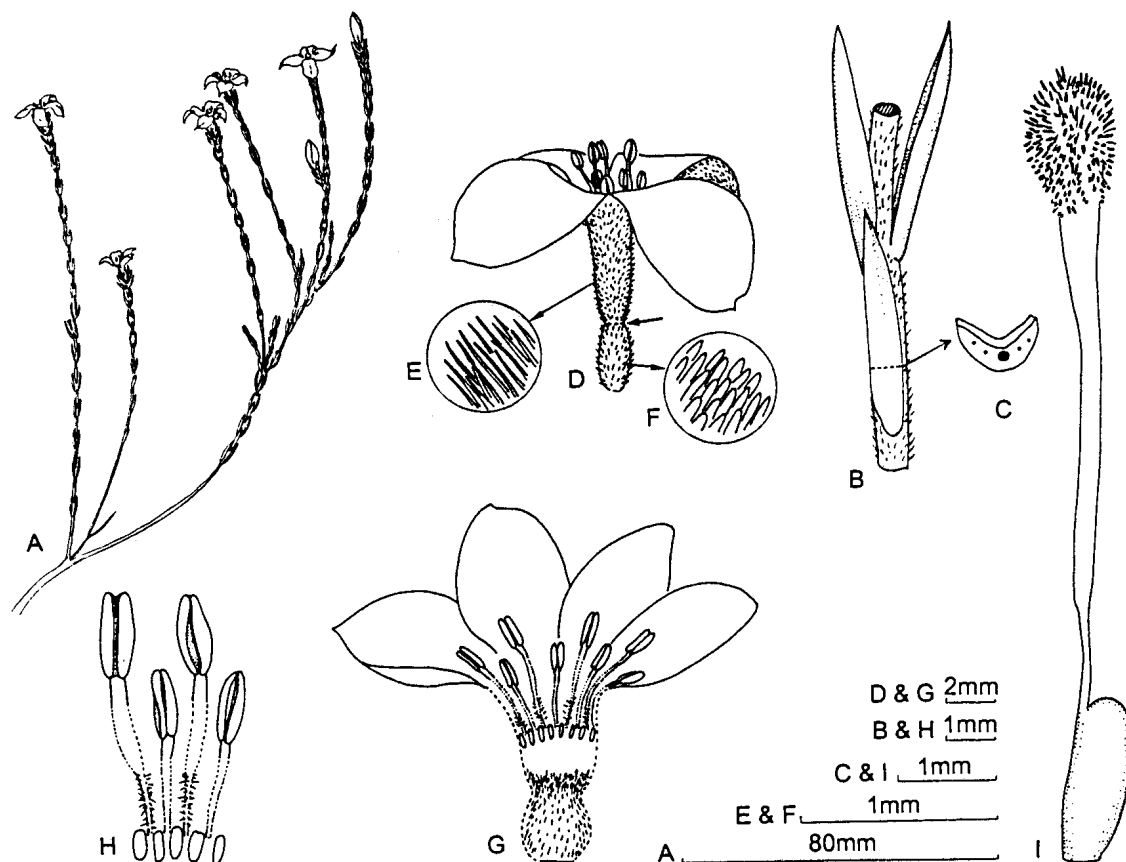


FIGURE 7.1—*Lachnaea uniflora*, Beyers 136 (NBG). A, portion of plant; B, branch with leaves (enlarged); C, leaf (cross section); D, flower, note circumscription zone (arrowed); E, acicular trichomes on upper portion of hypanthium; F, obtuse trichomes on basal portion of hypanthium; G, flower split longitudinally with gynoecium removed; H, stamens and scales (enlarged); I, gynoecium.

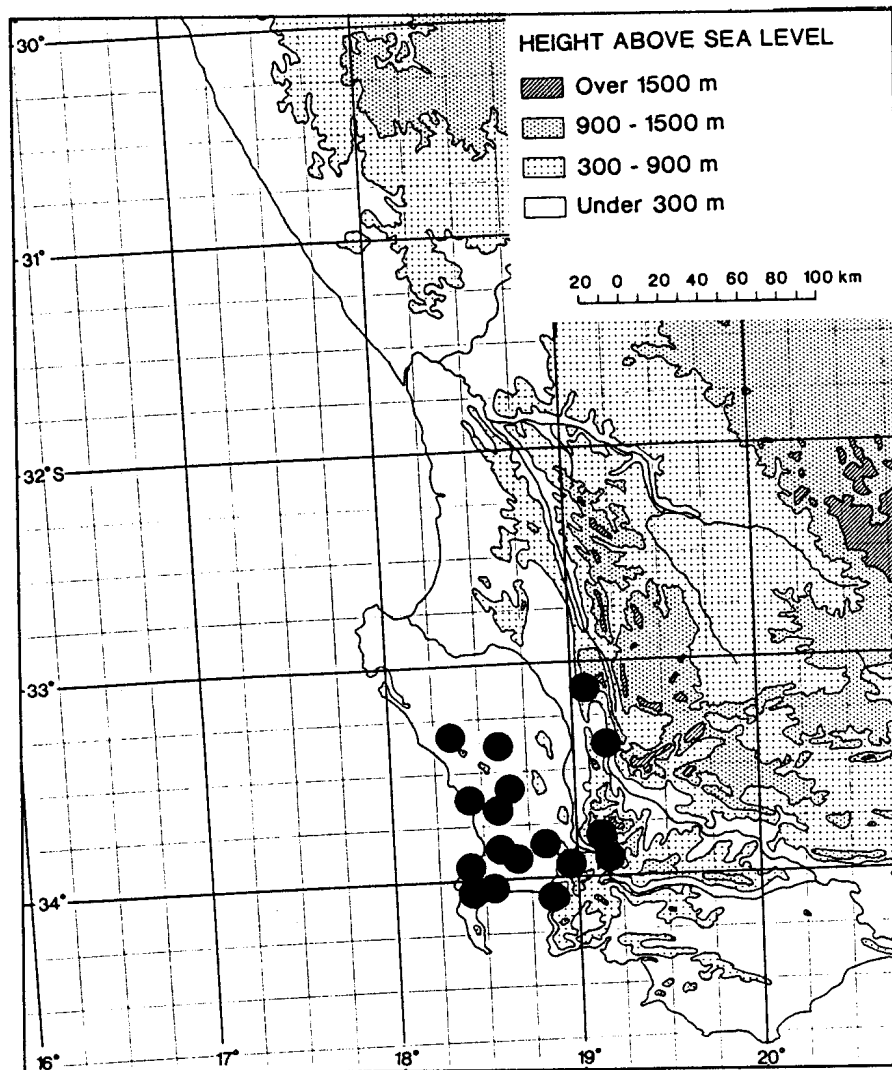


FIGURE 7.2—Known distribution of *Lachnaea uniflora*.

Diagnostic characters and relationships

Lachnaea uniflora is closely related to *L. grandiflora*, both having similar, large, solitary flowers, but it differs from the latter by the obtuse or acute trichomes being twice as broad as those above the circumscission zone on the outside of the hypanthium. In *L. grandiflora* the trichomes are acicular, not differing above and below the circumscission zone. The reseeding form of *L. uniflora* is sympatric with *L. grandiflora* but can easily be distinguished from the latter, which is a resprouter. The resprouting form of *L. uniflora* appears to be allopatric with *L. grandiflora*.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Twenty-four Rivers Mtn, below 130 m, (–AA), 30-11-1828, *Drège* [*Cryptadenia uniflora* Meisn. b] (P, S); Ceres Road (Wolseley) 330 m, (–AC), 11-11-1896, *Schlechter* 9089 (BOL, Z); Franschhoek Pass, sandy, rocky W slopes half-way up pass, (–CC), 11-12-1934, *Acocks* 3832 (S); *ibid.*, 830m, 25-01-1942, *Compton* 12965 (NBG); *ibid.*, 830m, 28-12-1946, *Dickson* NBG 52536 (NBG); Franschhoek, (–CC), 06-10-1946, *Barker* 4160 (NBG); *ibid.*, N slopes of Pass, 04-10-1931, *Levyms* 3437 (BOL); *ibid.*, 330 m, 03-11-1913, *Phillips* 1286 (SAM); *ibid.*, Oct. 1913, *Phillips* 8486 (PRE); *ibid.*, 05-01-1948, *Rodin* 3082 (BOL, S); Klein Drakenstein Mtns, W of Wemmershoek Dam, E slopes, 665 m, (–CC), 18-12-1997, *Beyers* 269 (K, NBG, PRE); Zachariashoek Mtns, NW of Wemmershoek Dam on plateau, roadside ± 800 m, (–CC), 26-10-1972, *Boucher* 1970 (NBG, PRE); Wemmershoek Mtns, lower slopes in Tierkloof, (–CC), 05-11-1950, *Esterhuysen* 17690 (BOL); *ibid.*, slope above plantations at forest station, 04-11-1965, *Esterhuysen* 31371 (BOL, S); Wemmershoek, (–CC), 16-12-1940, *Esterhuysen* 4069 (BOL); *ibid.*, dry slopes above dam, 500 m, 28-10-1958, *Levyms* 10906 (BOL); Drakenstein Mtns above Franschhoek (–CC), 10-12-1933, *Galpin* 12401 (PRE); Franschhoek, Zachariashoek Catchment Waterdivide, ± 865 m, (–CC), 08-12-1969, *Haynes* 257 (NBG, PRE); Upper Zachariashoek, stony NE aspect, ± 450 m, (–CC), 12-11-1970, *Haynes* 447 (NBG); *ibid.*, 14-11-1968, *Kruger* 782 (NBG); Klein Drakenstein Mtns, Kasteelkloof Experimental Catchment, ± 330 m, (–CC), 08-10-1970, *Kruger* 1063 (NBG); Zachariashoek Catchment Experiment, Zachariaskloof Catchment, ± 440 m, (–CC), 20-12-1979, *Le Maitre* 37 (NBG); *ibid.*, Kasteelkloof Catchment, ± 600 m, 14-09-1972, *Smith* 11 (NBG); *ibid.*, ± 530 m, 19-10-1972, *Smith* 53 (NBG); *ibid.*, Kasteelkloof, 465m, 09-09-1982, *Viviers* 544 (NBG); *ibid.*, 21-10-1982, *Viviers* 657 (NBG); Drakenstein Mtns, 330m, (–CC), Dec. 1939, *Stokoe* SAM 54530 (SAM); Franschhoek Peak, (–CC), Oct. 1946, *Stokoe* SAM 59499 (SAM); Zachariashoek, 665 m, (–CC), 29-10-1963, *Van der Merwe* 1603 (NBG, PRE); *ibid.*, 540 m, 03-11-1977, *Van Wilgen* 179 (NBG).

—3318 (Cape Town): Paarl Dist., Hercules Pillar (exact locality unknown), 15-09-1942 *Barker* 1649 (NBG); Melkbosch Strand Rd (exact locality unknown), 08-09-1940, *Bond* 512 (NBG); *ibid.*, 15 m, 12-09-1931, *Levyms* 3212 (BOL); Melkbosch Rd (exact locality unknown), 18-10-1941, *Compton* 12030 (NBG); Malmesbury Dist., Cape Town–Malmesbury Rd (exact locality unknown), 11-09-1973, *Montgomery* 545 (NBG); Darling Dist., (–AD), 25-09-1927, *Lewis Grant* 3411 (PRE); Darling Flats, (–AD), 10-10-1949, *Malherbe s.n.* (NBG); Darling, (–AD), 20-09-1956, *Stokoe* SAM 69982 (SAM); Between Mamre Rd and Malmesbury, sandy flats, 300 m, (–AD), 13-09-1958, *Levyms* 10861 (BOL); Malmesbury, Springfontein, off Mamre Rd, (–CB), 22-01-1971, *Axelson* 380 (NBG); Cape Peninsula, Kenilworth Race Course, (–CD), 3-09-1946, *Barker* 4112 (NBG); *ibid.*, in centre of course, 12-09-1989, *Beyers* 136 (BOL, K, MO, NBG, PRE, S); *ibid.*, 02-11-1990 *Beyers* 196a (NBG); *ibid.*, in sandy flats near Claremont, Sept. 1877, *Bolus* 2923 (BOL); *ibid.*, 1877, *Bolus* 2923b (BOL); *ibid.*, 26-01-1968, *Esterhuysen* 31879a (BOL); *ibid.*, Sept. 1947 *Lewis* 2727 (SAM); Camps Bay, (–CD), *Marloth* 13637 (PRE); sandy flats E of Mowbray, (–CD), 12-10-1913, *Pillans* 2135 (BOL); Vygeskraal, (–CD), 25-12-1895, *Wolley Dod* 482 (BOL); flats near Rondebosch, (–CD), 23-12-1895, *Wolley Dod* 664 (BOL); between Koeberg Rd and Melkbosch Strand, (–DA), 06-10-1934, *Acocks* 3314 (S); Malmesbury Dist., Morewag farm, W of Paardeberg, (–DA), 05-09-1978, *Boucher* 4570 (NBG, PRE); Malmesbury Dist., Kalbaskraal (–DA), 05-11-1961, *Ihlenfeldt* 1493 (PRE); *ibid.*, 120 m, 29-09-1958,

Werdermann & Oberdieck 310 (PRE); corner of Mamre and Melkbosch Rd (–DA), 06-09-1938, *Lewis SAM 53002* (SAM); Malmesbury Div., National Rd, Cape Town–Malmesbury, 15 miles from C.T., (–DA), 22-11-1965, *Mattatia 39* (BOL); Malmesbury Rd, near turnoff to Melkbosch Strand, 30 m, (–DA/DC), Nov. 1962, *Levyins 11385* (BOL); between Bottelary Rd and Main line, (–DC), Feb. 1932, *Acocks 94* (S); Kraaifontein, (–DC), 04-10-1947, *Barker 4820* (NBG); Brackenfel, (–DC), 14-12-1940, *Bond 716* (NBG); Cape, Doornhoogde, Cape Flats (–DC), Aug., *Ecklon & Zeyher 3744* (Z), as *Ecklon & Zeyher 78.8* (S, Z), as *Zeyher [78.8] PRE 49111* (PRE); Bosmansdam, in sand, (–DC), 27-10-1965, *Esterhuysen 31330a* (BOL); Wolwefontein S of Kraaifontein, dry sandy flats choked by Acacia, 115 m, (–DC), 22-03-1971, *Oliver 3303* (NBG); Pniel, sandy slopes at foot of Groot Drakenstein Mtns, (–DD), 29-12-1954, *Esterhuysen 24034* (BOL); Paarl Dist., Groot Drakenstein, (–DD), 28-11-1934, *Compton 4838* (NBG); *ibid.*, Devils Tooth, 330–500 m, 12-12-1943, *Wasserfall 746* (NBG); sandy flats near Joostenberg, between Durbanville and Paarl, (–DD), 11-10-1949, *Esterhuysen 16015* (BOL); N slopes of Joostenberg, (–DD), Aug. 1929, *Pillans BOL 49961* (BOL); Bellevue farm, Bottelary Rd, W of Koelenhof, ±115 m, (–DD), 30-09-1975, *Thompson 2625* (NBG).

—3418 (Simonstown): Cape Peninsula, on flats near Tokai, 30 m, (–AB), Aug. 1880, *Bolus 4592* (BOL, PRE, Z); Tokai Flats, (–AB), 01-09-1916, *Foley 8* (NBG, PRE); Wynberg (111, E, b), below 30 m, (–AB), 03-08-1926, *Drège s. n.* (P); flats NE. of Steenberg, (–AB), 30-07-1918, *Pillans 3613* (BOL); Wynberg, Sanddowns, (–AB), 07-08-1846, *Prior PRE 49116* (PRE); Constantia, Bergvliet Farm, flats near small Gethyllis camp, (–AB), 23-08-1917, *Purcell SAM 90784* (SAM); *ibid.*, flats near pump, 25-08-1917, *Purcell SAM 90785* (SAM); Wynberg, old Pollsmore race track, 30 m, (–AB), 09-02-1967, *Rourke 725* (NBG); Wynberg, (–AB), Nov. 1898, *Schimper s.n.* (Z); *ibid.*, Flats, 10-08-1883, *Wilms 3592* (Z); *ibid.*, September, *Zeyher 1485* (GRA); near Princess Vley, (–BA), Nov. 1892, *MacOwan 3061* (GRA); Princess Vley, 30 m, (–BA), Feb. 1896, *MacOwan HAA 1637* (SAM, Z); Hottentots Holland, (–BB), *Zeyher s.n.* (S). Grid ref. unknown: Cape Peninsula, *Bauer 96* (PRE); Cape, in sandy flat area, Dec., *Ecklon 362* (S); Cape Flats (exact locality unknown), *Ecklon s. n.* (S); *ibid.*, *Krauss 1835* (PRE); *ibid.*, 17-09-1918, *Moss 4005* (Z); *ibid.*, *MacOwan SAM 1459* (SAM); *ibid.*, Oct., *Zeyher 1485* (BOL, SAM, K); Cape, sandy flats, *Pappe STEU 14344* (NBG); near Cape Town, 1847, *Prior PRE 49128* (PRE); Cape Peninsula, Flats?, 1–166 m, 1886, *Thode STEU 9364* (NBG). Without locality: Oct., *Pappe SAM 19795* (SAM); 1847, *Prior PRE 49118* (PRE).

2. ***Lachnaea grandiflora* (L.f.) Baill.** in Natural history of plants 6: 109, t. 77 (1880); Beyers: 45 (1997). *Passerina grandiflora* L.f., Supplementum plantarum: 226 (1782); Curtis: t. 292 (1795); Willd.: 432 (1799), excluding synonym *P. linoides* Thunb.; Poir.: 44 (1804); Wikstr.: 345 (1818). *Cryptadenia grandiflora* (L.f.) Meisn. in Linnaea: 405 (1840); Meisn.: 552 (1843); Meisn.: 573 (1857); Gilg: 234, t. 83, f. e (1894); C.H.Wright: 16 (1915); Levyins: 601 (1950). Type: *herb. LINN 504.13* (LINN, lecto. here designated, —NBG, photocopy!).



Cryptadenia grandiflora (L.f.) Meisn. var. *latifolia* Meisn. in A. P. de Candolle, *Prodromus systematis naturalis regni vegetabilis*: 573 (1857); C.H.Wright: 16 (1915). Type: specimen without collector and locality in herb. DC [possibly in G-DC], fide Meisner – not seen.

Cryptadenia breviflora Meisn. *Linnaea* 14: 406 (1840); Meisn. 14: 573 (1857); C.H.Wright: 17 (1915). Syntypes: In single, sandy island in Berg River, alt 400 ft., (111. E. b), Drège s.n. (not yet located); *Passerina uniflora* Herb. Lam. ex parte fide Meisn. (not seen); icon. Burm. *Rariorum africanarum plantarum*: 131, t. 48, f. 2 (1739); Table Mountain, *Ecklon 360* (S, lecto.! here designated; K!, NBG!, PRE!, isolecto.).

Note: Unfortunately the sheet from Meisner's Herbarium (NY) with notes written by him has two different collections of Ecklon without stating the collection number. The sheet from S is chosen as the lectotype as Meisner communicated with Sonder as stated on the sheet in NY and most likely this specimen is from Sonder's Herbarium, which is now incorporated in S.

Calysericos canaliculata Eckl. & Zeyh. ex Drège—*nom. nud.* *Linnaea* 20: 210 (1847b) in synonymy.

Calysericos grandiflora Eckl. & Zeyh. ex Meisn.—*nom. nud.* A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 573 (1857) in synonymy.

Calysericos parviflora Eckl. & Zeyh. ex Meisn.—*nom. nud.* A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 574 (1857) in synonymy.

Calysericos subulata Eckl. & Zeyh. ex Meisn.—*nom. nud.* A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 574 (1857) in synonymy.

Calysericos tabularis Eckl. & Zeyh. ex Meisn.—*nom. nud.* A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 574 (1857) in synonymy.

Passerina campanulata E.Mey. ex Meisn.—*nom. nud.* in *Linnaea* 14: 407 (1840) in synonymy.

Passerina uniflora L. var *alba* P.J. Bergius Descriptiones plantarum ex Capite Bonae Spei: 129 (1767); Poir.: 42 (1804). Type: Burm. Rariorum africanarum plantarum: 123, t. 46, f. 1 (1739) (lecto.! here designated).

Note: Bergius also refers to Herm. Afr. 23 in the protologue. This is only a literature reference as no specimen was found in Vol.4-1 (Burman 1737) which does contain some South African material, matching the Hermann polynomial as cited by Bergius (pers. comm. S. Cafferty). According to Cafferty: 'Herm. afr'. refers to an appendix by Paul Hermann, Cat. Pl. Afr., in Burman's Thesaurus Zeylanica (1737), where the cited polynomial is listed on page 23.

Passerina uniflora var. *latifolia* Burm.f., Flora indica: 12 (1768). Type: Burm. Rariorum africanarum plantarum: 131, t. 48, f. 2 (1739) (icono.!).

Thymelaea foliis imbricatis oblongis, floribus serieis, ramosa Burm. Rariorum africanarum plantarum: 123, t. 46, f. 1 (1739).

Thymelaea foliis imbricatis angustioribus, floribus serieis, spicata Burm. Rariorum africanarum plantarum: 123, t. 46, f. 2 (1739).

Thymelaea foliis triquetris, angustis, cruciatim oppositis, flore sericeo Burm. Rariorum africanarum plantarum: 131, t. 48, f. 2 (1739).

Erect or occasionally straggling, moderately to much-branched shrub 0.2–0.6–(1.0) m tall, multistemmed at base; resprouter. *Branches* ascending to decumbent, slender to moderately thick, flexuose to semi-rigid, ridged below the leaf bases, usually adpressed puberulent, occasionally sparsely hairy, leafy, later glabrescent and naked with prominent leaf scars. *Leaves* decussate, subadpressed to ascending, ± imbricate or scattered, internodes quarter to one and a half length of leaves, distal two pairs subverticillate, sessile, epistomatic, narrowly elliptic to elliptic, narrowly ovate or narrowly obovate, 2.2–11.5 × 0.8–3.0 mm, coriaceous, glabrous, adaxially obtusely concave or concave, enervate or faintly mid-veined, dull, ± white-punctate, abaxially convex, occasionally nervate, subkeeled or only subkeeled in upper half, glossy, smooth to rugose, sometimes upper

leaves below inflorescence with a reddish brown tinge, apex acute, mucronulate or mucronate, base obtuse or rounded, margin membranous, narrow to broad, when broad usually conspicuously corrugated (with transverse folds). *Inflorescence* terminal, one-flowered. *Flowers* sessile, subactinomorphic, creamy white, white with a pink tinge, pinkish mauve or pink, unscented. *Hypanthium* 5.0–14.0 mm long, circumscissile a fifth to a third from base, upper portion narrowly obconical to obconical, basal portion narrowly ellipsoid to ellipsoid, occasionally widely obovoid, sericeous outside, trichomes of base and upper portion acicular, upper portion within adpressed hairy from the scales downwards, glabrous or sparsely hairy above, basal portion within adpressed hairy in upper third or upper half, glabrous below. *Sepals* ascending to spreading, subequal (two inner ones slightly smaller than outer two), elliptic, obovate or occasionally ovate, 5.2–14.5 × 3.0–8.0 mm, apex subacute to obtuse, abaxially sericeous, adaxially usually glabrous, occasionally glabrescent. *Stamens* of outer, antisepalous whorl exserted, adnate to upper portion of the hypanthium and becoming free at the base to a fifth-way up sepals, inner, antipetalous whorl semi-exserted or included, occasionally exserted, adnate to upper hypanthium and becoming free at rim to a third-way down the hypanthium; filaments filiform, 0.3–2.2 mm long; anthers narrowly ellipsoid to ellipsoid, 1.0–2.6 mm long, abaxially without broad connective tissue. *Scales* enclosed, inserted a sixth to a third-way, occasionally half-way up from circumscission zone on upper portion of hypanthium, semiterete, abaxially adnate to hypanthium, narrowly elliptic or oblong in outline, 0.4–1.2 mm long, glabrous, yellow in fresh state. *Ovary* ellipsoid, 1.0–2.2 mm long, glabrous. *Style* linear-obconical, 5.2–11.5 mm long, glabrous, occasionally glabrescent. *Stigma* capitate, elongate-papillate (Figure 7.3).

Distribution, ecology and variation

Lachnaea grandiflora occurs on sandy flats and sandy areas on lower mountain slopes from Swartboskraal in the Clanwilliam District south and southeast to the Cape Peninsula, Citrusdal, Tulbagh, Worcester and Bredasdorp, at altitudes between 15 and 1000 m (Figure 7.4). One isolated record from Buffelsberg in the Kammanassie Mountains in the Little Karoo, at altitude of 1660 m, (*Viviers & Vlok 30 NBG*) appears out of place and needs to be investigated. This sheet could possibly have an incorrect label.

Two intergrading morphs, based on the leaves, can be discerned in this species. Form A with leaves narrowly elliptic to elliptic, narrowly ovate or narrowly obovate, abaxially usually rugose and with a broad membranous margin with transverse corrugations or at

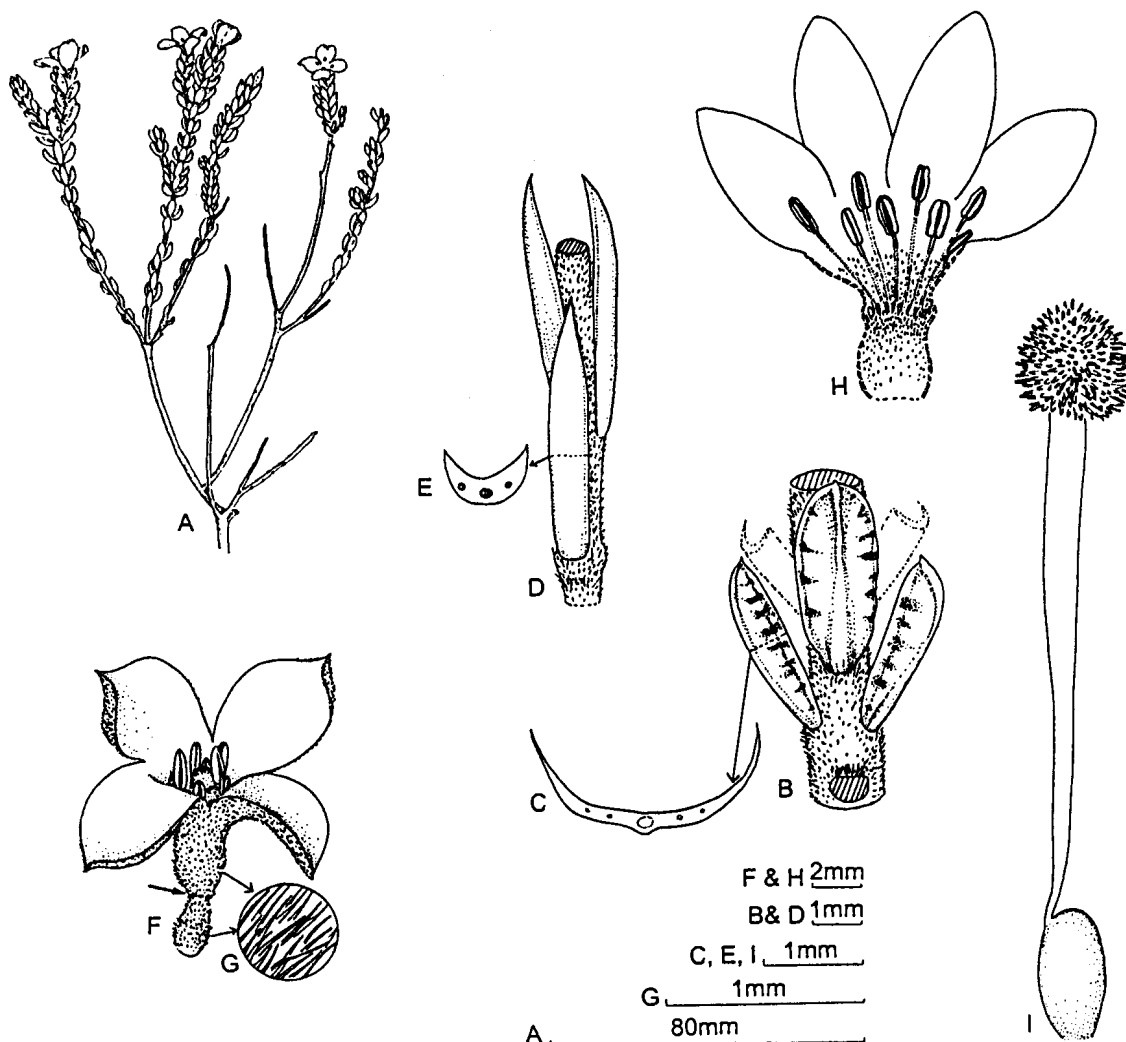


FIGURE 7.3—*Lachnaea grandiflora*. A, portion of plant; B & D, branches with leaves (enlarged); C & E, leaves (cross section); F, flower, note circumscission zone (arrowed); G, acicular trichomes on hypanthium; H, flower split longitudinally with gynoecium removed; I, gynoecium. A–C, F–I, *Beyers 129* (NBG); D, E, *Hansford 86* (NBG).

least the distal two pairs of leaves below the inflorescence with broad, membranous, corrugated margins. In form B the leaves are narrowly ovate to narrowly obovate, some times almost linear elliptic, with a very narrow, smooth membranous margin. Form A occurs predominantly from Malmesbury to the Cape Peninsula and eastwards to Houhoek.

In the Bredasdorp area the leaves of at least the distal two leaf pairs below the inflorescence have broad membranous margins which are either smooth or faintly corrugated. Form B occurs from Swartboskraal in Clanwilliam District in the north, south-east through Citrusdal to Worcester. The narrow leaved-form appears to occur in drier conditions. Between these two forms there is a continuum of variation with regard to the width of the membranous margin and the surface of the leaves which makes a reliable subdivision of this species impossible. Flowering has been recorded in all the months except July.

Conservation status: Vulnerable (VU A1c). Most of the sandy flats populations have disappeared.

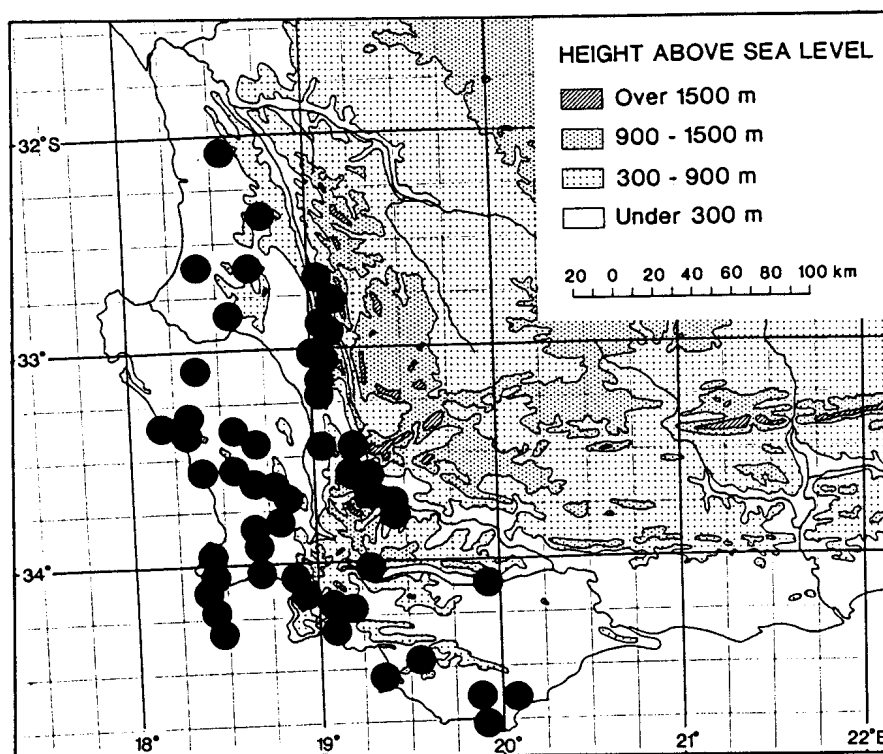


FIGURE 7.4—Known distribution of *Lachnaea grandiflora*.

Diagnostic characters and relationships

Lachnaea grandiflora is closely related to *L. uniflora*. Both have a similar inflorescence and floral structure. The narrow-leaved form of *L. grandiflora* has in the past been confused with *L. uniflora*. *L. grandiflora* is multi-stemmed at base, resprouting after a

fire whereas in *L. uniflora* two distinct forms have been identified, namely a single-stemmed reseeder and a multistemmed resprouter. Although the hypanthium of both species is sericeous on the outside the trichomes of the basal portion of the hypanthium in *L. uniflora* are blunt (obtuse), whereas those in *L. grandiflora* are acicular, similar to those on the upper hypanthium.

Specimens examined

WESTERN CAPE.—3218 (Clanwilliam): mountain slopes Piquetberg (exact locality unknown), Oct. 1892, *Bolus PRE 49112* (PRE); Clanwilliam Div., mountain slopes above Olifants River Valley at Keerom, W aspect (exact locality unknown), 04-12-1950, *Esterhuysen 17924* (BOL, NBG); Klipfonteinkoppe, Pankop Flats near vlei, sandy ridge near pan, 430 m, (–BA), 09-02-1978, *Boucher 3622* (NBG); Piquetberg (III, E, a), 165 m, (–BC/DA), 17-11-1828, *Drège s. n.* (P); Clanwilliam Dist., Olifants River Mtns, Swartboskraal, deep sand, (–BD), 10-10-1984, *Bean & Viviers 1485* (BOL); Piquetberg Dist., Klein Klipfontein, Coastal Fynbos of white sand, ± 15 m, (–CB), 19 11-1970, *Acocks 24455* (NBG, PRE); Piquetberg Dist., Papkuil Valley, (–DA), 22-09-1940, *Compton 9508* (NBG); Piketberg, (–DA/DD) *Edwards BOL 49955* (BOL); in hills between Pretorskloof and Pikenierskloof, 665 m, (–DB), *Drège [uniflora e]* (K); Piketberg Div., 2–3 miles S of Sauer, (–DC), 15-09-1953, *Lewis 3967* (SAM), *Lewis SAM 66773* (NBG).

—3219 (Wuppertal): Warm Baths, Olifants River Valley, (–CA), Oct. 1915, *Engela PRE 49130* (PRE); Clanwilliam Div., Elandskloof, W end, (–CA), 20-12-1940, *Esterhuysen 4164* (BOL); Groot Winterhoek Mtn Catchment Area, Swartvlei, NW of Perdekop, (–CA), 14-10-1985, *Rheeder 141* (NBG); Olifants River Valley, foothills of Cold Bokkeveld Mtns, opposite Warm Baths, (–CA), 26-09-1911, *Stephens 7265* (BOL); Clanwilliam Dist., Cardouw Pass, 1000 m, (–CC), 04-11-1951, *Martin 910* (NBG); Clanwilliam Div., Grasruggens Moutains, middle E slopes, (–CC), 26-11-1938, *Pillans 8789* (BOL); Olifants River Valley, Grootfontein, SE of Grasruggens, sandy N slope 465 m, (–CC), 29-09-1972 *Thompson 1490* (NBG); Porterville, Olifants River Mtns, Grasruggens, ± 730 m, (–CC), 14-09-1982, *Van Zyl 3110* (NBG); Porterville Dist., Grootfontein, close to Ratel River, (–CC), 17-09-1983, *Van Zyl 3534* (NBG).

—3318 (Cape Town): Paarl Div., Belgravia, Paarl Rd (exact locality unknown), 04-12-1930, *De Villiers BOL 49949* (BOL); Cape Town-Malmesbury Road (exact locality unknown), 18-12-1972, *Montgomery 278* (NBG); Cape Town Dist., Melkbosch Road (exact locality unknown), 18-10-1941, *Olivier NBG 52528* (NBG); Paarl district (exact locality unknown), *Smith s.n.* (NBG); Malmesbury Div., vicinity of Hopefield, (–AB), Dec. 1885, *Bachmann 965* (Z); Malmesbury Dist., near Hopefield, (–AB), 10-12-1946, *Compton 18923* (NBG); *ibid.*, *Esterhuysen 2450* (BOL); *ibid.*, *Leighton 2450* (BOL); Hopefield, (–AB), Oct. 1912, *Pattison BOL 13394* (BOL); *ibid.*, in sand, Oct. 1930, *Van Ryswyk STEU 11627* (NBG); Malmesbury Dist., Ysterfontein, (–AC), 18-12-1938, *Wall s.n.* (S); Jakkalsfontein, sand, slight drainage line, 50 m, (–AD), 06-02-1978, *Boucher 3566* (NBG); about 7 miles from Darling on Yzerfontein Rd., (–AD), 23-09-1950, *Maguire 452* (NBG); Malmesbury Dist., Darling Flora Reserve, (–AD), 13-11-1956, *Rycroft 2012* (NBG); Malmesbury Dist., Mamre Road, (–BC), 12-10-1940, *Compton 9809* (NBG); *ibid.*, 18-10-1941, *Olivier NBG 52527* (NBG); Malmesbury, opposite Abbotsdale, (–BC), 14-11-1979, *Goldblatt 5114* (PRE, S); Mamre,

1km from intersection of Mamre, Melkbosch Rd & Silwerstroom Rd, (–CB), 08-03-1989, *Beyers 129* (NBG); Malmesbury Dist., near Bok Point, (–CB), 15-09-1940, *Compton 9403* (NBG); Malmesbury Div., near Bokbaai, (–CB), 15-09-1940, *Esterhuysen 5120* (BOL); Cape Peninsula, Kenilworth Race Course, (–CD), 01-11-1990, *Beyers 196* (NBG); *ibid.*, 19-02-1970, *Esterhuysen 32392* (BOL); *ibid.*, 06-11-1973, *Esterhuysen 33326* (BOL); Cape Peninsula, Camps Bay (–CD), Jan., *Ecklon & Zeyher 69.1* (S, Z); Cape Peninsula, Table Mtn, (–CD), Nov., *Ecklon 360* (K, NBG, S); *ibid.*, 03-01-1898, *Froembling 603* (NBG, PRE); *ibid.*, *Wahlberg s.n.* (S); Cape Peninsula, Devil's Peak, (–CD), 1875–1880, *Rehmann 1149* (Z); Cape Peninsula, flats near Claremont, (–CD), 16-12-1891, *Schlechter 98* (Z); Malmesbury Dist., near Pella, Burgers Post Farm, 210 m, (–DA), 27-03-1979, *Boucher & Shepherd 4282* (NBG, PRE); *ibid.*, ± 65 m, 14-11-1979, *Boucher & Shepherd 4902* (NBG, PRE); 1km N of Pella Mission Station near Mamre, ± 330 m, (–DA), 03-06-1975, *Boucher 2755* (NBG); 21 st mile-stone to Mamre, (–DA), 26-01-1951, *Middlemost 1659* (NBG); *ibid.*, *Middlemost 1660* (NBG); Malmesbury Dist., Kalbaskraal; (–DA), 14-11-1963, *Van der Merwe 1618* (NBG, PRE); *ibid.*, 120 m, 29-09-1958, *Werdermann & Oberdieck 307* (PRE); Paarl Dist., Modderkloof, W side of Paardeberg, 500m, (–DB), 14-04-1981, *Fellingham 4* (NBG); in hills near Paarl, 100 m, (–DB), 16-11-1896, *Schlechter 9209* (PRE); Agter Paarl, Bulelwa, slight S slope, (–DB), 24-11-1983, *Van Zyl 3584* (NBG); Bellville, Joostenberg Farm, sandy flats, (–DC), 18-10-1961, *Barker 9606* (NBG, S); Penhill, Eersterivier, 45 m, (–DC), 20-11-1989, *Beyers 168* (K, NBG, PRE); *ibid.*, 19-05-1979, *Raitt 372* (NBG); Brackenfel, (–DC), 14-12-1940, *Compton 10121* (NBG); Bosmansdam, (–DC), 27-10-1956, *Esterhuysen 31322a* (BOL); Cape Flats, Kraaifontein, North Pine Development Area, (–DC), 05-01-1979, *Low 792* (NBG); 0,5 mile along Kraaifontein Road from Bottelary Road, 100 m, (–DC), 22-03-1971, *Oliver 3308* (NBG, PRE); Annandale, (–DC), 24-04-1903, *Rautanen s.n.* (Z); *ibid.*, 18-04-1903, *Rautanen s.n.* (Z); Bellville, (–DC), 30-10-1929, *Rogers 17700* (Z); Stellenbosch Dist., between Kraaifontein and Bottelary Hills, 66 m, (–DC), 01-02-1968, *Rourke 1026* (NBG); Beecroft Farm near Kraaifontein, (–DC), 09-11-1949, *Wilman 958* (BOL); Cape, Doornhoogte, Cape Flats, (–DC), Oct., *Zeyher 3744* (S); Ysterplaat, (–DC), Oct., *Zeyher 4803* (BOL); Stellenbosch, (–DD), 05-11-1943, *Compton 15274* (BOL, NBG); Agter Paarl Rd near Klappmuts, (–DD), 24-09-1951, *Esterhuysen 20430* (BOL); Klappmuts, (–DD), 1875–1880, *Rehmann s.n.* (Z). —3319 (Worcester): near Worcester (exact locality unknown), 16-10-1929, *Bolus L. BOL 49958* (BOL); Worcester Dist., between Worcester and Villiersdorp (exact locality unknown), 01-10-1951, *Compton 22916* (NBG); Worcester Div., between Franschhoek and Villiersdorp (exact locality unknown), Oct. 1951, *Lewis 3966* (SAM); Tulbagh Dist., Roodezandsberg, lower E slopes just S of Platberg; 460 m, (–AA), 22-10-1994, *Beyers 250* (BOL, K, NBG, PRE); Porterville, near farm De Tronk, flats between Twenty-four Rivers Mtn and Groot Kliphuis River, 830 m, (–AA), 10-10-1969, *Boucher & Kruger 7* (NBG); Piquetberg Dist., 3 km E of Porterville, W slope of mountain range, (–AA), 05-11-1956, *Dahlgren & Peterson 1060* (NBG); Piketberg Dist., Twenty-four Rivers Mtn, slopes overlooking Porterville, ± 665 m, (–AA), 17-12-1962, *Esterhuysen 29955* (BOL, NBG); Saron, (–AA), 22-09-1936, *Lewis 22020* (BOL); slopes of Great Winterhoek Mtns near Saron, (–AA), Nov. 1941, *Stokoe 8227* (BOL); Tulbagh Div., De Hoek Estate near Saron, (–AA), Nov. 1941, *Stokoe SAM 58624* (SAM); Wellington Dist; Elandsberg Private Nature Reserve, (–AC), 29-09-1994, *Beyers 241* (NBG); *ibid.*, restioid flats between Elandsberg and fields, tortoise reserve, 70 m, 04-10-1994, *Beyers 242* (BOL, K, MO, NBG, NY, PRE, S, Z); Wolseley, Romansrivier, geometric tortoise reserve; (–AC), 21-10-1996, *Hansford 86* (NBG); *ibid.*, 250 m, 07-11-1996, *Hansford s.n.* (BOL, K, NBG, PRE); Romansrivier, (–

AC), 09-11-1946, *Leighton 2178* (BOL, NY); Breede River Valley, near Bain's Kloof, 65 m, (–CA), Oct. 1873, *Bolus 2923 sub BOL 49956* (BOL); Worcester Dist, Botha, (–CA), 09-11-1846, *Compton 18706* (NBG); Worcester, Bothashalt, in sand along main road to Ceres, (–CB), 04-10-1960, *Van Breda 1002* (PRE); Worcester Dist, Brandvlei Co-op Winery, (–CB), 28-10-1960, *Van Rensburg 448* (K, NBG, PRE, Z); Goudini, farm Wyzersdrift, (–CB), 26-10-1979, *Walters 1890* (NBG); Worcester area, Moordkuil, roadside near greater Brandvlei dam wall, (–CD), 24-10-1976, *Boucher 3242* (K, NBG); Villiersdorp, road to High Noon, Elandskloof, sandy slope next to road, (–CD), 19-10-1977, *Osrin 22* (NBG); Worcester Div., flats near Sandhills, (–DA), 17-05-1896, *Wolley Dod 1078* (BOL).

—3322 (Oudtshoorn): Kammanassie Mtns, Buffelsberg 1665m, (–DB), 29-01-1983, *Viviers & Vlok 30* (NBG) (dubious locality).

—3418 (Simonstown): Cape Peninsula, flats (exact locality unknown), Oct. 1832, *Zeyher SAM 19794* (SAM); Cape Peninsula, Fish Hoek Mtns, (–AB), 01-11-1944, *Barker 3250* (NBG); *ibid.*, Klawer Valley, Klawersvlei, 320 m, 13-11-1989, *Beyers 151* (NBG, PRE); *ibid.*, Cape of Good Hope Nature Reserve, Klaasjagers, 40 m, 13-11-1989, *Beyers 155* (NBG); *ibid.*, Muizenberg, 330 m, Jan. 1881, *Bolus 4635* (BOL, Z); *ibid.*, Modderdam, 10-10-1945, *Compton 17458* (NBG); *ibid.*, E-side of Table Mtn at Constantia, Aug., *Zeyher PRE 49123* (PRE), *Ecklon & Zeyher 85.8* (S, Z); *ibid.*, Kommetjie near Simonstown, ± 30 m, 21-11-1897, *Galpin 4494* (K, PRE); *ibid.*, Red Hill above Simonstown, 10-02-1929, *Gillett 3461* (NBG); *ibid.*, between Noordhoek Berg and Plateau above Retreat, 03-03-1929, *Gillett 3571* (NBG); *ibid.*, Kalk Bay Mtn, plateau, on top, 13-04-1974, *Goldblatt 1528* (NBG); *ibid.*, ridge between Fish Hoek and Glencairn, 300 m, 28-10-1956, *Levyns 10619* (BOL); *ibid.*, flats west of Klaasjagersberg, (–AB), Oct. 1945, *Lewis 1573* (SAM); *ibid.*, Modderdam, Dec. 1950, *Martin 7931* (GRA); *ibid.*, Silvermine Forest Reserve, 19-11-1965, *Mattatia 35* (BOL); *ibid.*, Fishhoek, Nov. 1916, *Page PRE 49121* (PRE); *ibid.*, Simonstown Mtn, 13-06-1903, *Pearson 127* (NBG); *ibid.*, sand flats near Kommetjie, 30-11-1924, *Phillips PRE 49122* (PRE), 30-12-1924, *Phillips PRE 59080* (PRE); *ibid.*, Kalk Bay, Jan. 1915, *Rogers 16096* (Z); *ibid.*, Clovelly, Dec. 1924, *Rogers 29853* (Z); *ibid.*, Wynberg, Nov. 1898, *Schimper 660* (Z); Smitswinkel, (–AD), 09-12-1939, *Compton 8108* (NBG, S); near entrance to Cape Point Reserve above Retreat, (–AD), 10-11-1964, *Lavranos 3745* (NBG); Smitswinkels Bay, Cape Point, (–AD), *MacOwan SAM 19796* (SAM); Miller's Point–Cape Point, sandy heathy places, 165–330 m (–AD), Nov. 1886, *Thode STEU 9365* (NBG); Cape Peninsula, near Cape Point turn off in marsh, (–AD), 3-12-1960, *Whellan 1712* (PRE); Faure-Kramat Road, alongside new flyover on farm Zandvliet, ± 5 m, (–BA), 20-11-1970, *Boucher 1426* (NBG); Cape Flats, (–BA), Dec., *Ecklon 361* (K, NY, Z); *ibid.*, 1875–1880, *Rehmann 2218* (Z); Somerset West, Westridge, on public open ground; (–BB), 15-10-1994, *Beyers 248* (NBG); *ibid.*, 25-10-1994, *Beyers 252* (NBG); upper Harmony Flats between Lwandle township and Strand Foam Factory, 30 m, (–BB), 05-01-1978, *Boucher 3446* (NBG); bottom of Sir Lowry's Pass, near Somerset West, (–BB), 10-01-1946, *Clarkson 219* (PRE); Sir Lowry's Pass, foot of pass, (–BB), Nov. 1944, *Lewis 1572* (SAM); *ibid.*, 27-09-1958 *Werdermann & Oberdieck 240* (PRE); Hottentots Holland Mtns, at foot of mountains, (–BB), Feb. 1897, *MacOwan 3182* (SAM); Caledon Dist., Kogelberg Forest Reserve, (–BB), 28-12-1965, *Mattatia 58* (BOL); Somerset West, common on clay, 28-04-1940, *Parker 3495* (BOL, NBG); Strand to Gordons Bay, (–BB), 21-10-1946, *Parker 4133* (BOL, NBG).

—3419 (Caledon): Elim (exact locality unknown), Dec. 1915, *Frowein 1025* (PRE); in hills between Houhoek and Palmiet River, (–AA), Nov. 1879, *Bolus BOL 49944* (BOL); Houhoek, Haasvlakte, sandy flats

on crest of ridge, 465 m, (–AA), 23-10-1987, *Boucher 5201* (NBG); *ibid.*, SW corner on boundary with farm De Hoop, 300 m, 28-10-1991, *Boucher s.n.* (NBG); *ibid.*, 19-11-1935, *Hubbard Forest Dept. Herb. 177* (NBG); Kogelberg State Forest, Remhoogte, 200 m, (–AA), 25-10-1984, *Brits 9* (NBG); Houhoek Mtns, ± 330 m, (–AA), 08-11-1897, *Galpin 4493* (PRE); Houhoek, in mountains, 500 m, (–AA), 24-11-1896, *Schlechter 9375* (PRE, S, Z); Riviersonderend Valley, Zeekoeikraal, W. base of Donkerhoekberg, 330 m, (–AB), 23-11-74, *Oliver 5479* (NBG, PRE); Caledon Dist., Highlands, (–AC), 07-11-1942, *Compton 14089* (NBG); Bredasdorp Div., Appelskraal, (–BB), Oct. 1947, *Stokoe 9386* (BOL); Sandy Glen Farm (Koueberg), ± 330 m, (–BC), 22-12-1985, *Forsyth 389* (NBG); Gansbaai, (–CB), Oct. 1947, *Stokoe SAM 62644* (SAM); Bredasdorp Div., vlei on road between The Poort and Vogelvlei, (–DB), *Leighton BOL 21142* (BOL); between Bredasdorp and Elim, sandy flats, 30 m, (–DB), Sept. 1932, *Levyms 4516* (BOL); Bredasdorp, on hill S of farm Bo-Vogelvlei, 70 m, (–DB), 27-09-1989, *Vlok 2179* (K, NBG, PRE, S); Brandfontein, sand dunes along coast, (–DD), 13-10-1951, *Esterhuysen 18990* (BOL). —3420 (Bredasdorp): Bredasdorp, damp margin of salt pan NW of The Poort, (–CA), 25-09-1933, *Acocks 1757* (S); Bredasdorp, The Poort, (–CA), *Compton 4390* (NBG); *ibid.*, Jan. 1948, *Lewis 3285* (SAM). Grid ref. unknown: Liefde, on hills, below 330 m, Oct., *Drège s.n. [uniflora g]*, (S); Cape Peninsula, *Harvey 12407* (PRE); Cape of Good Hope, *Grubb* (S); Cape of Good Hope, *Grubb & Thunberg* (SBT); about 20 miles from Malmesbury on the new road, 65 m, Nov. 1962, *Levyms 11390* (BOL); from Cape Town Flower Show, Oct. 1924, *Marloth 6232* (PRE); in ericoid Flats, Oct., *Pappe SAM 19807* (SAM); Cape Town, Sept. 1846, *Prior s.n.* (PRE, Z); Cape, 1773, *Thunberg Herb. Montin* (S). Without locality: *Burchell 163* (K); *Burchell 194* (K); *Ecklon 397* (S).

3. ***Lachnaea filicaulis* (Meisn.) Beyers** in *Bothalia* 27,1: 45 (1997). *Cryptadenia filicaulis* Meisn. in *Linnaea* 14: 407 (1840); *Drège*: 210 (1847b); Meisn.: 574 (1857); C.H.Wright: 17 (1915). Type: Cape, locality unknown, *Drège 7367* (NY, holo.!—fragment in capsule on *Burchell 7540*; P!, iso.).

Gnidia genistaefolia Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P.de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 574 (1857) in synonymy.

Erect, moderately branched shrub to 0.4 m tall, multistemmed at base; resprouter. *Branches* erect to flexuous, slender, ridged below the leaf bases, sericeous, leafy, becoming sparsely hairy and naked without prominent leaf scars. *Leaves* decussate, ascending to patent, imbricate to distant, distal two pairs of leaves usually subverticillate, sessile, epistomatic, lanceolate, 3.6–8.0(–12) × 0.6–1.0(–1.5) mm, coriaceous, glabrous, adaxially concave to obtusely concave, smooth, dull, ± white-punctate, abaxially convex, glossy, smooth, apex mucronate or acuminate, base obtuse. *Inflorescence* terminal, one-flowered, but appearing to be axillary when much-reduced, lateral branches comprise only

one pair of leaves and a single flower, densely sericeous at floral articulation. *Flowers* sessile, subactinomorphic, cream or pink. *Hypanthium* 3.0–4.5 mm long, circumscissile a third to two-thirds from base, upper portion cup-shaped, basal portion narrowly ellipsoid to ellipsoid or narrowly ovoid to ovoid, sericeous outside, upper portion adpressed puberulent within but barbate above circumscission zone in vicinity of scales, basal portion glabrous within. *Sepals* ascending, subequal, elliptic, ovate, obovate to subrotund, 1.3–3.0 × 1.2–2.0 mm, obtuse, abaxially sericeous, adaxially puberulent to glabrescent. *Stamens* exerted or only outer, antisepalous whorl exerted and inner, antipetalous whorl semi-exserted; antisepalous whorl inserted usually at rim but occasionally a third-way down upper portion of hypanthium, inner, antipetalous whorl inserted third to midway down upper portion of hypanthium; filaments filiform, 0.3–0.9 mm long; anthers widely oblong to widely ellipsoid, 0.5–1.0 mm long, abaxially with broad connective tissue. *Scales* inserted just above circumscission zone immediately below antipetalous stamens, subrotund, 0.3–0.5 mm long, glabrous. *Ovary* ellipsoid, ovoid or obovoid, 1.0–1.6 mm long, usually glabrous but occasionally adpressed hairy near apex. *Style* linear-obconical, 1.4–2.8 mm long, glabrous. *Stigma* conical and papillate (Figure 7.5).

Distribution and ecology

Lachnaea filicaulis occurs on the flats and lower mountain slopes in the southwestern and southern part of the Western Cape from the Palmiet River in the Caledon District eastwards to Riversdale at altitudes below 365 m (Figure 7.6). Flowering has been recorded from August to June.

Conservation status: Vulnerable (VU A1 ce). The habitat of this species has been restricted through the effects of human activities and invasion by alien invader plants.

Diagnostic characters and relationships

Lachnaea filicaulis is distinguished from *L. axillaris* by the upper portion of the hypanthium being cup-shaped without a basal invagination, the hypanthium and sepals being sericeous on the outside and the conical, papillate stigma.

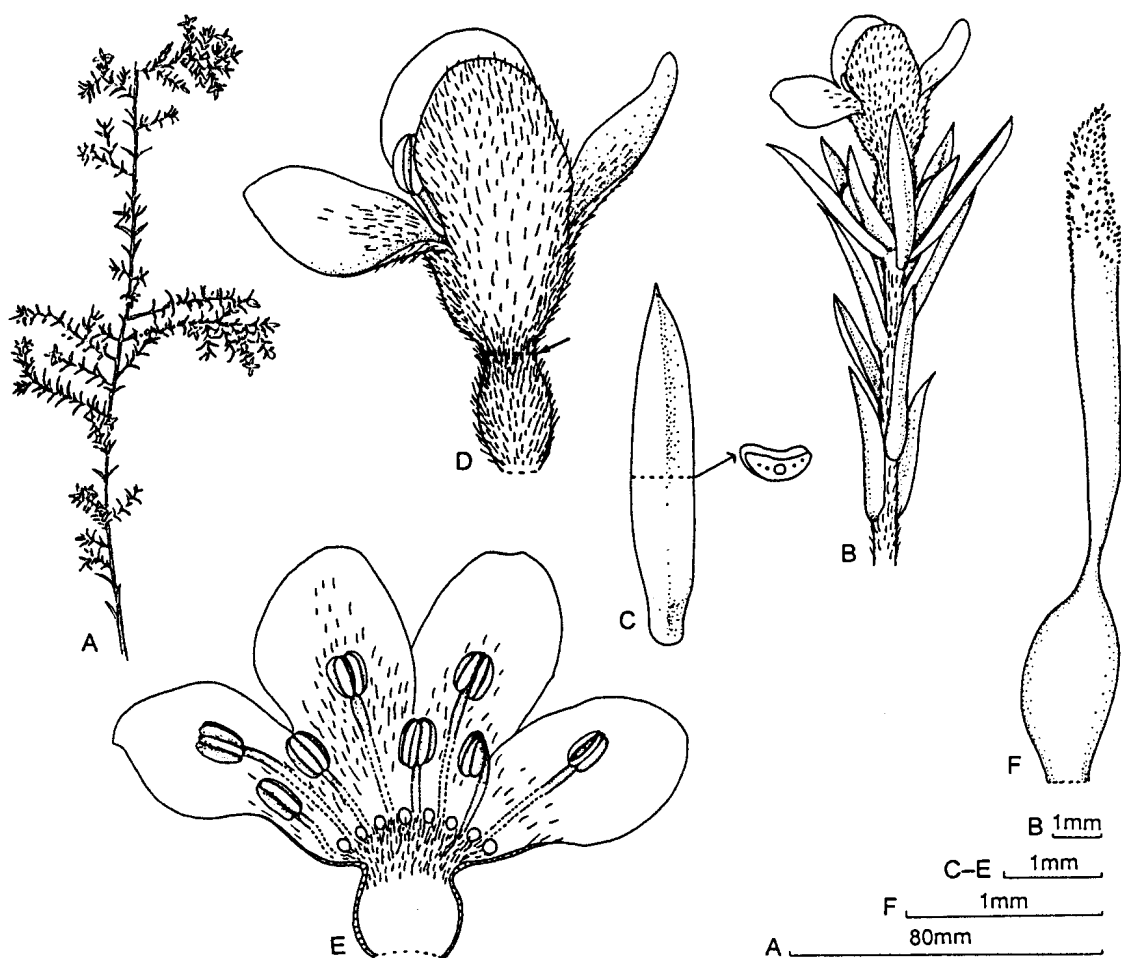


FIGURE 7.5—*Lachnaea filicaulis*, McDonald 1988 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower, note circumscession zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium.

Specimens examined

WESTERN CAPE.—3418 (Simonstown): Caledon Dist., Palmiet River, valley near Elgin, (–BB), May 1943, *Stokoe 8982* (BOL); Betty's Bay, across Palmiet River towards Betty's Bay, on right side of road, (–BD), Jan. 1994, *Oakes s.n.* (NBG); Palmiet River mouth, (–BD), May 1943, *Stokoe SAM 58625* (SAM). —3419 (Caledon): Swartberg, (–AB), *Zeyher 3747* (GRA, SAM, NY – capsule); between Hermanus River and Ysterklip, close to road, (–AC), 30-09-1956, *Dahlgren & Peterson 487* (NBG); Palmiet vlakte below mountain, (–AC), Dec. 1948, *De Vos 1120* (NBG); Kleinmond flats on road to Heuningklip, foot of mountain W of Heuningklip, (–AC), 20-02-1949, *De Vos 1230* (NBG); Head of Bot River Lagoon, (–AC), 19-09-1949, *MacNae 1095* (SAM); Kleinmond, near Palmiet River, (–AC), Dec. 1950, *Stokoe SAM 64619* (SAM); Bredasdorp Dist., Stanford, (–AD), 30-12-1940, *Compton 10208* (NBG); beyond Mossel River, slopes above lagoon 10 m, (–AD), 06-01-1954, *Levy's 10051* (BOL); in sandy flats near Vogelgat, 30 m, (–AD), 02-12-

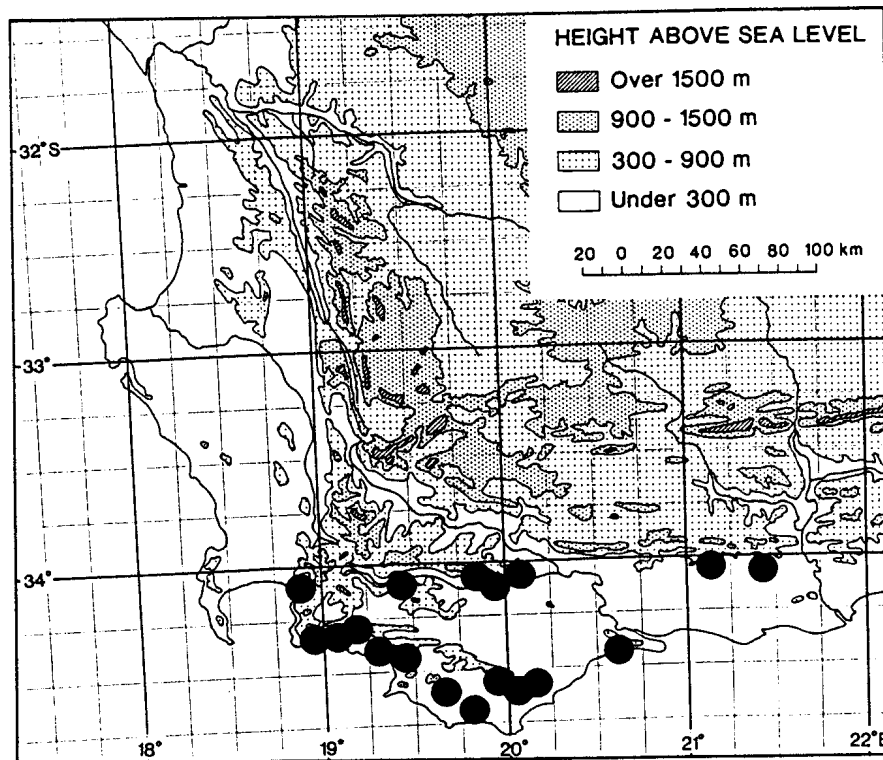


FIGURE 7.6—Known distribution of *Lachnaea filicaulis*.

1896, *Schlechter 9579* (BOL, Z); Hermanus, Coppall Farm, road to Stanford, 6 m, (–AD), 24-09-1991, *Williams 1315* (NBG); Caledon, Kleinriviersberg, 330–1000 m, (–AD/BC), Aug., *Ecklon & Zeyher 58.8*. (K, NY – capsule, S); Riviersonderend Mtns, lower slopes near village, (–BB), 20-11-1955, *Esterhuysen 25079* (BOL); *ibid.*, Olifantskloof, entrance to kloof, dry flats, *Goldblatt 8482* (PRE); *ibid.*, lower slopes N of town, 170 m, 26-01-1991, *Oliver 9803* (K, NBG, PRE); Langeberg, Riviersonderend, Appelskraal, (–BB), Nov. 1848, *Zeyher 3748* (BOL, SAM); Bredasdorp Dist., Pheasantshoek near Viljoenshof, (–DA), 15-09-1976, *Esterhuysen 34370* (BOL, PRE, S); Rietfontein Private Nature Reserve, Melkbosvlei environs, (–DB), 04-02-1981, *Boucher 5071* (NBG); Uitvlugt, S slopes of Bredasdorp Mountain, 115 m, (–DB), 16-03-1978, *Thompson 3789* (NBG, PRE).

—3420 (Bredasdorp): Riviersonderend Mtns, Dasberg near Stormsvlei, (–AA), Oct. 1947, *Stokoe SAM 64618* (SAM); Potberg, 165–660 m, (–BC), 13-11-1962, *Taylor 4356* (NBG); Elias Kraal (Kleinheuwel farm) S of Bredasdorp, (–CA), 19-04-1983, *Albertyn 658* (NBG); National Bontebok Park, (–CA), 25-06-1953, *Brynard 229* (PRE); *ibid.*, 16-04-1950, *Compton 21922* (NBG); *ibid.*, 17-02-1951, *Johnson 11* (NBG); Stomp Bay, (–CA), Oct. 1940, *Esterhuysen 5122* (BOL).

—3421 (Riversdale): Langeberg Mtns, slopes near Riversdale 330 m, (–AA), 30-11-1992, *Schlechter 1904* (BOL); Langeberg Mtns, slopes W of Riversdale, 300 m, (–AB), 30-11-1892, *Schlechter 1906* (BOL, GRA, Z); Langeberg Mtns, De Berg, NE of Riversdale, footslopes of mountain, 365 m, (–AB), 30-10-1989, *McDonald 1989* (K, NBG, PRE). Grid ref. unknown: Riviersonderend Mtns, May 1950, *Stokoe SAM 64617* (NBG, SAM). Without locality: *Burchell 7540* (K, NY); *Drège 7367* (P, NY – capsule).

4. ***Lachnaea gracilis* Meisn.** in *Linnaea* 14: 421 (1840); Drège: 114 (1843); Meisn.: 579 (1857). Type: Hexrivier, alt. 1000–1500 ft. (IV. A), *Drège s.n.* [583] (NY, holo.!, P!, iso.).

Erect, lax, moderately branched shrub to 2 m tall, single-stemmed and branching at base, when grazed tends to have low, compact, decumbent habit; reseeder. *Branches* erect to flexuous, slender, subridged or ridged below the leaf bases, sparsely adpressed hairy, leafy, becoming glabrous and naked without prominent leaf scars. *Leaves* decussate, adpressed to ascending, distant, internodes half to three-quarters as long as leaves, distal two pairs usually subverticillate, sessile, epistomatic, narrowly elliptic to elliptic or narrowly obovate to obovate, $(3.1-3.5-8.3 \times 0.8-1.5(-3.0))$ mm, coriaceous, glabrous, adaxially flat or obtusely concave, smooth, dull, $\pm$ white-punctate, abaxially flat or obtusely convex, occasionally subkeeled at apex, glossy or glaucous, smooth, apex acute, acuminate or obtuse, base obtuse. *Inflorescence* terminal, one-flowered, but may appear axillary when much-reduced, lateral branches comprise only one pair of leaves and a solitary flower, sericeous at floral articulation. *Flowers* sessile, subactinomorphic, cream usually turning pink with age. *Hypanthium* 2.4–5.0 mm long, circumscissile midway to three-quarters from base, upper portion cup-shaped occasionally with a basal invagination, basal portion narrowly ellipsoid to ellipsoid or narrowly ovoid to ovoid, sericeous outside, upper portion adpressed puberulent or glabrous within but barbate above circumscission zone in vicinity of scales, basal portion glabrous within, but sometimes adpressed puberulent towards circumscission zone. *Sepals* patent, subequal, ovate to widely ovate, or orbicular to oblate, $1.5-3.0 \times 1.5-2.6$ mm, obtuse or rounded, abaxially sericeous, adaxially adpressed puberulent or glabrous. *Stamens* exserted or outer, antisepalous whorl exserted and inner, antipetalous whorl subexserted or included, antisepalous whorl inserted at base of sepals, at rim of hypanthium or occasionally third-way down upper portion of hypanthium, antipetalous whorl inserted a third to two-thirds down upper portion of hypanthium; filaments filiform, 0.3–0.9 mm long; anthers widely ellipsoid to depressed spheroid, 0.6–0.9 mm long, abaxially with broad connective tissue. *Scales* inserted just above circumscission zone immediately below antipetalous stamens, subrotund, 0.3–0.6 mm long, glabrous, yellow in fresh state. *Ovary* narrowly ellipsoid, ovoid or obovoid, 0.9–2.8 mm long, glabrous. *Style* linear-obconical, 1.3–2.8 mm long, glabrous. *Stigma* capitate and papillate (Figure 7.7).

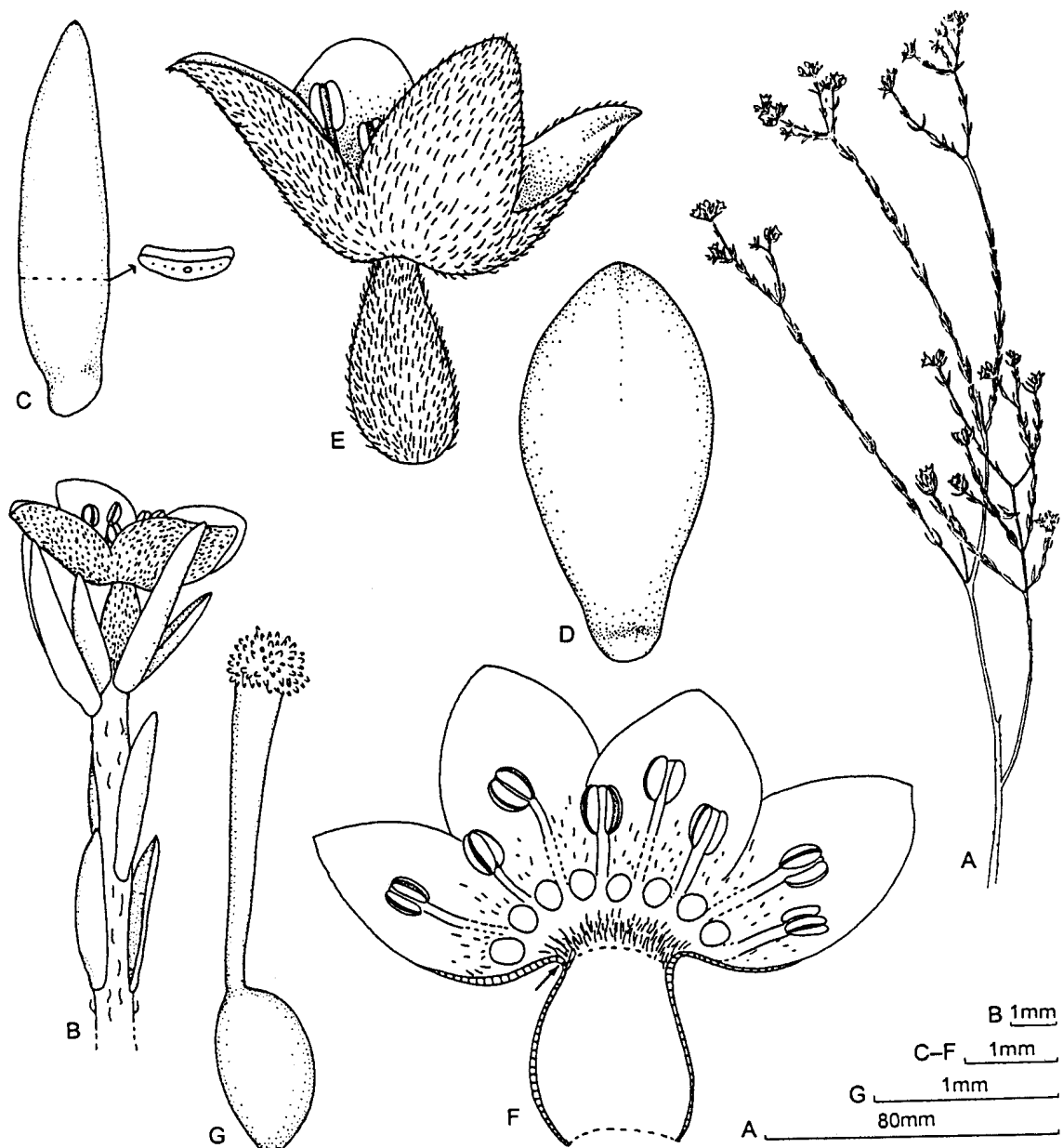


FIGURE 7.7—*Lachnaea gracilis*. A, portion of plant; B, flowering branch; C & D leaves: C, abaxial view and cross section; D, abaxial view; E, flower; F, flower split longitudinally with gynoeceum removed, note circumscission zone (arrowed); G, gynoeceum. B,C,E–G, *Beyers 254* (NBG); D, *Bean & Viviers 2613* (NBG).

Distribution and ecology

Occurs on sandy flats and mountain slopes in the Ceres, Tulbagh and Worcester Districts at altitudes between 330 and 1660 m (Figure 7.8). Flowering has been recorded in May and from July to January.

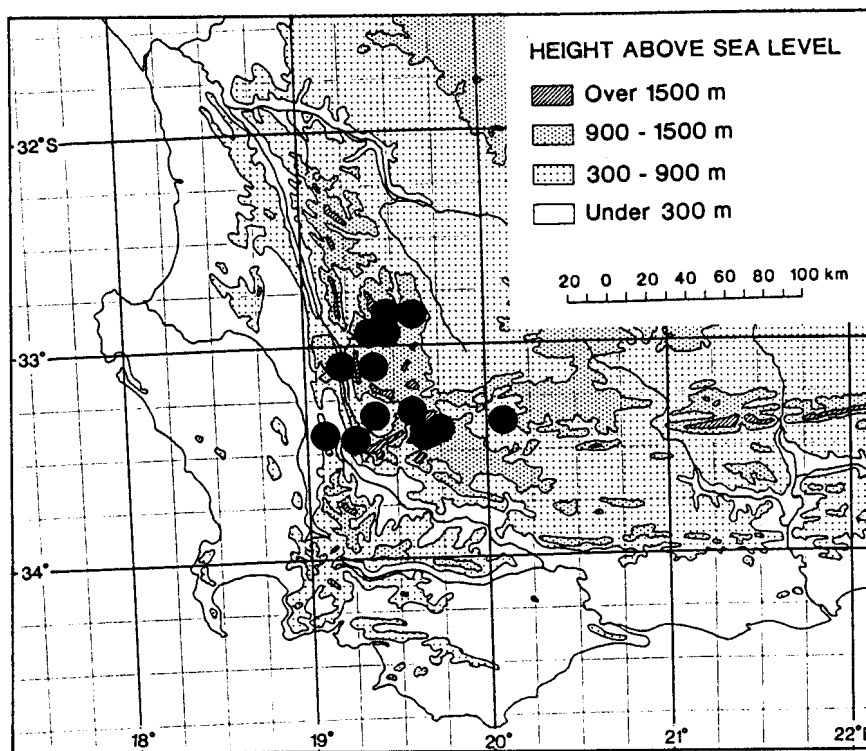


FIGURE 7.8—Known distribution of *Lachnaea gracilis*.

The leaf width of this taxon is variable. There is a gradation from narrowly elliptic or narrowly obovate to elliptic or obovate leaves. The leaves of those from the Katbakkies area are the broadest. With only one such variable, subspecific delimitation has not been considered.

Conservation status: Lower Risk Least Concern (LRlc). Since this species is a reseeders, it could in future through frequent mountain fires become threatened.

Diagnostic characters and relationships

Lachnaea gracilis is distinguished from *L. axillaris* by the hypanthium and sepals being sericeous on the outside and from *L. filicaulis* by the capitate, papillate stigma.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Zuurvlakte, E of pass up from Ceres-Clanwilliam Road near turnoff to God's Acre, (–CD), 06-10-1990, *Bean & Viviers* 2612 (NBG); Ceres Dist., Katbakkies area,

Zuurvlakte, E of summit of pass, in sand, (–CD), 06-10-1990, *Bean & Viviers 2613* (NBG); Rosendal, valley NE of farmstead, N of large dam, sandy flats, 1050 m, (–CD), 10-10-1975, *Oliver 6099* (NBG, PRE); Swartruggens, Groenfontein, near Stompiesfontein on open sandy flats, 1300 m, (–DC), 02-10-1991, *Bean & Trinder-Smith 2689* (BOL, NBG); Rietrivier on road to Zuurvlak in river valley, in deep sand, (–DC), 08-11-1987, *Bean & Viviers 1973* (NBG); Swartruggens, between Winkelhaaks River and Stompiesfontein, in sand, (–DC), 18-11-1961, *Esterhuysen 29307* (BOL, S); Swartruggens, Stompiesfontein, (–DC), 18-11-1961, *Esterhuysen 29328* (BOL), *Esterhuysen 29328a* (BOL, S); Winkelhaaks River in Swartruggens, near river, 1130 m, (–DC), 28-09-1926, *Levy's 1913* (BOL); Katbakkies Pass, Ceres, 1160 m, (–DC), 15-09-1964, *Taylor 5858* (NBG).

—3319 (Worcester): Visgat, between Schurfteberg and Groot Winterhoek Mtns, (–AA), Oct. 1953, *Stokoe SAM 63185* (SAM); Between Witzenberg and Skurfdeberg, 660–1660 m, (–AA/AB), Dec., *Zeyher 1486* (GRA, K, NY [capsule on *Burchell 7540*], PRE, SAM, Z); Cold Bokkeveld, Wadrif area, junction of 3 main roads near Kleinvlei 960 m, (–AB), 14-11-1993, *Beyers 219* (NBG); *ibid.*, 13-02-1992, *Oliver 10043* (NBG); Cold Bokkeveld, Hartbeeskloof, E end of Sandberg, 1020 m, (–AB), 13-11-1993, *Oliver 10405* (NBG); *ibid.*, S of Bokberg, 970 m, 13-11-1993, *Oliver 10415* (NBG), *Oliver 10416* (NBG); Cold Bokkeveld in sand near Kleinvlei, 1300 m, (–AB), 20-01-1897, *Schlechter 10067* (BOL, PRE, Z); Ceres Dist., Elandskloof, 1160 m, (–AC), 19-12-1944, *Compton 16780* (NBG); Ceres, Schoonvlei (–AD), 24-01-1989, *Beyers 126* (NBG); *ibid.*, 13-10-1989, *Beyers 140a* (NBG); *ibid.*, October 1988, *Cillie s. n.* (NBG); in plain near Ceres, 500 m, (–AD), Jan., *Bolus 9207* (BOL, PRE); *ibid.*, Dec. 1891, *Bolus HNAA 1356* (BOL, SAM, Z); Hex River [between Hex River Mtns and Bokkeveld on mountain flats on stony hills (Drège 1843)], 330–500 m, (–AD/BC, Drège 583 (NY, P); Ceres Div., Baviaansberg, (–BA), 10-12-1956, *Stokoe PRE 49144* (PRE); *ibid.*, 10-01-1956, *Stokoe SAM 69996* (SAM); Hex River near De Doorns, ± 560 m, (–BC), Jan. 1908, *Bolus 13181* (BOL, S); Ceres Div., Valsch Gat Kloof, (–BC), May 1940, *Esterhuysen 1567* (BOL); Hex River valley, near Buffelshoek Kloof, in sand, (–BC), 10-12-1947, *Esterhuysen 14275* (BOL, PRE); Ceres, Matroosberg, near Lakenvlei, 1160 m, (–BC), Jan. 1917, *Phillips 2052* (SAM); Ceres, Bokkerivier, flats, in sand, 930 m, (–BC/BD), Sept. 1924, *Levy's 923* (BOL); Bokkerivier Farms, flats SE of camping site, (–BC/BD), 09-11-1963, *Middlemost 2252* (NBG); *ibid.*, 19-03-1964, *Thompson 3* (NBG).

—3320 (Montagu): Touws River, in sand, 660 m, (–AC), 13-05-1935, *Compton 5140* (BOL, NBG); *ibid.*, opposite railway station, 800 m, Jul. 1903, *Marloth 3224* (BOL, NBG).

5. *Lachnaea pudens* Beyers in South African Journal of Botany 64,1:66 (1998a).

Type: Western Cape, 3319 (Worcester): Riviersonderend Mountains, Jonaskop, upper north slopes, –DC, *Beyers 161* (NBG, holo.!, BOL!, K!, NY!, PRE!, iso.).

Erect to decumbent, much branched shrub to 0.6 m tall, single-stemmed at base, branching close to ground; reseeder. *Branches* flexuous, intertwined, moderately thick, ridged below leaf bases, tomentose or tomentose-sericeous, leafy, becoming sparsely hairy and naked with prominent leaf scars; flowering branches declinate. *Leaves* decussate,

ascending incurved, imbricate, distal two pairs of leaves inclined, erect or slightly recurved, subverticillate, sessile, elliptic, $3.8\text{--}5.7 \times 1.0\text{--}1.3$ mm, subfleshy, glabrous, adaxially flat to obtusely concave, smooth, dull, $\pm$ white-punctate, abaxially convex, keeled, glossy, smooth, sometimes with a reddish brown tinge, apex apiculate, base obtuse. *Inflorescence* terminal, one-flowered, but appearing to be axillary when much-reduced, lateral branches comprise only one pair of leaves and a solitary flower. *Flowers* sessile, subactinomorphic, dark red. *Hypanthium* 3.0–4.5 mm long, circumscissile four-fifths from base, upper portion widely cup-shaped with a basal invagination, basal portion pyriform, sericeous outside, upper portion glabrous within but villous above circumscission zone in vicinity of scales, basal portion sparsely hairy within. *Sepals* patent, subequal, widely ovate or widely depressed ovate, $2.0\text{--}3.9 \times 2.6\text{--}3.6$ mm, acute or obtuse, abaxially sericeous, adaxially glabrous. *Stamens* exerted, outer, antisepalous whorl adnate to upper portion of hypanthium and becoming free just above base of sepals, inner antipetalous whorl adnate to upper hypanthium and becoming free two-thirds up hypanthium; filaments filiform, 0.3–0.5 mm long; anthers depressed-spheroid, 0.5–0.6 mm long, abaxially with broad connective tissue. *Scales* inserted midway on upper portion of hypanthium below antipetalous stamens, subrotund, 0.3–0.4 mm long, glabrous. *Ovary* ovoid, 1.0–1.3 mm long, glabrous. *Style* linear-obconical, 2.2–2.6 mm long, glabrous. *Stigma* brush-like (Figure 7.9).

Distribution and ecology

Lachnaea pudens occurs on the mountain slopes of Jonaskop near Villiersdorp and on the Riviersonderend Mountains above Greyton and Genadendal, at altitudes between 330 and 1530 m, growing in sandy, stony soils overlying sandstones (Figure 7.10). Flowering has been recorded in February, May, August and from October to December.

Conservation status: Vulnerable (VU D2). This species has a restricted distribution and being a reseeders, is vulnerable to frequent mountain fires.

Diagnostic characters and relationships

Lachnaea pudens is easily distinguished by the terminal, solitary, dark red flowers borne on short branches facing downwards. The floral structure is similar to that of *L. axillaris* Meisn., with the upper portion of the hypanthium cup-shaped and basely

invaginated, but the flowers are sericeous on the outside whereas in *L. axillaris* they are glabrous and cream to dark pink.

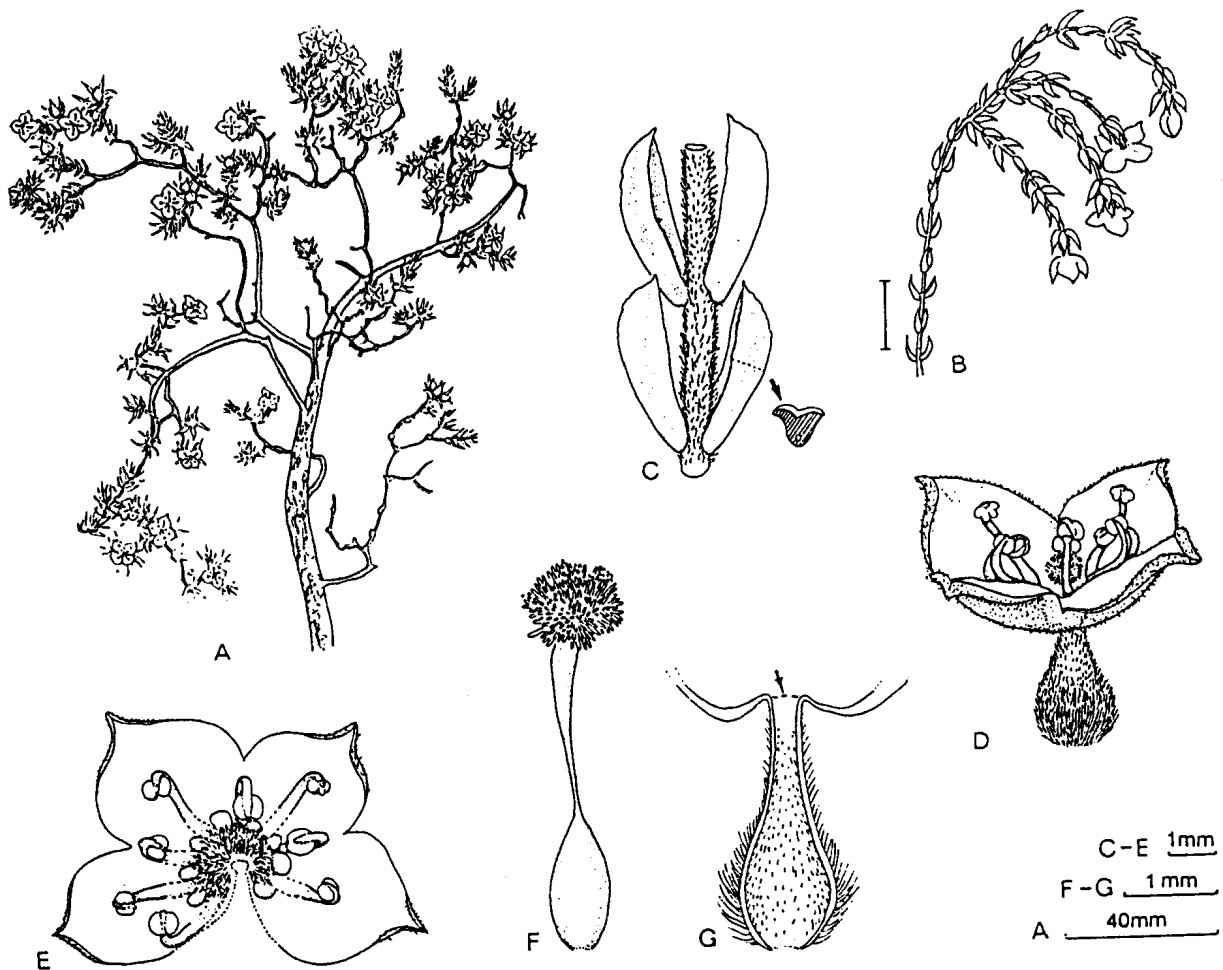


FIGURE 7.9—*Lachnaea pudens*, Beyers 161 (NBG). A, portion of plant; B, flowering branch; C, branch with leaves and cross section of leaf; D, flower; E, upper portion of flower above circumscission zone; F, gynoecium; G, portion of hypanthium (longitudinal section), illustrating basal invagination of upper portion of hypanthium just above circumscission zone (arrowed). Scale bar: B,

Specimens examined

WESTERN CAPE.—3319 (Worcester): Villiersdorp, Paulsgat area above Kleinfontein, NE slopes SW of Vetkop, 680 m, (–CD), 4-10-1997, *Oliver 10730* (K, PRE, NBG); Riviersonderend Mtns, lower N slopes on Boesmans Pass road, E-facing slopes E of Koenieskloof, 660 m, (–DC), 14-10-1991, *Bean & Viviers 2737* (BOL, K, NBG, PRE); Riviersonderend Mtns, Jonaskop, N slopes, 660 m, (–DC), 19-11-1989,

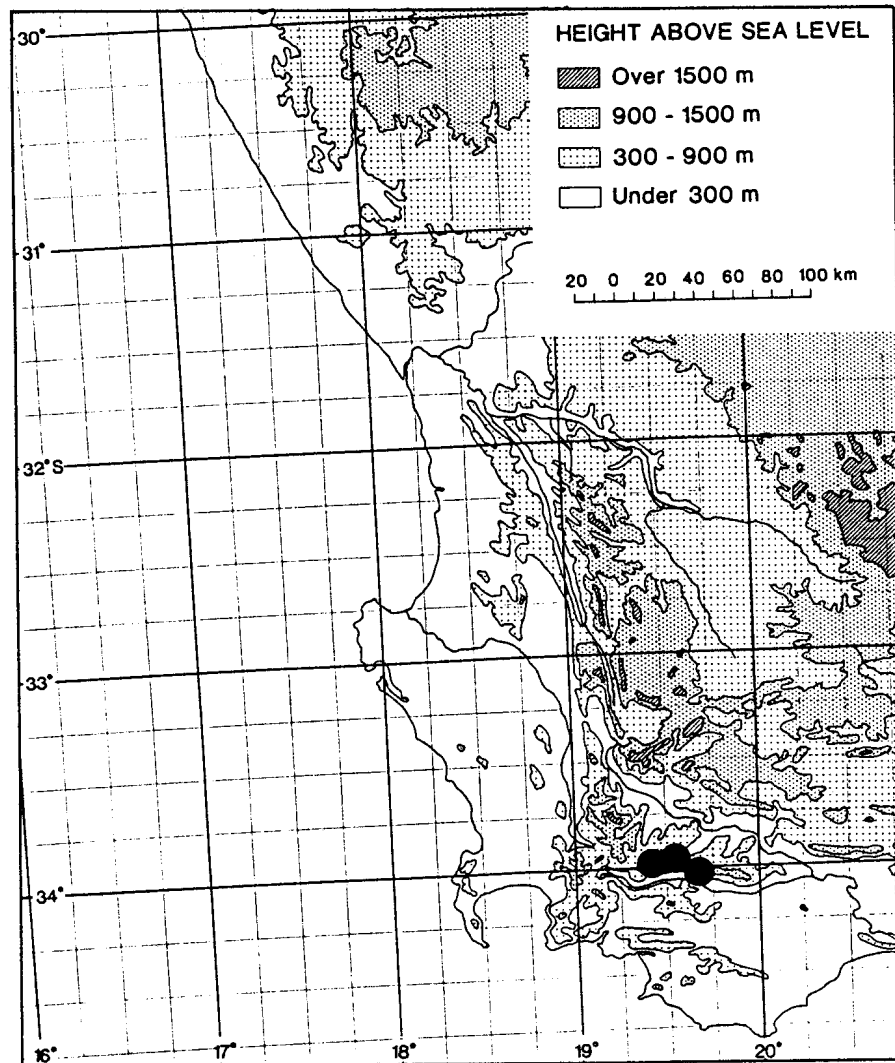


FIGURE 7.10—Known distribution of *Lachnaea pudens*.

Beyers 166 (BOL, K, NBG, PRE); *ibid.*, S side near summit to W of SABC tower, ± 1530 m, 16-12-1975, *Boucher 3038* (NBG); *ibid.*, N slope, roadside quarry above 2nd gate, ± 700 m, 25-05-1985, *Boucher 5094* (NBG); *ibid.*, Oct. 1977, *Hugo 958* (NBG); *ibid.*, upper NE slopes, 1200 m, 08-08-1986, *Oliver 8980* (NBG); Genadendal Mtns top of Baviaanskloof, 1500 m, (–DC), Oct., *Stokoe 2524* (NBG, PRE); Boschjeveld Mtns, Worcester side, (–DC), 01-10-1955, *Stokoe SAM 69967* (NBG, SAM); *ibid.*, Villiersdorp side, 1500 m, Feb. 1940, *Stokoe SAM 58590* (SAM).

—3419 (Caledon): Riviersonderend Mtns, Greyton, Boesmanskloof, jeeptrack to Die Galg, 640 m, (–BA), 12-11-1992, *Beyers 210* (BOL, K, NBG, NY, PRE); Wildepaardeberg, (–BA), 00-10-1933, *Stokoe 2762* (BOL, PRE); Genadendal Mtns, (–BA), 00-11-1930, *Stokoe 6759* (BOL, PRE); Genadendal, plateau W of The Trail, 700 m, (–BA), 24-05-1996, *Volk 249* (NBG). Grid ref. unknown: Riviersonderend, 330 m, 20-10-1894, *Schlechter 5643* (BOL, Z).

6. *Lachnaea axillaris* Meisn. in *Linnaea* 14: 142 (1840); Meisn.: 552 (1843); Meisn.: 578 (1857); C.H.Wright: 26 (1915). Type: Cape, locality unknown, *Drège 7371* (NY, holo.!—fragment in capsule on *Krauss 1265*; P!, iso.).

Lachnaea micrantha Schltr. in *Botanische Jahrbücher für Systematik, Pflanzeschichte und Pflanzengeographie* 24: 451 (1898); C.H.Wright: 26 (1915). Type: Western Cape, on sandy hill at Elim, 300 ft, 24 April 1896, *Schlechter 7702* (Z, holo.!, BOL!, iso.).

Radojitskya capensis Turcz. in *Bulletin de la Société Impériale des Naturalistes de Moscou* 25: 176 (1852); Turcz.: 743 (1853). Type: Cape of Good Hope, *Zeyher 2163* (S, holo.!, K!, NBG!, iso.);

Erect, much-branched, compact shrub to 0.75 m tall, multistemmed at base; resprouter. *Branches* erect to flexuous and interlacing, filiform, $\pm$ terete, sericeous or sericeous-tomentose, leafy, becoming puberulent and naked without prominent leaf-scars. *Leaves* decussate, ascending, distant, internodes $\pm$ as long as leaves, distal two pairs of leaves sometimes subverticillate, sessile, epistomatic, narrowly ovate to lanceolate, 2.0–4.0 $\times$ 0.8–1.2 mm, fleshy, glabrous, adaxially flat, smooth, dull, $\pm$ white-punctate, abaxially convex, subkeeled towards apex, glossy, apex mucronate, base obtuse. *Inflorescence* terminal, one-flowered, but may appear axillary when much-reduced, lateral branches comprise only one pair of leaves and a single flower, sericeous to sericeous-tomentose at floral articulation. *Flowers* sessile, subactinomorphic, cream, pink or dark pink. *Hypanthium* 1.4–2.2 mm long, circumscissile midway to two-thirds from base, upper portion cup-shaped with a basal invagination, basal portion ovoid to broadly ovoid, glabrous outside, glabrous within but barbate above circumscission zone in vicinity of scales. *Sepals* erect-spreading, subequal, two outer ones elliptic, ovate to broadly ovate, 1.6–2.6 $\times$ 0.8–1.5 mm, acute, adaxially glabrous or near apex puberulent or ciliolate, abaxially glabrous, two inner ones elliptic, obovate to broadly obovate, acute to obtuse, 1.4–2.3 $\times$ 1.0–1.8 mm, adaxially glabrous becoming puberulent near apex, abaxially glabrous. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at mouth of hypanthium; filaments filiform, 0.4–0.8 mm long, inner whorl shorter or as long as outer whorl; anthers widely ellipsoid to spheroid, 0.4–0.5 mm long, dorsally with broad connective tissue. *Scales* inserted just above the

circumscission zone immediately below the antipetalous stamens, partially concealed by stiff hairs in throat of hypanthium, subrotund, 0.2–0.4 mm long, glabrous. *Ovary* narrowly ellipsoid to ellipsoid, 1.0–1.3 mm long, glabrous. *Style* linear-obconical, 0.8–1.6 mm long, glabrous. *Stigma* capitate and papillate (Figure 7.11).

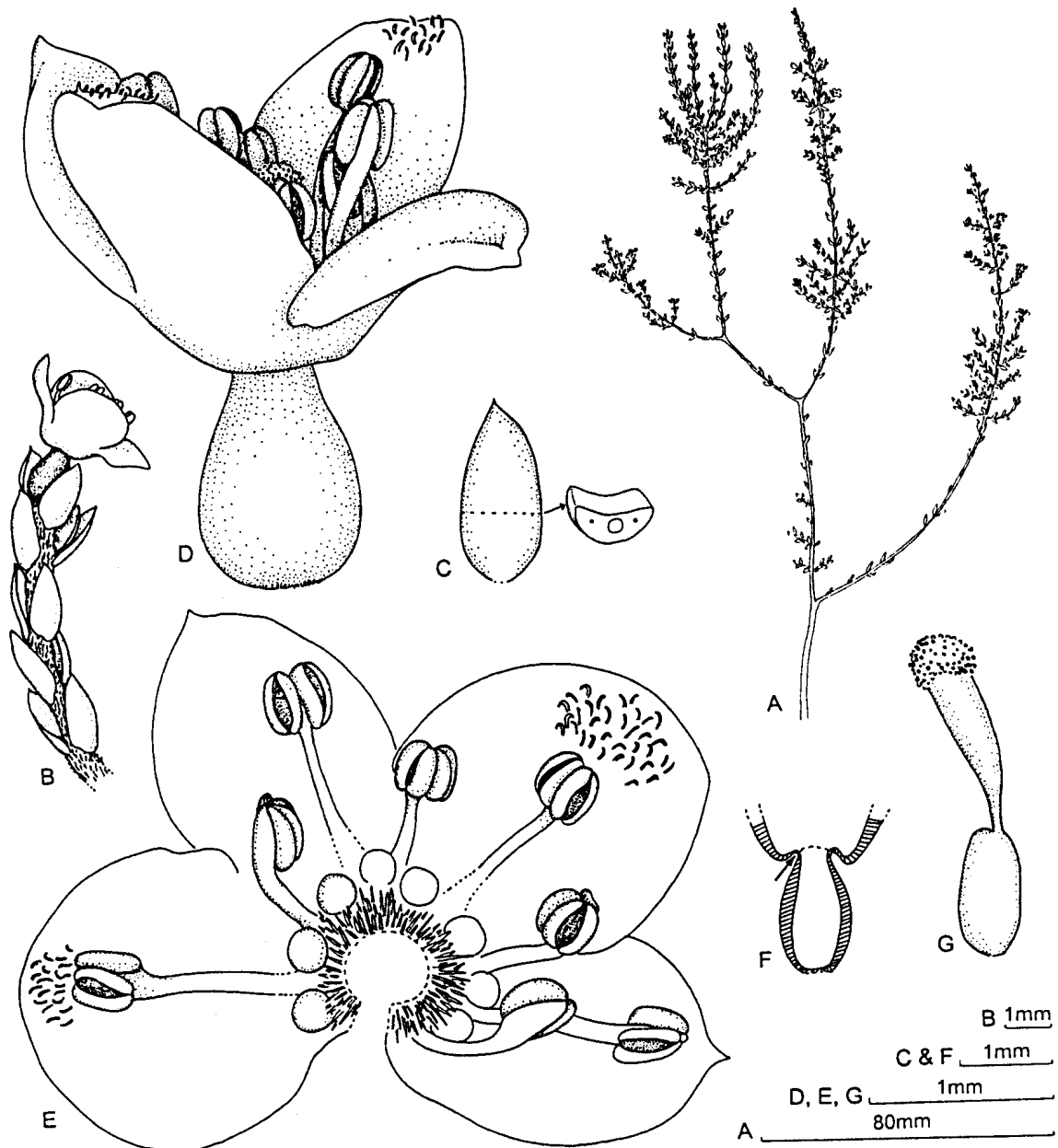


FIGURE 7.11—*Lachnaea axillaris*, Beyers 180 (NBG). A, portion of plant; B, flowering branch (enlarged); C, leaf (abaxial view and cross section); D, flower; E, upper portion flower above circumscission zone split longitudinally; F, hypanthium (longitudinal section), note circumscission zone (arrowed); G, gynoecium.

Distribution and ecology

Confined to the Western Cape and with a disjunct distribution. Occurs on sandy flats in the Hopefield and Darling Districts in the southwestern area and reappears along the southern coast from Elim to the Gourits River mouth (Figure 7.12). The distribution of *L. axillaris* requires some explanation. The southern coastal flats are separated from the western coastal flats by a formidable ecological barrier, namely the Hottentots Holland Mountains. At the present time there are no low lying coastal sandy areas which could link the two areas of distribution. Rourke (1972) hypothesized that due to coastline regression during the Middle Pleistocene, a lowland link, now inundated, provided a migration route between the Bredasdorp coastal flats and the Cape Flats. Flowering has been recorded throughout the year.

Conservation status: Vulnerable (VU A1ce). The habitat of this species has been restricted through the effects of human activities and invasion by alien invader plants.

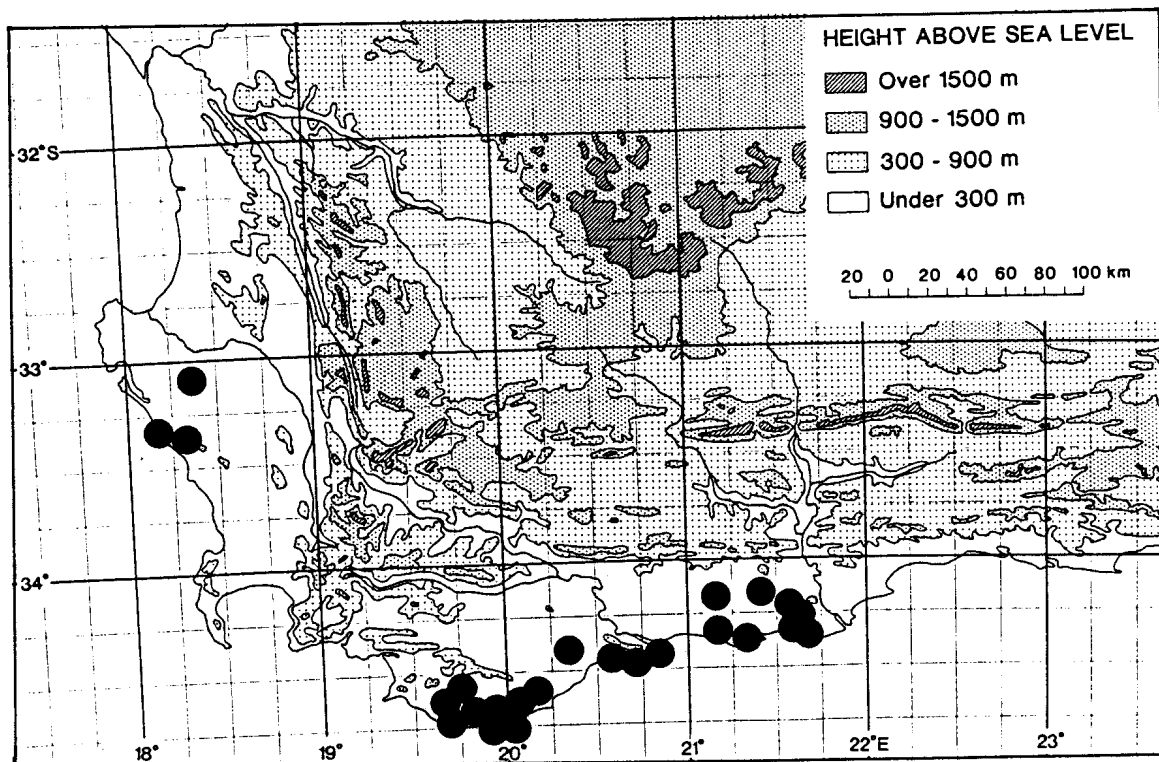


FIGURE 7.12—Known distribution of *Lachnaea axillaris*.

Diagnostic characters and relationships

Lachnaea axillaris is closely related to *L. pudens*, *L. leipoldtii* and *L. pusilla*. The upper portion of the hypanthium in these species are basally invaginated. *L. axillaris* is easily distinguished from *L. pudens* by the hypanthium being glabrous on the outside. In *L. axillaris* the upper portion of the hypanthium is cup-shaped and the stigma is capitate, papillate, whereas in *L. leipoldtii* and *L. pusilla* it is narrowly obconical and the stigma is conical, papillate and linear-conical, papillate respectively

Specimens examined

WESTERN CAPE.—3318 (Cape Town): Hopefield, (–AB), Nov. 1919, *Bolus L. BOL 16741* (BOL); road between Darling and Ysterfontein, 1 km before Langebaan turnoff, (–AC), 08-03-1989, *Beyers 127* (NBG); Jakkalsfontein, sandy flats, ± 150 m, (–AD), 06-02-1978, *Thompson 3596* (NBG).
—3419 (Caledon): Swellendam, Rietkuil, (–BB), Oct., *Zeyher 2163* (K, NBG, S); Buffelsjagtsberg, NW-foothills, ± 130 m, (–DA), 11-03-1979, *Hugo 1613* (NBG); Bredasdorp Dist., Ratel River, in sandy plain, (–DA/DC), 11-08-1983, *Esterhuysen 36028* (BOL); *ibid.*, 12-01-1956, *Rycroft 1853* (NBG); Elim, Jul. 1895, (–DA/DB), *Bolus Herb. Guthrie 3831* (NBG); Rietfontein Poort near Elim, 65 m, (–DB), 10-12-1896, *Bolus 8596* (BOL, NBG, Z); Soetanyenberg NW-end on farm Suur en Soet, ± 152 m, (–DB), 01-06-1973, *Boucher 2167* (NBG, S); Caledon, Soetendalsvlei, in sandy flats, (–DB), Dec. 1838, *Krauss 1265* (NY); Bredasdorp Dist., Brandfontein, limestone ridge, (–DC), *Esterhuysen 19092* (BOL); Springfield Estates on road to Hooiklip S of Soetendalsvlei, 15 m, (–DD), 29-07-1982, *Albertyn 299* (NBG).
—3420 (Bredasdorp): off Bredasdorp-Skipkop Road, 1 km on farm road next to fence of farm Melkkamer, 60 m, (–AD), 15-05-1984, *Fellingham 537* (NBG, PRE); De Hoop, Oulande, 16 m, (–AD), 20-09-1984, *Morley 174* (NBG); *ibid.*, 1 km from farm house, beside farm road, 20 m, 15-05-54, *Van Wyk 1524* (NBG); Potberg Estates, near Cape Infanta, limestone hills, 160 m, (–BC), 16-06-1974, *Bayliss 6608* (GRA, K, NBG, NY, S, Z); most E-outlier of Potberg range, (–BC), *Burgers 409* (NBG); Potberg Nature Reserve, De Hoop, 70m, (–BC), 08-09-1978, *Burgers 1180* (NBG); *ibid.*, 135 m, 18-10-1978, *Burgers 1435* (NBG); Potberg, sandy, stony flats, (–BC), 19-09-1954, *Esterhuysen 23265* (BOL); S of Potberg, Lekkerwater Farm, (–BC), 08-09-1973, *Powrie 271* (NBG); Potberg, S slopes of Hamerkop, 160-500 m, (–BC), 21-09-1962, *Taylor 4025* (NBG); *ibid.*, 65 m, 65m, 01-01-1971, *Thompson 1105* (NBG); Hamerkop Farm, 80–160 m, (–BC), 19-06-1984, *Van Wyk 1609* (NBG); *ibid.*, calcrete crevices, 65 m, 19-09-1984, *Van Wyk 1886* (NBG); Frans Rietfontein, near Cape Infanta, (–BD), 26-11-1961, *Esterhuysen 29392* (BOL, S); Cape Infanta, (–BD), 15-07-1966, *Thomas s.n. NBG 84653* (NBG); on Witwaters-Elandspad Road, 1 km from Witwater towards sea, 500 m, (–BD), 18-06-1984, *Van Wyk 1555* (NBG); De Hoop, Witwater, 100 m, (–BD), 06-08-1984, *Van Wyk 1709* (NBG); on stony hills near Bredasdorp, 65 m, (–CA), 00-07-1895, *Bolus 6973* (BOL); *ibid.*, 24-08-1940, *Bond 462* (NBG); Paapekuikfontein 281, 1.5 km W of Struisbaai, 40 m, (–CA), 13-04-1998, *Helme 1419* (NBG); Bredasdorp, (–CA), Aug. 1940, *Walgate 74* (BOL); 1 km along entrance road to Zoetendals Vallei farmstead off Bredasdorp/L'Agullas Rd., below 20 m, (CA/CC), *Paterson-Jones 418* (NBG).



—3421 (Riversdale): S of Riversdale, SE of Swartheuwel, $\pm$ 100 m, (–AA), 13-03-1978, *Boucher 3697* (NBG); *ibid.*, 130m, 24-11-1972, *Oliver 4157* (NBG); W of Albertinia, flats W of Dekriet siding, 180 m, (–AB), 16-03-1990, *Beyers 180* (NBG); *ibid.*, 05-01-1991, *Beyers 197* (NBG); *ibid.*, 180 m, 19-03-1975, *Oliver 5698* (NBG); Riversdale Dist., between Riversdale and Albertinia, (–AB), 24-11-1950, *Maguire 466* (NBG, S); Riversdale, (–AB), Aug. 1915, *Rogers 16731* (K, Z); Dekriet Station, roadside on E-side of station, (–AB), 27-11-1979, *Spreeth 160* (NBG); between Albertinia and Riversdale, (–AB/BA), 07-12-1951, *Compton 23173* (NBG); Vermaaklikheid, 34 km W of Still Bay, 210 m, (–AC), 15-03-1978, *Boucher 3737* (NBG); farm Ystervarkfontein near Stillbay, (–AD), 25-04-1990, *Barnard 313* (NBG); Takkiesfontein, $\pm$ 160 m, (–AD), 25-09-1978, *Hugo 1242* (NBG); Still Bay Hills, (–AD), 9-08-1949, *Steyn 331* (NBG, S); Albertinia Dist., Gouriqua, Ystervarkpunt, (–AD), 20-01-1987, *Willemse 13* (NBG); *ibid.*, 20-01-1987, *Willemse 32* (NBG); near Albertinia – to West, 230 m, (–BA), 22-09-1949, *Acocks 15409* (BOL); Ystervarkfontein Road from Albertinia, 330 m, (–BA), 20-03-1978, *Bayliss 8599* (GRA, NBG, NY); Schoemanshoek on Albertinia-The Fisheries Road, 100 m, (–BA), 14-03-1978, *Boucher 3714* (NBG); near Albertinia, (–BA), 30-01-1951, *Compton 22595* (NBG); Albertinia, (–BA), 15-04-1952, *Compton 23527* (NBG); *ibid.*, 15-04-1952, *Compton 23528* (NBG); *ibid.*, 16-04-1956, *Winkler 54* (NBG); National Road near Albertinia, in sand, (–BA), 07-12-1951, *Esterhuysen 19509* (BOL); roadside near Albertinia, (–BA), 27-07-1953, *Leighton 3036* (BOL); Albertinia, (–BA), 03-05-1955, *Lewis 4689* (SAM); S-facing slopes of Olifantsberg along road from Albertinia to Gourits, 200 m, (–BA), 21-10-1987, *McDonald 1395* (NBG); Albertinia dunes, (–BA), Oct. 1912, *Muir 1823* (BOL); farm Platbos on road to Gourits River mouth, S facing, 130 m, (–BA), 20-09-1973, *Thompson 2012* (NBG); Akkordskop, S of Albertinia, 200 m, (–BC), 21-03-1975, *Oliver 5746* (NBG); Gourits mouth, 2 km W of entrance gate to Gourikwa, on new road, 200 m, (–BC), 20-07-1990, *Bohnen 9093* (NBG); Gouriqua, Ystervarkpunt, 120 m, (–BC), 16-06-1987, *Willemse 210* (NBG). Without locality: *Mundt s.n.* [42. *Passerina brunioides* Eckl. & Zeyh., 91] (S).

7. *Lachnaea leipoldtii* Beyers, sp. nov. *L. axillaris* parte superiore hypanthii
basaliter invaginata affinis, sed parte superiore hypanthii obconica (non cyathiformi)
stigmatum conico (non capitato).

TYPE.—Western Cape, 3219 (Wuppertal): North Cederberg, between Heuningvlei and Boontjieskloof in moist, sandy flats between Heuningvlei and Koupoort, $\pm$ 950 m, (–AA), 28-12-1983, *Taylor 10871* (NBG, holo.!, PRE!, iso).

Erect to decumbent, much-branched, shrub to 0.4 m tall, single-stemmed at base, branching close to the ground; reseed. *Branches* ascending to patent, flexuous, slender, terete, tomentose, leafy, becoming sparsely hairy and naked without prominent leaf scars. *Leaves* decussate, adpressed, scattered, internodes three-quarters to one and a half times as long as leaves, distal two pairs of leaves subverticillate, sessile, epistomatic, narrowly



elliptic to ovate, $2.2\text{--}3.5 \times 0.8\text{--}1.2$ mm, coriaceous, glabrous, adaxially concave, enervate, dull, $\pm$ white-punctate, abaxially convex, keeled, glossy, enervate, apex acute, base rounded. *Inflorescence* terminal, one-flowered, sericeous-villous at floral articulation. *Flowers* sessile, subactinomorphic, white. *Hypanthium* 2.6–3.6 mm long, circumscissile one-third from base, upper portion narrowly obconical with basal invagination, sericeous outside, but at basal invagination hairs retrose, glabrous within but barbate at circumscission zone, basal portion ellipsoid or obovoid, glabrous outside and within. *Sepals* ascending, subequal, very widely ovate to oblate, $1.5\text{--}2.0 \times 1.5\text{--}1.9$ mm, apex rounded to obtuse, sericeous abaxially, glabrous adaxially. *Stamens* outer, antisepalous whorl exserted or half exserted, inserted a sixth to a quarter-way down upper portion of hypanthium, inner, antipetalous whorl enclosed, inserted two-thirds way down upper portion of hypanthium; filaments usually shorter than anthers, 0.3–0.7 mm long, inner whorl usually as long as outer whorl; anthers ellipsoid to widely ellipsoid, 0.5–0.8 mm long, dorsally with broad connective tissue. *Scales* enclosed, inserted just above circumscission zone partially concealed by stiff hairs at base, subglobose, ± 0.2 mm long, glabrous. *Ovary* ellipsoid, 0.5–1.0 mm long, glabrous. *Style* linear-obconical, 0.9–2.4 mm long, glabrous. *Stigma* conical and papillate (Figure 7.13).

Distribution and ecology

Lachnaea leipoldtii is endemic to the Northern Cederberg. It favours moist, sandy areas at an altitude of approximately 1000 m (Figure 7.14). Flowering has been recorded in December and February.

Conservation status: Vulnerable (VU D2). This species has a restricted distribution and being a reseeder would be vulnerable to frequent mountain fires.

Diagnostic characters and relationships

Lachnaea leipoldtii is allied to *L. axillaris* with the upper portion of the hypanthium basally invaginated but differs in that the upper portion of the hypanthium is narrowly obconical and not cup-shaped and the stigma is conical-papillate and not capitate-papillate. *L. leipoldtii* is sister to *L. pusilla* but differs in that the basal portion of the hypanthium is glabrous outside and the stigma is conical and papillate.

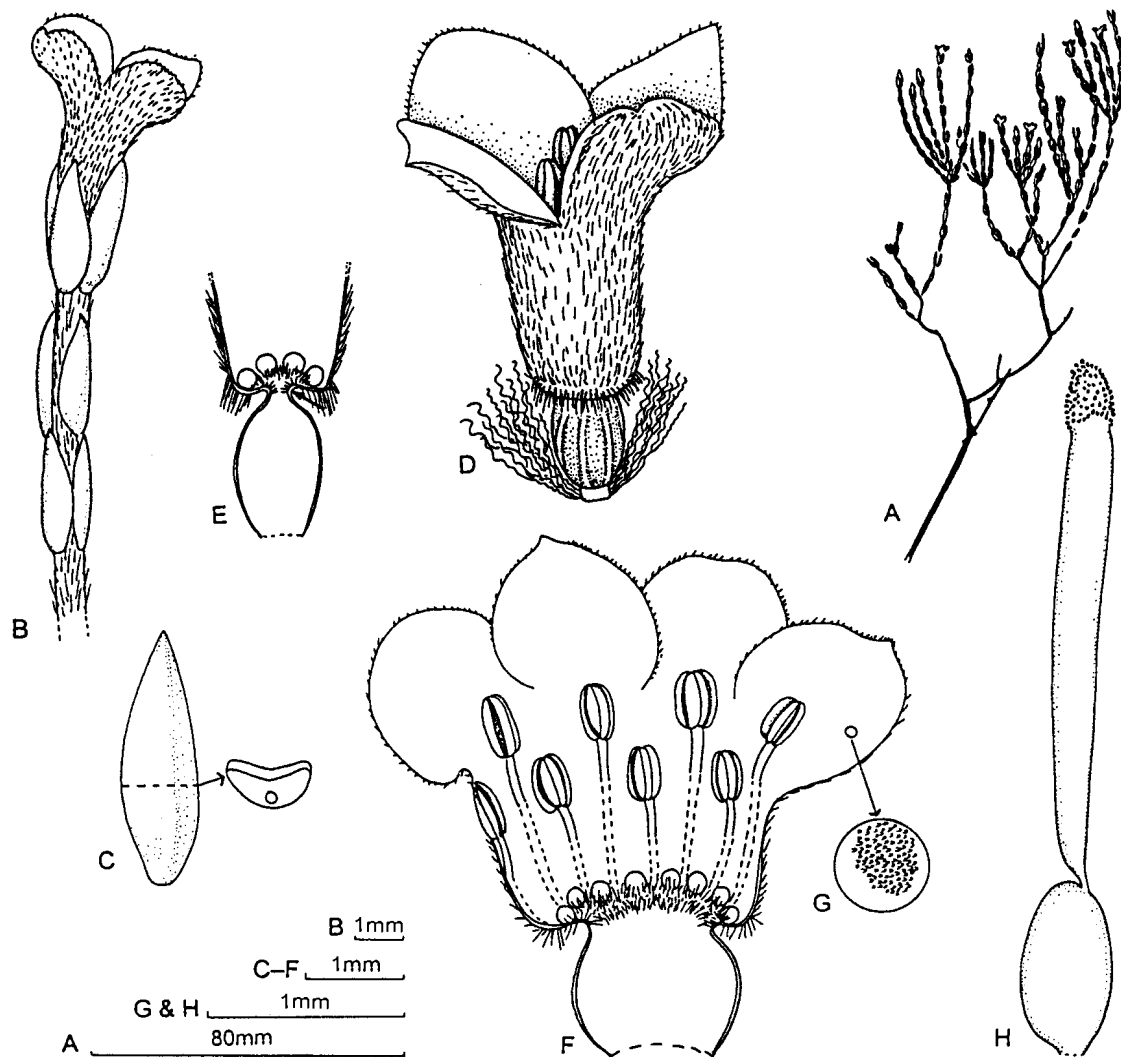


FIGURE 7.13—*Lachnaea leipoldtii*, Taylor 10871 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower; E, hypanthium (longitudinal section), note circumscission zone (arrowed); F, flower split longitudinally with gynoecium removed; G, inner surface of sepal papillate; H, gynoecium.

Eponymy

This species was first collected in 1889 by Dr. C. L. Leipoldt, a renowned Afrikaans poet and keen amateur botanist. Since the first collection, three other collections have been made close to his grave, thus prompting the choice of the specific epithet.

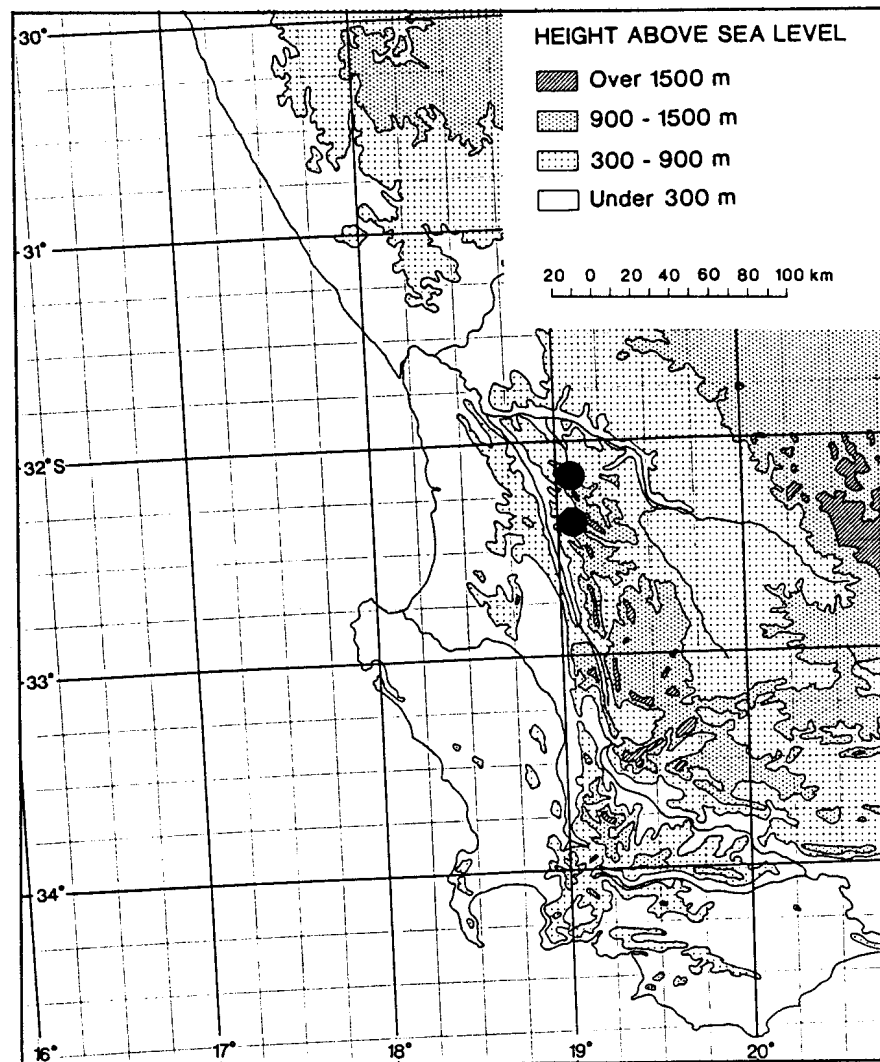


FIGURE 7.14—Known distribution of *Lachnaea leipoldtii*.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): North Cederberg, between Heuningvlei and Boontjieskloof, (–AA), 18-12-1977, *Esterhuysen 34831* (BOL); *ibid.*, 31-12-1941, *Esterhuysen 7523* (BOL); *ibid.*, moist, sandy flats between Koupoort and Heuningvlei, ± 950 m, 28-12-1983, *Taylor 10871* (NBG, PRE); Grootberg, Clanwilliam, 1000 m, (–AC), Feb. 1898, *Leipoldt 1047* (BOL).

8. *Lachnaea pusilla* Beyers, sp. nov. *L. leipoldtii* proxime affinis, sed differt parte basali hypanthii extra pilis obtusis in parte superiore (non omnino glabra) stigmatibus lineari-conicis (non conicis).

TYPE.—Western Cape, 3319 (Worcester): Wellington District, Elandsberg Private Nature Reserve, in restioid flats between Elandskloof Mountains and fields in Tortoise

Reserve, 70 m, (–AC), 4-10-1994, *Beyers* 243 (NBG, holo.!: BOL!, KEW!, NY!, PRE!, Z!, iso.)

Straggling, erect, much branched, shrub to 0.4 m tall, single-stemmed at base; reseeded. *Branches* ascending to patent, flexuous, filiform, terete, sericeous, leafy, becoming glabrous and naked without prominent leaf scars. *Leaves* decussate, adpressed, internodes three-quarters to as long as the leaves, distal two pairs of leaves subverticillate, sessile, epistomatic, narrowly elliptic, $2.8\text{--}3.2 \times 0.6\text{--}0.7$ mm, coriaceous, glabrous, adaxially concave, enervate, dull, $\pm$ white-punctate, abaxially convex, subkeeled, glossy, apex subacute, base rounded. *Inflorescence* terminal, one-flowered, villous at floral articulation. *Flowers* sessile, subactinomorphic, white, some tinged pale pink. *Hypanthium* 2.3–3.2 mm long, circumscissile quarter to one-third from base, upper portion narrowly obconical with basal invagination, sericeous outside, but at basal invagination hairs retrose, inside sericeous at mouth, glabrescent towards base and barbate at base of scales, basal portion ellipsoid or obovoid, outside puberulent in upper and lower third, middle portion covered with ascending, obtuse hairs, inside adpressed hairy at plane of circumscission, glabrous below. *Sepals* erect-patent, subequal, elliptic to widely elliptic, $1.4\text{--}2.5 \times 1.2\text{--}1.7$ mm, rounded to obtuse, sericeous on both sides. *Stamens* outer, antisepalous whorl exserted, inserted at mouth of hypanthium, inner, antipetalous whorl enclosed, inserted two-fifths way down upper portion of hypanthium; filaments as long or shorter than anthers, 0.2–0.5 mm long, inner whorl shorter or as long as outer whorl; anthers ellipsoid to ovoid, 0.5–0.7 mm long, dorsally with broad connective tissue. *Scales* enclosed, inserted just above circumscission zone partially concealed by stiff hairs at base, subglobose, 0.2–0.3 mm long, glabrous, yellow in fresh state. *Ovary* ellipsoid, 0.8–0.9 mm long, glabrous. *Style* linear-obconical, 0.7–1.0 mm long, glabrous. *Stigma* linear-conical, papillate, 1.6–2.0 mm long (Figure 7.15).

Distribution and ecology

Recorded from Nuwekloof southwest of Tulbagh southwards along Elandskloof Mountains to the western foot of Bailey's Peak north of Wellington, occurring in stony sand between 70 and 1000 m above sea level (Figure 7.16). Flowering has been recorded from October to March.

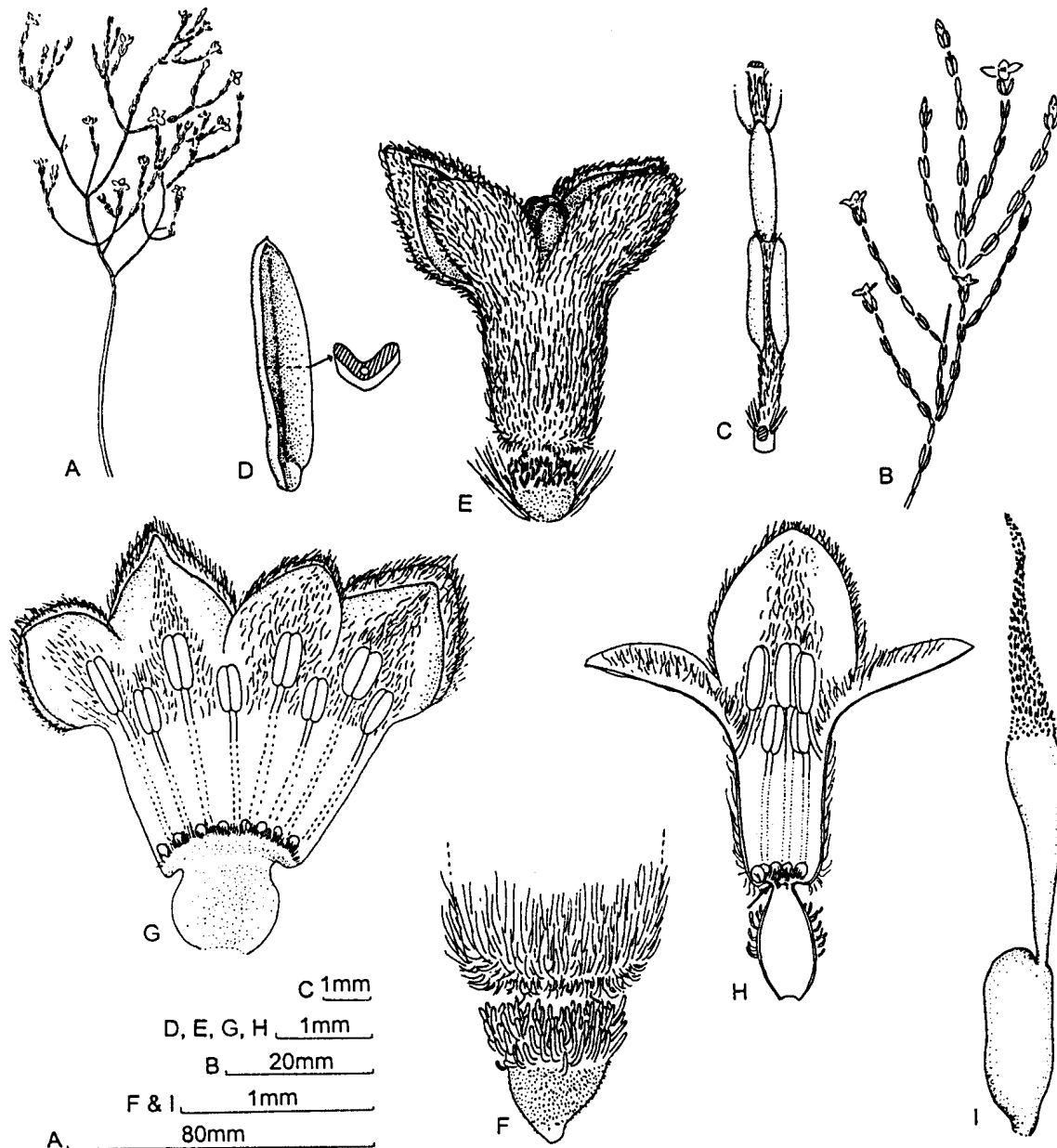


FIGURE 7.15—*Lachnaea pusilla*, Beyers 243 (NBG). A, portion of plant; B, portion of plant (enlarged); C, branch with leaves; D leaf (lateral view and cross section); E, flower; F, hypanthium (enlarged); G, flower split longitudinally with gynoecium removed; H, longitudinal section of flower, note circumscission zone (arrowed); I, gynoecium.

Conservation status: Vulnerable (VU D2). This species has a restricted distribution and although also occurring in a private nature reserve, would be vulnerable to frequent fires as it is a reseeder.

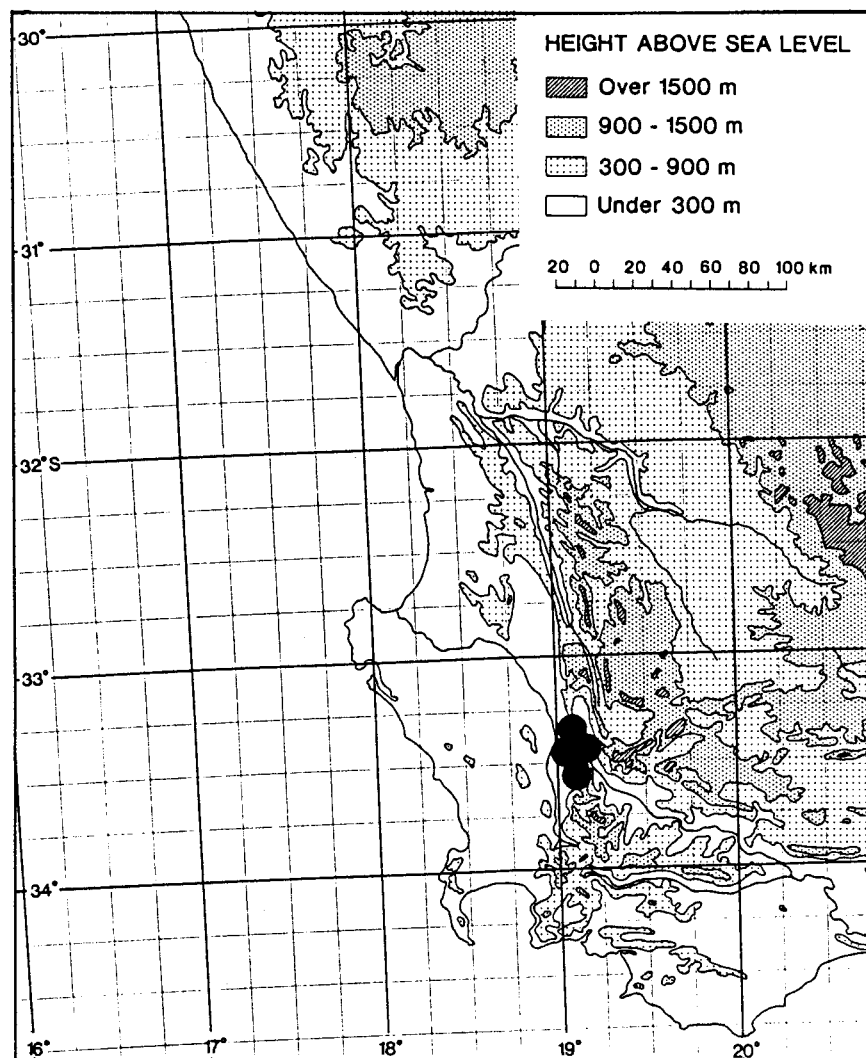


FIGURE 7.16—Known distribution of *Lachnaea pusilla*.

Diagnostic characters and relationships

Lachnaea pusilla is closely allied to *L. leipoldtii* but differs in that the basal portion of the hypanthium outside is covered with obtuse hairs in the upper half and the stigma is linear-conical, papillate.

Etymology

The specific epithet, means very small, and refers to the tiny flowers.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Wellington Dist., Elandsberg Private Nature Reserve, restioid flats between Elandskloof Mtns and fields in Tortoise Reserve, 70 m, (–AC), 04-10-1994, *Beyers* 243 (BOL, K, NBG, NY, PRE, Z); *ibid.*, 13-11-1986, *De Villiers* 45 (NBG); Nieuwekloof, 1000 m, (–AC), 17-02-1896, *Schlechter* 1195 (PRE); *ibid.* 1000 m, 17-02-1896, *Schlechter* 7503 (BOL, GRA, K, S, Z); Paarl Div., W. foot of Bailey's Peak, (–CA), 22-11-1953, *Esterhuysen* 22341 (PRE, BOL).

9. *Lachnaea laxa* (C.H.Wright) *Beyers* in *Bothalia* 27,1: 45 (1997). *Crytadenia laxa* C.H.Wright *Flora capensis* 5,2: 17 (1915). Syntypes: Caledon Div., Swartberg, near Caledon, 3200 ft., *Bolus* 7875 (BOL!); near Houw Hoek, 2000 ft., *Bolus* 9208 (BOL!); Bredasdorp Div., near Elim, *Bolus* 7876 (BOL!. PRE!); without locality *Harvey s.n.* (K, lecto.! here designated; K!, isolecto.).

Note: Wright cites the locality of *Bolus* 9208 as “near Houw Hoek, 2000 ft”. Only the sheet in BOL has the collecting no 9208, but the locality is questioned and there is no date. Sheets of *Bolus* HNAA 1353 (BOL, K, NBG, SAM, Z) correspond to the locality and altitude given by Wright [sheet in BOL determined by Wright] for *Bolus* 9208. Unfortunately one cannot assume that they were referred to as types. *Harvey s.n.* sub. *herb.* *Hooker* (K) is selected as the lectotype, as it is the only one determined by Wright. The isolectotype is mounted on the same sheet as *Bolus* HNAA 1353 (K).

Erect to decumbent, sparsely to moderately branched shrub to 0.3 m tall, single-stemmed at base, branching close to the ground; reseeder. *Branches* slender, lax to straggling, ridged below the leaf bases, at first sericeous, leafy, later glabrescent and naked with inconspicuous leaf scars. Leaves decussate, adpressed to ascending, scattered, internodes three-quarters to one and a third as long as leaves, distal two pairs of leaves subverticillate, sessile, narrowly elliptic to lanceolate, 3.8–7.6 × 0.6–1.3 mm, coriaceous, glabrous, adaxially concave, smooth, dull, ± white-punctate, abaxially convex, smooth or keeled, glossy, apex acute, base obtuse. *Inflorescence* terminal, one-flowered, sericeous at floral articulation. *Flowers* sessile, subactinomorphic, cream to pink. *Hypanthium* 3.8–8.0 mm long, circumscissile ± a third from base, upper portion funnel-shaped, basal portion narrowly ovoid, sericeous outside, upper portion adpressed hairy within, basal portion glabrous within. *Sepals* erect-patent, subequal, narrowly elliptic to elliptic, 2.8–8.5 × 1.3–4.2 mm, acute to subacute, abaxially sericeous, adaxially sparsely sericeous or sericeous

only in upper quarter, lower three-quarters glabrous. *Stamens* exserted, the outer, antisealous whorl inserted at base to lower fifth of sepals, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, 0.4–2.0 mm long, inner shorter than outer whorl; anthers ellipsoid, 0.6–1.2 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium just below the antipetalous stamens, narrowly ellipsoid, 0.5–1.3 mm long, glabrous, translucent-white in fresh state. *Ovary* narrowly ellipsoid to ellipsoid or obovoid, 0.8–1.2 mm long, glabrous. *Style* linear, 2.8–6.0 mm long, covered with soft, ascending hairs in upper half. *Stigma* brush-like (Figure 7.17).

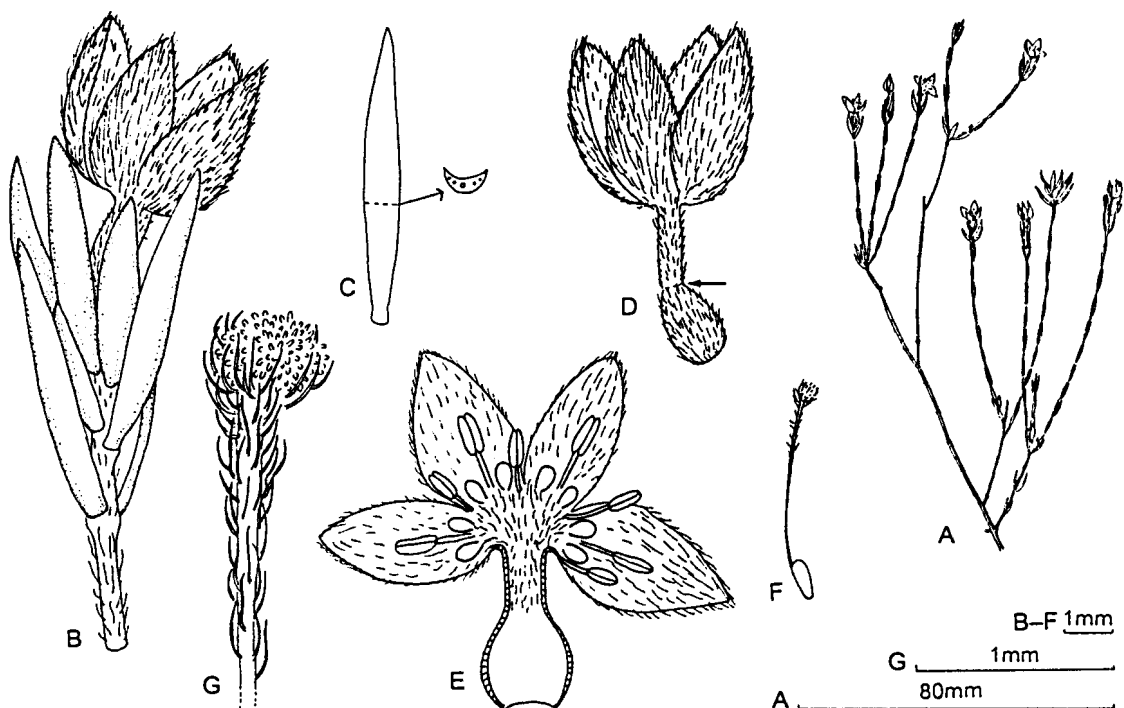


FIGURE 7.17—*Lachnaea laxa*, I, Oliver 4 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower, note circumscission zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium; G, stigma and upper portion of style (enlarged).

Distribution and ecology

Recorded from the Jonkershoek and Hottentots Holland Mountains eastwards to Genadendal and southeast to the Houhoek Mountains and Swartberg, above Caledon. It has also been recorded from Elim but no precise locality is given. It occurs on mid to upper slopes, at altitudes between 400 and 2150 m, favouring damp, sandy areas (Figure 7.18). Flowering has been recorded in October to December.

Conservation status: Vulnerable (VU D2). Although only known from a few collections, most of which are old, it occurs in a restricted area on high mountains. From the available collections it appears to be a reseeder and would therefore be vulnerable to frequent fires.

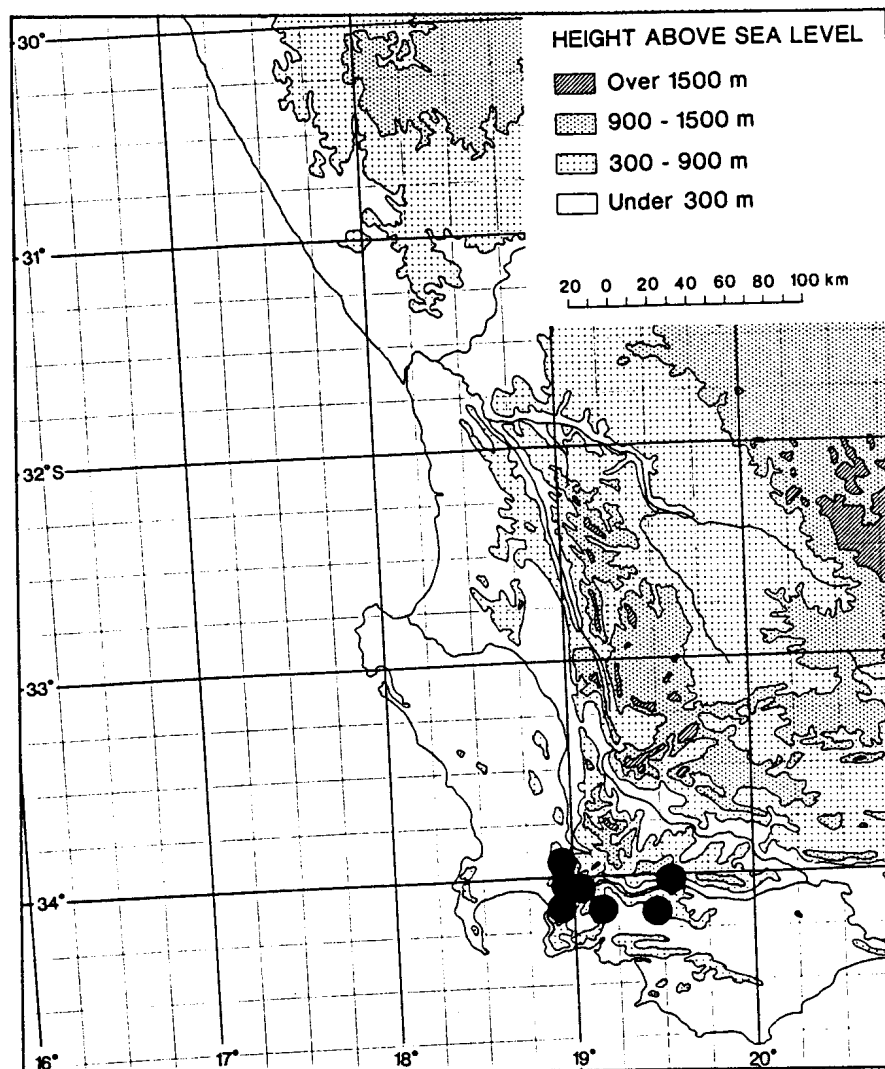


FIGURE 7.18—Known distribution of *Lachnaea laxa*.

Diagnostic characters

Lachnaea laxa is easily distinguished from the other solitary-flowered species with a decussate leaf arrangement and cream to pink flowers by the upper portion of the hypanthium being funnel-shaped and the scales being inserted at the mouth of the hypanthium.

Specimens examined

WESTERN CAPE.—3318 (Cape Town): Stellenbosch, Jonkershoek Valley, S slopes beyond head of valley, en route to Victoria Peak, 1000 m, (–DD), 15-10-1950, *Esterhuysen 17598* (BOL, NBG).
—3418 (Simonstown): Hottentots Holland Mountains, Sugarloaf [Verkykerskop], summit, coarse sand, ± 2150 m, (–BB), 10-11-1974, *Boucher 2637* (NBG); Kogelberg Nature Reserve, 2 km NE of Rockview Dam, 400 m, (–BB), *Johns A 5* (NBG).
—3419 (Caledon): near Elim (precise locality unknown), Oct. 1894, *Bolus 7876* (BOL, PRE); near Houhoek, mountain slopes, 665 m, (–AA), Oct. 1885, *Bolus HNAA 1353* (BOL, K, NBG, SAM, Z); Lebanon Slopes, in marsh on slopes towards Houhoek, ± 500–665 m, (–AA), 28-09-1975, *Esterhuysen 33988* (BOL); valley between Dwarsberg and Victoria Peak, (–AA), 10-10-1990, *Oliver I. 4* (NBG, PRE); Houhoek Mountain, summit, 1200 m, (–AA), 14-10-1894, *Schlechter 5444* (GRA, Z); Swartberg, near Caledon, 1065 m, (–AB), Dec. 1894, *Bolus 7875* (BOL); Genadendal, 1000 m, (–BA), 28-12-1895, *Bodkin sub Herb. Guthrie 3585* (NBG). Grid ref. unknown: near Houhoek ? (locality uncertain), *Bolus 9208* (BOL). Without locality: *Harvey s.n.* (K).

10. *Lachnaea ruscifolia* *Compton*, Journal of South African Botany 19: 132 (1953).
Type: Western Cape, 3321 (Ladismith): Klein Swartberg Range, Elandsberg, 2000 ft, (–AD), July/August 1953, *Wurts 1036* (NBG, holo.!, K!, PRE!, iso.).

Erect, moderately branched shrub up to 0.8 m tall, multistemmed at base; resprouter. *Branches* erect, slender to moderately thick, ridged below leaf bases, covered with long, straight, adpressed hairs admixed with crooked ones, densely leafy, later glabrescent and naked with prominent leaf scars. *Leaves* alternate, ascending to patent, imbricate, sessile to subsessile, epistomatic, ovate to orbicular, 5.0–10.5 × 2.6–5.5 mm, coriaceous, green, glabrous, adaxially obtusely concave, smooth, dull, ± white-punctate, abaxially convex, glossy, with 6–9 ridges converging to base and apex, apex acute to subacute, base cuneate, margin indurated, at first pilose, later deciduous, becoming naked, petiole up to 0.6 mm long. *Inflorescence* terminal, one-flowered, but appearing to be axillary as apical meristem of main branches seems to abort and flowers borne only on much reduced, lateral flowering shoots, comprising usually one pair of small, scarious, bracteose leaves and a solitary flower, which develop at random in axils of foliage leaves on main flowering branches thus appearing spicate-like. *Flowers* sessile, subactinomorphic, creamy white. *Hypanthium* 2.7–4.7 mm long, circumscissile one-third from base, upper portion narrowly funnel-shaped, tomentose outside, adpressed villous within, basal portion ellipsoid, tomentose outside, glabrous within. *Sepals* ascending, subequal, elliptic to narrowly ovate,

2.8–4.5 × 1.5–2.2 mm, subacute to obtuse, both surfaces tomentose. *Stamens* exserted, outer, antisealous whorl inserted at base of sepals, 0.9–1.3 mm long, inner, antipetalous whorl inserted at rim of hypanthium, 0.9–1.1 mm long; anthers spheroid, 0.3–0.5 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium, immediately below antipetalous stamens, ovate to obovate in outline, laterally flattened, 0.6–1.0 mm long, glabrous, yellow in fresh state. *Ovary* ovoid, 0.8–1.1 mm long, usually glabrous but occasionally with tuft of hair at base of style. *Style* linear-obconical, 2.7–4.5 mm long, with incurled hairs in upper half, rest glabrous. *Stigma* capitate, elongate-papillate (Figure 7.19).

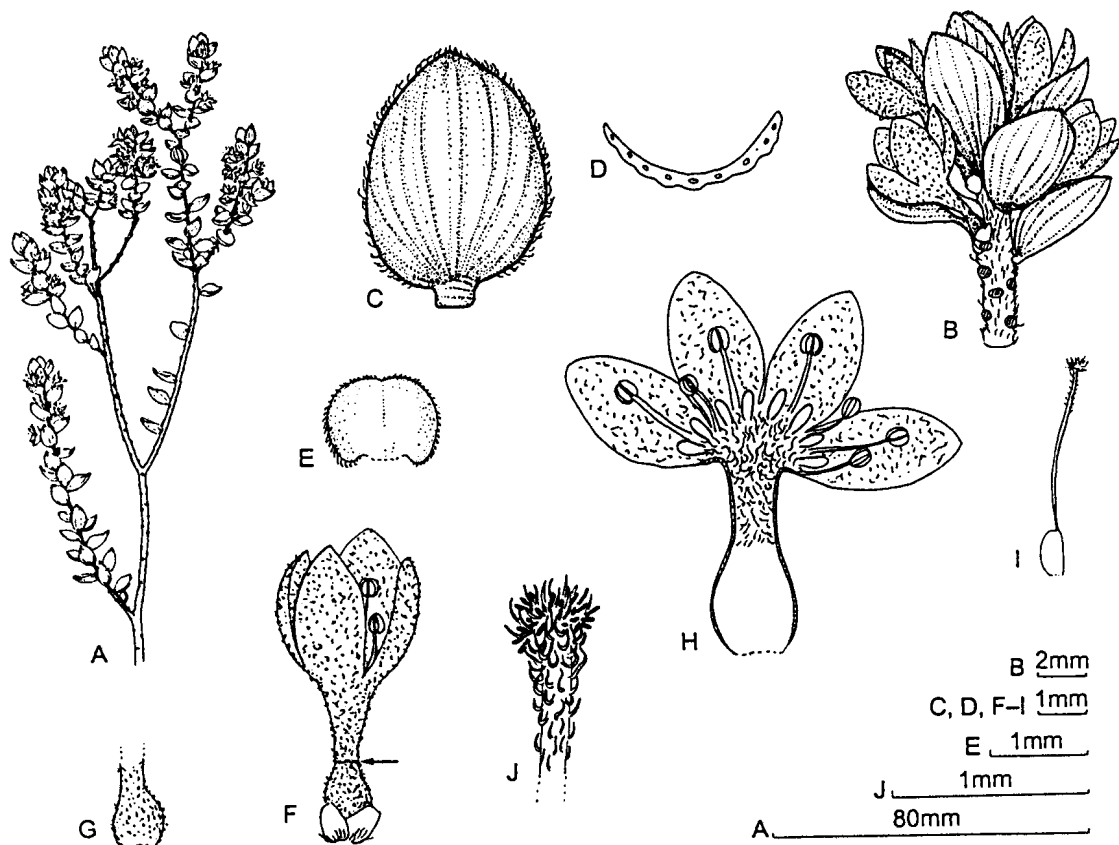


FIGURE 7.19—*Lachnaea ruscifolia*, Vlok 2084 (NBG). A, portion of plant; B, flowering branch; C & D, leaves: C, abaxial view; D, cross section; E, scarious, bracteose leaf; F, flower with bracteose leaves at base, note circumscission zone (arrowed); G, basal portion of hypanthium; H, flower split longitudinally with gynoecium removed; I, gynoecium; J, stigma and upper portion of style (enlarged).

Distribution and ecology

Confined to the mountains of the Little Karoo, from the Klein Swartberg and Rooiberg in the west to the Groot Swartberg and Gamka Mountain in the east, at altitudes between 650 and 1150 m, growing in rocky, sandy loam soils (Figure 7.20). Flowering has been recorded in December to September.

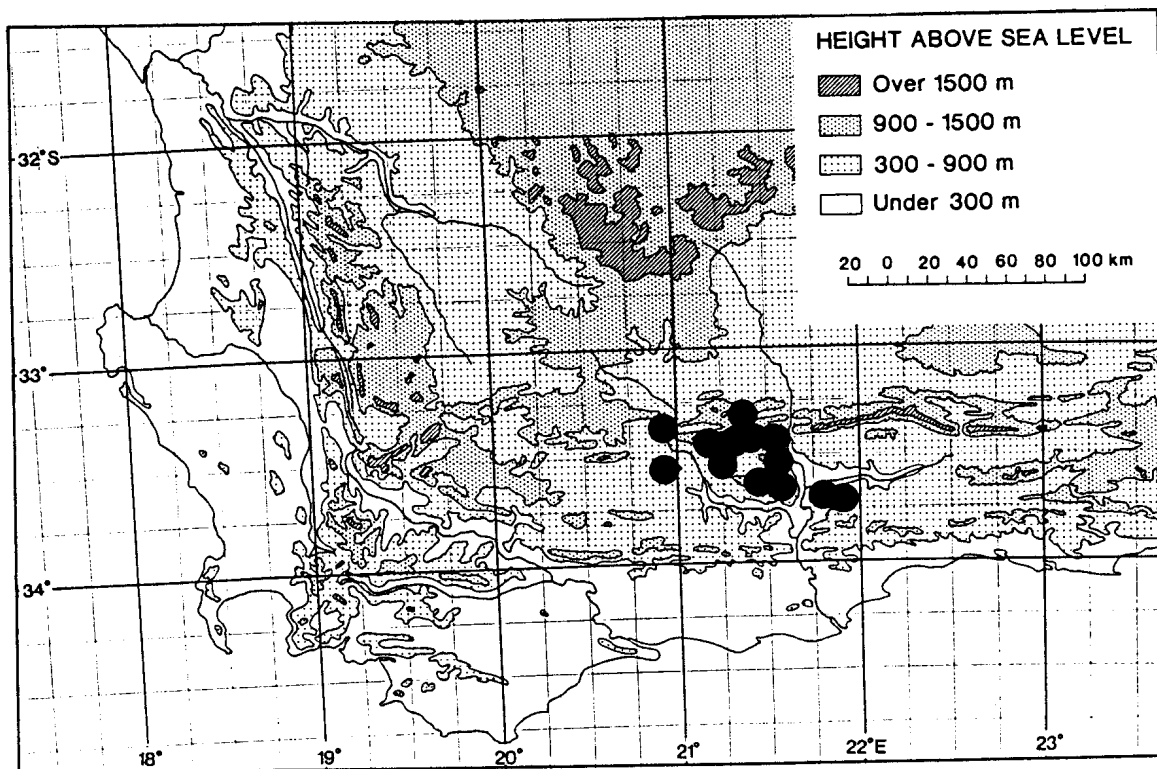


FIGURE 7.20—Known distribution of *Lachnaea ruscifolia*.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters

Lachnaea ruscifolia is easily distinguished from the other one-flowered species by the alternate, ovate to orbicular leaves with six to nine prominent ridges below.

Specimens examined

WESTERN CAPE.—3320 (Montagu): Klein Swartberg, above Buffelsrivierpoort 1000-1330 m, (–BD) 31-03-1988, Goldblatt & Manning 8870 (NBG); *ibid.*, above Aasvoëlkrans, 1000 m, 03-01-1981, Vlok

166 (NBG); *ibid.*, next to forestry track at Buffelsrivierpoort 760 m, 07-05-1985, *Vlok 993* (NBG); Touwsberg, Ladismith, rocky S slopes, 1155–1330 m, (–DB), 01-06-1956, *Esterhuysen 25893* (BOL). —3321 (Ladismith): Brandewynskuil, Bobuffelskloof at base of Swartberg, (–AC), 17-08-1975, *Esterhuysen 33905* (BOL, S); lower slopes of Swartberg, Ladismith, 760 m, (–AC/AD), Jul. 1929, *Levyms 2734* (BOL); Seweweekspoort near Ladismith, 660 m, (–AD), 04-05-1965, *Bayliss 2821* (NBG, Z); Korrelland (Waterkloof), N of Ladismith, 650 m, (–AD), 31-07-1956, *Dahlgren & Peterson 39* (K, NBG); koppie at foot of Swartberg, Ladismith, 730 m, (–AD), 02-09-1941, *Levyms 7399* (BOL); koppie N of Ladismith, 830 m, (–AD), 16-08-1948, *Levyms 9045* (BOL); Klein Swartberg, Steenslang, 1305 m, (–AD), 15-06-1983, *Marshall 39* (NBG); *ibid.*, Elandsberg, Ladismith, 660 m, 12-08-1953 *Wurts 1036* (NBG); *ibid.*, S slopes Ladismith 1330 m, 04-05-1955, *Wurts 1342* (NBG); Paardeberg at head of Huis R. Pass, Ladismith, (–BC), 23-05-1950, *Esterhuysen 17108* (BOL, NBG); Groot Swartberg, N slopes of Kangoberg, 1830 m, (–BD), 17-01-1954, *Taylor 1100* (NBG, SAM); koppie near Ladismith, 660 m, (–CA/CB), Jul. 1927, *Levyms 2126* (BOL), *Levyms 2127* (BOL); *ibid.*, 800 m, 09-07-1937, *Levyms 6101* (BOL); Rooiberg, S slopes, Mount Ararat, along jeep track, NW aspect, 1330 m, (–CB), 08-08-1990, *Beyers 193* (NBG); *ibid.*, 20-01-1989 *Vlok 2084* (NBG); Roodeberg, S slopes, Ladismith, (–CB/DA), 24-05-1950, *Esterhuysen 17193* (BOL); *ibid.*, 1300 m, 06-07-1937, *Levyms 6073* (BOL); along Rooiberg, road to Pass, Ladismith, ± 960 m, (–DA), 18-04-1977, *Taylor 9601* (NBG); Calitzdorp Dist., Opsoek, E of Amalienstein, 970 m, (–DA), 01-08-1956, *Dahlgren & Peterson 64* (NBG); Gamka Mountain Reserve, S slope, (–DB), 16-01-1977, *Boshoff 358* (NBG); *ibid.*, 22-05-1975, *Boshoff P75* (NBG); *ibid.*, Bakenskop, 1200 m, 24-01-1983, *Cattell & Cattell 230* (NBG); *ibid.*, near Calitzdorp, 23-05-1975, *Esterhuysen 33848* (BOL); *ibid.*, between Syferwater and Paddafluitjies Kloof, 900 m, 13-04-1988, *Erasmus 155* (NBG); *ibid.*, Calitzdorp, on crest of mountain, 1060 m, 07-12-1987, *Vlok 1898* (NBG).

11. ***Lachnaea alpina* Meisn.** in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 578 (1857); C.H. Wright: 583 (1925). Type: In mountain Winterhoeksberg, near Tulbagh, alt. 6000 ft, *Ecklon s.n.* (NY, holo.!, S!, SAM!, iso.).

Gonophylla alpina Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 578 (1857) in synonymy.

Erect, much-branched shrub up to 1 m tall, single-stemmed at base with capacity to sprout from base of old branches; reseeder. *Branches* ascending, slender, later becoming woody, ridged below leaf bases, glabrous or at first hirsute below inflorescence becoming glabrous, densely leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending, imbricate, subsessile, epistomatic, glabrous, narrowly elliptic to obovate, 5.0–10.0 × 1.5–3.0 mm, coriaceous, green, faintly midveined, adaxially flat or obtusely concave, dull, white-punctate, abaxially flat or obtusely convex, glossy, smooth, apex

rounded to acute, straight or slightly incurved, base attenuate. *Inflorescence* a terminal, ebracteate capitulum, 1.5–2.5 cm in diameter, $\pm$ 12–40-flowered, pedunculate; peduncle 3–20 mm long, sericeous-hirsute. *Receptacle* subconical, $2.0\text{--}3.2 \times 2.2\text{--}3.5$ mm, sericeous. *Flowers* sessile, subactinomorphic to zygomorphic, pale blue, mauve or cream, strongly honey-scented. *Hypanthium* 4.3–6.8 mm long, circumscissile third to midway from base, upper portion funnel-shaped, basal portion ellipsoid, sericeous-villosulus outside, adpressed hairy inside above plane of circumscission, glabrous below. *Sepals* patent, unequal, abaxially sericeous-villosulus, adaxially sericeous, elliptic, ovate or obovate, apex acute to rounded, anterior and lateral sepals $\pm$ equal, $2.9\text{--}5.4 \times 1.4\text{--}3.0$, posterior one smallest, $2.1\text{--}3.8 \times 1.3\text{--}3.0$ mm. *Stamens* exserted, outer, antisealous whorl inserted near base of sepals, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, 0.7–2.0 mm long, inner whorl as long as or slightly shorter than outer whorl; anthers depressed spheroid, 0.4–0.5 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, obovoid, 0.4–0.6 mm long, hirsute, yellow in fresh state. *Ovary* obovoid, 0.9–1.5 mm long, apex sericeous, glabrous below. *Style* filiform, covered with silky, ascending hairs. *Stigma* brush-like (Figure 7.21).

Distribution and ecology

Lachnaea alpina is known only from the mountains in the Tulbagh and Ceres Districts, occurring at altitudes between 1600 and 2100 m (Figure 7.22). Flowering has been recorded from November to January.

Conservation status: Vulnerable (VU D2). This species has a restricted distribution and being a reseeder would be vulnerable to frequent mountain fires.

Diagnostic characters and relationships

Lachnaea alpina belongs to the group of species with capitate inflorescences. It is easily distinguished from *L. macrantha*, the only other species in this group which also has epistomatic leaves, by its honey-scented, subactinomorphic to slightly zygomorphic flowers, with the posterior sepal either equal to or slightly shorter than the other sepals.

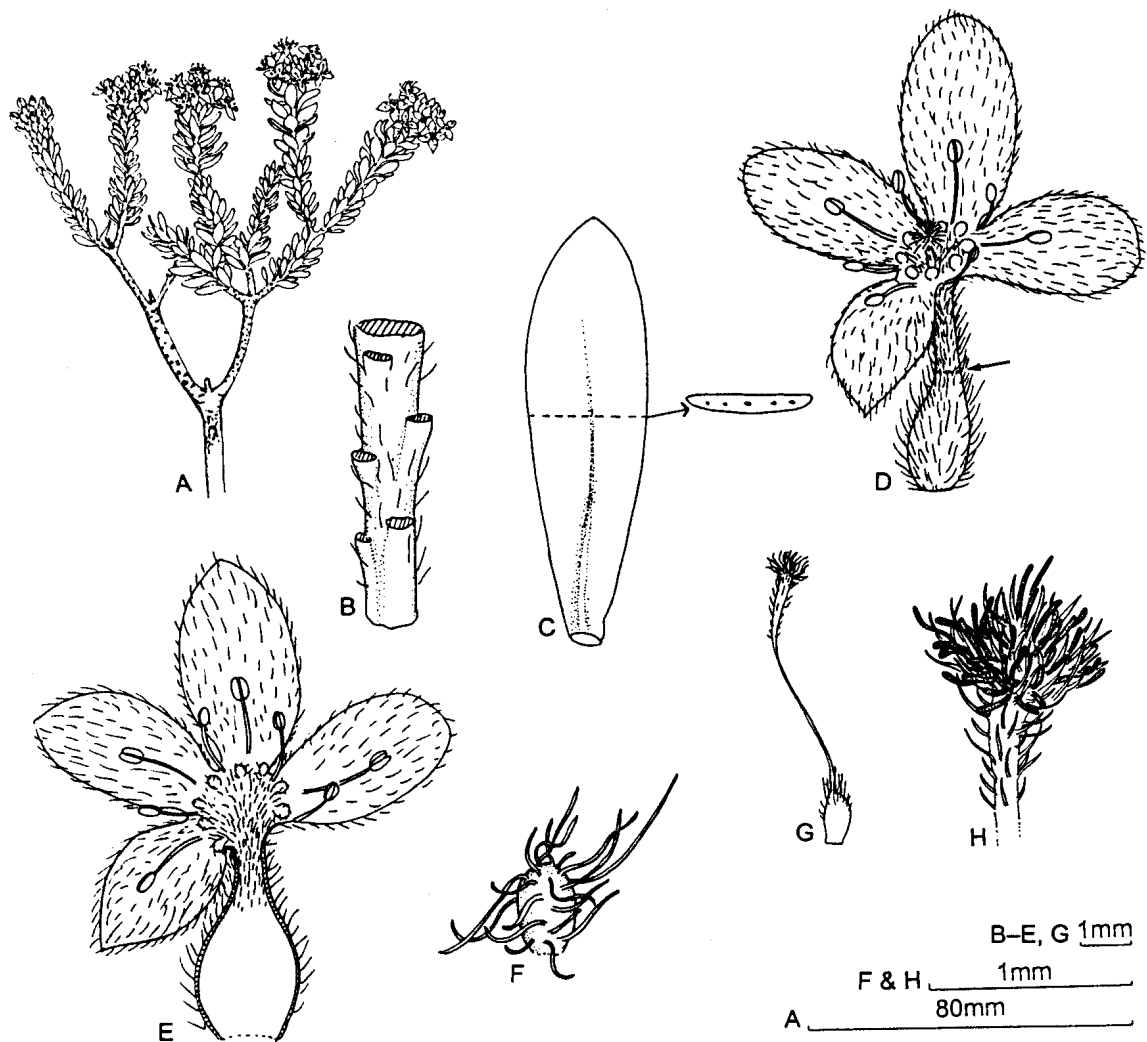


FIGURE 7.21—*Lachnaea alpina*, Beyers 258 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D, flower, note circumscission zone (arrowed); E, flower split longitudinally with gynoecium removed; F, scale; G, gynoecium; H, stigma and upper portion of style (enlarged).

Specimens examined

WESTERN CAPE.—3319 (Worcester): Tulbagh, Winterhoek Mtns, 1800 m, (–AA), Nov. 1879, *Bolus 5441* (BOL); Winterhoekberg [Winterhoek Mtn] near Tulbagh, 2000 m, (–AA), November, *Ecklon s.n.* (NY), *Ecklon 71* (S), *Ecklon & Zeyher 71* (SAM!); Groot Winterhoek Mtns, 2000 m, (–AA), 2-01-1927, *Andreae 1133* (NBG); *ibid.*, 2000 m, 31-12-1951, *Esterhuysen 19799* (BOL); Ceres Dist., Waboomsberg, summit ridge W of beacon, 1720 m, (–AD), 24-11-1995, *Beyers 258* (NBG); *ibid.*, 1700 m, 12-11-1989, *Oliver 9299* (BOL, K, NBG, PRE); Ceres Dist., Baviaansberg, 2000 m, (–BA), 2-01-1942, *Bond 1454* (BOL); *ibid.*, 2100 m, 4-11-1962, *Esterhuysen 29830* (BOL); *ibid.*, 1900 m, 5-11-1989, *Forsyth 508* (NBG);

ibid., 2100 m, Jan. 1937, *Stokoe* 4502 (BOL), *Stokoe* SAM 52720 (SAM); *ibid.*, 1800–2000 m, 10-01-1956, *Stokoe* SAM 68239 (BOL, NBG, SAM). Without locality: *Stokoe* 6474 (BOL).

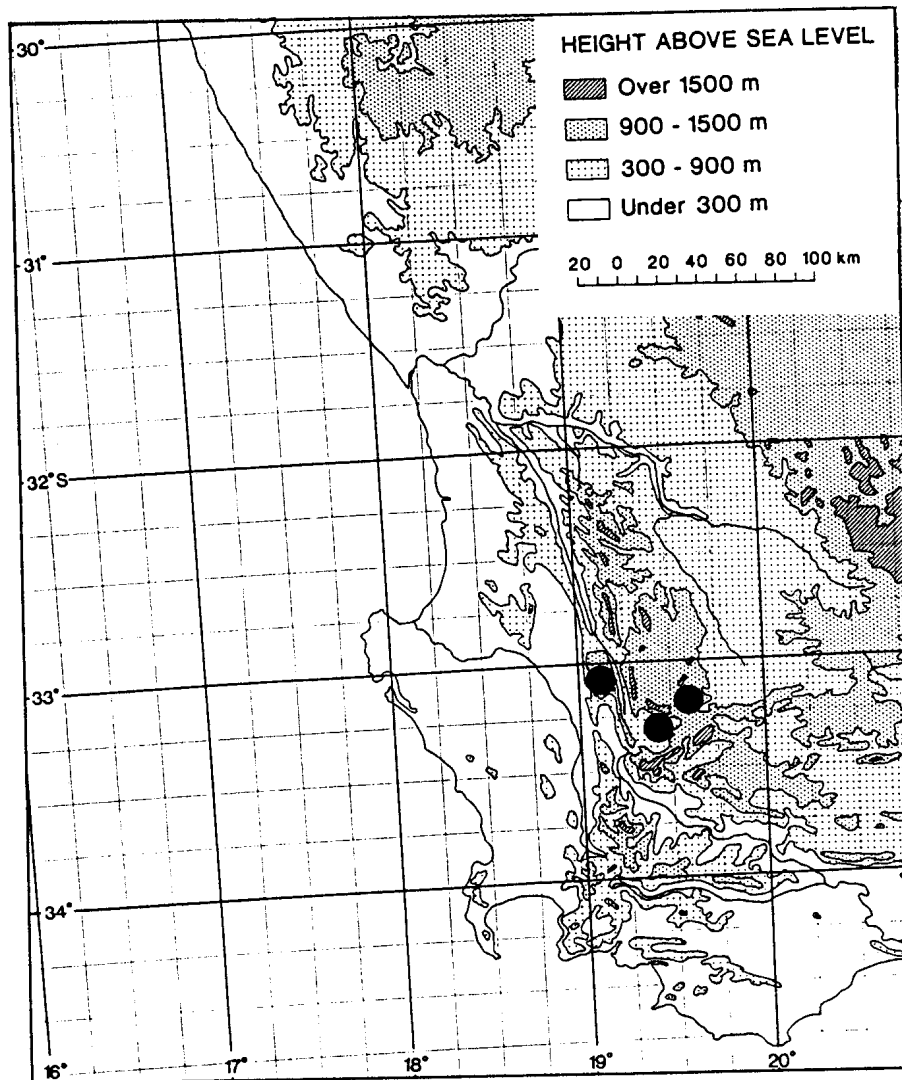


FIGURE 7.22—Known distribution of *Lachnaea alpina*.

12. *Lachnaea macrantha* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 575 (1857); C.H. Wright: 19 (1915). Type: Cape, without locality, *Ecklon & Zeyher s.n.* ["28. *Lachnaea buxifolia*." Eckl. & Z. *L. macrantha* nob.—script Meisner] (S, holo!).

Lachnaea buxifolia Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 575 (1857) in synonymy.

Erect to semi-erect, sparsely to much branched shrub up to 2 m tall, single-stemmed at base; reseeded. *Branches* ascending, woody, ridged below leaf bases, glabrous, leafy, becoming naked with prominent leaf-scars. *Leaves* alternate, ascending, those lower down on stem sometimes patent, imbricate, subsessile, epistomatic, obovate, $7.0\text{--}23.0 \times 2.9\text{--}11.0$ mm, coriaceous, glabrous, faintly nerved, adaxially $\pm$ flat or obtusely concave, glaucous, white-punctulate, abaxially $\pm$ flat or obtusely convex, glossy, smooth, apex rounded or mucronulate, base cuneate. *Inflorescence* a terminal, more than 50-flowered, ebracteate capitulum, 35–60 mm in diameter, basally enclosed by foliage leaves, pedunculate; peduncle 2–3 mm long, puberulent towards apex, glabrous below. *Receptacle* oblong conical to ellipsoid, $4.0\text{--}5.5 \times 1.8\text{--}2.2$ mm, puberulent. *Flowers* sessile, zygomorphic, cream, occasionally with pink or purplish tint, fragrantly scented. *Hypanthium* 6.6–10.6 mm long, circumscissile $\pm$ midway, upper portion narrowly funnel-shaped, silky-hirsute outside, sericeous inside, basal portion narrowly ellipsoid, ellipsoid or ovoid, sericeous outside, glabrous within. *Sepals* patent, unequal, sericeous on both sides, anterior one at least three times length of other three, obovate, $8.3\text{--}16.3 \times 2.3\text{--}6.5$ mm, apex acute to rounded, lateral ones narrowly elliptic to narrowly obovate, $2.0\text{--}5.5 \times 0.4\text{--}1.3$ mm, apex acute to rounded, posterior one narrowly elliptic to elliptic or narrowly ovate, $2.0\text{--}4.0 \times 0.5\text{--}1.3$ mm, apex acute to rounded. *Stamens* exserted, outer, antisealous whorl inserted near base to one-fifth way up sepal, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, outer 0.6–2.5 mm long, inner 0.7–2.0 mm long; anthers ellipsoid to subrotund, 0.4–0.8 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted in mouth of hypanthium immediately below antipetalous stamens, obovoid, 0.4–0.7 mm long, glabrous, yellow in fresh state. *Ovary* narrowly obovoid to ovoid, 1.8–3.0 mm long, attenuate at base, sericeous throughout or only near apex. *Style* filiform, upper third to upper half covered with ascending hairs, glabrous below. *Stigma* brush-like (Figure 7.23).

Distribution and ecology

Lachnaea macrantha has been recorded from the Slanghoek to Riviersonderend Mountains in the southwestern part of the Western Cape and from the Langeberg Mountains in the Swellendam and Riversdale Districts. It is a montane species with a localised distribution, occurring amongst rocks and on rock crevices on the southern,

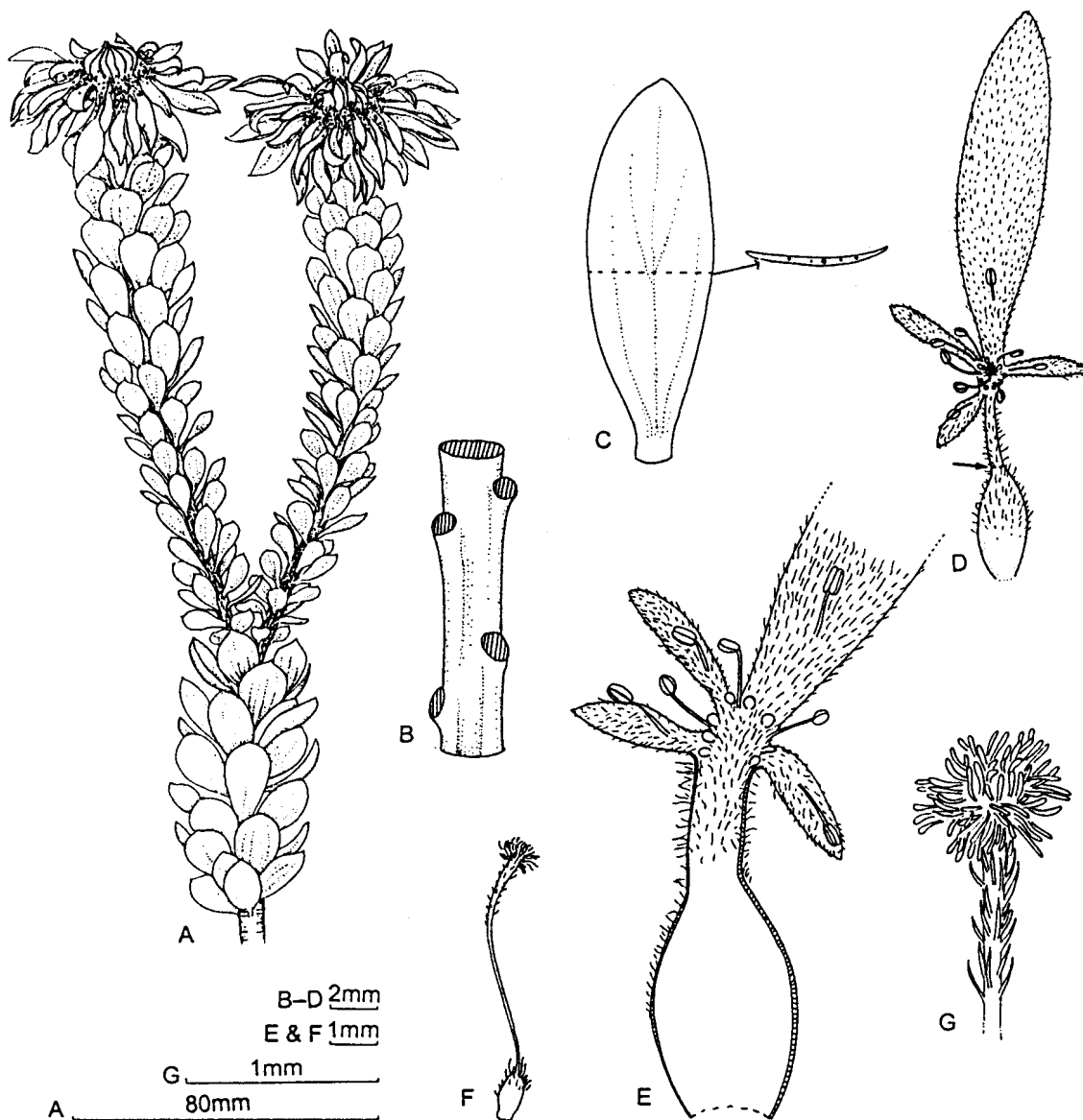


FIGURE 7.23—*Lachnaea macrantha*, I. Oliver 3 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D, flower, note circumscession zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium; G, stigma and upper portion of style (enlarged).

southeastern or western mountain slopes at altitudes between 1330 and 2255 m (Figure 7.24). Flowering has been recorded from September to January and in April.

Conservation status: Lower Risk Least Concern (LRlc). Although this species has a wide distribution, it is vulnerable to frequent fires. Due to frequent fires it has disappeared locally from the southern slopes of Jonaskop, where it was last collected in 1970.

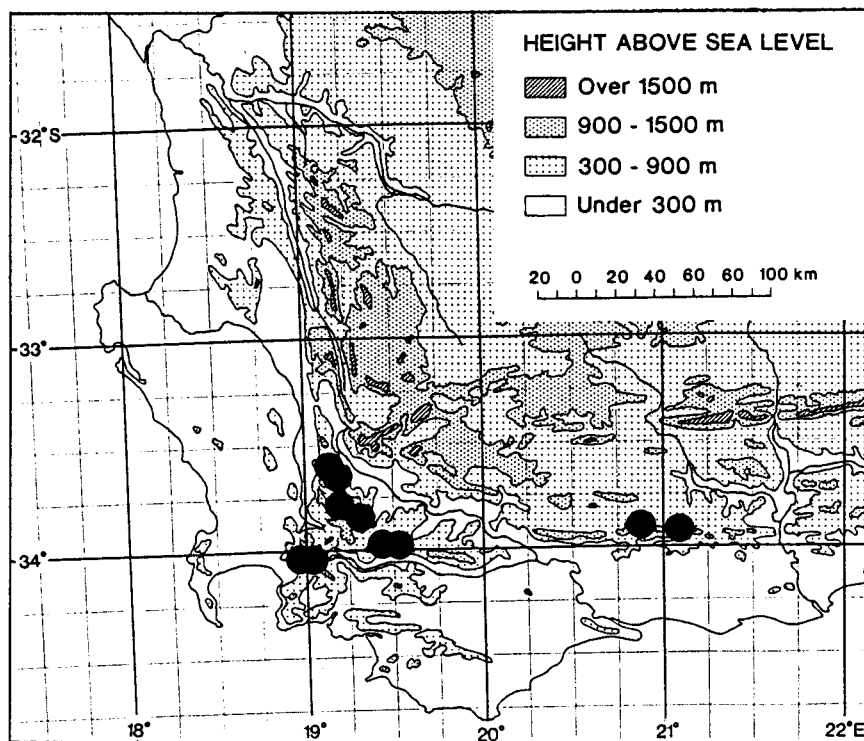


FIGURE 7.24—Known distribution of *Lachnaea macrantha*.

Diagnostic characters and relationships

Lachnaea macrantha and *L. pomposa* both have capitate, pedunculate inflorescences. *L. macrantha* is distinguished from *L. pomposa* by being a reseeder, the inflorescences are daisy-like not pompom-like, the large anterior sepal is at least three times the length of the other three and the leaves are epistomatic.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Wellington, Sneeuks Mtns, 1330 m, (–CA), 07-11-1925, Adamson SAM 36859 (SAM); Slanghoek Mtns, Witteberg, W slope, between boulders and on ledges, 1830–2000 m, (–CA), 13-11-1944, Esterhuysen 16539 (BOL); *ibid.*, summit amongst rocks, 2000 m, 21-11-1943, Esterhuysen 9468 (BOL); *ibid.*, 2000 m, 21-11-1943, Wasserfall 638 (NBG); Slanghoek Mtns, Upper Wellington Sneeuks, S aspect, on shale band, 1665–1830 m, (–CA), 11-11-1956, Esterhuysen 26484 (BOL); Worcester Dist., Du Toitskloof, (–CA), Dec. 1954, Taylor SAM 69948 (SAM); Du Toit's Mtns, Du Toit's Peak, amongst rocks, 2165 m, (–CC), 26-01-1943, Esterhuysen 8578 (BOL); *ibid.*, near summit, S side, 2165 m, 01-01-1966, Esterhuysen 31452 (BOL); *ibid.*, summit, 2200–2255 m, (–CC), 13-12-1954, Taylor s.n. sub Saasveld Herb. (NBG); Paarl Div., Wemmershoek Peak, rocky gulley on W side, 1665 m, (–CC), 31-12-1944, Esterhuysen 11259 (BOL); *ibid.*, 1665 m, Dec. 1944, Stokoe SAM 58633 (SAM); Wemmershoek Mtns, Tafelberg, from rock crevices at rocky summit, 1900 m, (–CC), 05-11-1950,



Esterhuysen 17723 (BOL, PRE); Hawequas State Forest, Wemmershoek Mtns, SE-facing slope, rocky habit, 1580 m, (–CC), 04-11-1990, *Forsyth 527* (K, NBG, NY, PRE); Caledon Div., Stettynsberg, S side, below summit, 1830–1930 m, (–CD), 16-12-1944, *Esterhuysen 11163* (BOL, NBG); Caledon Dist., Riviersonderend Mtn Range, Olifantsberg, above farm Elandskloof, E slope, ± 1600 m, (–CD), *Steyn s.n.* (NBG); Riviersonderend Mtns, Jonaskop, S-facing slopes, 1665 m, (–DC), 15-12-1970, *Oliver 3195* (NBG); *ibid.*, head of Baviaanskloof, S slopes, 1600 m, 02-09-1983, *Oliver 8029* (NBG); *ibid.*, cliffs on S side, 1665 m, 09-11-1965, *Oliver s.n.* (NBG, PRE); *ibid.*, Wilde Paardeberg, 1665 m, (–DC), Jan. 1925, *Stokoe SAM 28652* (SAM).

—3320 (Montagu): Grootvadersbos State Forest, Boosmansbos Wilderness Area, S-facing slopes, 1370 m, (–DD), 02-12-1987, *McDonald 1552* (NBG).

—3321 (Ladismith): without locality [Riversdale Div., summit of Kampsche Berg; fide Wright: 19 (1915), (–CD)], *Burchell 7120* (PRE, NY).

—3418 (Simonstown): Hottentots Holland Mtns, Somerset Sneekop, summit SE side among rocks, (–BB), Dec. 1939, *Esterhuysen 3639* (BOL); *ibid.*, Nov. 1938, *Stokoe 8039* (BOL); Somerset West, Lourensford Estate, (–BB), Jan. 1946, *Stokoe SAM 59500* (SAM); Hottentots Holland Mtns, Emerald Dome, ledges S side below shale band, 1330 m, (–BB), 09-04-1944, *Esterhuysen 10089* (BOL).

—3419 (Caledon): Jonkershoek Forest Reserve, Victoria Peak, S aspect, 1500–1600 m, (–AA), 19-01-1975, *Esterhuysen 33742* (BOL); Dwarsberg, SE face of Victoria Peak, 1600 m, (–AA), 02-01-1968, *Kerfoot 6252* (NBG); *ibid.*, moist slopes usually amongst rocks, ± 1500 m, 06-09-1973, *Kerfoot 6800* (NBG); *ibid.*, summit, amongst boulders, 10-10-1990, *Oliver I. 3* (NBG); Caledon Dist., Landdrooskop, 1330 m, (–AA), Nov. 1939, *Stokoe SAM 58634* (SAM). Grid ref. unknown: Swellendam Mtns, 1630 m, Oct. 1925, *Barnard SAM 28908* (SAM); Swellendam, Puspasvalei (3319DC), Voormansbosch (3320DC), Duivelsbosch, Keurboomrivier (3320CD), 1000–4000 ft., Oct., *Ecklon & Zeyher 28* (S); summit Zuurbraak Mtn, 1630 m, 12-10-1897, *Galpin 4503* (PRE).

13. ***Lachnaea filamentosa* Meisn.** in *Linnaea* 14: 410 (1840); Meisn.: 575 (1857); C.H.Wright: 20 (1915). Type: Cederberg near Honigvalei [Heuningvlei], alt. 3000–3500 ft (111. A. d.), *Drège s.n.* (NY, holo.!—two collections on sheet; one *Burchell 7120* [= *L. macrantha*] and the other specimen on the right with a capsule, annotated by Meisner as “*Gnidia filamentosa* Th.” *Drège. 12.*; K!, P!, S!, iso.).

Gnidia filamentosa Thunb., *Prodromus plantarum capensium*: 76 (1794)?—description insufficient, could also be referring to *L. pomposa* Beyers as in Thunberg Herb. specimens of both these species are annotated as *G. filamentosa*. *G. filamentosa* Thunb., *Flora capensis*, ed. 2: 378 (1823), non L.f.

Note: In herb. Thunberg there are two specimens annotated by Thunberg, one as *Gnidia filamentosa 1* and the other as *Gnidia filamentosa 2*. He assumed that these two

specimens were conspecific with *G. filamentosa* L.f. However, in his description of the species he mentions that the sepals are unequal, which distinguishes it from *G. filamentosa* L.f. *G. filamentosa* 1 is in fact *L. filamentosa* Meisn. and *G. filamentosa* 2, with its regular sepals, is *L. pomposa*.

Lachnaea filamentosa Meisn. var. *major* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis*: 575 (1857); C.H. Wright: 20 (1915). Type: Winterhoekseberg near Tulbagh, mountain slopes, alt. 5, *Ecklon & Zeyher* 72 (S, holo.!—without coll. no. but annotated by Meisner; NBG!, Z!, iso.).

Erect, sparsely to moderately branched shrub to 2 m tall, single-stemmed or multistemmed at base; reseeder or resprouter. *Branches* ascending, semi-rigid to rigid, terete or ridged below leaf bases, glabrous, leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending, imbricate or patent with tips turned upward, closely set, sessile, amphotomatic, glabrous, 7–40 × 2–13 mm, narrowly elliptic to elliptic, narrowly obovate to obovate, narrowly ovate or occasionally ovate, coriaceous, flat, glaucous or dull green, sometimes those below inflorescence tinged blue, adaxially enervate, dull, ± white-punctulate, abaxially enervate or faintly nerved, glossy, occasionally ± white-punctulate, apex subacute, acute or mucronulate, base cuneate, occasionally attenuate. *Inflorescence* a terminal, ebracteate capitulum, usually more than 50-flowered with 10 to more than 50 open flowers at a time, 30–100 mm in diameter, basally enclosed by foliage leaves, pedunculate; peduncle 1–15 mm long, sericeous. *Receptacle* narrowly conical to conical, 5–25 × 2–11 mm, puberulent. *Flowers* sessile, zygomorphic, blue, lilac-blue, cream or cream with a lilac or blue flush, fragrantly scented. *Hypanthium* 6.3–17.5 mm long, circumscissile ± one-fifth to one-third from base, upper portion narrowly funnel-shaped, covered with long, ascending to patent, silky hairs admixed with shorter adpressed, crooked hairs on outside, within densely adpressed hairy, glabrescent towards circumscission zone, basal portion ellipsoid to ovoid, sericeous outside, glabrous within. *Sepals* patent, sericeous on both sides, unequal, anterior one almost twice to three times size of other three, narrowly elliptic to elliptic or narrowly obovate, 6.5–30.0 × 2.0–10.6 mm, apex acute to rounded, lateral ones narrowly elliptic to elliptic or narrowly obovate, 3.5–10.5 × 1.0–2.8 mm, apex acute to rounded, posterior one narrowly ovate to narrowly obovate or ovate to elliptic, 3.3–8.0 × 1.0–2.5 mm, apex acute to rounded. *Stamens* exerted, outer, antisepalous whorl inserted on sepals [anterior one inserted at base to a

third-way up, other three inserted near base], inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, 1.0–5.3 mm long; anthers ellipsoid to broadly oblong, 0.6–1.5 mm long. *Scales* exerted, inserted at mouth of hypanthium immediately below antipetalous stamens, narrowly obovoid to obovoid or narrowly ovoid, 0.3–1.0 mm long, with stiff hairs at apex, yellow in fresh state. *Ovary* ellipsoid to obovoid, 1.4–5.0 mm long, tufted at apex, also occasionally adpressed hairy along side below style attachment. *Style* linear, 6.2–15.6 mm long, silky pubescent in upper third to midway, lower portion glabrous. *Stigma* brush-like (Figure 7.25).

Distribution and ecology

Lachnaea filamentosa is restricted to the Western Cape, ranging from the Pakhuis Mountains in the Clanwilliam District in the north along the Cederberg range southwards through the Groot Winterhoek and Roodesand Mountains near Tulbagh to Mostertshoek Mountain near Ceres (Figure 7.26). It occurs on stony, rocky soil or rocky outcrops, sandy areas along streamsides or in seasonally damp areas at altitudes between 665 and 1900 m.

There is considerable variation in size of the plant as well as in leaf, inflorescence and flower size. Those from the Groot Winterhoek and Roodesand Mountains, growing in seepage areas at altitudes between 1000 and 1665 m are the most robust. Throughout the range individuals growing in moist areas seem to be more luxuriant than those on open, sandy, drier areas. One collection (*Levy's 2205*) from Grootlands Peak in the Cederberg has exceptionally narrow leaves and sepals. Flowering has been recorded from July to February, with a peak from August to December.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters and relationships

Lachnaea filamentosa, *L. macrantha* and *L. pomposa* belong to the group of species with capitate, pedunculate inflorescences. *L. filamentosa* is easily distinguished from *L. pomposa* by the unequal sepals and from *L. macrantha* by the amphistomatic leaves.

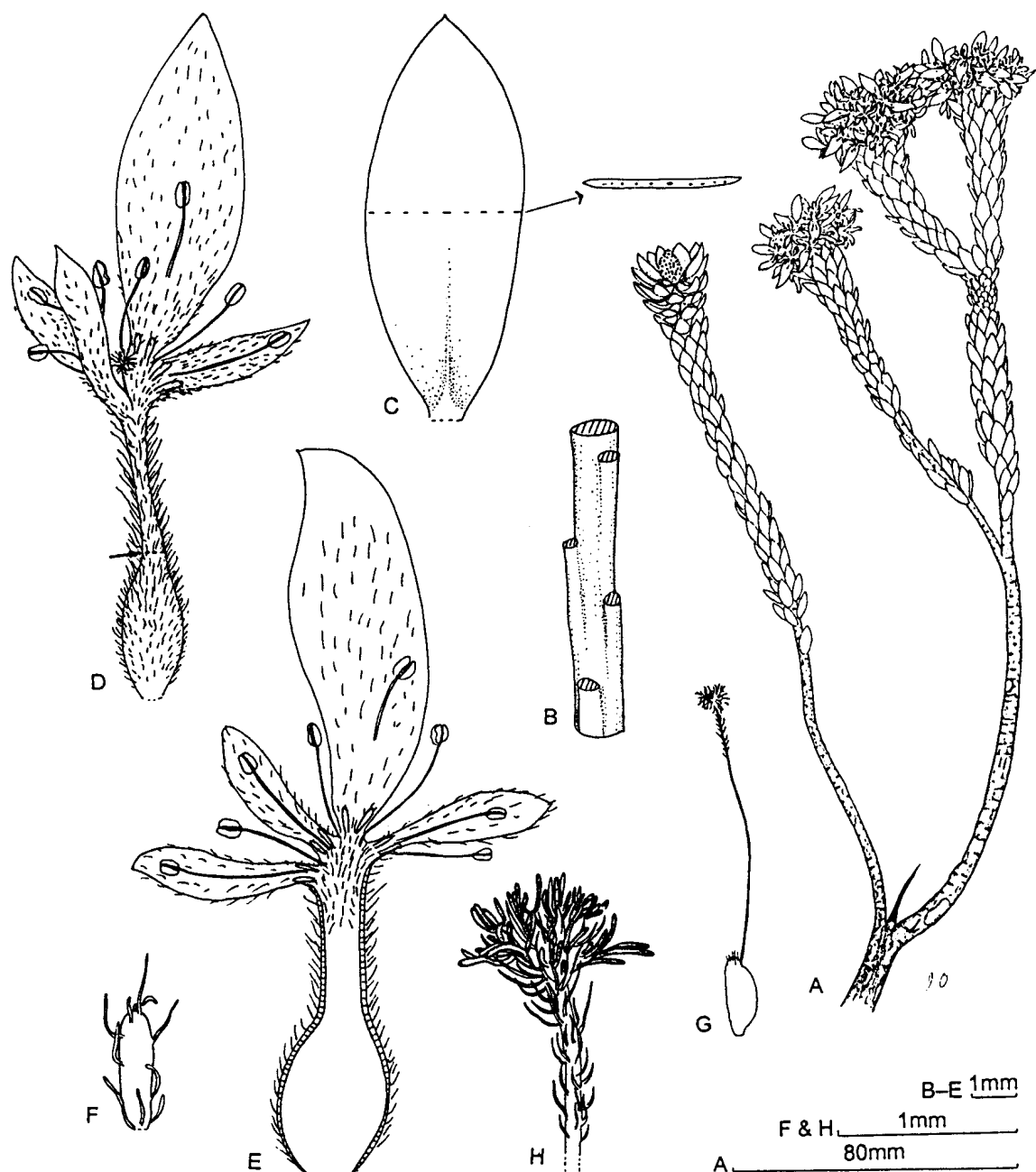


FIGURE 7.25—*Lachnaea filamentosa*, Beyers 110 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D, flower, note circumscession zone (arrowed); E, flower split longitudinally with gynoecium removed; F, scale; G, gynoecium; H, stigma and upper portion of style (enlarged).

Specimens examined

WESTERN CAPE.—3218 (Clanwilliam): Clanwilliam Dist., Steenrug farms, Varkfontein, next to small seasonal stream, (–BB), 14-08-1980, *Le Roux 2608A* (NBG).

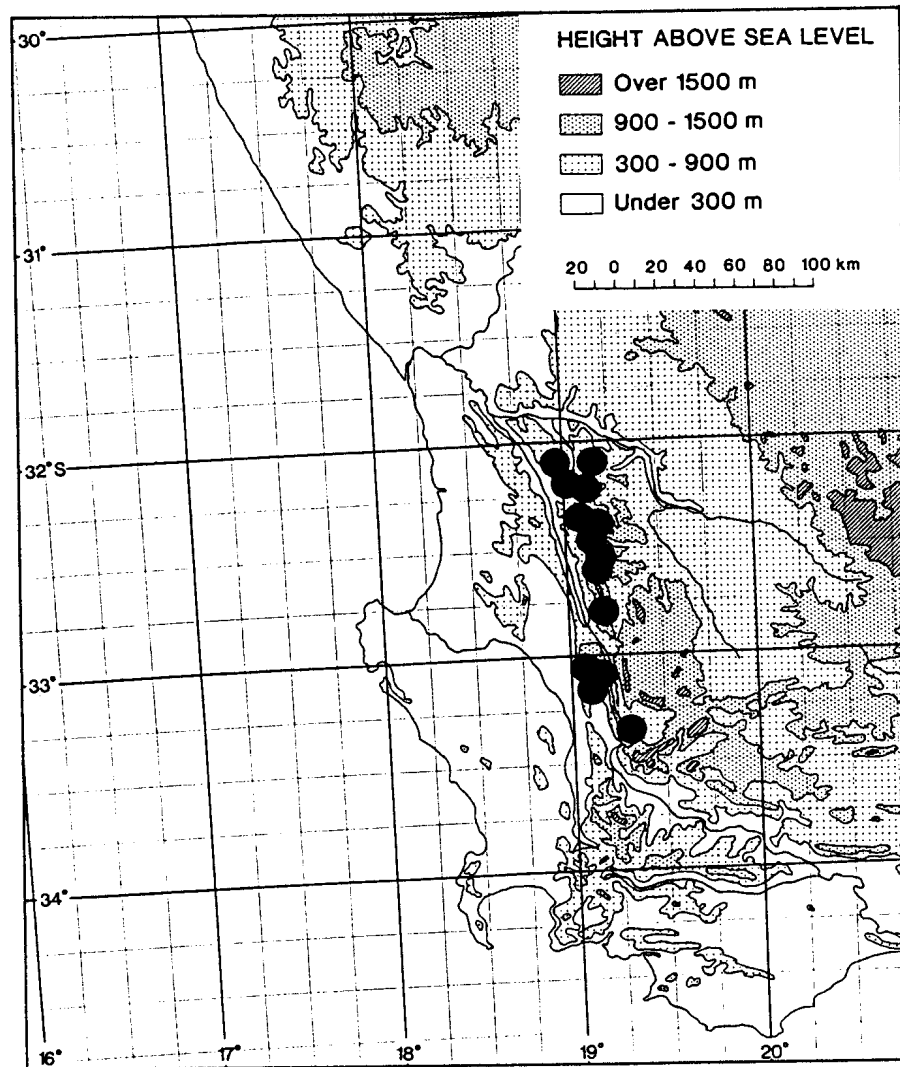


FIGURE 7.26—Known distribution of *Lachnaea filamentosa*.

—3219 (Wuppertal): Clanwilliam [precise locality unknown], 28-09-1915, *Resident Magistrate* (BOL); Clanwilliam Dist., Cederberg [precise locality unknown], Aug. 1896, *Mann sub Marloth* 11382 (NBG); *ibid.*, Oct. 1929, *Thode* A2055 (K); Cederberg, Heuningvlei, marshy, sandy soil, (–AA), 03-09-1972, *Andrag* 128 (NBG); *ibid.*, 1000–1165 m, 11-12-1830, *Drège* 2972 (P), as *Drège* 12 (NY), as *Drège s. n. sub. Herb Bentham* (K), as *Drège SAM* 19790 (SAM); *ibid.*, 29-12-1941, *Esterhuysen* 7482 (BOL); *ibid.*, rocky, slight N slope near stream, ± 1165 m, 14-09-1976, *Hugo* 528 (NBG); *ibid.*, 665 m, 1896, *Leipoldt* 364 (BOL, SAM, Z); *ibid.*, streamside, 22-11-1955, *Middlemost* 1892 (NBG); *ibid.*, scattered on water courses, ex hort. Kirstenbosch, 16-07-91, 17-07-1991, *Powrie* 196 (NBG); *ibid.*, Jan. 1942, *Stokoe SAM* 58635 (SAM); *ibid.*, E aspect, 23-11-1996, *Van Rooyen, Steyn & De Villiers* 338 (NBG); Pakhuis Pass, along jeeptrack to Heuningvlei; (–AA), 22-10-1988, *Beyers* 109 (NBG); *ibid.*, streamside near grassy flats, ± 950 m, 06-11-1983, *Taylor* 10770 (NBG); Pakhuis Pass, 1000 m, (–AA), 30-09-1940, *Bond* 604 (NBG); *ibid.*, 19-09-1937, *Compton* 6935 (NBG); *ibid.*, 09-09-1958, *Hayes NBG* 52593 (NBG); *ibid.*, Oct. 1929, *Leipoldt* BOL 46862 (BOL), as *Leipoldt STEU* 25887 (NBG); *ibid.*, top of pass, 26-08-1951, *Martin* 795 (NBG); *ibid.*, along forestry track, seasonally damp sandy soil, 15-11-1976, *Spreeth* 139 (NBG); *ibid.*, plateau at top of



pass, moist places, 28-11-1955, *Taylor 1613* (SAM); *ibid.*, S of top of pass, 1100 m, 02-08-1966, *Williams 848* (NBG); plateau S of Pakhuis Pass, 640 m, (–AA), 28-10-1956, *Dahlgren & Peterson 895* (NBG); North Cederberg, Krakadouw Peak, rocky summit, 1900 m, (–AA), 20-10-1945, *Esterhuysen 12090* (BOL); *ibid.*, 1000–1900m, Sept. 1936, *Thorne SAM 52499* (SAM); Clanwilliam Dist., near Boontjieskloof, streambank, 665–1000 m, (–AA), 24-10-1945, *Esterhuysen 12202* (BOL, NBG); North Cederberg, Pakhuis, on plateau amongst rocks, 1000 m, (–AA), 07-09-1953, *Esterhuysen 21763* (BOL); *ibid.*, above 1165 m, Dec. 1940, *Leipoldt 3505* (BOL); *ibid.*, E end of forestry road, 24-08-1966, *Pamphlett 114* (NBG); Cederberg Forest Reserve, SE of Heuningvlei, sandy banks of stream, ± 1030 m, (–AA), 03-12-1969, *Kruger 986* (NBG); Pakhuisvlakte beyond Stoor, near stream crossing at *Roridula* site, 970 m, (–AA), 07-11-1988, *Taylor 12001* (NBG); Clanwilliam, Rheboksberg, 1165–1200 m, Sept. 1936, *Thorne SAM 52675* (SAM); Cederberg, shale band east of Sneeuokop, marshy ground, 1665 m, (–AC), 15-08-1973, *Andrag 226* (NBG); Cederberg, between Middelberg Hut and Crystal Pool, 1330–1665m, (–AC), 22-09-1930, *Barnes BOL 19301* (BOL); near Middleberg Hut and Crystal Pool, (–AC), Sept. 1930, *Barnes s. n.* (NY); Cederberg Mtns, Sneeuuberg, along jeeptrack near hut, (–AC), 23-10-1988, *Beyers 110* (NBG); *ibid.*, shale belt, 1400 m, 18-10-1923, *Pocock 402* (NBG); *ibid.*, along jeep track near hut, 16-11-1976, *Spreeth 146* (NBG); *ibid.*, W aspect, 16-11-1996, *Van Rooyen, Steyn & De Villiers 209* (NBG); Cederberg, Sneeuokop, 1665 m, (–AC), 04-10-1897, *Bodkin BOL 9085* (BOL, NBG); Cederberg, Sneeuuberg Hut, ± 1500 m, (–AC), 03-09-1963, *Bos 584* (NBG); *ibid.*, approximately 1 km E of hut, on plateau, 1300 m, 14-10-1995, *Hanekom 2814* (NBG); *ibid.*, near hut, in rock outcrop on sand flats, ± 1400–2000 m, 09-09-1971, *Kruger 1397* (NBG); *ibid.*, hut vlakte, deep sand, moist near rock outcrop, ± 1300 m, 24-09-1983, *Taylor 10675* (NBG); Cederberg, Juriesberg, (–AC), 24-09-1937, *Compton 7025* (NBG); South Cederberg, Duiwelsgat, Sneeuuberg area, streamside, 1000 m, (–AC), 11-10-1946, *Esterhuysen 13115* (BOL); *ibid.*, near Duiwelsgat, 1000–1330 m, Oct. 1898, *Thode 5268* (NBG); Cederberg Forest Reserve, shale band SE of Langberg on stream banks, ± 1530 m, (–AC), 02-12-1969, *Kruger 977* (NBG); Cederberg, Middelberg Plateau, growing with 2206, 1530 m, (–AC), Sept., 1927, *Levy's 2205* (BOL); *ibid.*, 1530 m, Sept. 1927, *Levy's 2206* (BOL); *ibid.*, vlaktes on plateau, 1665 m, 12-10-1923, *Pocock 153* (NBG); Cederberg State Forest, Sneeuuberg summit, rocky (TMS) summit ridge, 2000–2200 m, (–AC), 04-12-1964, *Taylor 6154* (NBG); Cederberg, between Tafelberg and Corridor Peak, 165 m above jeeptrack, (–AC), 05-09-1965, *Reinecke s.n. sub Mattatia 29* (BOL); Cederberg, Hoogvertoon, along jeep track to Sneeuuberg hut, (–AC), 16-11-1976, *Spreeth 147* (NBG); Southern Cederberg, Suurvlakte, S of Apex Peak, flats S of dam. 1265 m, (–CA), 13-10-1994, *Beyers 245* (NBG); Kunje, Middelberg between Ceres and Citrusdal, (–CA), 10-10-1987, *Cillie 4* (NBG); Cederberg Forest Station, summit of Heksberg, in deep sand with restioids, (–CA), 03-12-1983, *Viviers 1236* (NBG); Koue-Bokkeveld Mtns, above farm Wydekloof, in sand amongst boulders, (–CC), 14-10-1975, *Hanekom 2468* (Z).

—3319 (Worcester): Winterhoek Mtns near Tulbagh, on plain, 830 m, (–AA), Nov. 1877, *Bolus 5260* (BOL, Z); Worcester, Winterhoeksberg, 330–1665 m, (–AA), Nov., *Ecklon & Zeyher 72.11* (NBG, PRE, Z) as *Ecklon & Zeyher s.n.* (S); Groot Winterhoek Mtns, 1665 m, (–AA), 06-12-1896, *Bolus A. sub Guthrie 4192* (BOL, NBG, PRE); *ibid.*, The Shoot SE of Sneeuugat alongside perennial river running down from Sneeuugat Peak, 1350 m, 18-11-1995, *Hansford 47* (NBG); *ibid.*, N-E of De Tronk, E edge of shale band, rocky slab in stream bed, 1000 m, 02-10-1981, *Low 1246* (NBG); *ibid.*, 1665 m, Oct. 1896, *Marloth 1952* (GRA, SAM), as *Marloth 1852* (Z); *ibid.*, 1500 m, Nov. 1896, *Marloth 2327* (NBG); *ibid.*, Sneeuugat valley, bank of stream,



1330 m, 18-11-1916, *Phillips 1861* (SAM); *ibid.*, Sneeuwgat, NE of Tulbagh, very stony soil, Nov., 1976, *Spreeth 144* (NBG); Roodesandberg, Tulbagh Wild Flower Show, (–AA), 13-09-1950, *Comm. Esterhuysen 17446* (BOL); Groot Winterhoek Forest Reserve, above Klein Kliphuis on bare slope above side stream, (–AA), 15-08-1982, *Esterhuysen 35790* (BOL); *ibid.*, between De Tronk and Perdevlei farms, NE aspect, 1000 m, 01-09-1980, *Forsyth 89* (NBG); *ibid.*, Driebosch, in sandy soil on shale band, ± 930 m, 28-08-1973, *Haynes 810* (NBG); *ibid.*, Driebosch, Porteville Plateau, on gentle sandy slopes, ± 965 m, 09-09-1971, *Kruger 1389* (NBG); Tulbagh Dist., Klein Winterhoek, half-way between Kleinpoort to Klein Winterhoek, 1400 m, (–AA), 12-11-1995, *Hansford 46* (NBG); *ibid.*, 1330 m, Feb. 1922, *Stokoe BOL 15405* (BOL); Tulbagh, Sneeuwgat Valley, 1165–1330 m, (–AA), Nov. 1932, *Thorne SAM 50391* (SAM); Mostertsberg [Mostertshoek] near Ceres, ± 830 m, (–AD), 31-01-1892, *Schlechter 936* (Z). Grid ref. unknown: Ceres Wild Flower Show, 01-10-1934, *Compton 4891* (BOL, NBG); Tulbagh Flower Show, 13-09-1969, *Van der Merwe s. n.* (NBG).

14. *Lachnaea pomposa* Beyers, nom. nov.

Gnidia filamentosa L.f., Supplementum plantarum: 224. (1782), non *Lachnaea filamentosa* Meisn.: 410 (1840); Thunb.: 76 (1794); Willd. 2: 425 (1799); Wikstr.: 311 (1818); Thunb.: 328 (1823) [but not the description which correlates with *L. filamentosa* Meisn.], Spreng.: 239 (1825). Type: Cape of Good Hope, herb. LINN 502.13 (LINN, lecto. here designated, —PRE, microfiche!, —NBG, photocopy!). *Lachnaea filamentosa* (L.f.) Gilg, in Engler & Prantl Natürlichen Pflanzenfamilien. 3, 6a: 240 (1894)—*nom. illeg.*

Lachnaea buxifolia Lam., Encyclopédie méthodique 3, 2: 373, t. 292, fig. 1 (1792)—*nom. superfl.*; Andrews: 8, t.524 (1808); Meisn.: 410 (1840), 575 (1857); C.H.Wright: 19 (1915). Type: as for *Gnidia filamentosa* L.f.

Lachnaea buxifolia var. *virens* Sims in Curtis's Botanical Magazine 39: t. 1657 (1814a)—*nom. superfl.*; *Gnidia filamentosa* var. *virens* Wikstr.: 311 (1818). Type: as for *Gnidia filamentosa* L.f.

Lachnaea glauca Salisb., Paradisus Londinensis 2: t. 109 (1808)—*nom. superfl.*; W.T.Aiton: 415 (1811); *L. buxifolia* var. *glauca* Sims in Curtis's Botanical Magazine 39: t.1658 (1814b); *Gnidia filamentosa* var. *glauca* Wikstr. in Kongl. Vetenskaps Akademiens Handlingar 1818: 311 (1818). Type: as for *Gnidia filamentosa* L.f.

Gnidia grandis hort., Sims in Curtis's Botanical Magazine 39: t. 1658 (1814b).

Linnaeus filius was the first to describe this species as *Gnidia filamentosa*. Lamarck (1792) transferred *G. filamentosa* to *Lachnaea* but unfortunately did not take up Linnaeus' epithet. Subsequent authors followed suit and as a result all the names for this species are illegitimate. Meisner (1840) decided that what Thunberg (1823) had described as *Gnidia filamentosa* was not the same as *G. filamentosa* L.f.. He cites *L. buxifolia* Lam. with *G. filamentosa* L.f. non Thunberg in synonymy and describes a new plant *L. filamentosa* nob. with *G. filamentosa* Thunb. in synonymy. With the epithet, *filamentosa*, thus occupied in *Lachnaea* the new combination by Gilg, *L. filamentosa* (L.f.) Gilg is illegitimate. As all the available names for this species are illegitimate, a new name, *L. pomposa*, is proposed.

Erect, moderately branched shrub to 1.7 m tall, single-stemmed or multistemmed at base; reseeded or resprouter. *Branches* ascending, stout, rigid, ridged below leaf bases, usually glabrous but occasionally sparsely adpressed hairy towards the apex [specimens from Touwsberg], leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending to patent, occasionally reclined, those below inflorescences patent to reclined with their tips turned upwards, imbricate, sessile, amphistomatic, glabrous, narrowly elliptic to elliptic, narrowly ovate to widely ovate or narrowly obovate to obovate, 7–38 × 2–19 mm, coriaceous, glaucous, adaxially flat, midveined or subnervate, abaxially flat, faintly nervate, apex mucronulate, obtuse, rounded or acute, base rounded, cuneate or attenuate. *Inflorescence* a terminal, more than 50-flowered, ebracteate capitulum, 25–55 mm in diameter, basally enclosed by the foliage leaves, pedunculate; peduncle 1–10 mm long, shortly sericeous. *Receptacle* subconical to conical, 4.0–12.0 × 2.8–6.0 mm, puberulent. *Flowers* sessile, subactinomorphic, cream, occasionally with blueish tint, sweet-scented. *Hypanthium* 9–20 mm long, circumscissile one-fifth to one-third from base, upper portion narrowly funnel-shaped, silky hirsute or hirsute-tomentose outside, within densely hairy at mouth, rest adpressed hairy, basal portion ellipsoid, ovoid or obovoid, sericeous or silky hirsute outside, glabrous within. *Sepals* patent, ± equal, adaxially and abaxially sericeous, ovate or elliptic, 3.5–9.0 × 1.6–5.3 mm, apex acute. *Stamens* exserted, outer, antisealous whorl inserted at base of sepals, usually the longest, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, 1.3–5.0 mm long; anthers ellipsoid to spheroid, 0.4–1.5 mm long. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, obscured by dense hairs in mouth, narrowly obovoid to obovoid or ellipsoid, 0.4–0.9 mm long, hirsute at apex, occasionally glabrous

[specimens from Matroosberg], at first yellow later translucent in fresh state. *Ovary* ellipsoid, 1.4–3.0–(5.0) mm long, tufted at apex, occasionally sericeous in upper half. *Style* filiform, 8.3–18.2 mm long, midway to upper quarter adpressed hairy, lower portion glabrous. *Stigma* brush-like (Figure 7.27).

Distribution and ecology

Lachnaea pomposa is endemic to the Western Cape, occurring on the mountain slopes from the Olifants River Mountains in the north through to the Du Toits Mountains in the south, and to the Witteberg and the mountains of the western end of the Little Karoo as far east as the Klein Swartberg at altitudes between 500 and 2330 m (Figure 7.28). Flowering has been recorded from August to January.

Conservation status: Lower Risk Least Concern (LRlc).

Etymology

The specific epithet, derived from *pomposus* meaning showy or splendid, refers to the showy, pompom-like inflorescences.

Diagnostic characters and relationships

This species, with its more or less regular sepals, can easily be distinguished from *Lachnaea filamentosa* and *L. macrantha* with similar, large, showy, ebracteate capitula and strongly zygomorphic flowers.

Specimens examined

CAPE.—3219 (Wuppertal): Ceres Div., Olifants River Mtns, 1500 m, (–CC), 28-12-1946, *Esterhuysen 13459* (BOL).
—3319 (Worcester): Groot Winterhoek State Forest, Kliphuisvlakte, rocky sandy soil on top of ridge, (–AA), 15-11-1977, *Durand 289* (NBG); Schurfdeberg, Tulbagh, (–AA/AB), Nov., *Pappe s.n.* (Z); *ibid.*, Nov., *Pappe SAM 1477* (SAM); *ibid.*, *Zeyher 1477* (K, PRE.); Ceres, Agter Witzenberg, farm Slagboom, NW slope, 1130 m, (–AB), 22-11-1988, *Beyers 122* (NBG); Ceres, Schurfdeberg Pass, (–AB), 30-10-1950, *Hall 184* (NBG, NBG); Modderivierskloof, (–AB), Dec. 1976, *Hugo 788a* (NBG); Worcester, slopes at head of sandy vlakte, ± 1465 m, (–AB), 06-11-1973, *Taylor 8648* (NBG); Ceres Dist., Ceres Nature Reserve,

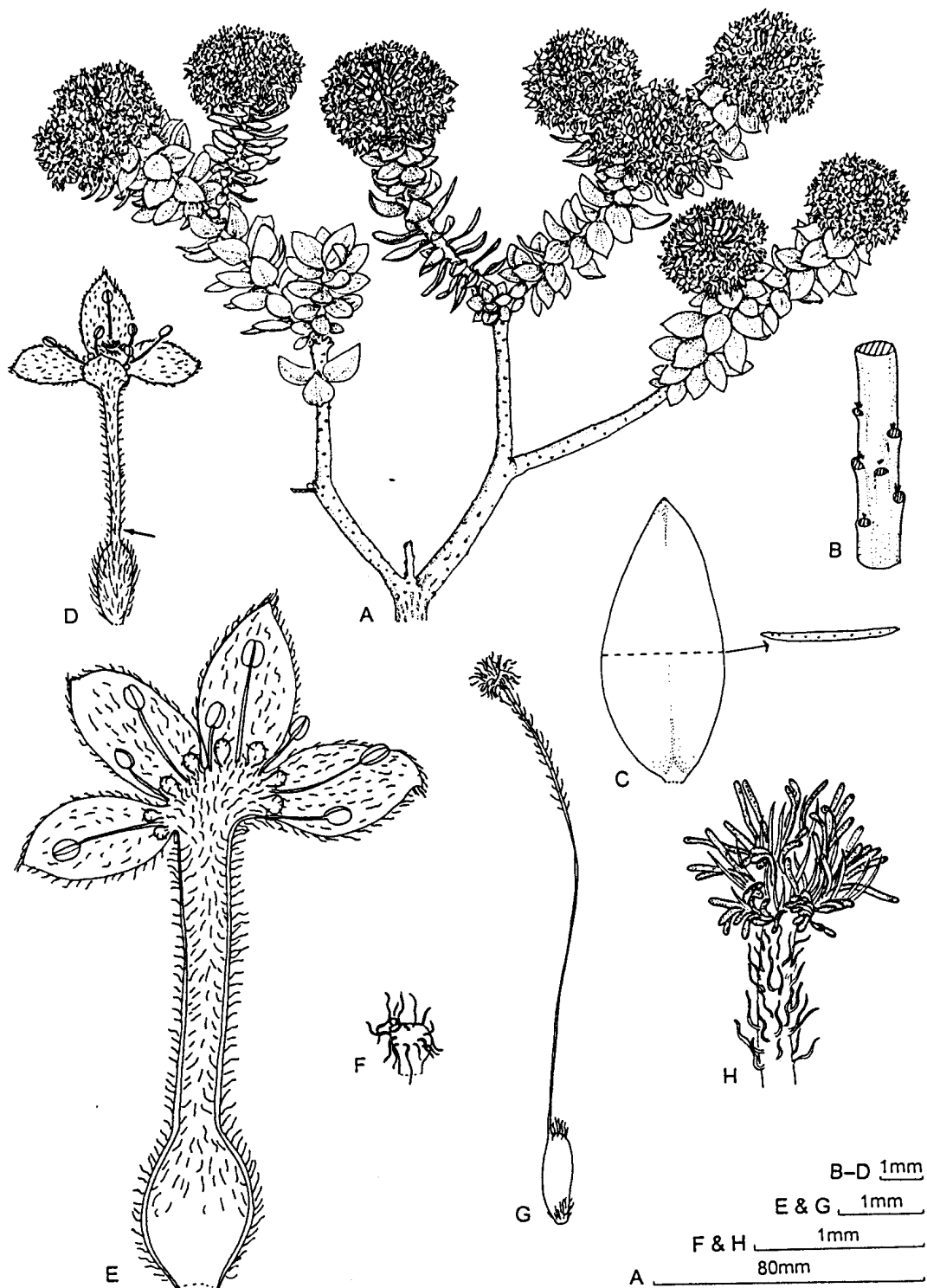


FIGURE 7.27—*Lachnaea pomposa*, Beyers 118 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D, flower, note circumscription zone (arrowed); E, flower split longitudinally with gynoecium removed; F, scale; G, gynoecium; H, stigma and upper portion of style (enlarged).

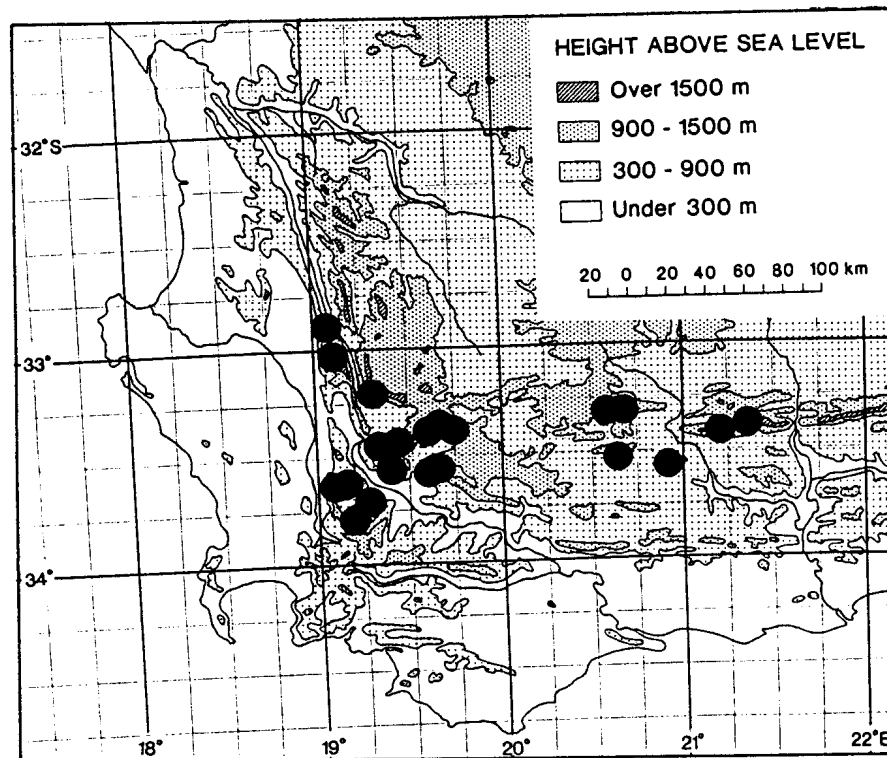


FIGURE 7.28—Known distribution of *Lachnaea pomposa*.

cultivated from seed, (–AD), 22-11-1988, *Beyers 123* (NBG); Ceres, Mitchell's Pass, 500 m, (–AD), Sept. 1903, *Bolus 445* (NBG); *ibid.*, Slab Peak, 665 m, 05-10-1941, *Compton 11962* (NBG); *ibid.*, 05-10-1941, *Esterhuysen BOL 46772* (BOL); *ibid.*, Ceres side, 03-10-1934, *Thorne SAM 51240* (SAM); Skurfdeberg near Ceres, 600 m, (–AD), Oct. 1899, *Bolus 7349* (BOL); *ibid.*, 900 m, Oct. 1889, *Bolus HNAA 1091* (Z); Worcester Div., Milner Peak, S side, shale band, 1665 m, (–AD), 07-12-1947, *Esterhuysen 14265* (BOL); *ibid.*, 1665 m, 18-12-1948, *Esterhuysen 14928* (BOL); Ceres Div., Castle Rocks, S slopes, (–AD), 05-12-1948, *Esterhuysen 14696* (BOL); Ceres, (–AD), Oct. 1940, *Leslie NBG 52580* (NBG); *ibid.*, 1831, *Stokoe 6475* (BOL); Matroosberg, 2330 m, (–BC), Dec. 1895, *Bolus sub Guthrie* (NBG); *ibid.*, shale band on W slope, in swamp, 02-12-1947, *Esterhuysen 14193* (BOL); *ibid.*, 1665 m, Sept. 1924, *Levyms 959* (BOL); *ibid.*, upper slopes, 2065 m, Sept. 1924, *Giffen sub Levyms 960* (BOL); *ibid.*, 2000 m, Dec. 1895, *Marloth 2256* (NBG); *ibid.*, near Lakenvlei, 2000–2330m, Jan. 1917 *Phillips 2048* (SAM); mouth of Els Kloof, Hex River, (–BC), 15-08-1897, *Wolley Dod 2758* (BOL. K); Ceres, Bokkerivier Farms, SE of camping site, (–BC/BD), 09-11-1963, *Horrocks 109* (NBG); Hawakwa Mtn, Du Toits Kloof, on farm De Poort, S slope, 1000 m, (–CA), 09-11-1988, *Beyers 118* (NBG); *ibid.*, 04-11-1980, *Walters 2353* (NBG); Paarl Dist., Du Toit's Kloof, (–CA), 27-11-1962, *D'Ewes s.n.* (NBG); Du Toitskloof Mtn, in rocks (III, A, e), [a.], 1000–1165 m, (–CA), 30-11-1827, *Drège 1197* (P); Du Toitskloof (III, A, e), 665 m, (–CA), 28-12-1827, *Drège s.n.* (P); *ibid.*, *Drège s.n. Herb. Hooker* (K); Paarl Div., Lower Wellington Sneekop, S slopes, 1130–1330 m, (–CA), 23-12-1945, *Esterhuysen 12451* (BOL); Paarl Div., Bailey's Peak to Pic Blanc, 1330 m, (–CA), 22-11-1953,

Esterhuysen 22367 (BOL); Paarl Div., Seven Sisters Mountain, on cliffs, 1330 m, (–CA), 14-11-1954, *Esterhuysen 23940* (BOL); Worcester Dist., Slanghoek Mtns, Farm Witelsrivier, (–CA), 12-10-1997, *Le Roux s.n.* (NBG); Bainskloof, in kloof below Sneekop, (–CA), 11-10-1946, *Rehm STE 26824* (NBG); Bainskloof, (–CA), Nov. 1949, *Stokoe SAM 62665* (SAM); Worcester Dist, Steenboksberg, ± 500 m, (–CA), 29-08-1965, *Taylor 6435* (NBG); Wellington, slopes of Sneekop, (–CA), Nov. 1922, *Thorne SAM 46524* (SAM); Worcester Div., plateau on Fonteintjiesberg, (–CB), 00-09-1925, *Stokoe BOL 18423* (BOL); Worcester Div., Du Toit's Peak, steep S slopes, 1000-1330 m, (–CC), 27-12-1949, *Esterhuysen 16641* (BOL); Worcester Div., Keeromsberg, 1000–1330 m, (–DA), 22-11-1956, *Esterhuysen 26594* (BOL); *ibid.*, W side, shale band, 1000–1330 m, 01-11-1943, *Esterhuysen 9243* (BOL); Kwadousberg, Saw-Edge Peak on farm Keeromsberg, along jeeptrack on lower slopes, 1120 m, (–DA), 29-10-1988, *McDonald 1687* (NBG); Saw Edge Peak, N slopes above Tierkloof, 1000 m, (–DA), 24-08-1972, *Oliver 3791* (NBG); Saw Edge Peak, N slope, 1000 m, (–DA), 24-08-1972, *Rourke 1356* (NBG).
—3320 (Montagu): Witteberg (Bantams), 1665 m, (–BC), 27-10-1941, *Compton 12227* (NBG); Laingsburg, Witteberg (Whitehill), 1300 m, (–BC), 21-10-1942, *Compton 13946* (BOL, NBG); Laingsburg, Fisantekraal, S aspect, 1330 m, (–BC), 07-11-1948, *Compton 21088* (NBG); summit of Witteberg, 1665 m, (–BC), Oct. 1924, *Compton 2723* (BOL); Witteberg, S of Bantams, S slopes, 1330-1500 m, (–BC), 04-11-1936, *Esterhuysen 30482* (BOL); *ibid.*, Bantamskop, 20-10-1989, *Marais s.n.* (NBG); *ibid.*, Bantams SABC tower, 1565 m, 20-10-1989, *Van Zyl 3974* (NBG); Ladismith, Anysberg, next to forestry track, 1665 m, (–DA), 16-09-1982, *Vlok 453* (NBG); Ladismith Dist., Touwsberg, W end summit ridge, steep S-facing slope, 1160 m, (–DB), 05-10-1993, *Oliver 10301* (K, MO, PRE, NBG).
—3321 (Ladismith): Ladismith, Swartberg, Towerkop, S aspect, 2165 m, (–AC), 15-12-1956, *Esterhuysen 26811* (BOL); Klein Swartberg, W of Towerkop on Bleshoek, SW aspect below summit, ± 1930 m, (–AC), 09-11-1991, *Forsyth 530* (NBG); Seweweekspoort, mountain slopes, 1330 m, (–AD), 26-09-1928, *Adamson BOL 46870* (BOL); Klein Swartberg, N of Seweweekspoort, 1666 m, (–AD), 03-01-1981, *Vlok 117* (NBG); Klein Swartberg, ESE of Seweweekspoort, Gysmanskop, Blouberg, 1665 m, (–BC), 13-11-1972, *Rycroft 3143* (NBG). Doubtful locality: Constantiaberg, in stony places, ± 500 m, (3418AB), 29-05-1892, *Schlechter 880* (Z). Without locality, *Foster Herb.* (K); 1882, *Sickenberger s.n.* (Z); *Thunberg in herb. Thunb. 9551* (UPS).

15. ***Lachnaea capitata* (L.) Crantz** in *Institutiones rei herbariae* 1: 129 (1766); Meisn.: 414 (1840) [as var. *pauciflora*]; Meisn.: 552 (1843); Meisn.: 577 (1857) [as var. *pauciflora*]; C.H. Wright: 22 (1915); Levyns: 601 (1950); Mason: 150, t. 64, f. 7 (1972). *Passerina capitata* L. *Amoenitates academicae* 6: 88 (1760); L.: 513 (1762); Burm.f.: 12 (1768); Thunb.: 75 (1794); Wendl.: 18, t. 2, f. 17 (1798); Poir.: 41, t. 291, f. 3 (1804); Wikstr.: 329 (1818); Thunb.: 376 (1823); Spreng.: 240 (1825). Type: Africa australis: Caput bonae Spei, *herb. Burman s.n.* (G.-DEL, lecto. here designated, —NBG, photo!). The specimen chosen here, selected from six original elements, most closely matches the illustration in Burm. Rar. afr. pl. 133. t. 48, fig. 3 (1739).

Lachnaea capitata var. *multiflora* Meisn. in *Linnaea* 14: 414 (1840); Meisn.: 578 (1857). Type: near Dieprivier, alt. below 100 ft Drège s.n. (NY ["Pas. capitata. L. c." Drège], holo.!, P!, iso.).

Lachnaea phyllicoides Lam. *Encyclopédie méthodique* 3, 2: 374, non t. 392, f. 3 (1792); Meisn.: 414 (1840). Type: Herb. Lamarck 19.3-1 (P-LA, lecto. here designated, — NBG, photo!).

Gonophylla acuminata Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 578 (1857) in synonymy.

Gonophylla capitata Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 578 (1857) in synonymy.

Gonophylla conglomerata Eckl. & Zeyh. (pro parte) ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 578 (1857) in synonymy.

Thymelaea foliis linearibus, etc., Burman *Rariorum africanarum. plantarum* 133, t. 48, fig. 3 (1739). Type: as for *Passerina capitata*.

Erect, sparsely to moderately branched shrub up to 1,8 m tall, single-stemmed at base; reseeder. *Branches* ascending, slender, lax, occasionally rigid [few individuals from Cape Peninsula], ridged below leaf-bases, glabrous or distal 1–4 internodes below inflorescence sericeous, leafy, becoming nude and marked with leaf-scars. *Leaves* alternate, ascending, crowded to distant, internodes one-fifth to twice leaf length, sessile, amphistomatic, glabrous, linear to narrowly elliptic, 5.2–21.0 × 0.7–1.8 mm, coriaceous, green, concolourous, enervate, glossy, white-punctulate, adaxially ± flat to concave, abaxially flat to convex, sometimes subkeeled, apex acute to acuminate, base cuneate to attenuate. *Inflorescence* a terminal, ebracteate capitulum, 5–16 mm in diameter, up to 20-flowered with 1–8 open flowers, pedunculate; peduncle 3–6 mm long, sericeous. *Receptacle* at first hemispherical, later after elongating, cylindrical-conical, 0.9–20.2 × 1.5–6.0 mm, sericeous. *Flowers* sessile, subactinomorphic, cream. *Hypanthium* 2.5–4.6 mm long, circumscribing two-fifths to three-fifths from base, upper portion obconical, basal

portion ovoid, ellipsoid or obovoid, sericeous outside, inside between plane of circumscission and base of scales adpressed hirsute, rest glabrous. *Sepals* ascending, subequal, elliptic to oblate or ovate to widely depressed ovate, $1.2-2.8-(5.0) \times 1.2-3.2$ mm, adaxially densely to sparsely covered with short, silky, adpressed hairs, abaxially sericeous, apex rounded to obtuse. *Stamens* exserted or inner, antipetalous whorl only anthers exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted a quarter to midway down upper portion of hypanthium; filaments filiform, 0.3–1.7 mm long, inner whorl shorter than outer whorl; anthers ellipsoid to spheroid, 0.4–0.7 mm long, abaxially without broad connective tissue. *Scales* included, inserted two-thirds to three-quarters way down upper portion of hypanthium, narrowly oblong, 0.4–0.9 mm long, glabrous, translucent or yellow-translucent. *Ovary* ellipsoid to obovoid, 0.7–1.6 mm long, glabrous. *Style* filiform, 1.7–4.7 mm long, adpressed hairy to sparsely adpressed hairy. *Stigma* brush-like (Figure 7.29).

Distribution and ecology

Lachnaea capitata is restricted to the Western Cape, where it occurs on sandy flats and lower mountain slopes from Clanwilliam in the north, southwards to the Cape Peninsula and inland to Franschhoek and Goudini (Figure 7.30). Flowering has been recorded from June to March.

Conservation status: Vulnerable (VU A1c). *L. capitata* may have disappeared from the Cape Peninsula as a result of urban development as no recent collections have been made. Very few recent collections are known from the sandy flats up the west coast and in the Tygerberg area.

Diagnostic characters and relationships

Lachnaea capitata is a sister species of *L. densiflora* based on the shared characters—leaves abaxially convex, upper portion of the hypanthium not stalked and floral scales inserted below midway on the upper portion of the hypanthium. It can, however, be distinguished from *L. densiflora* by the usually glabrous branches [sericeous or sericeous-tomentose branches], the inflorescence with 1–8 open flowers [up to 20 open

flowers] and the ascending sepals with sericeous indument [patent sepals with tomentose indument].

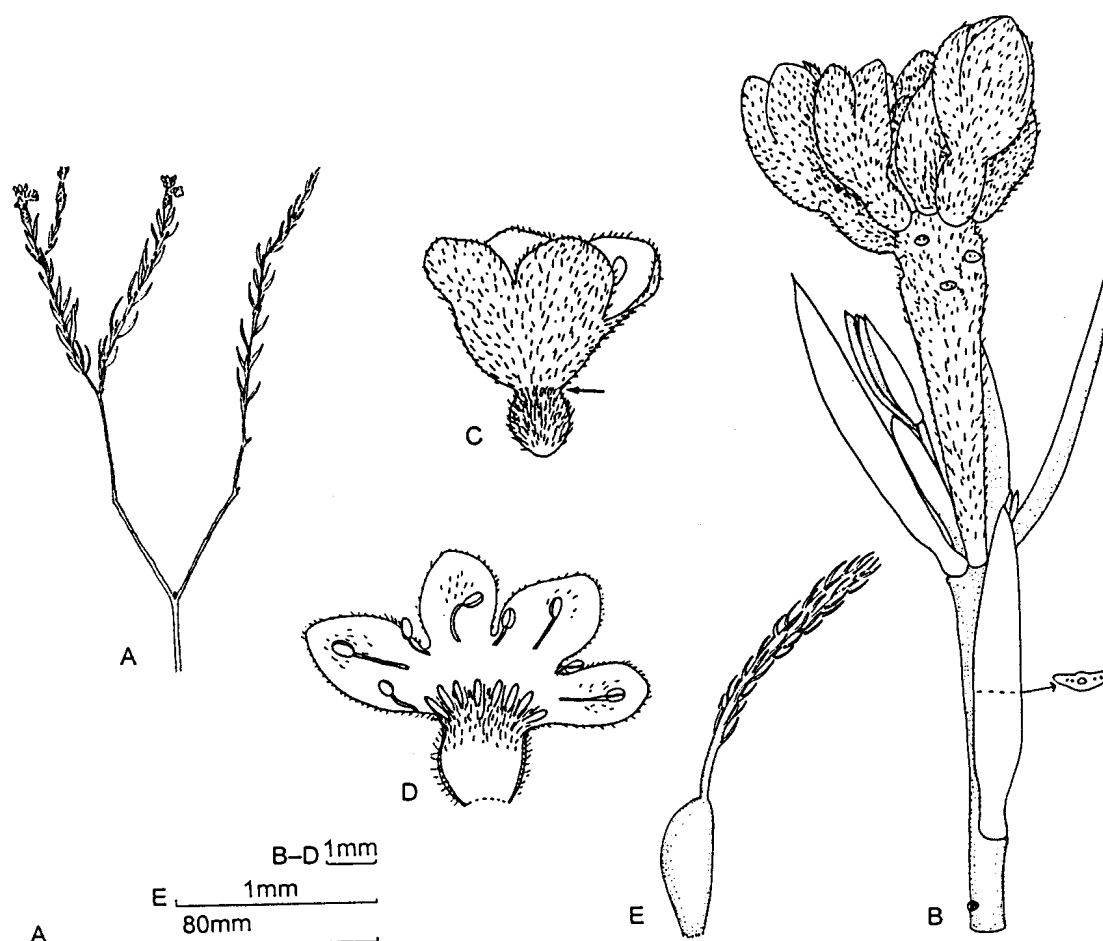


FIGURE 7.29—*Lachnaea capitata*, Beyers 138 (NBG). A, portion of plant; B, flowering branch with leaves and cross section of leaf; C, flower, note circumscession zone (arrowed); D, flower split longitudinally with gynoecium removed; E, gynoecium.

Specimens examined

WESTERN CAPE.—3218 (Clanwilliam): Zeekoeivlei W of Clanwilliam, flats E of Elandsberg, 530 m, (–BA), 06-09-1972, *Oliver 3866* (NBG); Zeekoeivlei, 260 m, (–BA), 13-08-1896, *Schlechter 8508* (BOL, GRA, K, S, Z); between Paleisheuvel and Leipoldville, 150 m, (–BC), 07-10-1958, *Werdermann & Oberdieck 472* (PRE); Kleinivlei, near Swartboskraal, N of Paleisheuvel, (–BC), 04-10-1990, *Bean 2603* (NBG); Clanwilliam Dist., hills between Witelskloof and Lambertshoekberg, (–BD), 11-10-1939, *Pillans 9073* (BOL); W slopes of Olifants River Mtns N of Paleisheuvel, farm Swartberg, (–BD), 08-09-1988, *Bean & Viviers 2054* (BOL, NBG, PRE); Goergap-Aurora Road, 64 km from Piketberg, (–DA), 13-08-1969, *Marsh 1257* (NBG); N-base Engelsman se Baken between Weltevrede & Barkatsfontein, (–DA), 23-11-

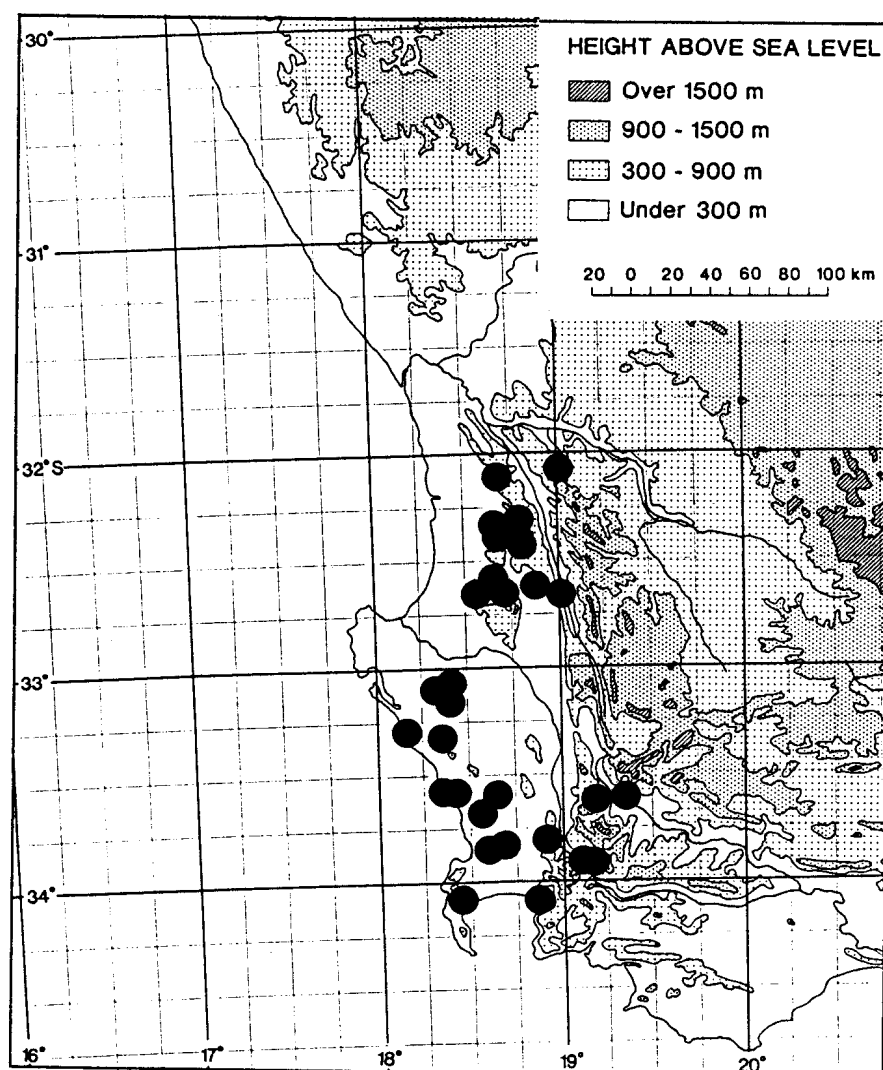


FIGURE 7.30—Known distribution of *Lachnaea capitata*.

1982, *Bean 1043* (BOL, NBG); Riviera farm, W side of Piketberg Mtn, (–DA), 10-09-1969, *Barker 10660* (NBG); Olifants River Mtns, 200 m, (–DB), 01-09-1894, *Schlechter 5113* (BOL, GRA, S, Z); Pikenierskloof, Piketberg Mtns, (–DB), Jun., *Zeyher 1484* (BOL, SAM); Piketberg, 330–1330 m, (–DC/DD), Jun., *Ecklon & Zeyher 1484b* (Z).

—3219 (Wuppertal): Pakhuis Pass, (–AA), Oct. 1925, *Leipoldt STEU 25886* (NBG); Clanwilliam Dist., Modderfontein, 230 m, (–CA), 06-09-1933, *Compton 4332* (BOL, NBG); road between Warmbaths and Modderfontein, Olifants River Valley, (–CA), 27-09-1911, *Stephens 7262* (BOL).

—3318 (Cape Town): Between Tygerberg and Simonsberg, Stellenbosch [precise loc. unknown], *Drège s.n.* (K [sub herb Bentham]), NY; near road to Melkbosch Strand [precise loc. unknown], 04-08-1946, *Leighton 1757* (NY); Malmesbury Dist., Cape Town to Malmesbury, roadside [precise loc. unknown], 11-09-1973, *Montgomery 543* (NBG); Paarl [precise loc. unknown], *Rogers 10505* (BOL, K); Malmesbury Dist., Geelbek, (–AA), 23-08-1947, *Compton 19901* (NBG); Hopefield Dist., Geelbek Road, (–AA), 28-09-1953, *Compton 24380* (NBG, S); around Hopefield, (–AB), *Bachmann 1295* (Z); around Hopefield on way to Saldanha Bay, (–AB), Oct. 1885, *Bachmann 1280* (Z); around Hopefield, Theefontein, (–AB), Mar. 1887,



Bachmann 1294 (Z); near Hopefield, in sand, 30 m, (–AB), Sept. 1905, *Bolus 12820* (BOL, GRA, Z); Darling area, Theefontein farm, about 8 km SW of farmhouse, 109 m, (–AB), 18-07-1978, *Boucher 3868* (NBG); Hopefield, Waterboerskraal, (–AB), 15-06-1975, *Hugo 231* (NBG); *ibid.*, 03-10-1974, *Hugo STEU 5460/10* (STE); Yzerfontein, gravel road between Yzerfontein and Geelbek, (–AC), 08-03-1989, *Beyers 128* (NBG, PRE); *ibid.*, 2km. from turn, 17-09-1989, *Beyers 138* (K, NBG, PRE); near Yzerfontein, (–AC), Jul. 1938, *Esterhuysen 1459* (BOL); veld between Yzerfontein and Darling, (–AC), 30-09-1926, *Lewis Grant 2599* (PRE); along West Coast Highway near Yzerfontein turnoff ± 90 m, (–AC), 30-08-1989, *Taylor 12074* (NBG); between Yzerfontein and Darling, (–AC/AD), 01-08-1938, *Barker 393* (NBG); Darling, sand, 130 m, (–AD), 13-09-1931, *Levyys 3253* (BOL); Mamre, (–CB), *Baur sub Marloth 8679* (PRE); Malmesbury, near Bok Point, (–CB), 15-09-1940, *Compton 9404* (NBG); Melkbosch Road, (–CB), 18-10-1941, *Compton 12027* (NBG); Malmesbury Dist., Mamre flats, (–CB), 28-09-1953, *Compton 24375* (NBG); *ibid.*, 03-03-1940, *Penfold 242* (NBG); 6 km SE of Mamre, (–CB), 21-09-1956, *Dahlgren & Peterson 374* (NBG); just outside Mamre next to tarred road, (–CB), 31-08-1977, *Emdon 34* (NBG); Malmesbury Dist., near Bokbaai, (–CB), *Esterhuysen 5170* (BOL); *ibid.*, ± 15 m, 15-08-1963, *Taylor 5010* (NBG); Melkpost, Atlantis, ± 165 m, (–CB), 05-10-1977, *Thompson 3546* (NBG); Bokke River, beside new national road, dune ridge, 65 m, (–CB), 06-02-1978, *Thompson 3581* (NBG); Malmesbury, near Manresa Holiday Farm, N of Atlantis, (–DA), 06-03-1991, *Koekemoer 578* (NBG); National Rd from Cape Town to Malmesbury, 24 km from Cape Town, (–DA), 22-11-1965, *Mattatia 38* (BOL); W slopes of Koeberg on Baasariesfontein, sandy slopes, 180 m, (–DA), 21-06-1972, *Oliver 3757* (NBG); Malmesbury, Kalbaskraal, (–DA), 22-02-1962, *Van der Merwe 69* (NBG); Brackenfell, (–DC), 14-12-1940, *Bond 722* (NBG), *ibid.*, *Compton 10112* (NBG); Kraaifontein, (–DC), Mar. 1931, *Bolus L. BOL 46792* (BOL); *ibid.*, 17-10-1956, *Dahlgren & Peterson 682* (NBG); *ibid.*, Aug. 1908, *Dummer NBG 96308* (NBG); *ibid.*, 08-02-1950, *Middlemost 1578* (NBG); Cape, Doornhoogde, Cape Flats, (–DC), Oct., *Ecklon & Zeyher 1484a* (S, Z); Bosmansdam, (–DC), 27-10-1965, *Esterhuysen 31326* (BOL, S); Durbanville near Cape Town, (–DC), Oct. 1903, *Marloth 3255* (PRE); Flats near Doornhoogde, (–DC), 23-12-1895, *Wolley Dod 653* (BOL, K); between Tygerberg and Zandhoogte, 65 m, (–DC/DD), 07-10-1827, *Drège s.n* [(III, E, b) aa] (P); Between Tygerberg and Zandhoogte, 65 m, (–DC/DD), 18-12-1827, *Drège 266* [(III, E, b), (a)] (P); Rhodes Fruit Farm, Languedoc portion, foot of Groot Drakenstein Mnts, 220 m, (–DD), 26-09-1986, *Forsyth 407* (NBG); Kliprug Farm, S of Paarl, (–DD), 10-10-1998, *Low 3928* (NBG); Paarl Div., Muldersvlei, (–DD), Jan. 1951, *Pillans 10399* (NY). —3319 (Worcester): Rawsonville, Witelsrivier Farm, Slanghoek, (–CA), 18-08-1975, *Walters 229* (NBG); *ibid.*, 300 m, 19-09-1975, *Walters 970* (NBG); Goudini Road, (–CB), Oct. 1921, *Levyys 4431* (BOL); Drakenstein, (–CC), Oct. 1925, *Leipoldt BOL 46791* (BOL); Franschhoek, Keerweder, 330 m, (–CC), Oct. *Bolus BOL 46796* (BOL, NBG), *Bolus BOL 46797* (BOL); Franschhoek, (–CC), 12-10-1932, *Keet STEU 17229* (NBG); *ibid.*, on flats, 29-12-1938, *Louw 181* (NBG); *ibid.*, Oct. 1913, *Phillips 1293* (SAM); Franschhoek flats near Groot Drakenstein alongside Paarl Rd, ± 800 m, (–CC), 26-10-1972, *Boucher 1972* (NBG, S); Roberts Vlei, Franschhoek, (–CC), 19-09-1946, *Compton 18303* (NBG); Paarl Dist., 1km SE of Groot Drakenstein, 175 m, (–CC), 24-10-1956, *Dahlgren & Peterson 794* (NBG); Wemmershoek Vlei, opposite sawmill on R303, (–CC), 18-07-1993, *Johns s.n.* (NBG); Berg River Hoek, (–CC), 19-09-1946, *Leighton 2058* (BOL, NY); Wemmershoek; ENE of station and N of railway (Forest Reserve), 185 m, (–CC), 26-08-1994, *Oliver 10519* (K, NBG, PRE); Franschhoek Pass, (–CC), Oct. 1946, *Stokoe SAM 59496* (SAM).

—3418 (Simonstown): sandy flats near [known], 30 m, October 1877, *Bolus* 3776 (BOL, NBG, Z); Kalk Bay Mtns. [known] 18607 (NBG); Cape Peninsula, Polsmoor, (–AB), 12-06-1947, *Cross* 29 (NBG); Dieprivier, sandy flats (III, E, b) c, below 30 m, (–AB), 15-06-1827, *Drège s.n.* (NY, P!); Tokai Flats, (–AB), 01-09-1916, *Foley* 13 (NBG, PRE); *ibid.*, 30-05-1897, *Wolley Dod* 2565 (BOL, K); near Princess Vley 30 m, (–AB), Oct. 1896, *MacOwan HNAA* 1786 (K, SAM, Z), *MacOwan* 3134 (Z); Old Polsmoor Race Track, Wynberg, 30 m, (–AB), 09-02-1967, *Rourke* 729 (NBG); between Steenberg and Retreat, (–AB), 16-08-1931, *Salter* 1293 (K); Cape Peninsula (Kalk Bay?), (–AB), May 1887, *Thode STEU* 7740 (NBG); Cape Flats, (–BA), November 1886, *Purcell s.n.* (Z); near Grabouw towards Palmiet River, on hills, (–BB), December 1877, *Bolus* 4195 (BOL). Grid ref. unknown: Bergvriër, Oct., *Ecklon & Zeyher SAM* 19785 (SAM); Cape of Good Hope, *Thunberg s.n.* (S). Without locality: *Drège PRE* 49229 (PRE), *Drège s.n.* (K [sub Herb Hooker]), *Harvey* 553 (NY), *Harvey* 665 (NY), Aug., *Pappe SAM* 19784 (SAM).

16. *Lachnaea densiflora* Meisn. in A.P. de Candolle, *Prodromus systematis naturis regni vegetabilis* 14: 578 (1857); C.H. Wright: 22 (1915); Levyns: 601 (1950). Syntypes: “In planitie Capensi et distr. Caledon”, *Ecklon s.n.* (NY [capsule annotated as “*L. capitata* a E. & Z.”, marked #, on Meisner Herbarium sheet with different collections of *L. densiflora*!], lecto. here designated; S! [locality on sheet in Meisner’s handwriting, but unfortunately he did not write the species name on the sheet], isolecto.), *Ludwig* (not seen), *Niven* (not seen), *Zeyher* 1483 (BOL! K! PRE! S!, SAM!, Z!).

Note: The capsule, annotated as “*L. capitata* a E. & Z.” and marked # in Meisner’s script, on Meisner’s Herbarium sheet with different collections, annotated as *L. densiflora* corresponds with the locality (marked #) on the sheet also in his handwriting. *Zeyher* 1483, which is well represented in the different herbaria, could not be chosen as there was no indication whether Meisner had seen any of the sheets.

Erect, corymbosely, moderate to much branched shrub up to 0.5 m tall, single-stemmed at base; reseeded. *Branches* ascending, semi-rigid, ridged below the leaf-bases, sericeous or sericeo-tomentose, densely leafy, the older sparsely hairy or glabrous and naked with prominent leaf scars. *Leaves* alternate, ascending to inclined, below inflorescence often patent with apex turned upward, crowded to distant, internodes one-fifth to as long as leaf length, sessile, amphistomatic, glabrous or occasionally margins ciliate or apex tufted, later becoming glabrous, linear to narrowly elliptic, 5.0–12.0(–20.0) × 0.7–2.5 mm, coriaceous or slightly fleshy, green, concolorous, enervate, glossy or dull, white-punctulate, in dried state longitudinally wrinkled, adaxially ± flat to concave,

abaxially convex, sometimes subkeeled, apex acuminate, occasionally acute, base cuneate to attenuate. *Inflorescence* a terminal, ebracteate capitulum, globose, 8–16 mm in diameter, ± 40-flowered with up to 22 open flowers, pedunculate; peduncle 5–10 mm long, sericeous or tomentose-sericeous. *Receptacle* at first hemispherical later after elongating, conical to widely conical, 2.0–8.0 × 3.4–7.5 mm, sericeous. *Flowers* sessile, subactinomorphic, cream, cream with a pink flush, or pale to dark pink. *Hypanthium* 1.7–3.9 mm long, circumscissile three-fifths to three-quarters from base, upper portion widely obconical, basal portion ovoid or ellipsoid, sericeous to villosulous outside, inside adpressed hairs between base of scales and plane of circumscission, rest glabrous. *Sepals* patent, subequal, ovate to widely depressed ovate, 1.7–3.5 × 1.2–3.1 mm, adaxially tomentose, abaxially tomentose or occasionally sericeo-tomentose, apex rounded to obtuse. *Stamens* exerted, outer, antisealous whorl inserted at base of sepals, inner, antipetalous whorl inserted quarter to third-way down upper portion of hypanthium; filaments filiform, 0.5–1.8 mm long, inner whorl shorter than outer whorl; anthers ellipsoid to depressed spheroid, 0.3–0.4 mm long, abaxially without broad connective tissue. *Scales* exerted, inserted midway to two-thirds down upper portion of hypanthium, linear, 0.5–1.0 mm long, glabrous, yellow in fresh state. *Ovary* ellipsoid to obovoid, 0.7–1.5 mm long, glabrous. *Style* filiform, 1.8–3.1 mm long, adpressed hairy in upper half to two-thirds. *Stigma* brush-like (Figure 7.31).

Distribution and ecology

Lachnaea densiflora is restricted to the Western Cape, extending from the southern parts of the Cape Peninsula eastwards to Bredasdorp. It is predominantly a coastal species but has been recorded to occur on sandy flats at low elevations on the Peninsula and along the Palmiet River and in the Klein River Mountains (Figure 7.32). The explanation regarding the distribution of *L. axillaris* is applicable to that of *L. densiflora*. Flowering has been recorded from August to March.

Conservation status: Vulnerable (VU A1c). The populations occurring between Rooi Els and Bredasdorp are threatened by the development of residential erven of the coastal towns in the area.

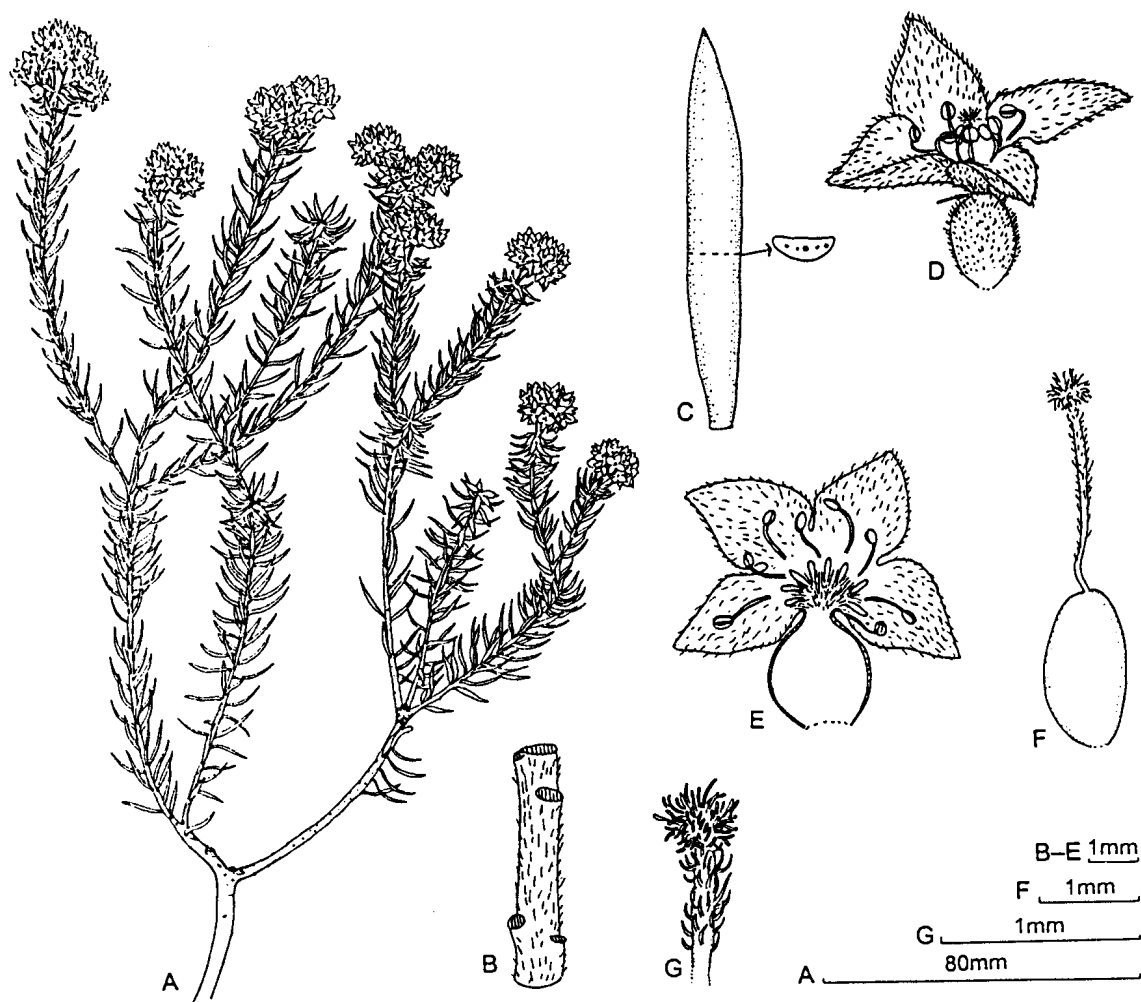


FIGURE 7.31—*Lachnaea densiflora*, Oliver 9129 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D, flower, note circumscription zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium; G, stigma and upper portion of style (enlarged).

Diagnostic characters and relationships

Lachnaea densiflora is distinguished from *L. capitata*, its sister species, by the sericeous or sericeous-tomentose branches [usually glabrous branches], the inflorescence with up to 20 open flowers at a time [with 1–8 open flowers] and the patent, tomentose sepals [ascending, sericeous sepals].

Specimens examined

WESTERN CAPE—3319 (Worcester): Bain's Kloof [doubtful locality], (–CA), Dec.1924, Rogers 29268 (NBG).

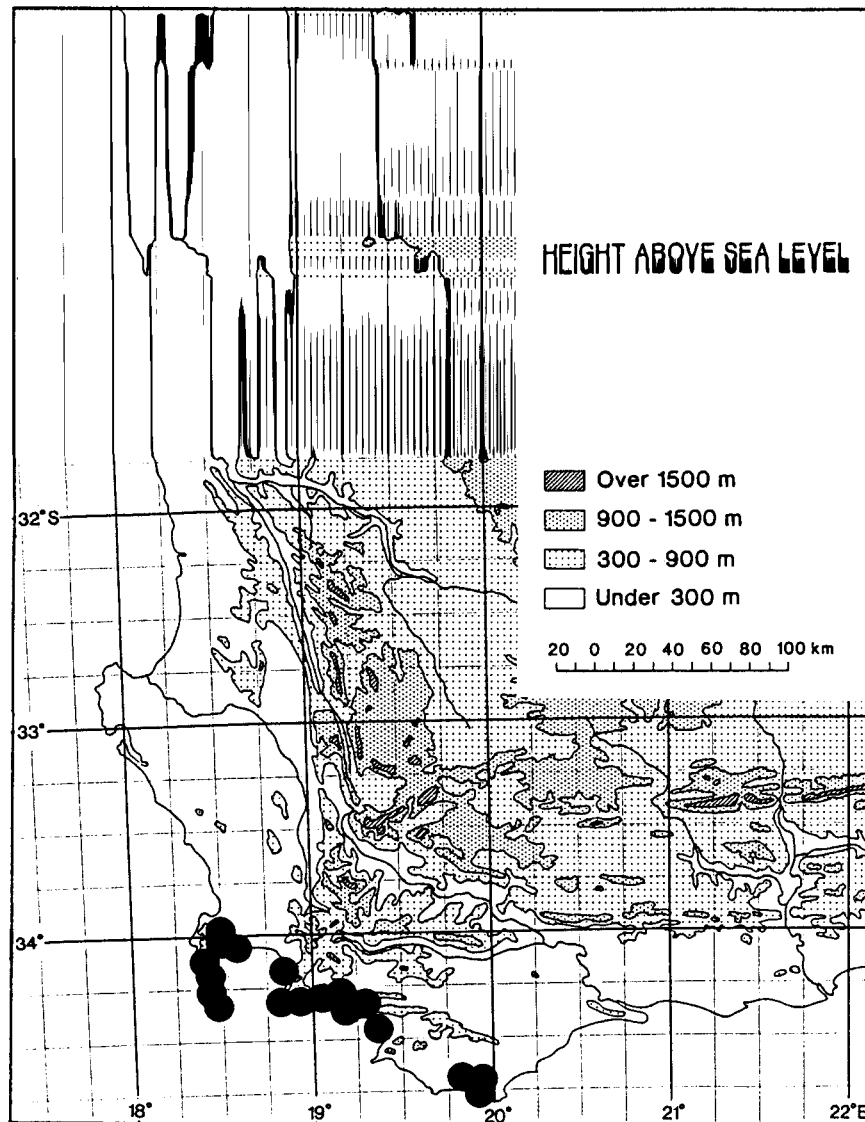


FIGURE 7.32—Known distribution of *Lachnaea densiflora*.

—3318 (Cape Town): Cape Peninsula, Kenilworth Race Course, centre of course, (–CD), 23-10-1989, *Beyers 148* (BOL, K, NBG, PRE); *ibid.*, NE corner, 08-10-1956, *Dahlgren & Peterson 601* (NBG); *ibid.*, 14-11-1956, *Dahlgren & Peterson 1889* (NBG); *ibid.*, 24-10-1964, *Esterhuysen 30817* (BOL); Kenilworth, 40 m, (–CD), 15-01-1894, *Kuntze s.n.* (NY); Claremont flats near Cape Town, 26 m, (–CD), 12-12-1891, *Schlechter 5* (Z); Cape, E-side of Tafelberg [Table Mtn] at Konstantia [Constantia], (–DC), *Ecklon 74* (S); Doornhoogde, (–DC), July, *Ecklon s.n.* (S).

—3418 (Simonstown): Cape Peninsula, Klawer Valley, Klawersvlei, 320 m, (–AB), 13-11-1989, *Beyers 150* (K, NBG, PRE); Cape of Good Hope Nature Reserve, Klaas Jagers, 40 m, (–AB), 13-11-1989, *Beyers 154* (K, NBG, PRE); *ibid.*, between Modderdam and Perdekloof, ± 80 m, 14-05-1965, *Taylor 6270* (NBG); *ibid.*, Taylor plot 17, ± 30 m, 19-01-1988, *Taylor 12023* (NBG); Kommetjie flats, (–AB), Oct. 1954, *Barker 484* (NBG); Cape Peninsula, Bonteberg, (–AB), 09-03-1941, *Compton 10625* (NBG); Simonstown, W of Rooihogte near Krom River, ± 90 m, (–AB), 18-11-1956, *Dahlgren & Peterson 1230* (K, NBG); Redhill, (–AB), Aug. 1938, *Esterhuysen 1460* (BOL); *ibid.*, Isoetes Vlei overlooking Simonstown, ± 230 m, 21-11-1965, *Taylor 6606* (NBG); near Wynberg on moist plain, 30 m, (–AB), Nov. 1886, *MacOwan HNAA 763* (BOL, SAM, Z); Constantia, Bergfliet Farm, Albertyn's camp, (–AB), 29-10-1916, *Purcell s.n. a* (SAM), *Purcell SAM 90787* (SAM); *ibid.*, flats near Louws, 17-10-1915, *Purcell s.n. b* (SAM); Cape Point, (–AD), 06-11-1941, *Compton 12313* (NBG); *ibid.*, 250 m, Nov. 1884, *Marloth 480* (BOL); Cape Peninsula, marsh near Smith's Farm, (–AD), Nov. 1939, *Esterhuysen 1424* (BOL); *ibid.*, near Cirkels Vlei, 14-11-1945, *Leighton 1505* (BOL, NY); *ibid.*, Smitswinkel, 01-02-1951, *Middlemost 1672* (NBG); *ibid.*, Patrys Vlei, 16-



08-1896, *Wolley Dod 1498* (BOL. K); Cape of Good Hope Nature Reserve, Olifant's Point, (–AD), 14-03-1965, *Mattatia 6* (BOL); *ibid.*, shack track near Rheboksdam, ± 50 m, *Taylor 6556* (NBG); Cape Flats, in sand dunes, (–BA), Oct. 1877, *Pillans BOL 3776* (BOL); Cape Flats, (–BA), Nov. 1884, *Purcell s.n* (Z); Steenbrasmond, (–BB), 23-09-1959, *Van Rensburg 440* (NBG); Betty's Bay, vacant plot just off Albertyn's Drive, (–BD), 22-10-1989, *Beyers 145* (BOL, K, NBG, PRE); *ibid.*, 16-10-1949, *Martin 416* (NBG); *ibid.*, coastal flats at Sunny Seas, 10 m, 16-10-1988, *Oliver 9129* (NBG, PRE); *ibid.*, Cascades, *Taylor L. 4386* (NBG); Pringle Bay, just south of Die Punt, 16 m, (–BD), 10-12-1989, *Beyers 171* (K, NBG, PRE); *ibid.*, open erf in Bell Road South, 18 m, 09-10-1994, *Beyers 244* (NBG, PRE); *ibid.*, dry stony places, probably damp in winter, 20 m, 05-02-1958, *Levyns 10843* (BOL); SW of Klein Hangklip Flats, rocky sandy, 20 m, (–BD), 10-09-1969, *Boucher 567* (NBG); Skilpadsvlei Flats, 10 m, (–BD), 29-10-1969, *Boucher 846* (NBG); *ibid.*, W of Hangklip, 29-01-1936, *Pillans 8245* (BOL); W of Klein Hangklip range near Roman Rock, 16 m, (–BD), 03-09-1970, *Boucher 1368* (NBG); Elephant Rock Estate, flats W of Palmiet River mouth, ± 10 m, (–BD), 08-01-1972, *Boucher 1767* (NBG); *ibid.*, near beach N of river, 30-09-1956, *Dahlgren & Peterson 1872* (NBG); *ibid.*, marshy slopes, 23-01-1946, *Esterhuysen 12589* (BOL); *ibid.*, 01-02-1947, *Levyns 8695* (BOL); Hangklip, 30 m, (–BD), 26-01-1936, *Compton 6117* (NBG); *ibid.*, 28-01-1936, *Compton 6129* (NBG); *ibid.*, 09-10-1950, *Compton 22149* (NBG); *ibid.*, SW slope, 25-10-1956, *Dahlgren & Peterson 1881* (NBG); *ibid.*, Oct. 1957, *Loubser 1036* (NBG); Palmiet vlakte, (–BD), 05-10-1948, *De Vos 1047* (NBG); Paardeberg, (–BD), Jan. 1933, *Jordaan s.n.* (NBG); Palmiet River, (–BD), Sept. 1930, *Nieuwoudt STEU 11258* (NBG); *ibid.*, near Kleinmond, Sept. 1930, *Rossouw STEU 11241* (NBG); Rooi Els, swampy ground, 33 m, (–BD), 02-10-1955, *Levyns 10349* (BOL); near Cape Hangklip, (–BD), 27-12-1945, *Parker 4025* (BOL, K, NBG).

—3419 (Caledon): Palmiet River Mountains, (–AA), Jan. 1944, *Stokoe SAM 58599* (SAM); Onrust, (–AC), 12-10-1929, *Adamson sub Levyns 2620* (BOL); Flats between Palmiet and Botrivier, in swamp, 60 m, (–AC), 19-10-1924, *Andreae 588* (NBG); Kleinmond, just past houses on way to Bot River, damp sandy flats, (–AC), 30-10-1988, *Beyers 115* (K, NBG, PRE), *Beyers 116* (NBG), *Beyers 117* (NBG); *ibid.*, 21-01-1990, *Beyers 177* (NBG); *ibid.*, near coast, 31-10-1854, *Cloete SAM 67545* (SAM); *ibid.*, 09-11-1941, *Compton 12381* (NBG, BOL); *ibid.*, dorpsrwe W van Kerksaal, , 14-09-1946, *De Vos 38* (NBG); *ibid.*, vlakte N of vlei, 14-09-1946, *De Vos 79* (BOL, NBG); *ibid.*, dorpsrwe W van hotel, , 01-10-1946, *De Vos 163* (NBG); *ibid.*, 03-10-1946, *De Vos 191* (NBG); *ibid.*, 01-09-1958, *Loubser 1060* (NBG); *ibid.*, opposite Heuningklip, between Main Rd. and Akasia Ave., 23-08-1985, *Simpson 56* (NBG); Kleinmond Nature Reserve, (–AC), 25-09-1982, *Burman 974* (BOL); Hawston, (–AC), 08-12-1951, *Compton 23214* (NBG); *ibid.*, 28-11-1896, *Schlechter 9461* (K, S, Z); 7 km SE-junction Kleinmond-Hawston-Botrivier, road to Kleinmond, 200 m NW, (–AC), 30-09-1956, *Dahlgren & Peterson 489* (NBG); 5 km NE Kleinmond near Bot River Vlei, (–AC), 30-09-1956, *Dahlgren & Peterson 1871* (NBG); E Kleinmond, near beach Sandown Bay, (–AC), 27-11-1956, *Dahlgren & Peterson 1895* (NBG), *ibid.*, *Dahlgren & Peterson 1896* (NBG); Bot River Vlei, sandy area W of vlei, 10 m, (–AC), 16-08-1982, *O'Callaghan 269* (NBG); Hermanus, Sandbaai, in black sandy soil, (–AC), 12-10-1975, *Walters 1393* (NBG); near Hermanus, next to the sea shore, ± 30 m, (–AC/AD), 1893, *Bolus 9894* (BOL); Hermanus, (–AC/AD), 13-01-1952, *Compton 23221* (NBG); *ibid.*, 6 m, 23-10-1897, *Galpin 4499* (BOL); *ibid.*, E cliffs, 06-12-1937, *Hubbard 499* (NBG); *ibid.*, Nov. 1921, *Rogers 26587* (Z); *ibid.*, 08-12-1935, *Taylor L. 1709* (NY); Hermanus, Vogelklip, (–AD), 29-09-1942, *Barker 1708* (NBG); *ibid.*, Mossel

River, *Guthrie PRE 59858* (PRE); *ibid.* Fernkloof Nature Reserve, 50 m, 04-09-1974, *Orchard 224* (NBG); *ibid.*, 110 m, 14-10-1976, *Woodvine 24* (NBG); *ibid.*, Mossel River, Jan. 1913, *Potts SAM 28324* (SAM); *ibid.*, N of Riviera Hotel, 05-10-1916, *Purcell SAM 98112* (SAM), *Purcell SAM 98113* (SAM); *ibid.*, Riviera Hotel, 02-10-1918, *Purcell SAM 98114* (SAM); Caledon Div., Klein River Mtns, (–AD), 13-10-1975, *Orchard 308* (NBG); *ibid.*, Sept. 1940, *Stokoe 8035* (BOL); *ibid.*, Sept. 1940, *Stokoe SAM 58600* (SAM); Kleinmond, Ysterklip, (–AD), 25-09-1984, *Van der Walt 456* (NBG), *Van der Walt 458* (NBG); Caledon, Kleinriviersberg, 330–1000 m, (–AD/BC) Aug., *Ecklon 58.8* [as “*Gonophylla conglomerata* E. Z. ”] (S); Caledon, Kleinriviersberg, 330–1000 m, (–AD/BC) Aug., *Zeyher 1483* (BOL, K, PRE, S, SAM, Z); Bredasdorp Div., Springfield Estate, (–DB), 00-09-1949, *Stokoe SAM 64620* (SAM); Elim–Napier, Rietfontein Private Nature Reserve, (–DB), 19-09-1984, *Van der Walt 427* (NBG, PRE); Bredasdorp Div., Brandfontein, (–DD), 13-10-1951, *Esterhuysen 19025* (BOL); *ibid.*, 10-08-1983, *Esterhuysen 35985* (S). Grid ref. unknown: sandy flats near Cape Town, 30 m, Oct. 1877, *Bolus 3776 a* (SAM, Z); Bredasdorp Dist., Ratel River, 03-09-1943, *Compton 14774* (NBG); *ibid.*, sandy brak soil, 12-01-1956, *Rycroft 1841* (NBG); Caledon Div. Oct. 1929, *Pont 1115* (Z); Cape of Good Hope, *Thunberg sub Herb Swartsii* (S), *Sparrman sub Herb Montinii* (S). Without locality, *Burchell s.n.* (K), *Ecklon & Zeyher Herb. Schinz* [as “*L. globulifera* Msn. (Eckl.)”] (Z); *Harvey 550* (NY), *Perdonnet 167* (Z), *Wright s.n.* (NY).

17. ***Lachnaea nervosa* (Thunb.) Meisn.**, *Linnaea* 14: 417 (1840); Meisn.: 579 (1857); C.H.Wright: 20 (1915). *Passerina nervosa* Thunb. *Prodromus plantarum capensium*: 75 (1794); Wikstr.: 328 (1818); Thunb.: 375 (1823). Type: *Thunberg 9588* (UPS, holo.—NBG, photo!, —PRE, microfiche!).

Lachnaea ambigua Meisn. in *Linnaea* 14: 417 (1840) [as var. *major*]; Meisn.: 576 (1857) [as var. *major*]; C.H.Wright: 23 (1915). Type: Dutoitskloofbergen, alt. 2500–3000 ft., *Drège 7368a* (NY [capsule on *Drège 7378b*], holo.!, P!, iso!).

Lachnaea ambigua var. *minor* Meisn. in *Linnaea* 14: 418 (1840); Meisn.: 577 (1857); C.H.Wright: 24 (1915). Type: Dutoitskloofbergen, in rocky area, alt. 4000 ft., *Drège 7368b* (NY, holo.!, P!—*Drège s.n. b*, iso.).

Gonophylla stricta Eckl. & Zeyh. ex Meisn.—*nom. nud.* A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 579 (1857) in synonymy.

Erect, moderately to much branched shrub up to 0.3 m, rarely up to 1 m tall, single- or multistemmed at base; reseeder or resprouter. *Branches* ascending, occasionally patent, slender to semi-rigid, ridged below leaf bases, sericeous or sparsely sericeous later

glabrescent, leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending or patent, close set to scattered, internodes up to half as long as leaves, sessile, epistomatic, narrowly elliptic or rarely narrowly obovate, $4.7\text{--}14.0 \times 0.7\text{--}1.5$ mm, coriaceous, glabrous, adaxially concave, enervate, dull, faintly white-punctulate, abaxially convex, midribbed or 3–5-ribbed, glossy, apex mucronate or acuminate, base cuneate; distal leaves below inflorescence crowded, green or tinged maroon, may appear bract-like, size variable, those immediately below inflorescence largest, narrowly ovate to obovate, $1.8\text{--}9.0 \times 1.0\text{--}4.2$ mm, acuminate or cuspidate, margin glabrous or ciliate. *Inflorescence* a terminal, sessile, ebracteate, 2–14-flowered umbel with 2–5 open flowers at a time, on main and also on short lateral flowering branches below main inflorescence, appearing racemose-like. *Flowers* subactinomorphic, cream or pink, or cream with mauve tinge. *Pedicel* 0.3–2.5 mm long, sericeous. *Hypanthium* 3.5–6.8(–10.0) mm long, circumscissile a third to two-thirds from base, upper portion funnel-shaped, sericeous on both sides, trichomes acicular, basal portion ovoid or ellipsoid, sericeous outside, trichomes blunt or subacute, glabrous within. *Sepals* patent, subequal, narrowly ovate to widely elliptic, $2.3\text{--}5.2(–8.2) \times 1.1\text{--}3.0$ mm, apex acute to obtuse, adaxially sparsely sericeous or glabrous, abaxially sericeous. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepal, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 1.0–2.4(–4.0) mm long, inner 0.6–1.5(–2.0) mm long; anthers ellipsoid to widely ellipsoid, 0.5–0.9(–1.2) mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, linear or narrowly ellipsoid, 0.7–1.7(–2.4) mm long, glabrous, translucent white in fresh state. *Ovary* ellipsoid or rarely obovoid, 0.9–1.9 mm long, glabrous, usually with tuft of hair at style attachment. *Style* linear, 3.0–6.0(–10.5) mm long, covered with straight, silky, ascending hairs throughout or only in upper half. *Stigma* brush-like (Figure 7.33).

Distribution and ecology

Lachnaea nervosa has been recorded along the mountains from Elandskloof south of Citrusdal in the north to the Jonkershoek mountains in the Stellenbosch District and eastwards through the Riviersonderend Mountains to the Langeberg near Swellendam (Figure 7.34). Apart from the Zeyher collection, no other herbarium specimens of this species are known from the Langeberg. It occurs on the upper slopes and summit ridges at altitudes between 830 and 2000 m. Flowering has been recorded from July to December.

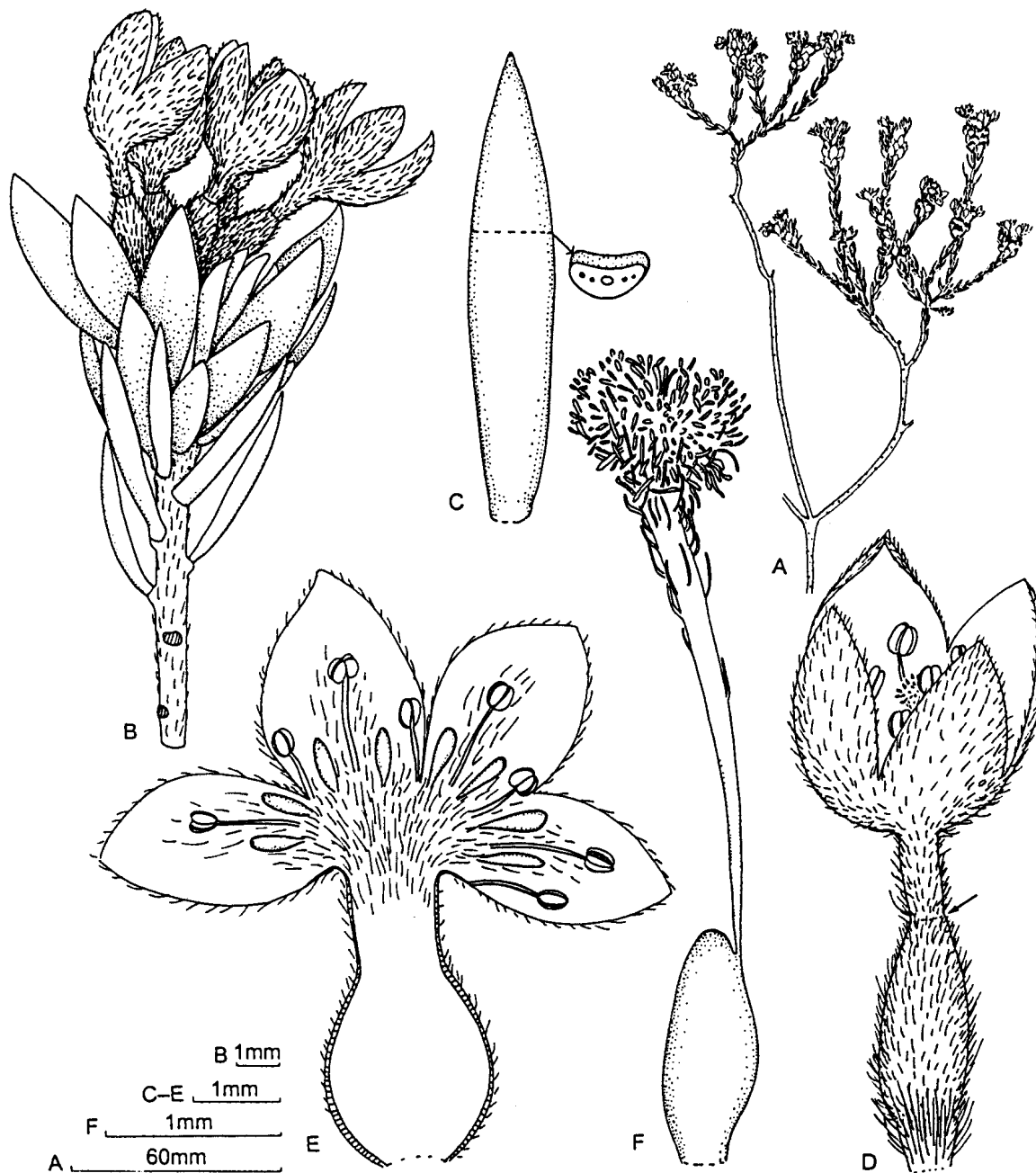


FIGURE 7.33—*Lachnaea nervosa*, Oliver 9259 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower, note circumscession zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium.

Meisner regarded *Lachnaea ambigua* to be very similar to *L. nervosa* from which it is distinguished mainly by the shorter branches and the leaves being two to four times shorter. Over its distribution range variation in growth form and leaf length could be

correlated with variation in habitat. On the open slopes in the drier regions the plants are more compact and usually not more than 0.4 m tall. The length of the leaves, however, varies from 4.7 to 12 mm. Plants growing on steep rocky slopes in wetter areas, as in the Du Toit's Kloof and Stellenbosch Mountains, are more slender, upright, and up to 1.0 m tall with the leaf length varying from 5.0 to 14.0 mm. The variation exhibited includes Meisner's concepts of the two species and therefore *L. ambigua*, the more recent name, must be regarded as a synonym of *L. nervosa*.

Conservation status: Lower Risk Least Concern (LRlc).

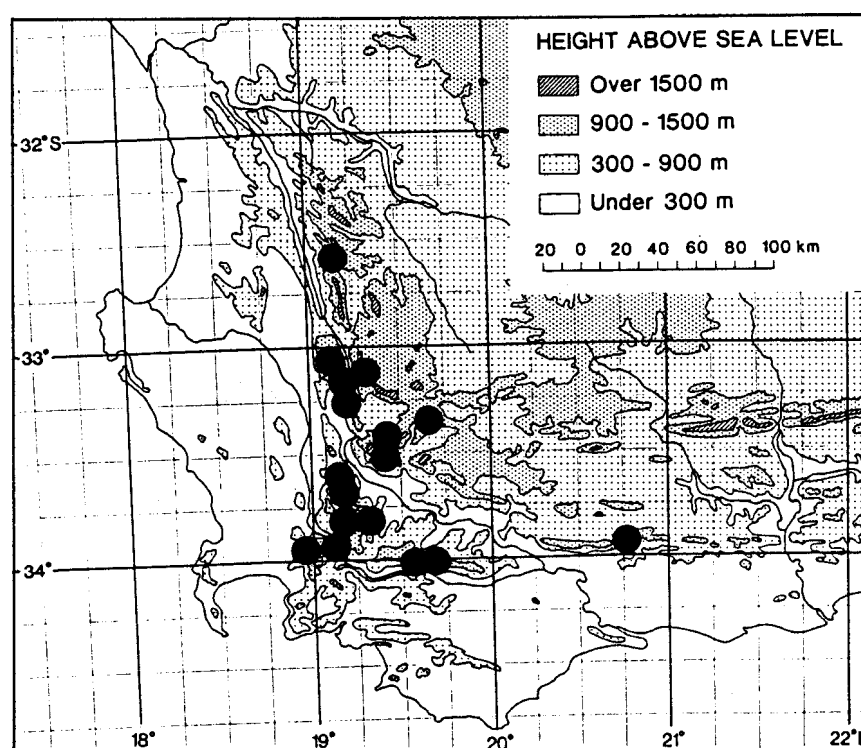


FIGURE 7.34—Known distribution of *Lachnaea nervosa*.

Diagnostic characters and relationships

Lachnaea nervosa can be distinguished from *L. striata*, a species also having ebracteate umbels, alternately arranged leaves and leaves abaxially 1–5-ribbed with crisped ciliate margins by the eciliate leaves, the basal portion of the hypanthium covered on the outside by silky, blunt to subacute trichomes and the long, linear or narrowly elliptic scales which may be almost as long or longer than the antisepalous stamens.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Between Citrusdal and Elandskloof, W of the waterfalls, (–CA), Aug. 1940, *Stokoe 8038* (BOL); Elandskloof, (–CA), Aug. 1940, *Stokoe SAM 58638* (SAM); —3318 (Cape Town): Jonkershoek State Forest, Third Ridge Peak, (–DD), 29-11-1987, *De Kock 152* (NBG, PRE); Jonkershoek, Second Ridge Peak, 1400 m, (–DD), 01-06-1980, *Esterhuysen 35444* (BOL); *ibid.*, on steep rocky slope, 02-09-1984, *Esterhuysen 36180* (BOL, NBG); Jonkershoek Valley, 1000–1165 m, (–DD), 28-08-1963, *Taylor 5050* (NBG, PRE). —3319 (Worcester): Ceres Mtns [exact locality unknown], Sept. 1924, *Marloth 6253* (NBG); Witzenberg, Inkruip, (–AA), 01-10-1954, *Esterhuysen 23395* (BOL); *ibid.*, Swartgat Peak, upper slopes, 1665–2000 m, 02-11-1958, *Esterhuysen 27931* (BOL); Groot Winterhoek State Forest, Kliphuisvlakte, ± 1465 m, (–AA), 20-09-1973, *Haynes 827* (NBG); Great Winterhoek, Sneegat Valley, 1500 m, (–AA), 17-11-1916, *Phillips 1669* (NBG, SAM); *ibid.*, 1165–1330 m, Nov. 1932, *Thorne SAM 50405* (SAM); top of Tulbagh Valley, 1330 m, (–AA), 21-11-1916, *Phillips 1669a* (SAM); Ceres Dist., road to Agter Witzenberg, near Gydo Pass, (–AB), 09-11-1956, *Dahlgren & Peterson 1138* (K, NBG, S); Gydo Pass, (–AB), Aug. 1939, *Leipoldt 22470* (BOL, NBG, PRE); *ibid.*, *Leipoldt 22471* (BOL, NBG, PRE); *ibid.*, 1065 m, 18-08-1934, *Salter 4699* (BOL, K, PRE, SAM); *ibid.*, Jul. 1943, *Newton BOL 46746* (BOL); Ceres Dist., Hansiesberg, E slopes, 1400 m, (–AB), 09-10-1975, *Oliver 6049* (NBG); *ibid.*, SE slopes below summit, 1600 m, 05-11-1989, *Oliver 9259* (K, NBG, PRE); *ibid.*, 1700 m, 06-12-1975, *Winter 56* (NBG); Witzenberg near Steendahl, 665–1000 m, (–AC), Oct. 1884, *Bolus 5475* (BOL); Tulbagh, Nuwekloof S-side, (–AC), 15-11-1928, *Gillett 364* (NBG); Hex River Mtns, nek below Sentinel Peak, 1830 m, (–AD), 13-12-1948, *Esterhuysen 14836* (BOL); Ezelsfontein slopes, (–AD), 01-09-1951, *Esterhuysen 20380* (BOL); Mount Brodie, Hex River Mtns, 1830 m, (–AD), 01-11-1953, *Esterhuysen 22211* (BOL); Matroosberg, (–BC), 13-11-1960, *Esterhuysen BOL 46745* (BOL); *ibid.*, 1900 m, Dec. 1895, *Marloth 2232* (NBG); Ceres, Roodeberg, (–BC), Jan. 1841, *Stokoe SAM 58630* (SAM); Du Toit's Kloof Mtns, 1300 m, (–CA), 19-09-1833, *Drège 7368b* (NY), as *Drège s.n.* (P); *ibid.*, 830–1000 m, (–CA), *Drège 7368a* (NY, P); *ibid.*, 1000–1330 m, (–CA), Oct., *Drège s.n.* [*L. ambigua* Msn. a] (S); *ibid.*, Molenaarsberg, 1000–1330 m, 29-09-1963, *Esterhuysen 30349* (BOL); Du Toit's Kloof, slopes above, S aspect, 830–1000 m, (–CA), 11-11-1951, *Esterhuysen 19230* (NBG BOL); Paarl Div., Haalhoek Sneekop, S aspect, 1300 m, (–CA), 05-12-1965, *Mattatia 48* (BOL); Fonteintjiesberg area, S slope of Meirings Plateau, 1330–1665 m, (–CB), 20-10-1963, *Esterhuysen 30419* (BOL, S); Franschoek Pass, Middagkransberg, summit ridge, ± 830 m, (–CC), 11-10-1973, *Boucher 2402* (NBG); Wemmershoek Mtns, 1000–1330 m, (–CC), 19-10-1943, *Esterhuysen 9083* (BOL); Wemmershoek Peak, 2000 m, (–CC), 31-12-1944, *Esterhuysen 11245* (BOL); *ibid.*, S slopes, 1665 m, 03-11-1951, *Esterhuysen 19198* (NBG, BOL); Du Toit's Peak, W ridge, 1330–1665 m, (–CC), 11-12-1945, *Esterhuysen 12377* (BOL); *ibid.*, stony slopes, 1500 m, 16-10-1949, *Esterhuysen 16057* (BOL); *ibid.*, 1665–1830 m, 19-10-1954, *Esterhuysen 23776* (BOL); Franschoek, Mont Rochelle Nature Reserve, near path on ascent to observation point, 700 m, (–CC), 4-10-1997, *Hansford, M 3* (NBG); Franschoek, 1000 m, (–CC), 27-10-1913, *Phillips 1288* (SAM); Worcester Dist., Goudini Sneekop, SE-side, 1830–2000 m, (–CD), 30-10-1960, *Esterhuysen 28548* (BOL, S); Louwshoek Mtns, 1833 m, (–CD), Nov. 1946, *Stokoe SAM 59497* (NBG, SAM).

—3320 (Montagu): mountains near Swellendam [precise locality unknown], Oct. 1826, *Ecklon s.n.* (NY); Langeberg, NW of Swellendam, Voormansbosch, Duiwelsbosch, 330–1330 m, (–DC), Oct., *Ecklon & Zeyher s.n.* [70.10] (NY, PRE, S, Z); Grootvadersbosch, Swellendam, (–DC/DD), Oct., *Ecklon 3767* [126.10] (NY, Z), *Zeyher 3767* (BOL, PRE, S, SAM).

—3419 (Caledon): Riviersonderend Mtn, Wa en Osse (Nooienskap on Map, 2nd edn.) S slopes, 1200 m, (–BA), 29-11-1992, *Beyers 215* (BOL, K, PRE, NBG); mountains Genadendal, ± 1330 m, (–BA), 27-10-1897, *Galpin 4498* (PRE); Caledon Div., Riviersonderend Mtns, (–BA/BB), Oct. 1950, *Stokoe SAM 64621* (PRE, SAM); Caledon Dist., Riviersonderend Peak, 1665 m, (–BB), 17-10-1945, *Stokoe NBG 52671* (NBG), as *Stokoe SAM 58629* (SAM). Grid ref. unknown: Ceres Wild Flower Show, Oct. 1931, *Comm. Compton BOL 46751* (BOL); *ibid.*, 04-10-1939, *Compton 7071* (NBG). Without locality: *Drège 7365* (NY [capsule], P); *Drège s.n.* [*L. ambigua* Msn. a] (K).

18. ***Lachnaea sociorum*** *Beyers* in *Bothalia* 28,1: 49 (1998b). Type: Western Cape, 3321 (Ladismith): Langeberg, Bergfontein, S-facing midslopes of Koksposberg, 379 m, (–DC), 18-01-1991, *McDonald 2059* (NBG, holo.!, BOL!, K!, NY!, PRE!, iso.).

Lachnaea diosmoides var. *major* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 579 (1857). Type: *Zeyher s.n.* (S, holo.!). Meisner, however, expressed his doubt regarding the status of this variety.

Lachnaea crassifolia Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 579 (1857).

Calysericos parviflora Eckl & Zeyh. (ex parte) ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 579 (1857).

Erect, compact, moderately branched, shrub up to 0.6 m tall, multistemmed at base; resprouting after fire. *Branches* erect, slender, ridged below leaf bases, covered with long, straight, adpressed hairs admixed with crooked ones, densely leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending or occasionally inclined to patent, with apex curled inward, imbricate, sessile, lanceolate to narrowly elliptic or occasionally elliptic to obovate, 3.6–6.0 × 0.9–2.4 mm, coriaceous, green, those below inflorescence sometimes tinged maroon, glabrous, adaxially concave, smooth, dull, ± white-punctulate, abaxially convex, faintly 3-ribbed or towards apex subkeeled, glossy, subpapillate, apex acute, base cuneate. *Inflorescence* a terminal, sessile, ebracteate, 6–14-flowered umbel

with up to 9 open flowers at a time, on main flowering branches. *Flowers* subactinomorphic, white, skunk-scented. *Pedicel* 0.3–0.7 mm long, sericeous. *Hypanthium* 2.5–3.7 mm long, circumscissile, three-fifths to three-quarters from base, upper portion funnel-shaped, tomentose outside, adpressed hirsute within, basal portion oblong, glabrous, rarely tomentose outside, glabrous within. *Sepals* patent, subequal, widely ovate or subrotund, $1.7\text{--}3.0 \times 1.7\text{--}3.2$ mm, apex rounded or obtuse, adaxially and abaxially tomentose. *Stamens* exserted, outer, antisealous whorl inserted at base of sepals, 0.7–1.5 mm long, inner, antipetalous whorl inserted at rim of hypanthium, 0.5–1.2 mm long (inner stamens the shortest or equal to the shortest of outer stamens); anthers widely ellipsoid, 0.4–0.6 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, obovoid or subglobose, 0.3–0.5 mm long, glabrous, translucent-white when fresh. *Ovary* ellipsoid or obovoid, 0.9–1.4 mm long, glabrous. *Style* linear-obconical, 2.0–2.9 mm long, with straight, adpressed or incurled hairs in upper half to two-thirds. *Stigma* brush-like (Figure 7.35).

Distribution, ecology and variation

Recorded from the eastern end of the Langeberg Mountains, from Perdeberg in the west eastwards to Gavelbos and the southern slopes of the Attakwa Mountains below Perdekop. Plants occur in stony soil on the southern and northern slopes, at altitudes between 300 and 1 100 m (Figure 7.36). Flowering has been recorded from August to January.

The population on the northern side of the Langeberg at Tygerberg, west of Huisrivier, is very localised and reasonably old. These plants are single-stemmed at the base, branching close to the ground and are open at the crown with decumbent branches. Whether they would resprout after a fire remains to be seen. Two collections were made from this area, viz. *Beyers 176* and *McDonald 1780*. In all the material collected by McDonald, the basal portion of the hypanthium is glabrous as in all collections from other localities. However, in the material collected by Beyers the basal portion of the hypanthium on the outside is tomentose like the rest of the flower. This variation in hairiness needs further investigation before it can perhaps be formally expressed taxonomically.

Conservation status: Lower Risk Least Concern (LRlc).

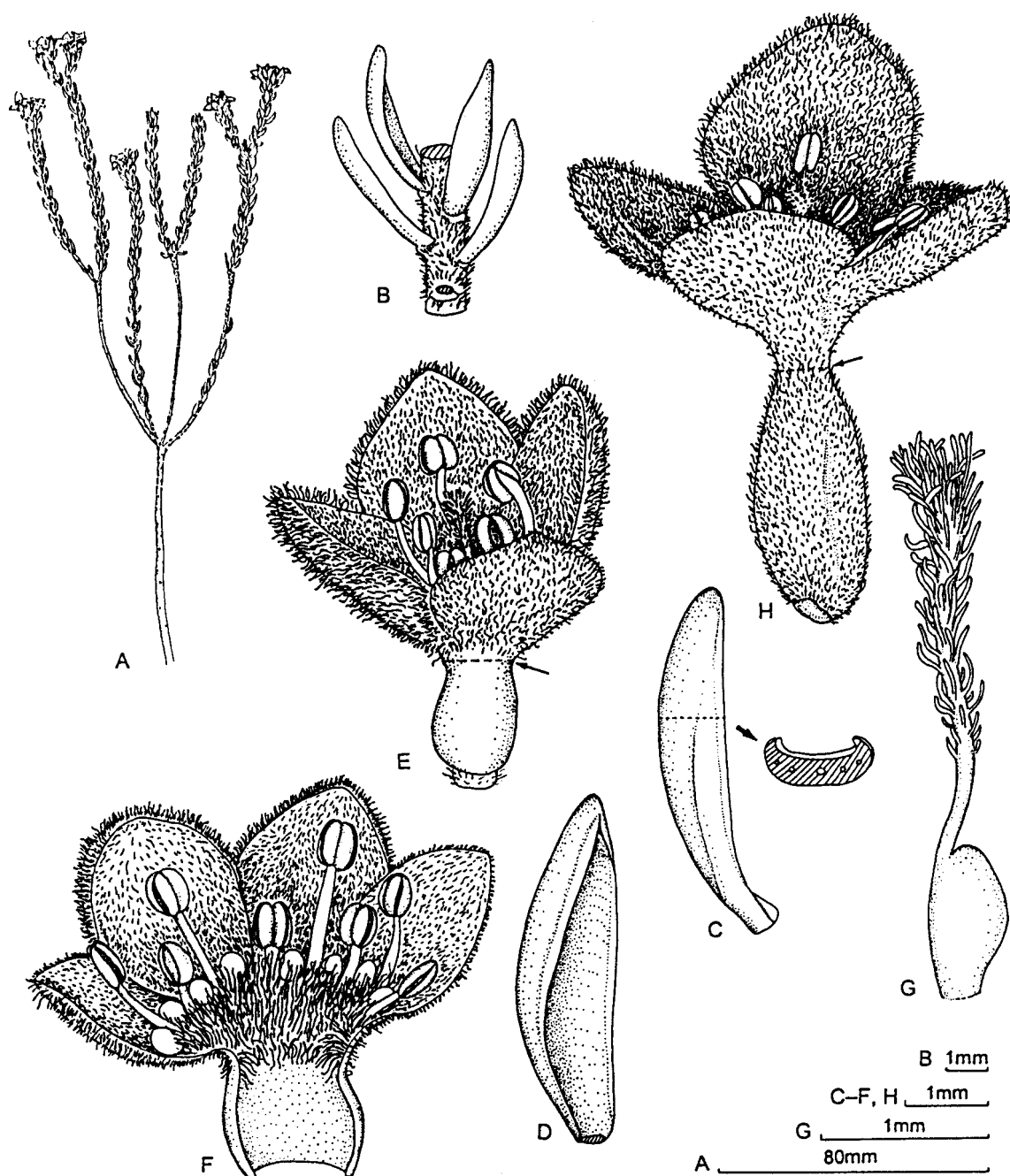


FIGURE 7.35—*Lachnaea sociorum*. A, portion of plant; B, branch with leaves; C & D leaves: C, abaxial view and cross section; D, lateral view; E, flower, note circumscission zone (arrowed); F, flower split longitudinally with gynoecium removed; G, gynoecium; H, flower (atypical pubescent form). A–G, McDonald 2059 (NBG); H, Beyers 176 (NBG)

Diagnostic characters and relationships

Lachnaea sociorum is closely related to *L. ericoides* Meisn.; both have a similar inflorescence and floral structure. In both species the lower portion of the hypanthium is glabrous (except for the one collection of *L. sociorum*, *Beyers 176*, where it is tomentose). In *L. sociorum* the leaves are usually lanceolate to narrowly elliptic, abaxially faintly 3-ribbed, with an acute, glabrous apex, the sepals adaxially tomentose and the stigma penicillate. In *L. ericoides*, on the other hand, the leaves are narrowly elliptic to obovate, abaxially keeled, with a rounded, tufted apex, the sepals adaxially sericeous-tomentose and the stigma capitate with elongated papillae.

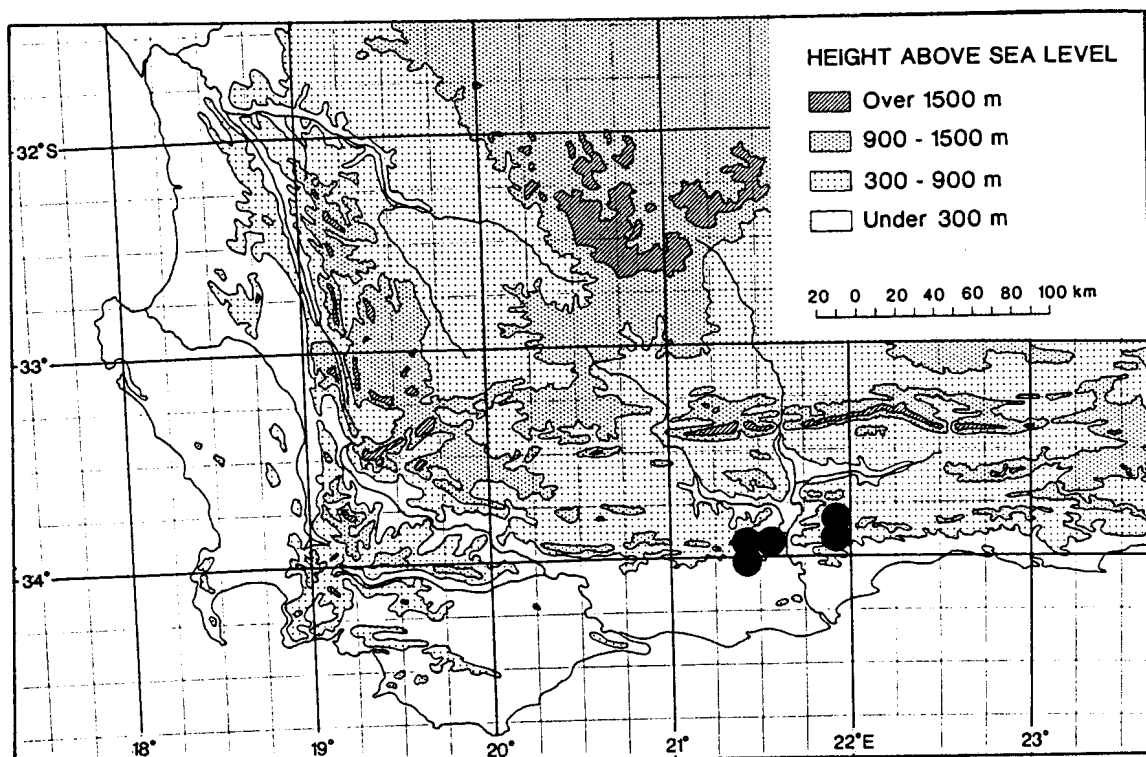


FIGURE 7.36—Known distribution of *Lachnaea sociorum*.

Specimens examined

WESTERN CAPE.—3321 (Ladismith): Langeberg, Paardeberg, 1 100 m, (–CD), 11-08-1977, *Haynes 1401* (NBG); E of Garcias Pass on northern side of Langeberg, Tygerberg, west of Huisrivier, 300 m, (–DC), 15-12-1989, *Beyers 176* (BOL, K, NBG, NY, PRE, Z); *ibid.*, 17-12-1988, *McDonald 1780* (BOL, NBG, PRE); Langeberg, Bergfontein area, lower slopes of Koksposberg, 425 m, (–DC), 30-10-1990, *McDonald 1963* (PRE, NBG); *ibid.*, S-facing midslopes of Koksposberg, 379 m, 18-01-1991, *McDonald 2059* (BOL, K,

NBG, NY, PRE); Riversdale Dist., Langeberg, W of Witelsberg, upper Witelsrivierkloof, 610 m, (–DC), 01-09-1994, *Oliver 10524* (BOL, NBG, PRE); Langeberg, lower SW slopes of Witelsberg, N of Koksposberg, 485 m, (–DC), 01-09-1994, *Oliver 10536* (BOL, K, NBG, PRE, Z); Mossel Bay Road to Perdekop before forest plantation, 600 m, (–DD), 17-10-1978, *Bond 1578* (NBG); Outeniqua Mtns, ridge E of Elandsberg NW of Voortrekkergeedenkplaat on Attaquaskloof Nature Reserve boundary, S slopes, 900 m, (–DD), 24-06-1997, *Oliver 10829* (BOL, K, NBG, PRE, S).

—3421 (Riversdale): Riversdale, Farm Gavelbos, mountain slope, SW aspect, stony soil, 307 m, (–AB), 08-09-1984, *Bohnen 8479* (NBG, PRE). Grid ref. unknown: Riversdale Flower Show, 01-09-1994, *comm. Oliver* (NBG); Riversdale Div., Langeberg, 01-10-1923, *Muir 2824* (BOL), *Muir 3053* (PRE).

19. ***Lachnaea diosmoides* Meisn.** in *Linnaea* 14: 418 (1840) [as var. *elatior* on p. 419; see below]; Meisn.: 552 (1843); Meisn.: 578 (1857); C.H.Wright: 23 (1915); Batten & Bokelmann: ill. t. 88, fig. 9 (1966). Syntypes: mountain near Hoogekraalsrivier, below 1000–2000 ft, [19-09-1831], *Drège a* [*Lachnaea phyllicoides* Lam. *a*] (K!, P!, PRE!); at margin of mountain forest near George, 1000–1500 ft, [29-08-1831], *Drège b* [*Lachnaea phyllicoides* Lam. *b*] (NY!, lecto., here designated; P!, SAM!).

Lachnaea diosmoides var. *elatior* Meisn., *Linnaea* 14: 419 (1840), Meisn.: 578 (1857). Syntypes: mountains near Hoogekraalsrivier, below 1000–2000 ft, [19-09-1831], *Drège a* [*Lachnaea phyllicoides* Lam. *a*] (K!, P!); at margin of mountain forest near George, 1000–1500 ft, [29-08-1831], *Drège b* [*Lachnaea phyllicoides* Lam. *b*] (NY!, lecto., here designated; P!, SAM!, isolecto.).

Lachnaea diosmoides var. *tenella* Meisn., *Linnaea* 14: 419 (1840); Meisn.: 579 (1857); C.H.Wright: 23 (1915). Type: Damp flats near Ataquaskloof, 1000 ft, [25-01-1830], *Drège s.n.* [7366 on specimen] (NY, holo.!; K!, P!, iso.).

Lachnaea phyllicoides Lam. *Encyclopédie méthodique*: t 292, fig. 3, non dict. *Encyclopédie méthodique* 3: 374 (1792), nec Herb.; *Drège*: 117 & 124 (1843).

Erect, moderately branched shrub to 1,5 m tall, single-stemmed at base; reseeder. *Branches* erect to flexuous, slender, ridged below the leaf bases, glabrous, leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending to patent, occasionally reclined, imbricate but towards inflorescence crowded, sessile, epistomatic, linear-elliptic to narrowly elliptic, 5.0–10.0 × 1.0–1.5 mm, coriaceous, glabrous, adaxially flat to

obtusely concave, smooth, dull, $\pm$ white-punctulate, abaxially obtusely convex, subkeeled in distal third, prominently midribbed, glossy, apex acuminate, base cuneate. *Inflorescence* a terminal, sessile, ebracteate, 6–20-flowered umbel on main and short lateral flowering branches immediately below main inflorescence, which may overtop umbel on main flowering branch, forming a dense cluster of umbels. *Flowers* subactinomorphic to zygomorphic, cream. *Pedicel* 0.2–0.5 mm long, adpressed hirsute. *Hypanthium* 2.0–2.8 mm long, circumscissile third to two-thirds from base, upper portion funnel-shaped, tomentose outside, within adpressed hirsute between base of scales and plane of circumscission, rest tomentose, basal portion oblong, ellipsoid or ovoid, sericeous outside, glabrous within. *Sepals* ascending, subequal to unequal, then posterior the smallest and anterior the largest, ovate, elliptic to widely elliptic, obovate or subrotund, $1.4\text{--}3.0 \times 1.3\text{--}2.6$ mm, apex rounded or obtuse, both sides tomentose. *Stamens* exerted, outer, antisealous whorl inserted usually at base of sepals, occasionally at rim of hypanthium, inner, antipetalous whorl inserted usually at rim of hypanthium, occasionally in mouth of hypanthium; filaments filiform, 0.3–1.2 mm long; anthers widely ellipsoid to suborbicular, 0.4–0.8 mm long, abaxially without broad connective tissue. *Scales* exerted, inserted at mouth of hypanthium immediately below antipetalous stamens, clavate, ovoid or ellipsoid, 0.2–0.7 mm long, glabrous. *Ovary* ellipsoid or ovoid, 0.7–1.0 mm long, glabrous. *Style* linear to linear-obconical, 1.6–2.4 mm long, with straight, adpressed or incurled hairs in upper third to two-thirds. *Stigma* capitate and papillate (Figure 7.37).

Distribution and ecology

Lachnaea diosmoides occurs on the slopes of the Attakwas Mountains southwest of Oudtshoorn, across the Outeniqua and Tsitsikamma Mountains, as far east as the Storms River Forest Reserve, at altitudes between 250 and 1665 m (Figure 7.38). Flowering has been recorded throughout the year.

Conservation status: Lower Risk Least Concern (LRlc). Being a reseeders, frequent fires could impact negatively on this species, moving it into a threatened category very quickly.

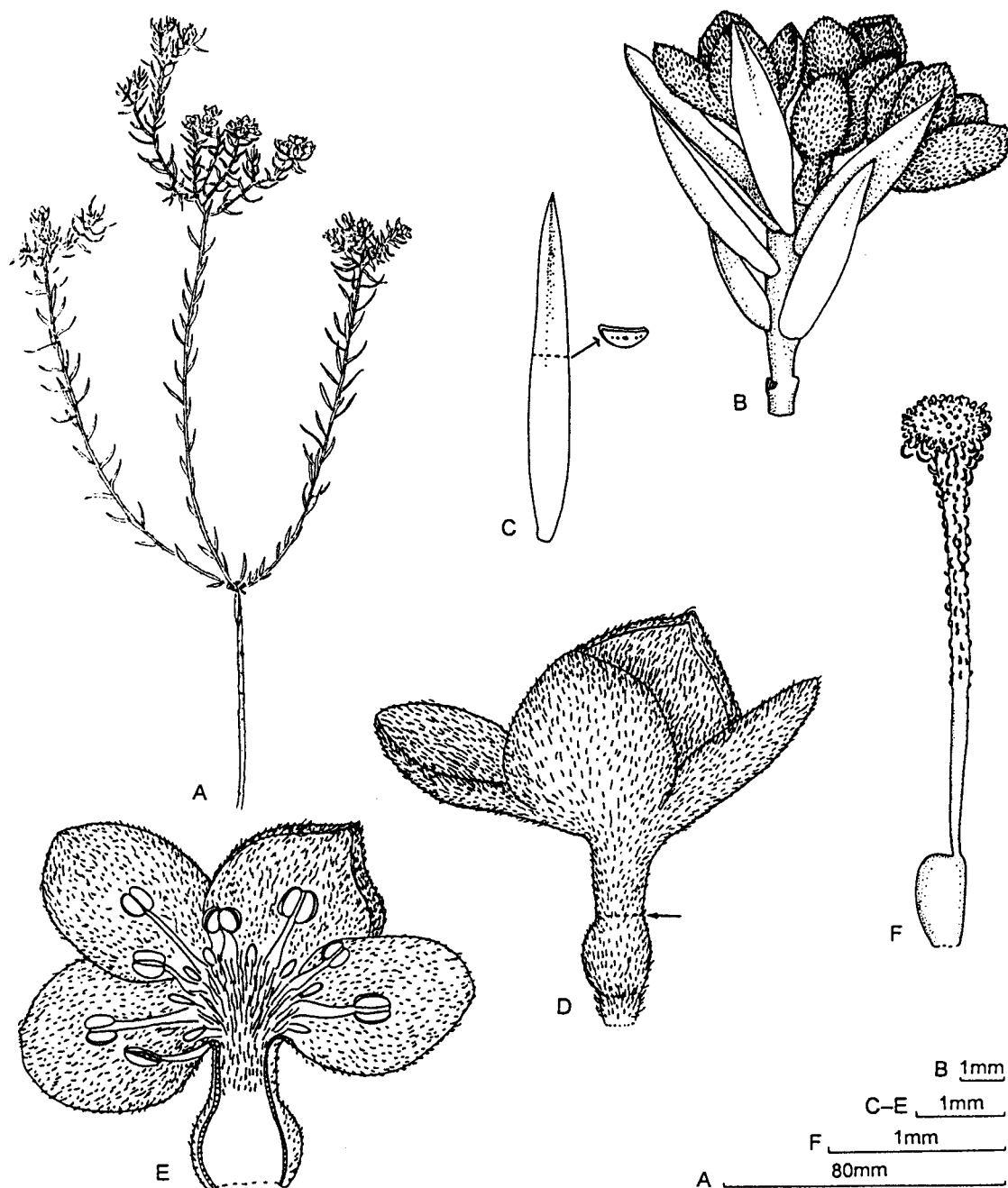


FIGURE 7.37—*Lachnaea diosmoides*, Beyers 181 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower, note circumscession zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium.

Diagnostic characters and relationships

Lachnaea diosmoides is allied to *L. ericoides* and *L. stokoei*. Its erect habit (up to 1.5 m), glabrous leaves and basal portion of hypanthium being sericeous on the outside,

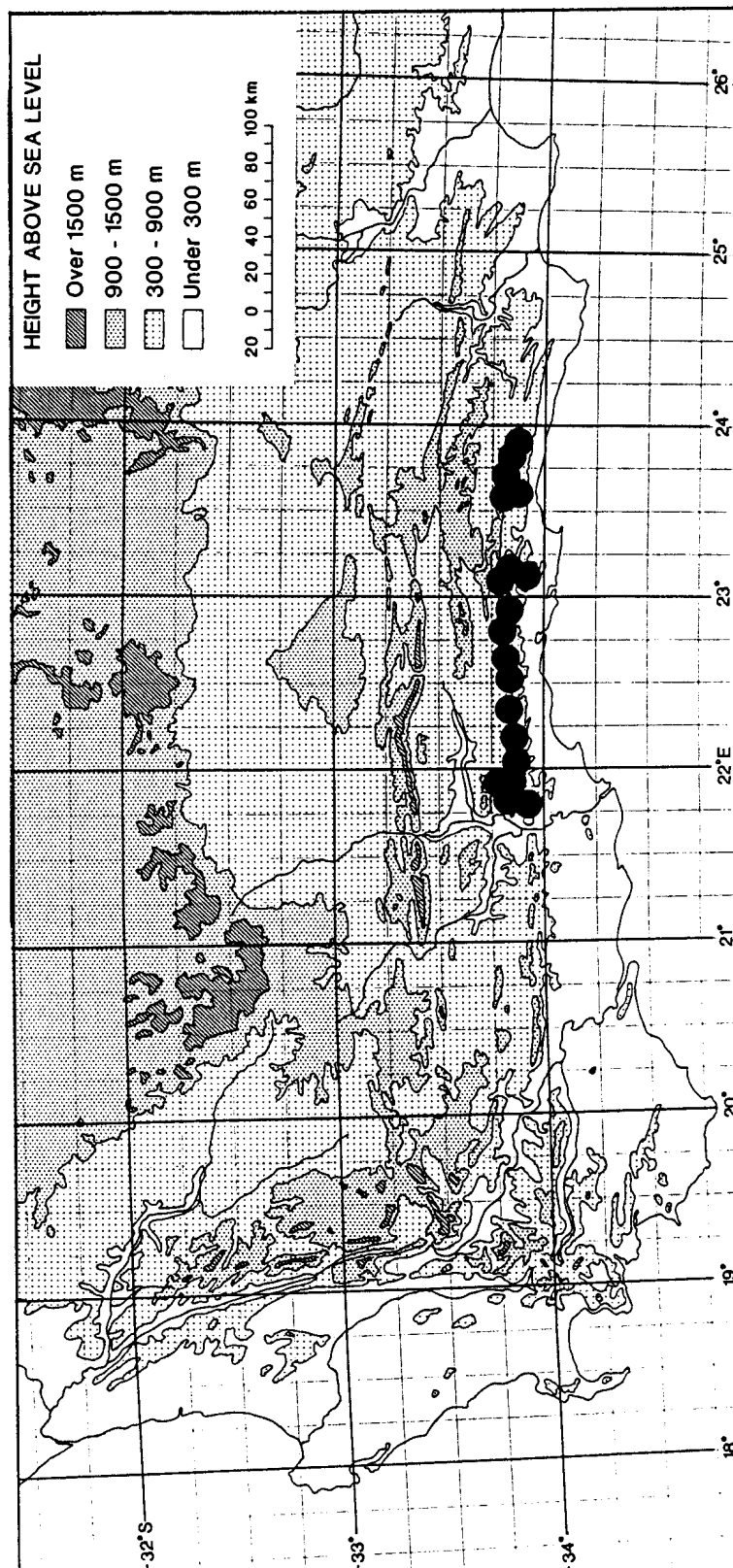


FIGURE 7.38—Known distribution of *Lachnaea diosmoides*.

distinguishes it from *L. ericoides* which has a more rounded to straggling habit (up to 0.5 m) and tufted leaves, with the basal portion of the hypanthium glabrous on the outside. It is also easily distinguished from *L. stokoei* which has the scales abaxially attached to the hypanthium.

Specimens examined

WESTERN CAPE.—3321 (Ladismith): Rooielsrivier Farm between Groot-Goliatsberg & Spitskop, NW aspect, 425 m, (–DD), 08-03-1980, *Burgers 2315* (NBG); damp flats near Ataquaskloof, (–DD), 330 m, 25-01-1830, *Drège 7366* (NY, P, K [Herb. Hook], K [Herb. Benth.]); Attakwas Mtns, Ruitersbos, en route to Perdekop, (–DD), 27-11-1979, *Spreeth 159* (NBG); Attakwaskloof near Voortrekker memorial plaque, 800 m, (–DD), 21-11-1972, *Thompson 1605* (NBG); Cloetes Pass, Herbertsdale, (–DD), 20-01-1940, *Zinn SAM 54770* (SAM).

—3322 (Oudtshoorn): George (precise locality unknown), Oct., *Pappe SAM 19787a* (SAM); *ibid.*, Jan., *Zeyher 1475* (PRE, SAM); Mossel Bay Dist, Ruytersbosch, (–CC), 05-12-1951, *Barker 7685* (NBG); *ibid.*, 19-09-1951, *Van Niekerk 92* (BOL); Outeniqua Mtns, near Krom River, ± 500 m, (–CC), 07-04-1979, *Campbell 13551* (NBG); Mossel Bay-Oudtshoorn Dist, Robinson Pass, (–CC), 30-06-1947, *Compton 19590* (NBG); *ibid.*, 415 m, 20-05-1956, *Heginbothnam 304* (NBG); *ibid.*, 500 m, 27-07-1957, *Levyyns 10550* (BOL); *ibid.*, Langeberg to W of top of pass, moist S facing slopes, 1000 m, (–CC), 12-12-1979, *Oliver 7491* (NBG); top contour of Jonkersberg Plantation; 665 m, (–CC), Sept. 1932, *Fourcade 4782* (BOL, NBG); *ibid.*, 19-09-1936, *Salter 6347a* (BOL); Ruitersbos Forest Station, beyond old station, (–CC), 27-11-1979, *Spreeth 157* (NBG); *ibid.*, at forester's house, 27-11-1979, *Spreeth 158* (NBG); George Dist., Jonkersberg, (–CC), 21-12-1935, *Taylor 1647* (NY); back road near Ruytersbosch, (–CC), 14-19-1951, *Van Niekerk 53* (BOL); George, in mountains near the town, 330 m, (–CD), 11-01-1897, *Bolus 8690* (BOL); George Dist, Cradock Mtn, 665 m, (–CD), 29-01-1943, *Compton 14387* (NBG); *ibid.*, rocky N slopes, 1000 m, 14-04-1963, *Esterhuysen 30149* (BOL); George Dist, Montagu Pass, 330 m, (–CD), 15-10-1938, *Compton 7423* (NBG); *ibid.*, 250 m, 29-09-1939, *Compton 7580* (NBG, S); 25-08-1956, *Dahlgren & Peterson 233* (K, NBG, S); *ibid.*, 730 m, Oct. 1921, *Fourcade 1601* (BOL, GRA, NBG); *ibid.*, between Toll House and bridge, 1165 m, 13-06-1944, *Fourcade 6405* (BOL); *ibid.*, S side, ± 330 m, 04-11-1928, *Gillett 2034* (NBG); *ibid.*, 3-10-1974, *Goldblatt 2915* (S); *ibid.*, bushy slopes, 300 m, 25-07-1956, *Levyyns 10505* (BOL); *ibid.*, 500 m, 02-11-1894, *Schlechter 5785* (BOL, K, S, Z); *ibid.*, 830 m, Aug. 1931, *Thorne SAM 51675* (SAM); *ibid.*, 400 m, Sept. 1880, *Young BOL 5532* (BOL); *ibid.*, Cradock Peak slopes, Jan. 1940, *Zinn SAM 54815* (SAM); Outeniqua Pass, 665 m, (–CD), 19-10-1953, *Compton 24398* (NBG); *ibid.*, near top of Pass, S slopes, 750 m, 21-08-1956, *Dahlgren & Peterson 177* (K, NBG); *ibid.*, top of Pass, ± 1000 m, 19-10-1953, *ibid.*, *Lewis 3975* (SAM); *ibid.*, summit, 800 m, 25-11-1979, *Spreeth 152* (NBG); Saasveld Forest Station, upper S slopes, 600 m, (–CD), 17-03-1970, *Dahlstrand 1405* (NBG); at margin of mountain forest near George, (IV, A), (–CD), 330–500 m, 29-08-1831, *Drège b* (P, NY, SAM); George, (–CD), Aug. 1931, *Gie STEU 11600* (NBG); *ibid.*, Jul./Aug. 1962, *Tennant 14* (NBG); mtns N of George, 500 m, (–CD), 12-01-1897, *Guthrie 4372* (NBG); George, New Montagu Pass, 665 m, (–CD), 01-08-1952, *Levyyns 9874* (BOL); George Dist,

Geelhoutboomberg, (–CD), 22-07-1962, *Taylor 3442* (NBG); Saasveld Forest Station, next to track en route to Tierkop, 1000 m, (–DC), 16-03-1990, *Beyers 181* (NBG); George Dist, S foothills of Outeniqua Mtns, Tierkop, S slope, 400 m, (–DC), 08-04-1983, *Bean 1122* (NBG); at mountain near Hoogekraals River, (IV, A), 330–665 m, (–DC), 19-09-1831, *Drège a* (P, K [Herb. Hook.], K [Herb. Benth.]); Berg Plaats, hills near settlement, 430 m, (–DC), Sept., 1936, *Fourcade 5255* (BOL, NBG); George Dist., Saasveld Block A, S slope of mountain, (–DC), 30-08-1966, *Le Roux 7* (NBG); Millwood, above old mining village, Nols se Kop, ± 700 m, (–DD), 03-12-1988, *Taylor 12013* (NBG); Knysna Dist, Mtns near Millwood, (–DD), Oct./Nov. 1889, *Tyson 3128* (K, SAM); Knysna, Millwood, (–DD), Oct./Nov. 1889, *Tyson 3128 sub Beck Herb.* (BOL); Outeniqua Mtns near George, 1000 m, (–DD), 15-03-1893, *Schlechter 2337* (BOL, GRA, K, NBG, Z). —3323 (Willowmore): Knysna Dist, Buffelsnek, 500 m, (–CC), 30-12-1933, *Compton 4498* (BOL, NBG); *ibid.*, 730 m, May 1921, *Fourcade 1255* (BOL, NBG, S); *ibid.*, 665 m, Nov. 1919, *Keet 442* (GRA, NBG); Knysna Dist, Deepwalls Reserve, Spitskop, (–CC), 21-11-1963, *Bos 869* (NBG); *ibid.*, Rabbit's Island, 565 m, July 1925, *Phillips FH 1413* (NBG); Buffelsnek, near Deepwalls boundary, 830 m, (–CC), 29-03-1956, *Donald Forestry Herb. 37* (NBG); Knysna Dist, Gouna, along roadside, (–CC), 10-08-1956, *Donald Forestry Herb. 100* (NBG); Knysna Dist, Spitskop Fynbos Reserve, 830 m, (–CC), 17-09-1970, *Geldenhuis 132* (NBG); Buffelsnek Forest Station, ± 1665 m, (–CC), 26-09-1978, *Hugo 1299* (NBG); Prince Alfred's Pass, slopes, 830 m, (–CC), 03-07-1931, *Levy's 3808* (BOL); Knysna Div., Gouna Reserve, 600–665 m, (–CC), 04-08-1954, *Taylor 1337* (SAM); *ibid.*, 22-07-1954, *Taylor 1297* (SAM); Knysna Dist, Spitskop Hill, 1000 m, (–CC), 04-09-1968, *Wurts 2239* (NBG); Uniondale Dist, Many Waterskloof, W of Louterwater, 1000 m, (–DC), 30-04-1935, *Compton 5180* (NBG, BOL); Bloukrans, (–DC), 03-05-1938, *Compton 7176* (NBG); Many Waters Kloof, 1000 m, (–DC), 05-05-1938, *Compton 7178* (NBG); Knysna Dist, Groot River, (–DC), 13-11-1949, *Compton 21714* (NBG, S); Knysa Div., E top of Groot River Pass, 250 m, (–DC), May 1921, *Fourcade 1230* (BOL); top of Bloukrans Pass between Humansdorp and Storms River, (–DC), 03-10-1974, *Goldblatt 2909* (NBG, S); Uniondale Div., Louterwater, (–DC), Jan. 1940, *Stokoe SAM 58631* (SAM, NBG); Bloukrans State Forest, path to Kleinheuningbos, lower N slope, ± 400 m, (–DC), 13-07-1978, *Taylor 9844* (NBG); Humansdorp Dist, near Groot Rivier Pass, 300 m, (–DC), 31-10-1962, *Wurts 2158* (NBG). —3422 (Mossel Bay): Mossel Bay (precise locality unknown), Aug., *Rogers 4164* (SAM). Grid. ref. unknown: George, Postberg, in descent down W ridge, 12-09-1814, *Burchell 5953* (BOL, NY, S); George Dist, Paddawatersbos, E slope, alongside road, 31-07-1970, *Geldenhuis 91* (NBG); Robertson Dist, Langeberge, Sept. 1934, *Kuun STEU 25998* (NBG); Knysna Dist, Ysternek, 600 m, 24-05-1936, *Laughton Forestry Herb. 1524A* (NBG); Swellendam, in mountains, Aug., *Pappe SAM 19787* (SAM); Knysa Dist., Houtboschberg, 660 m, 00-10-1925, *Phillips Forestry Herb. 1030* (NBG).

EASTERN CAPE.—3323 (Willowmore): Uniondale Dist, Formosa stream valley, 1000 m, (–DC), 04-05-1933, *Compton 4255* (NBG, BOL); Humansdorp Dist, Coldstream, (–DC), 06-04-1952, *Compton 23337* (NBG); Die Hoek, N foot of Outeniquas near Joubertinia, 15-01-1947, *Esterhuysen 13614* (BOL); Zitzikamma, Ratelsbosch (Lottering), flats under mountain, 265 m, (–DC), Jul. 1908, *Fourcade 293* (BOL); Humansdorp Dist, Lottering, (–DC), 08-11-1935, *Laughton Forestry Herb. 1524* (NBG); Uniondale Div., Formosa Peak, (–DC), Jan. 1940, *Stokoe 8036* (BOL); Storms River Forest Reserve, off National Rd, on Tsitsikama Mtn. S slope, 100–200 m, (–DD), 30-12-1968, *Dahlstrand 1678* (NBG); Camel Pile, Zitzikamma

Mtns near Joubertinia, 1165 m, (–DD), Mar. 1955, *Esterhuysen* 27322 (BOL, NBG); Tsitsikama, top of pass above Storms River, (–DD), 06-04-1952, *Lewis* 3974 (SAM). Without locality: *Lehmann s. n.* (NY).

20. *Lachnaea ericoides* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 579 (1857); C.H. Wright: 24 (1915). Syntypes: Swellendam District, in mountains around Grootvadersbosch and Voormansbosch, altitude 3–5, October, *Ludwig s. n.* (not seen) & *Zeyher* 3776 (S, det. Meisner, lecto.!, here designated; PRE!, SAM!, Z!, isolecto.).

Gonophylla ericoides Eckl. & Zeyh. ex. Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis*: 579 (1857) in synonymy.

Erect, round to straggling, corymbosely or fastigately branched, shrub up to 0,5 m tall, single-stemmed at base; reseeder. *Branches* ascending to inclined, slender, ridged below the leaf bases, densely covered with long ascending or adpressed hairs admixed with crooked hairs later glabrescent, densely leafy, becoming naked with prominent leaf scars. *Leaves* alternate, subadpressed or ascending, usually falcate [apex curled inward], occasionally lower leaves of young plants straight, imbricate, sessile, epistomatic, narrowly-elliptic to obovate, 2.0–6.0(–8.0) × 0.8–1.5 mm, coriaceous, green, glabrous with tufted apex which may become naked later, adaxially concave, smooth, dull, ± white-punctulate, abaxially convex, keeled, glossy, subpapillate, apex rounded or acute in straight leaves, base cuneate. *Inflorescence* a terminal, sessile, ebracteate, 2–8-flowered umbel with up to 4 open flowers at a time, on main flowering branches or also on lateral flowering branches restricted to area immediately below main inflorescence. *Flowers* subactinomorphic, cream. *Pedicel* 0.3–0.6 mm long, sericeous. *Hypanthium* 1.8–2.4 mm long, circumscissile midway to two-thirds from base, upper portion funnel-shaped, covered on outside with silky, straight adpressed or crooked hairs, adpressed hirsute within, basal portion oblong or narrowly ovoid to ovoid, glabrous outside and within. *Sepals* erect-patent, subequal, narrowly elliptic to obovate, ovate to subrotund, 1.4–2.2 × 1.0–1.8 mm, apex rounded or obtuse, adaxially shortly tomentose to sparsely hairy, abaxially covered with crooked hairs admixed with long silky adpressed hairs. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, 0.8–1.2 mm long, inner, antipetalous whorl inserted at rim of hypanthium, 0.5–0.9 mm long (inner stamens the shortest); anthers, spheroid, 0.3–0.6 mm long, abaxially without broad connective tissue. *Scales* exserted,

inserted at mouth of hypanthium immediately below antipetalous stamens, obovoid or subspheroid, 0.2–0.5 mm long, glabrous, translucent-white in fresh state. *Ovary* narrowly ellipsoid to obovoid, 0.7–0.8 mm long, glabrous. *Style* linear-obconical, 1.4–2.1 mm long, with ascending incurled hairs in the upper half. *Stigma* capitate and elongate-papillate with a few sparse hairs (Figure 7.39).

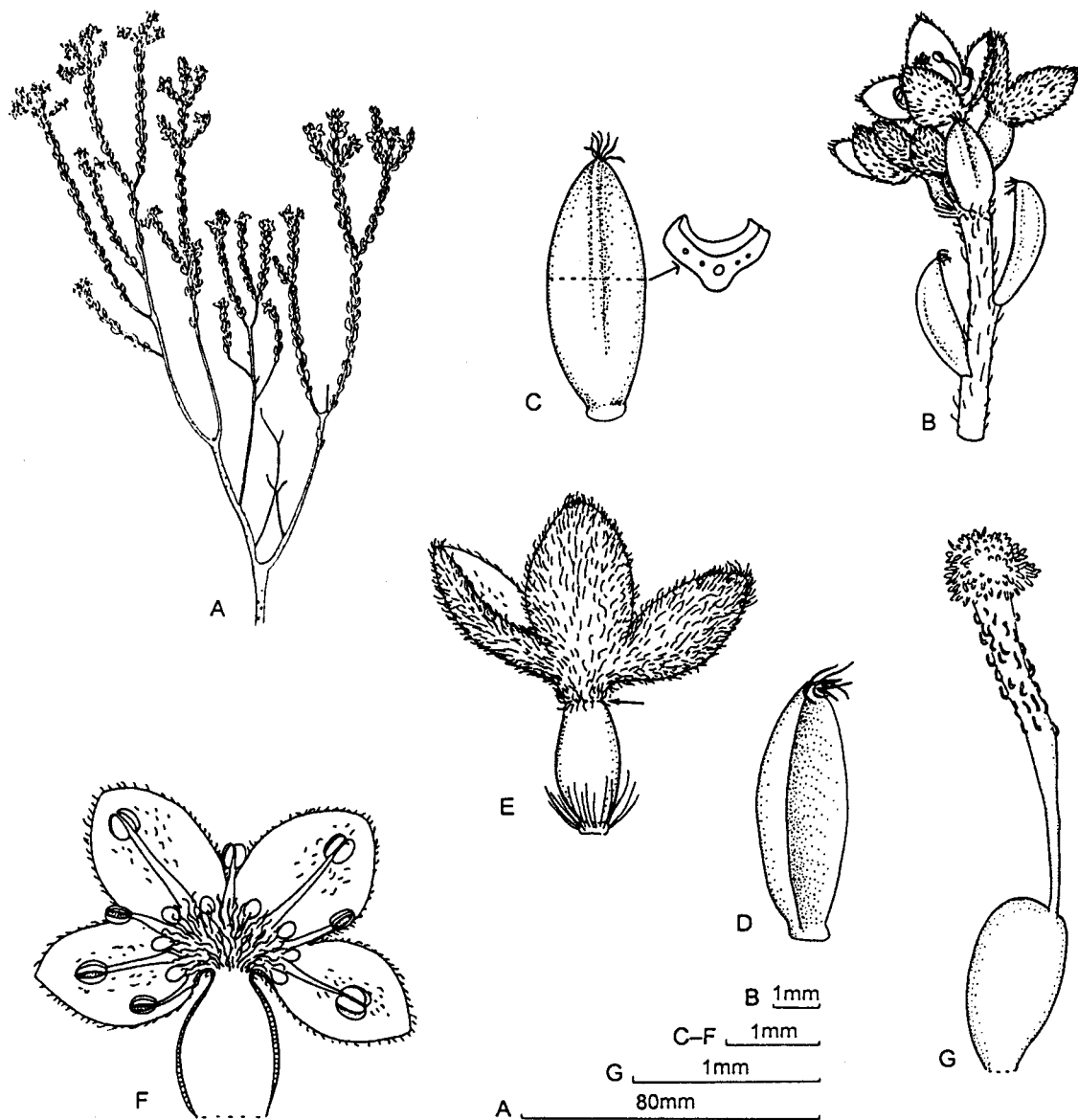


FIGURE 7.39—*Lachnaea ericoides*, Beyers 172 (NBG). A, portion of plant; B, flowering branch; C & D, leaves: C abaxial view and cross section; D, lateral view; E, flower, note circumscession zone (arrowed); F, flower split longitudinally with gynoecium removed; G, gynoecium.

Distribution and ecology

Lachnaea ericoides, a Langeberg endemic, occurs on the lower slopes from Clock Peaks in the Swellendam District to Garcia Forest Reserve in the Riversdale District at altitudes between 330 and 665 m (Figure 7.40). Flowering has been recorded in July and from September to December.

Conservation status: Lower Risk Least Concern (LRlc). Frequent fires could result in this species rapidly moving into a threatened category.

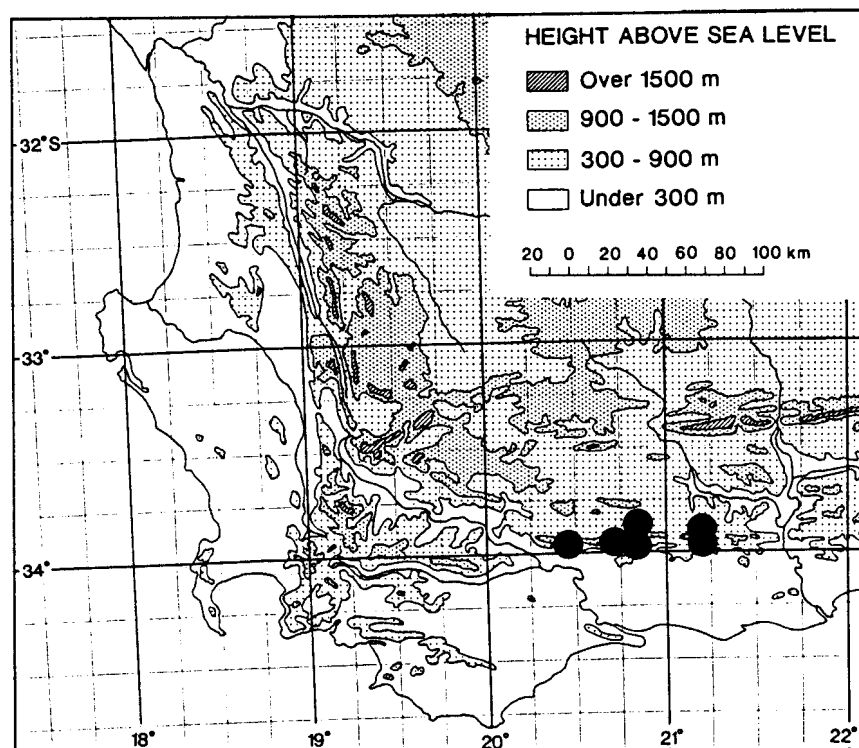


FIGURE 7.40—Known distribution of *Lachnaea ericoides*.

Diagnostic characters and relationships

Lachnaea ericoides is closely related to *L. sociorum* but is distinguished by being a reseeder, the leaves being narrowly elliptic to obovate, adaxially keeled, with a rounded, tufted apex, the sepals being sericeous-tomentose adaxially and the capitate stigma with elongated papillae.

Specimens examined

WESTERN CAPE.—3320 (Montagu): Swellendam Mtns, hiking trail, (–CD), 24-12-1979, *Esterhuysen BOL 46844* (BOL); Swellendam Dist., base of Langeberg Range, Clock Peaks, 330 m, (–CD), 16-06-1952, *Wurts 186* (NBG); *ibid.*, 27-10-1952, *Wurts 186a* (NBG); Swellendam Div., Tradouw Pass, (–DC), 07-09-1924, *Compton 3396* (BOL); *ibid.*, 530 m, 27-07-1954, *Levyms 10106* (BOL); *ibid.*, S entry, 450 m, Oct. 1923, *Levyms 672* (BOL), as *Levyms & Levyms 672* (NBG); *ibid.*, on SW-facing slope along jeep track to Gatboskloof, 360 m, 08-10-1988, *McDonald 1621* (NBG, PRE); *ibid.*, N-end, 24-09-1998, *Oliver 11124* (NBG); *ibid.*, 17-09-1936, *Salter 6313* (K); Zuurbraak (near Swellendam), 330 m, (–DC), 12-10-1897, *Galpin 4496* (BOL); Swellendam, above Voormansbosch, in grassy area on mountain, (–DC), Oct., *Zeyher 3776* (S, SAM, PRE, Z); Grootvadersbosch State Forest, (–DD), 03-12-1958, *Barker 8821* (NBG); *ibid.*, edge of plantation near reservoir, 455 m, 14-12-1989, *Beyers 172* (K, MO, NBG, NY, PRE); *ibid.*, E of Kleinberg, 430 m, 05-09-1984, *McDonald 901* (NBG); *ibid.*, 395 m, 12-09-1986, *McDonald 1188* (NBG); *ibid.*, slopes of Kleinberg, 480 m, 28-06-1988, *McDonald 1562* (NBG); *ibid.*, edge of plantation near reservoir, 455 m, 10-11-1989, *McDonald 1842* (NBG, PRE); *ibid.*, along Barend Koen Road, 300 m, 17-09-1985, *McDonald & Morley 976* (NBG); *ibid.*, 500 m, 11-07-1986, *Van der Merwe 118* (NBG); *ibid.*, E borderline, forest fringe, 483 m, 21-05-1983, *Van Wyk 1237* (NBG); *ibid.*, 600-1000 m, 18-10-1826, *Zeyher BOL 46846* (BOL); Swellendam Div., Langeberg, Lemoenshoek Peak, lower S slopes, (–DD), 27-03-1948, *Esterhuysen 14402* (BOL); *ibid.*, 27-10-1955, *Esterhuysen 25034* (BOL); Lemoenshoek Mtns near Heidelberg, (–DD), Mar. 1948, *Stokoe SAM 64624* (SAM); Swellendam, Voormansbosch and Grootvadersbosch, (–DC/DD), Oct., *Zeyher s.n.* (Z).

—3321 (Ladismith): Garcias Pass, Riversdale, 370 m, (–CC), *Bohnen 8374* (NBG); Garcia Pass Forest Station, above plantation, (–CC), 24-09-1985, *Dryfhout 4101* (NBG); *ibid.*, S. slopes near Rooiwaterspruit Huts, 545 m, 17-10-1990, *McDonald 1945* (K, NBG, PRE); *ibid.*, S-facing slopes on plateau S of Rooiwaterspruit, 515 m, 10-12-1990, *McDonald 2027* (K, NBG, PRE); Riversdale Dist., Kleinberg, (–CC), Aug. 1909, *Muir 497* (BOL); Riversdale, mountain slopes N of Garcias Pass, 500–665 m, (–CC), Oct. 1926, *Thorne SAM 38927* (SAM); slopes of Langeberg near Riversdale, 330 m, (–CC/CD), 06-11-1892, *Schlechter 1730* (BOL, S, Z). Grid ref unknown: Riversdale, 500 m, Sept. 1923, *Muir BOL 46848* (BOL); Langeberg, 665 m, 23-10-1894, *Schlechter 5693* (Z).

21. ***Lachnaea stokoei*** Beyers, sp.nov., *L. ericoidis* in facie similis foliis alternatis anguste ellipticis ad ovatis marginibus involutis apicibus caespitosis inflorescentia umbellata ebracteata floribus tribus apertis simul, sed differt squamis inclusis, stigmate conico.

TYPE.—Western Cape, 3320 (Montagu): Swellendam Div., Langeberg Range, between Lemoenshoek and Noukrans Farm, Strawberry Hill, (–DD), 11-01-1957, *Stokoe s.n.* (NBG 103641, holo.!: K!, PRE 49147!, iso.).

Low shrublet, ? height. *Branches* ascending to inclined, slender, ridged below the leaf bases, densely covered with long stiff adpressed hairs admixed with crooked hairs later glabrescent, densely leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending, scattered, internodes a quarter to as long as leaves, distal 4–5 leaves below inflorescence crowded, sessile, epistomatic, narrowly-elliptic to ovate, $2.5\text{--}4.0 \times 1.0\text{--}1.5$ mm, coriaceous, green, glabrous with tufted apex which may become naked later, adaxially widely concave, smooth, dull, $\pm$ white-punctulate, abaxially $\pm$ flat, faintly nervate, glossy, margin involute, apex subacute, base cuneate. *Inflorescence* a terminal, sessile, ebracteate, 4–8-flowered umbel with up to 3 open flowers at a time, on main flowering branches. *Flowers* subactinomorphic, ? cream. *Pedicel* 0.4–0.8 mm long, sericeous. *Hypanthium* 3.2–4.2 mm long, circumscissile midway to two-fifths from base, upper portion obconical, sericeous outside, adpressed hairy within, basal portion ellipsoid, sericeous outside, glabrous within. *Sepals* ascending, subequal, elliptic to very widely ovate, $1.1\text{--}1.8 \times 1.2\text{--}1.8$ mm, apex rounded, sericeous on both sides. *Stamens* partly exserted, outer, antisepalous whorl exserted and inner, antipetalous whorl semi-exserted; antisepalous whorl inserted at base of sepals to quarter-way down upper portion of hypanthium, inner, antipetalous whorl inserted quarter to third-way down upper portion of hypanthium (inner stamens the shortest); filaments filiform, outer 0.7–1.0 mm long, inner 0.2–0.6 mm long; anthers, ellipsoid, 0.4–0.6 mm long, abaxially without broad connective tissue. *Scales* enclosed, inserted $\pm$ third-way down upper portion of hypanthium immediately below antipetalous stamens, semi-terete, elliptic in outline, abaxially attached to hypanthium, 0.3–0.4 mm long, glabrous. *Ovary* ellipsoid, 0.8–1.0 mm long, glabrous. *Style* linear-obconical, 2.2–3.0 mm long, with ascending incurled hairs throughout or only in upper three-quarters. *Stigma* conical and elongate-papillate (Figure 7.41).

Distribution and ecology

Lachnaea stokoei is a Langeberg endemic found in the Heidelberg District at Lemoenshoek [Grootberg] and Strawberry Hill, according to Stokoe's collections, dated December 1954 and January 1957. The localities given are very vague and no other more recent information is available about this species (Figure 7.42). Flowering has been recorded in December and January.

Conservation status: More than 40 years have elapsed since the last collection of this species. This portion of the Langeberg has been fairly well surveyed by McDonald (1993) and specific searches for this species have been unsuccessful. This species is therefore considered to be Extinct (Ex).

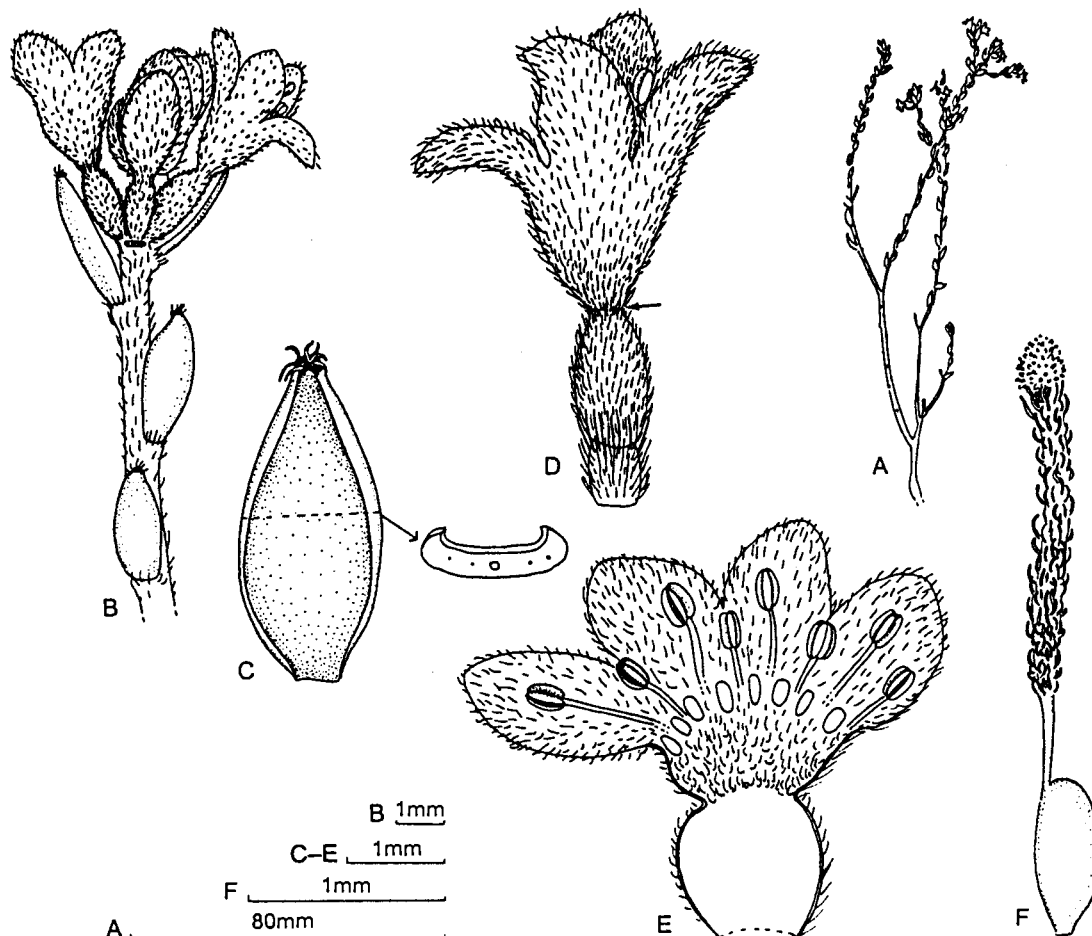


FIGURE 7.41—*Lachnaea stokoei*, *Stokoe s.n. sub NBG103641* (NBG). A, portion of plant; B, flowering branch; C, leaf (adaxial view and cross section); D, flower, note circumscession zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium.

Diagnostic characters and relationships

Lachnaea stokoei resembles *L. ericoides* in general facies in that it has alternate, narrowly elliptic to ovate leaves with involute margins and tufted at the apices and the inflorescence which is an ebracteate umbel with up to three open flowers at a time, but the flower structure differs. The antisepalous stamen whorl is exserted, the antipetalous one

semi-exserted, scales abaxially attached $\pm$ a third-way down upper portion of hypanthium and the stigma is conical and elongate-papillate.

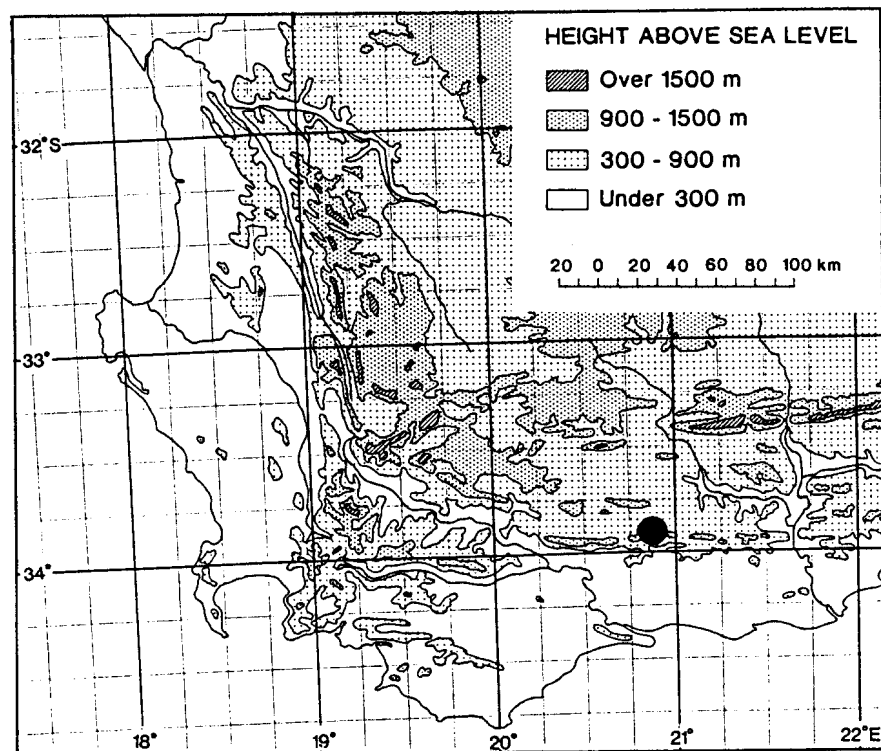


FIGURE 7.42—Known distribution of *Lachnaea stokoei*.

Eponymy

This species is dedicated to T.P. Stokoe (1868–1959) who, as a member of the Mountain Club between 1913 and 1959, climbed extensively in the mountains of the Western Cape where he collected many plant species new to science (Gunn & Codd 1981).

Specimens examined

WESTERN CAPE.—3320 (Montagu): Swellendam Div., Strawberry Hill, Heidelberg, (–DD), Dec. 1954, *Stokoe* SAM 69968 (SAM), as *Stokoe* PRE 49286 (PRE); Swellendam Div., Langeberg Range, between Lemoenshoek and Noukrans Farm, Strawberry Hill, (–DD), 11-01-1957, *Stokoe* NBG 103641 (NBG), as *PRE* 49147 (PRE), as *Stokoe* s.n. (K).

22. *Lachnaea striata* (Poir.) Meisn., Linnaea 14: 415–416 (1840); Meisn. 577 (1857); C.H. Wright: 22 (1915). *Passerina striata* Poir. in Encyclopédie méthodique 5: 44,

t. 291, f. 2 (1804); non Spreng.: 240 (1825). Type: *Passerina striata herb. Lam.* (P-LA,—NBG, photocopy!).

Lachnaea elegans Compton, Journal of Botany, British and Foreign 72: 20 (1934a). Type: Cape Province; Ceres Div., exact locality unknown. Exhibited at Ceres Wild flower Show, October 1932, *Compton 4157* (BOL, holo!),

Gonophylla nervosa Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, Prodomus systematis naturalis regni vegetabilis: 577 (1857) in synonymy.

Erect, corymbosely branched shrublet to 0.6 m tall, multistemmed at base; resprouter. *Branches* ascending, slender, slightly ridged below leaf bases, sericeous to sparsely sericeous, later glabrescent, densely leafy, becoming naked with prominent leaf scars. *Leaves* alternate, ascending, subimbricate to scattered, sessile, epistomatic, 4.8–10.0 × 1.5–4.5 mm, narrowly-elliptic to elliptic or ovate, coriaceous, adaxially flat with margin slightly incurved, glabrous, smooth, dull, ± white-punctulate, abaxially flat, venation conspicuous, prominently 1–5-ribbed, glabrous, glossy, apex acute, base cuneate to attenuate, margin crisped ciliate, trichomes bulbous at base, base often tinged red; with age trichomes disappear, then margins papillate. *Inflorescence* a terminal, sessile, ebracteate, more than 12-flowered umbel, 8.0–20.0 mm in diameter, on main flowering branches. *Flowers* subactinomorphic, cream, purple or pale rose, pedicellate. *Pedicel* 0.4–0.9 mm long, sericeous. *Hypanthium* 2.6–4.2 mm long, circumscissile half to two-thirds from base, upper portion shortly funnel-shaped, sericeous to sparsely hairy outside, within pubescent with stiff hairs at mouth, basal portion ellipsoid, glabrous outside and within. *Sepals* patent, subequal, elliptic to ovate, 2.2–5.3 × 1.0–1.3 mm, apex rounded, adaxially sericeous or posterior and anterior ones sparsely hairy with apex sericeous, lateral ones glabrous, or all four glabrous and only sericeous at apex, abaxially sericeous. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl, filaments filiform, outer 1–1.6 mm long, inner 0.7–1.1 mm long; anthers widely ellipsoid to depressed spheroid, 0.5–0.7 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, linear to clavate, 0.5–0.8 mm long, glabrous. *Ovary* ellipsoid, ovoid or obovoid, 1.0–2.2 mm long, glabrous. *Style* linear, 1.9–

3.7 mm long, upper half covered with straight, adpressed or incurled hairs, lower half glabrous. *Stigma* brush-like (Figure 7.43).

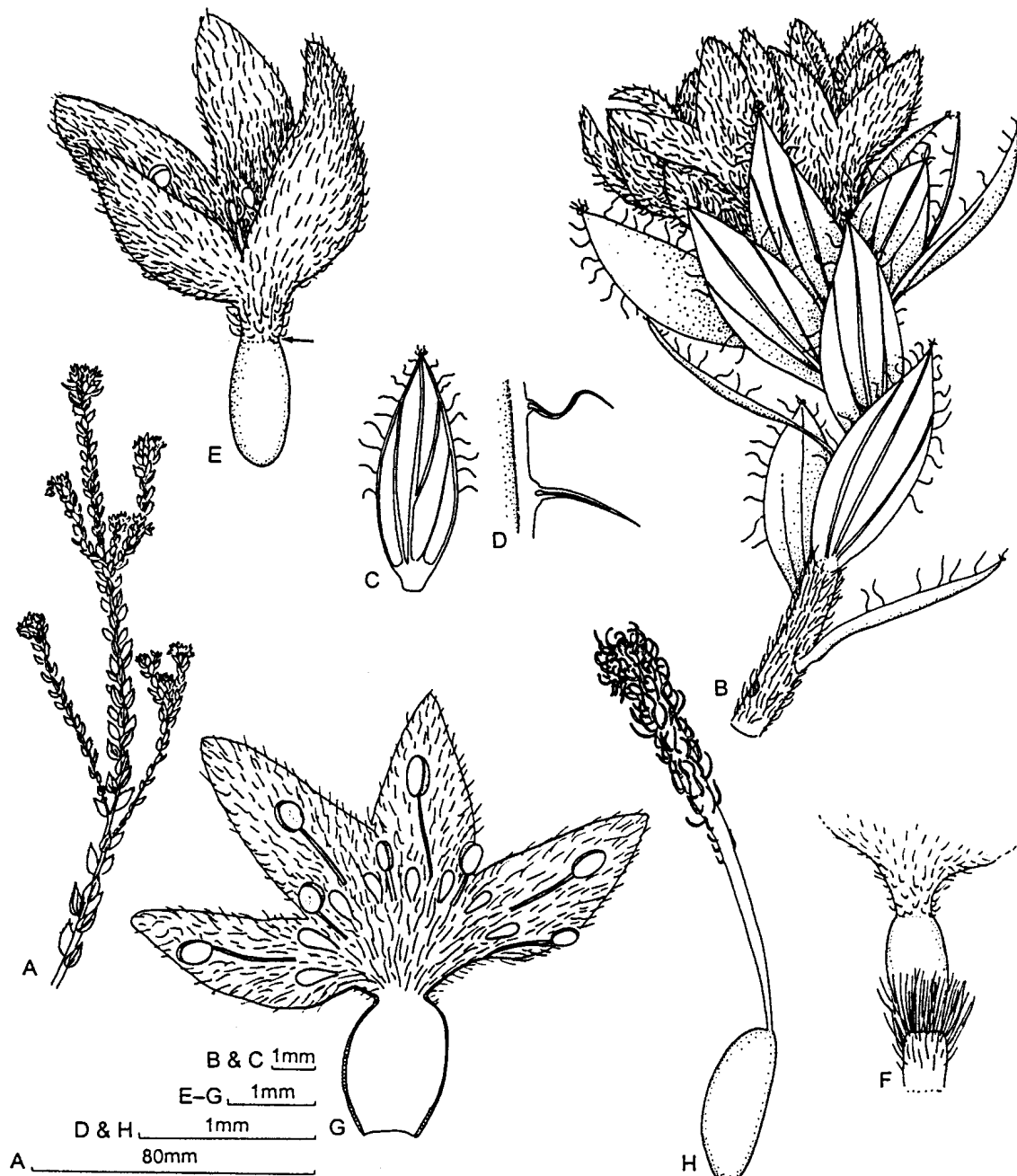


FIGURE 7.43—*Lachnaea striata*, Compton 6933 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view) D, leaf margin with trichomes (enlarged); E, flower, note circumscission zone (arrowed); F, basal portion of flower with pedicel; G, flower split longitudinally with gynoecium removed; H, gynoecium.

Distribution and ecology

Lachnaea striata is known from the Northern Cederberg around Pakhuis and Heuningvlei areas and south in the Groot Winterhoek, Witsenberg and Roodesand Mountains near Tulbagh, favouring seasonally damp areas at altitudes between 800 and 1160 m (Figure 7.44). Flowering has been recorded from September to January.

Conservation status: Lower Risk Near Threatened (LRnt). The last known collection was made in 1971. It appears to be very scarce and further searches are required to check the status of this species.

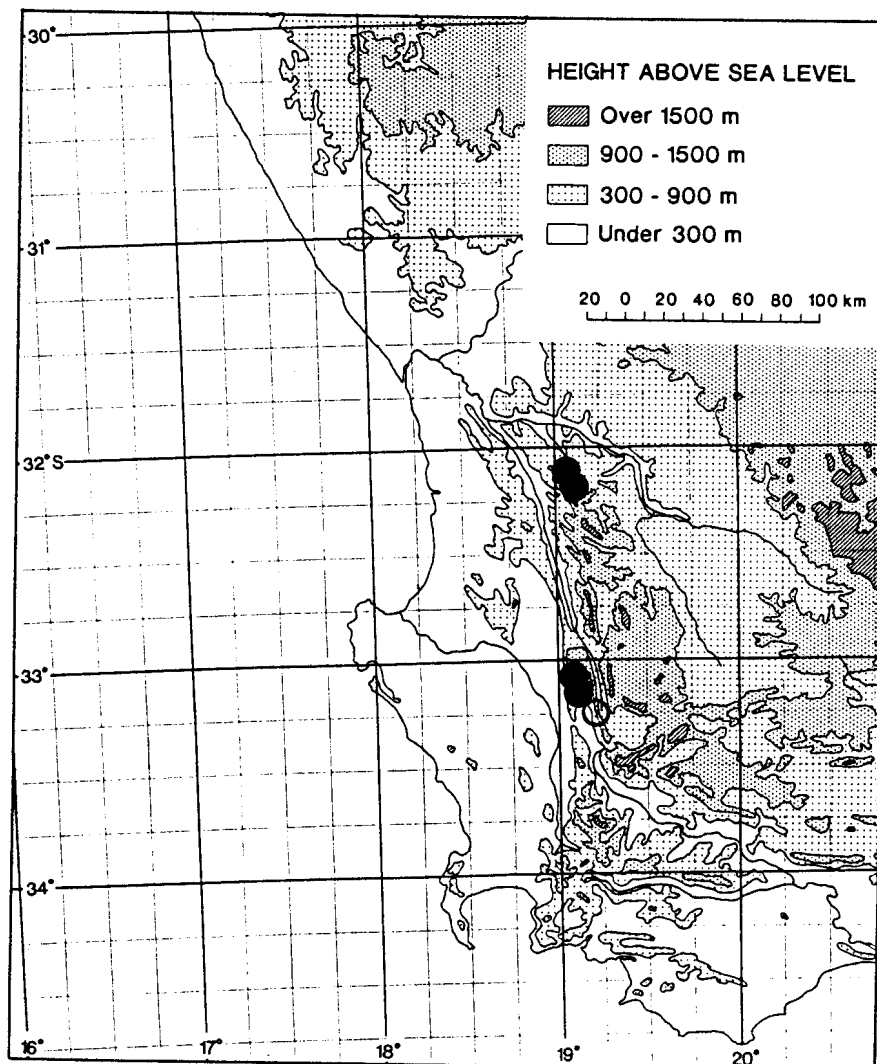


FIGURE 7.44—Known distribution of *Lachnaea striata*.

Diagnostic characters and relationships

Lachnaea striata is easily distinguished from the other species with alternate leaves and ebracteate inflorescences by its narrowly elliptic to ovate leaves with one to five prominent ribs abaxially and the crisped-ciliate margins.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Cederberg Mtns, Pakhuis Pass, 1000 m, (–AA), 07-10-1897, *Bolus* 9087 (BOL, NBG); *ibid.*, 19-09-1937, *Compton* 6933 (NBG); *ibid.*, Sept. 1942, *Stokoe* SAM 58157 (SAM); *ibid.*, Nov. 1929, *Thode* A2136 (K); N Cederberg, Pakhuis, stream bank on plateau. 800 m, (–AA), 16-01-1953, *Esterhuysen* 21152 (BOL, S); *ibid.*, swampy plateau, 1000 m, 27-12-1956, *Esterhuysen* 26861 (BOL); Pakhuis Mtns, 1160 m, (–AA), Dec. 1940, *Leipoldt* 3504 (BOL); Cederberg, Heuningvlei, (–AA), Dec. 1941, *Stokoe* SAM 58158 (SAM).

—3319 (Worcester): Winterhoek Mtns, Tulbagh, (–AA), Nov., *Ecklon & Zeyher* 77.11 (GRA, SAM, S, Z); Winterhoeksberg, (III, A, e), 830–1000 m, (–AA), 02-01-1829, *Drège* 1979 (K, NY, P, PRE); *ibid.*, Jan., *Drège* s.n. (S); Winterhoek State Forest, Driebosch, ± 930 m, (–AA), 18-09-1073, *Haynes* 818 (NBG); Roodesand Mtns near Tulbagh, (–AA), 28-09-1931, *Stokoe* BOL 22326 (BOL, NBG); Witsenberg, Tulbagh, (–AA/AC), Nov., *Ecklon & Zeyher* SAM 1476b (SAM). Grid ref. unknown: Ceres Wild Flower Show, October 1932, *Compton* 4157 (BOL); *ibid.*, 2 10 1933, *Compton* 4412 (BOL); *ibid.*, 1-10-1934, *Compton* 4890 (BOL); *ibid.*, Oct. 1931, *Comm. Compton* BOL 46842 (BOL); Porterville [precise locality unknown], 25-01-1971, *Keet* NBG 92.338 (NBG); Clanwilliam [precise locality unknown], *Mader Herb. MacOwen* 2210 (BOL, SAM); Worcester [precise locality unknown], *Zeyher Herb. Hooker* (K). Without locality: *Zeyher* PRE 49208 (PRE).

23. *Lachnaea aurea* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 576 (1857); C.H. Wright: 21 (1915). Type: In mountains Klynriviersbergen [Klein River Mountains] near Hemel en Aarde, alt. 5, dist. Caledon, *Ecklon* s.n. [30 or 58.8] (NY [Meisner Herb.], holo.!; BOL!, GRA!, K!, NY [Torrey Herb.]!, PRE, SAM!, S!, Z!, iso.).

Lachnaea aurea Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 576 (1857) in synonymy.

Erect, sparsely branched shrub up to 1 m tall, single- or few-stemmed at base; resprouter. *Branches* erect to flexuous, slender, ridged below leaf-bases, adpressed puberulent, leafy, becoming glabrous and naked with prominent leaf scars. *Leaves*

alternate, adpressed or ascending, occasionally patent to reflexed, imbricate, sessile, epistomatic, narrowly elliptic or narrowly obovate, $7.5\text{--}18.0 \times 0.8\text{--}4.0$ mm, coriaceous, glabrous, adaxially flat or obtusely concave, smooth, dull, $\pm$ white-punctulate, abaxially obtusely convex, sometimes subkeeled just below apex, smooth, glossy, margin membranous, yellow in fresh state, apex acuminate, base cuneate; leaves below inflorescence broader with a wider membranous margin resembling involucre bracts, narrowly elliptic to elliptic or narrowly obovate to obovate $11.5\text{--}19.0 \times 3.5\text{--}11.0$ mm. *Inflorescence* a terminal, sessile, bracteate, more than 50-flowered, capitate-like umbel with up to 30 open flowers at a time, 20–55 mm in diameter, on main flowering branches. *Involucre bracts* 6–8, narrowly elliptic to elliptic or obovate, $11.5\text{--}19.0 \times 4.5\text{--}11.0$ mm, innermost the widest, glabrous or abaxially sericeous along middle portion, $\pm$ flat or abaxially slightly keeled behind apex, middle portion coriaceous, 1- to 3-nervate, green, margin membranous, broad, yellow sometimes at apex tinged reddish-purple, apex mucronulate to mucronate or acuminate. *Flowers* zygomorphic, golden yellow, unscented, pedicellate. *Pedicel* 0.5–2.0 mm long, clothed with long, ascending, silky hairs. *Hypanthium* 3.8–7.8 mm long, circumscissile midway to two-thirds from base, upper portion narrowly funnel-shaped, clothed with long, ascending, silky hairs outside, within adpressed hirsute, basal portion ellipsoid or ovoid, clothed with short, ascending, silky hairs outside and glabrous within. *Sepals* patent, adaxially glabrous, abaxially sericeous, unequal, posterior one the smallest, ovate, acute to rounded, $2.6\text{--}4.5 \times 1.6\text{--}3.0$ mm, lateral ones narrowly elliptic, $7.5\text{--}14.0 \times 2.0\text{--}3.5$ mm, acute, anterior one usually the largest, narrowly elliptic, $9.3\text{--}15.5 \times 3.0\text{--}4.5$ mm, acute. *Stamens* exserted, outer, antisealous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, 2.0–6.5 mm long; anthers ellipsoid, 0.8–1.5 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, narrowly obovoid or ellipsoid, 0.8–1.4 mm long, apex occasionally irregularly lobed, glabrous, yellow in fresh state. *Ovary* ellipsoid or obovoid, 1.2–2.5 mm long, glabrous. *Style* linear-obconical, 4.0–6.5 mm long, adpressed hairy only in upper three-quarters. *Stigma* brush-like (Figure 7.45).

Distribution and ecology

Lachnaea aurea occurs from Hermanus to Bredasdorp and southwards to Agulhas on coastal flats and lower slopes, in acid sands and ferricrete at altitudes below 900 m (Figure

7.46). Flowering has been recorded mostly in July to September, but occasionally in March, April and June.

Conservation status: Vulnerable (VU A1ce). The habitat of this species has been restricted through the effects of human activities and invasion by alien plants.

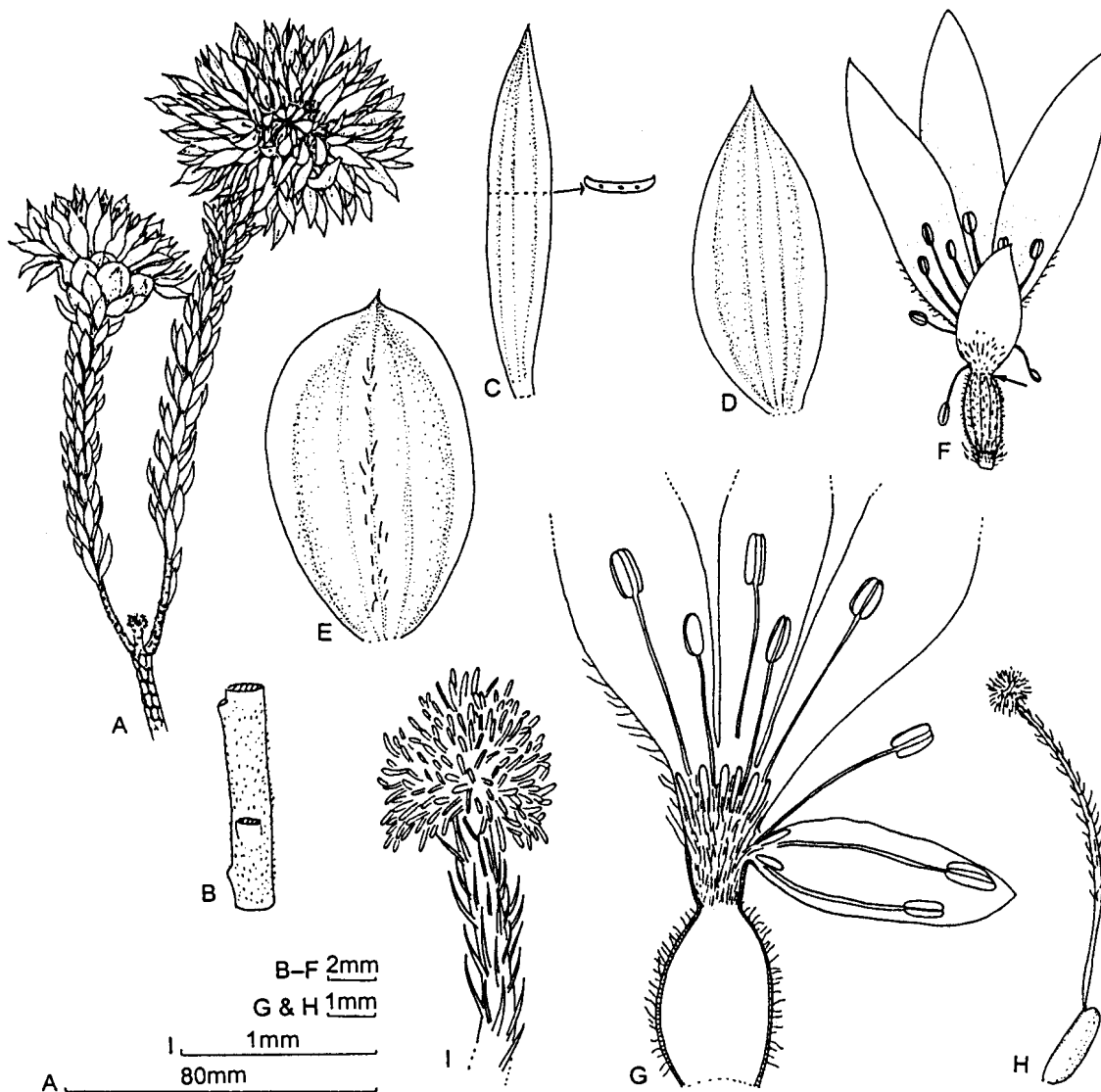


FIGURE 7.45—*Lachnaea aurea*, Oliver 10550 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D & E, involucral bracts: D, from subdistal pair; E, from distal pair; F, flower, note circumscission zone (arrowed); G, flower split longitudinally with gynoecium removed; H, gynoecium; I, stigma and upper portion of style (enlarged).

Diagnostic characters and relationships

Easily distinguished from the other umbellate species with alternate leaves by the showy, bracteate inflorescences with their strongly zygomorphic, golden yellow flowers, which at a glance appear asteraceous. *L. aurea* is a sister species of *L. striata*, both sharing the presence of marginal fibres not associated with the vascular bundles in the leaf.

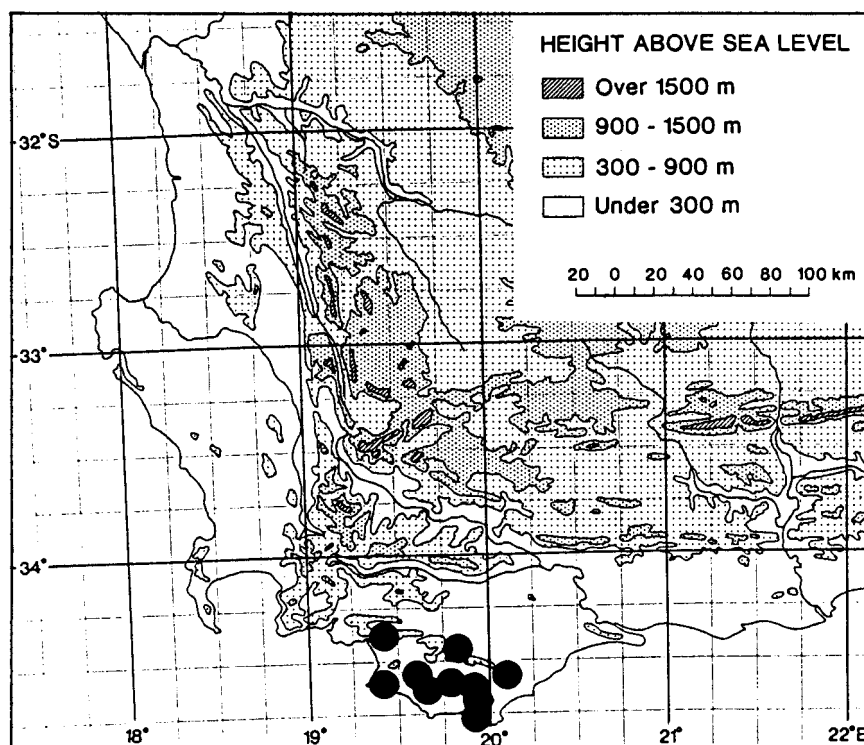


FIGURE 7.46—Known distribution of *Lachnaea aurea*.

Specimens examined

WESTERN CAPE.—3419 (Caledon): Caledon, Klein River Mountains near Hemel en Aarde, 333–1000 m, (–AD), August, *Ecklon & Zeyher 30 or 58.8* (BOL, K, NY [Meisner Herbarium], NY [Torrey Herbarium], SAM, S, Z); Klein River Mtns, near Hermanus, (–AD), Sept. 1920, *Stokoe BOL 16889* (BOL); Elandsberg, 18 miles from Stanford on road to Elim, (–BD), 22-09-1938, *Gillett 4343* (BOL, K); Elandskloof Mtns, east of Papiesvlei, (–BD), 03-09-1965, *Mattatia 26* (BOL); hills above Pearly Beach, (–CB), Jun. 1950, *Lewis 3531* (SAM); Papiesvlei valley, between Papiesvlei and Baardskeerdersbos, on farm Bruinklip, (–DA), 06-09-1993, *Aggenbach s.n.* (NBG); Bredasdorp Dist., Viljoenshof, (–DA), 14-06-1963, *Baker 2004* (NBG); *ibid.*, between Fisantekraal and Groenkloof, near Haelkraal River, 200 m, 13-08-1989, *Beyers 135* (NBG); Bleskloof near Viljoenshof, 100 m, (–DA), 17-03-1978, *Boucher 3788* (NBG); Bredasdorp Dist., Ratel River, (–DA), 03-09-1943, *Compton 14777* (BOL, NBG); Pheasantshoek near Viljoenshof, (–DA), 26-08-1976, *Esterhuysen 34351* (BOL, S); between Blomhuis and Bleskloof, NE of Pearly Beach, S aspect, (–



DA), 13-09-1981, *Hugo 2667* (NBG); Kouerivier Mtn near Elim, (–DA), 17-09-1932, *Nel STEU 17423* (NBG); Groenkloof at Klein Hagelkraal above Pearly Beach, 65 m, (–DA), 22-08-1968, *Rourke 1081* (NBG); Elim, (–DA/DB), 00-09-1924, *Compton 3397* (BOL); *ibid.*, Jul. 1937, *Gill SAM 52370* (SAM); *ibid.*, 130 m, Sept. 1927, *Levy's 2158* (BOL); *ibid.*, 19-04-1896, *Schlechter 7610* (GRA, K, Z); *ibid.*, Tyson SAM 19797 (SAM); Elim, in sand near Missionary Station ± 65 m, (–DA/DB), Oct. 1894, *Bolus 9186* (BOL, Z); Elim hills (–DA/DB), 05-08-1940, *Compton 9110* (NBG); Hills about Elim, 65–200 m, (–DA/DB), Jul. 1895, *Guthrie 3809* (NBG); Springfield Estates, (–DB), Sept. 1949, *Stokoe SAM 64623* (SAM); Bredasdorp Dist., Bo-Vogelvlei, flats SSW of the farm, 50 m, (–DB), 02-09-1994, *Oliver 10550* (K, MO, NBG, NY, P, PRE, Z); Vogel Vlei near Elim, 65–100 m, (–DB), Dec. 1898, *Thode STEU 5269* (NBG); Bredasdorp, Brandfontein Mtn slopes, (–DD), 14-10-1951, *Esterhuysen 19020* (BOL).
—3420 (Bredasdorp): upper slopes of mountain above Bredasdorp, 300 m, (–CA), 03-06-1981, *Burgers 2711* (NBG); Bredasdorp, (–CA), July 1933, *Jordaan STEU 18726* (NBG). Grid ref. unknown: Groot Houwhoek, Dec., *Zeyher SAM 19798* (SAM).

24. ***Lachnaea burchellii* Meisn.**, *Linnaea* 14: 420–421 (1840); Meisn.: 577 (1857); C.H.Wright: 583 (1925). Type: Locality unknown, *Drège 7370* (P, holo.!; NY, capsule on *Ecklon 78*, iso.!).

Lachnaea burchellii var. *angustifolia* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 577 (1857). Syntypes: locality unknown, *Drège 7370*, (P!, NY, capsule on *Ecklon 78*!); in mountains, dist. George, alt. 5, *Ecklon & Zeyher s. n.* (not seen).

Lachnaea burchellii var. *latifolia* Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 577 (1857); C.H.Wright: 583 (1925). Syntypes: In mountains, at river Vanstadensrivier [Van Stadens River], alt 2–4, dist. Uitenhage, *Ecklon 78* (NY [Meisner Herb.]!, lecto., here designated; GRA!, NY [Torrey Herb.]!, PRE!, S!, Z!); *Zeyher 3757* (K!, PRE!, SAM!, Z!).

Lachnaea phyllicoides Lam. var. *oppositifolia* Meisn.—*nom. nud.* in *Linnaea* 14: 420 (1840) in synonymy.

Gonophylla nana Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 577 (1857) in synonymy.

Gnidia tenuiflora Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle,
Prodromus systematis naturalis regni vegetabilis 14: 577 (1857) in synonymy.

Erect to decumbent, sparsely branched shrub to 0.3 m tall, single-stemmed at base; reseeded. *Branches* erect to straggling, slender, ridged below leaf-bases, sparsely adpressed hairy or glabrous, leafy, becoming naked with prominent leaf scars. *Leaves* decussate or occasionally subopposite, ascending to inclined, distal pair below inflorescence patent, imbricate to scattered, internodes half to twice as long as leaves, sessile, epistomatic, lanceolate to narrowly elliptic, 6–13 × 1–3 mm, coriaceous, glabrous, ± flat, adaxially smooth, dull, ± white-punctulate, abaxially, 1–3-ribbed, glossy, apex acuminate, base cuneate; leaves on reduced lateral flowering branches bract-like, elliptic, obovate to widely obovate or suborbicular, 1.3–4.9 × 1.1–4.5 mm, coriaceous, green, often with reddish tinge, adaxially concave, smooth, dull, abaxially convex, glossy, obtuse or mucronate, glabrous or abaxially sparsely hairy, margin ciliate. *Inflorescence* a terminal, sessile, ebracteate, 4–10-flowered umbel on main and short lateral flowering branches, those on the latter appearing bracteate. *Flowers* subactinomorphic, cream or pale pink. *Pedicel* 0.3–1.1 mm long, adpressed hirsute. *Hypanthium* 2.3–4.6 mm long, circumscissile midway to two-thirds from base, upper portion funnel-shaped, sericeous outside, adpressed hirsute within, basal portion ellipsoid or ovoid, clothed with obtuse hairs outside, glabrous within. *Sepals* patent, subequal, posterior sepal smallest, anterior one largest, elliptic or ovate, 2.0–4.6 × 1.1–3.2 mm, apex rounded or obtuse, adaxially sparsely sericeous or glabrous, abaxially sericeous. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, 0.7–1.4 mm long; anthers ellipsoid to suborbicular, 0.5–0.7 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, capitate, 0.4–0.5 mm long, lower half with declinate trichomes, upper half glabrous, white in fresh state. *Ovary* ellipsoid, 0.8–1.4 mm long, glabrous. *Style* linear-obconical, 2.1–3.7 mm long, clothed with stiff ascending hairs in upper half. *Stigma* brush-like (Figure 7.47).

Distribution and ecology

Lachnaea burchellii occurs on mountain slopes from Albertinia in the Western Cape eastwards to Port Elizabeth in the Eastern Cape, at altitudes between 330 and 1660 m (Figure 7.48). Flowering has been recorded from June to March.

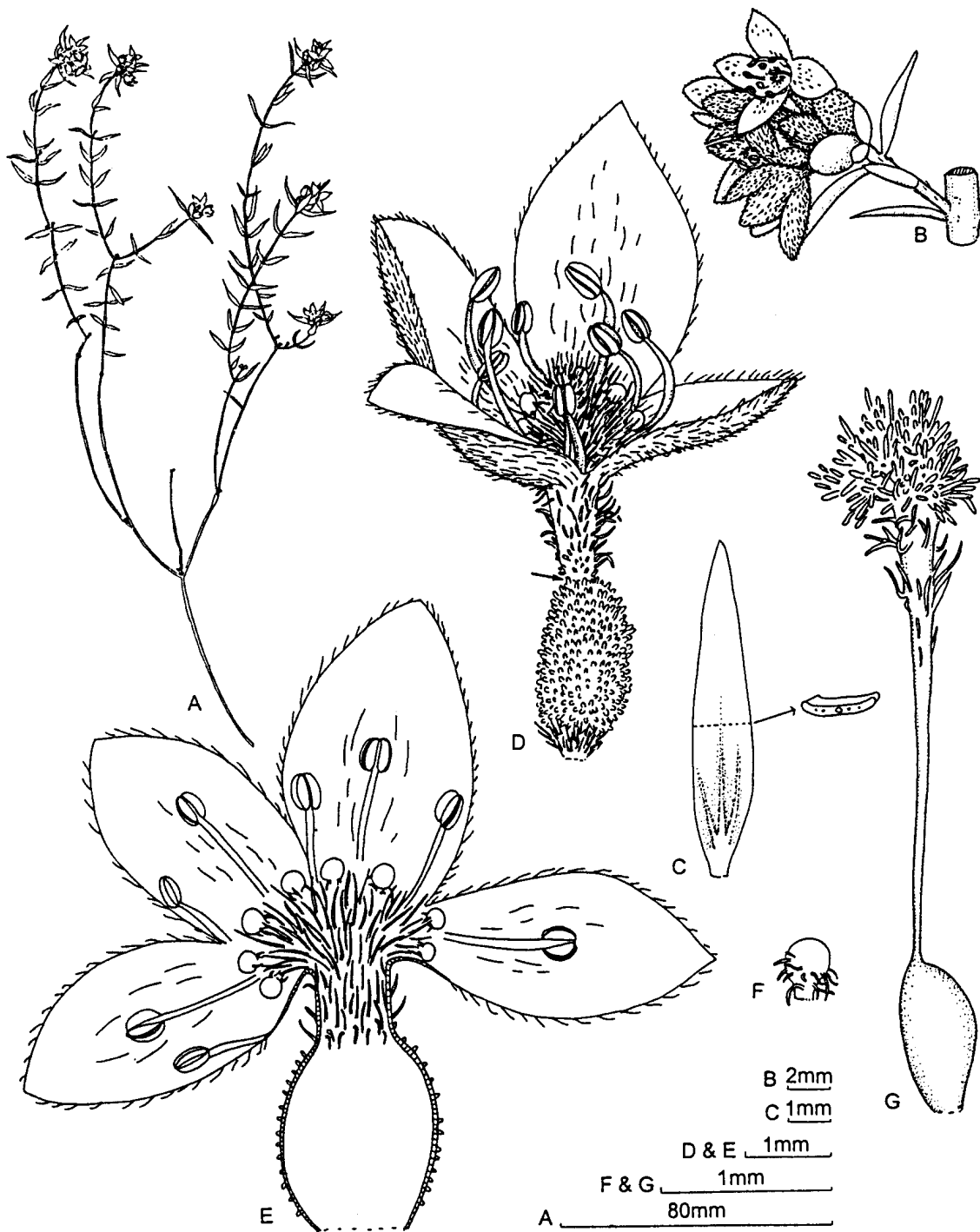


FIGURE 7.47—*Lachnaea burchelli*, Oliver 9251 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower, note circumscission zone (arrowed); E, flower split longitudinally with gynoecium removed; F, scale; G, gynoecium.

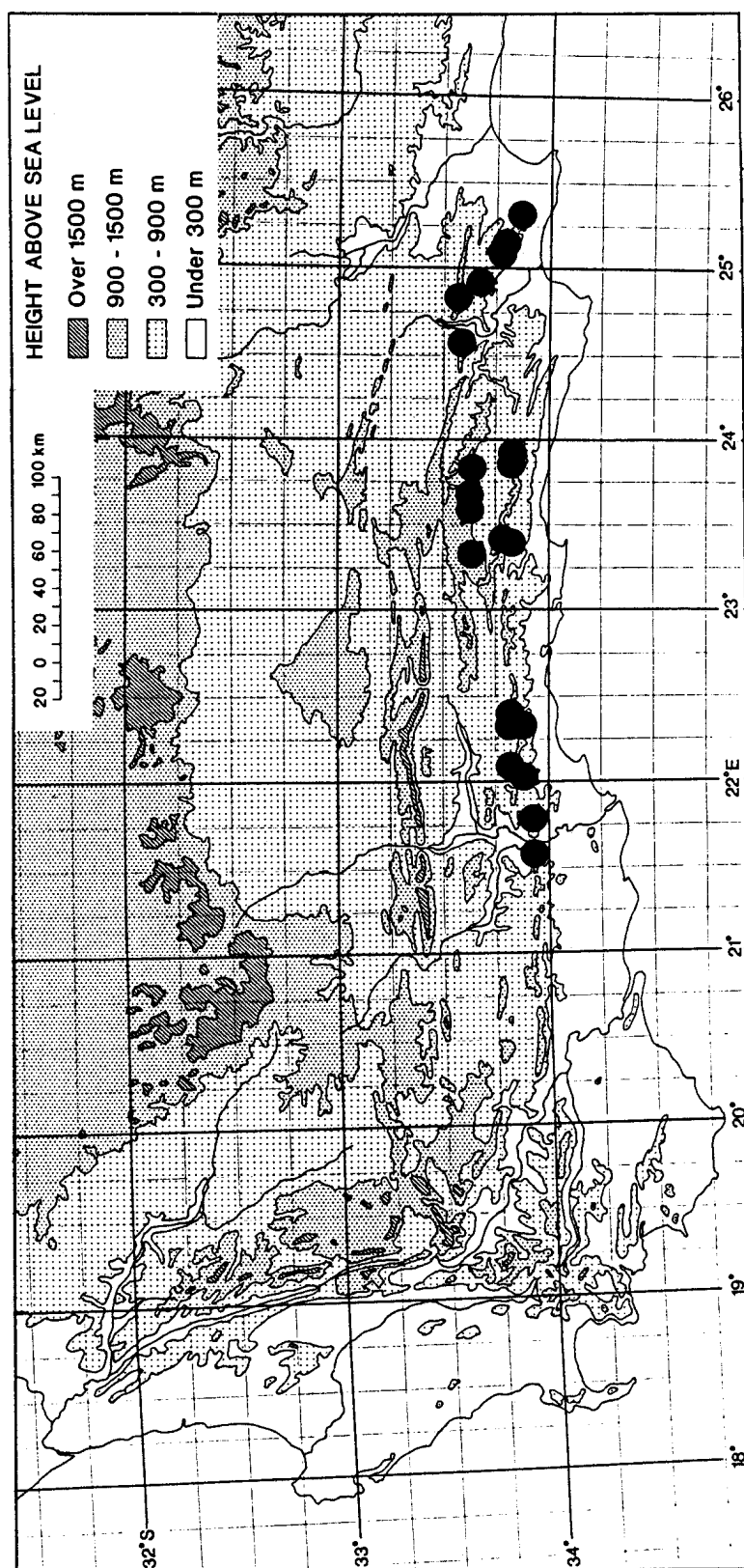


FIGURE 7.48—Known distribution of *Lachnaea burchellii*.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters

Lachnaea burchellii is distinguished from *L. glomerata*, by being a reseeder, and in having the outside of the upper portion of the hypanthium and sepals sericeous, clavate trichomes on the outside of the basal portion of the hypanthium and a brush-like stigma.

Specimens examined

WESTERN CAPE.—3321 (Ladismith): Attakwasberge, Vreysberg, Vreysrant west of Cloete's Pass, E slope, 1075 m, (–DC), 16-12-1988, *McDonald 1761* (NBG); Mossel Bay Div., hills above Langfontein, 400 m, (–DD), 26-08-1915, *Muir 2364* (BOL); Cloete's Pass, ESE of Vreysberg, SE facing slope, 530 m, (–DD), 21-06-1997, *Oliver 10805* (NBG, PRE).

—3322 (Oudtshoorn): Mossel Bay Div., Outeniqua Mtns, Klein Moeras R. Catchment, N slopes, (–CC), 10-06-1983, *Bean 1153* (BOL); W of Robinson Pass, 500 m, (–CC), 29-08-1978, *Bond 1471* (NBG); Outeniqua Mtns, Robinson Pass, (–CC), *Hops 70* (BOL); Robinson Pass, S slopes; 500 m, (–CC), 27-07-1956, *Levyns 10542* (BOL); Robinson Pass, (–CC), 19-09-1936, *Salter 6347b* (BOL); Outeniqua Mountains, Montagu Pass, summit, (–CD), 07-12-1982, *Bean 1069* (NBG); George Dist., summit Montagu Pass, above road; (–CD), 805 m, 06-10-1978, *Bean 155* (BOL);); *ibid.*, upper N slopes, 800 m, 16-09-1969, *Dahlstrand 1255* (NBG); *ibid.*, 830 m, Oct. 1921, *Fourcade 1608* (BOL, K, NBG, Z); *ibid.*, N part, 15-10-1928, *Gillett 1624* (NBG); *ibid.*, 04-11-1928, *Gillett 2061* (NBG); *ibid.*, 730 m, 25-07-1956, *Levyns 10490* (BOL); *ibid.*, 28-12-1949, *Martin 92* (NBG); *ibid.*, above Topping Siding, NW slopes, 800 m, 27-08-1989, *Oliver 9241* (NBG); *ibid.*, 1165 m, 03-11-1894, *Schlechter 5810* (BOL, GRA, K, S, Z); *ibid.*, summit, 26-11-1979, *Spreeth 155* (NBG); Outeniqua Pass, 1000 m, (–CD), 03-12-1951, *Compton 23081* (NBG, S); *ibid.*, top, 1000 m, 19-10-1953, *Compton 24411* (NBG); *ibid.*, near top, S slopes, 750 m, 21-08-1956, *Dahlgren & Peterson 179* (NBG, S); *ibid.*, 19-10-1953, *Lewis 3976* (BOL); *ibid.*, 11.9 miles from George, 26-09-1967, *Marsh 566* (NBG); Outeniqua Mtns, N side in Groot Doring R. valley, W of Waboomskraal, 700 m, (–CD), 27-08-1989, *Oliver 9251* (NBG); Cradock Peak, Montagu Pass, (–CD), Jan. 1940, *Stokoe SAM 54880* (SAM); George Dist., slopes of Cradock Berg, 830–900 m, (–CD), Aug. 1931, *Thorne SAM 51674* (SAM).

—3323 (Willowmore): Uniondale Div., Hoopsberg, summit, 1530 m, (–CD), 06-11-1941, *Esterhuysen 6554* (BOL); Donkerhoek Nek, Prince Alfred's Pass, ± 500 m, (–CD), 27-09-1978, *Hugo 1330* (NBG); Niekerksberg Forest Reserve, 1000 m, (–CD), 16-07-1974, *Bayliss 6430* (NBG); *ibid.*, 29-10-1975 *Bayliss 7169* (NBG); Kouga Mtns, Saptoukop, ridge up from Withoogte, 1340 m, (–DA), 16-12-1991, *Oliver 9941* (NBG); Kouga Mtns, 1000 m, (–DA/DB), 14-11-1944, *Esterhuysen 10824* (BOL).

—3421 (Riversdale): Near Albertinia (precise locality not known), 30 m, August 1913, *Muir 1431* (SAM). Grid ref. unknown: Eastern Cape, Baviaanskloof, 330 m, 18-11-1977, *Bayliss 8149* (Z), Drège 7370 (NY [cap. on *Ecklon 78*], P); *Zeyher 3757* (K, SAM); *Ecklon & Zeyher 3757* (Z).

EASTERN CAPE.—3323 (Willowmore): Kouga Mtns near Smutsberg, 1330–1665 m, (–DB), 12-11-1944, *Esterhuysen 10778* (BOL, NBG); Kromrivier, N side of Tsitsikamma, 805 m, (–DD), 18-05-1977, *Bond 1024* (NBG); Uniondale Div., Joubertinia, (–DD), 34-11-1941, *Esterhuysen 6877* (BOL); Wagenbooms River, headwaters, 630 m, (–DD), Sept. 1922, *Fourcade 2334* (BOL, K, NBG).
—3324 (Steytlerville): Great Winterhoek Mtns, Mac Peak, lower S slopes, 1000 m, (–DA), 22-09-1953, *Taylor 917* (BOL, NBG); Baviaanskloof Mtns above Coutie Kraal NW of Cambria, 1165 m, (–DA), 12-09-1973 *Thompson 1911* (NBG); Great Winterhoek Mtns, Cockscorn, 17-09-1950, (–DB), *Archibald 3464* (BOL); Otterford Forest Reserve, Elandsrivierberg area, 865 m, (–DB), 09-09-1973, *Thompson 1842* (NBG).
—3325 (Port Elizabeth): Longmore Forest reserve, Loerie, (–CC), 11-07-1968, *Dahlstrand 707* (GRA); Humansdorp Div., Blueberg, Loerie Plantation, (–CC), 22-09-1934, *Dix 44* (BOL); Uitenhage, Van Stadensberg, 1–100 m, (–CC), Jul., *Ecklon 78* (GRA, NY, S), *Ecklon s.n.* (S), *Ecklon & Zeyher 4.7* (NY, PRE, Z); Van Stadensberg, summit, 330 m, (–CC), Jan./Dec., *MacOwan 1051* (NY, Z); Van Stadens, Port Elizabeth, (–CC/CD), 31-5-1932, *Long 596* (K); *ibid.*, Nov. 1909, *Patterson 885* (GRA, K); Uitenhage Dist., Van Stadensberg, 330 m, (–CD), January 1867, *Bolus 1556* (BOL, NY); Uitenhage, Witteklip, (–CD), 1899, *Bolus 9130* (BOL); Van Stadensberg Trig. Beacon, Lady's Slipper on Wild Flower Reserve, Witteklip Mtn, 607 m, (–CD), 7-08-1994, *Dold 1038* (GRA). Doubtful locality: Annes Villa, near Kommadagga, 400 m, (3325BB), 02-03-1976, *Bayliss 7513* (NBG).

25. ***Lachnaea glomerata* Fourc.** in Transactions of the Royal Society of South Africa 21: 101–102 (1934). Type: Div. Humansdorp: Klein Hoek, 1000 ft., Sept. 1909, *Fourcade 445* (BOL 46910, holo.!, BOL 46906!, iso.).

Erect, moderately branched shrub up to 0,45 m tall, multi-stemmed at base; resprouter. *Branches* erect, slender, ridged below leaf bases, sparsely adpressed hairy or glabrous, leafy, becoming naked with prominent leaf scars. *Leaves* decussate, ascending to patent, scattered with internodes half to two-thirds as long as leaves, sessile, epistomatic, linear-elliptic to elliptic or obovate, 4.0–10.5 × 1.0–2.0 mm, coriaceous, glabrous, adaxially concave, smooth, dull, ± white-punctulate, abaxially convex, smooth or subkeeled, glossy, apex mucronate or acuminate, base cuneate; distal 2 or 3 or occasionally 4 or 5 leaf pairs immediately below inflorescence bract-like, elliptic, ovate, obovate or suborbicular, 1.3–3.0 × 1.3–2.4 mm, coriaceous, adaxially concave, abaxially convex, keeled to subkeeled, mucronate, margin ciliate. *Inflorescence* a terminal, sessile, ebracteate, 6–8-flowered umbel, 5.0–10.0 mm in diameter, on main and also on short lateral flowering branches below main inflorescence thus appearing racemose-like. *Flowers* subactinomorphic, cream or pale pink, sweetly skunk-scented. *Pedicel* 0.3–0.5 mm long, adpressed hirsute. *Hypanthium* 1.5–1.9 mm long, circumscissile ± midway,

upper portion funnel-shaped, tomentose outside, adpressed hirsute within, basal portion ellipsoid, tomentose outside, glabrous within. *Sepals* patent, subequal, elliptic to widely elliptic, $1.4\text{--}3.0 \times 1.0\text{--}2.0$ mm, apex rounded or obtuse, adaxially sparsely tomentose to glabrescent, abaxially tomentose. *Stamens* exserted, outer, antisealous whorl inserted at rim of hypanthium, inner, antipetalous whorl inserted at mouth of hypanthium; filaments filiform, 0.4–1.0 mm long; anthers ellipsoid to suborbicular, 0.2–0.4 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, clavate, 0.3–0.5 mm long, glabrous, yellow in fresh state. *Ovary* ellipsoid, 0.8–0.9 mm long, glabrous. *Style* linear-obconical, 1.3–1.9 mm long, with straight, adpressed or incurled hairs in upper half. *Stigma* capitate, elongate-papillate (Figure 7.49).

Distribution and ecology

Lachnaea glomerata has been recorded from the mountains in the Little Karoo, Antoniesberg in the Willowmore District and Kleinhoek in the Humansdorp District growing in stony soil on Table Mountain Sandstone at altitudes between 330 and 1130 m (Figure 7.50). Flowering has been recorded from August to October.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters

Lachnaea glomerata is distinguished from *L. burchellii* by being a resprouter, and in having the outside of the hypanthium and sepals tomentose, acicular trichomes on the outside of the upper and lower portion of the hypanthium and a capitate, elongate-papillate stigma.

Specimens examined

WESTERN CAPE.—3321 (Ladismith): Rooiberg, S slopes, along jeep track to Mount Ararat, 865–1130 m, (–CB), 07-08-1990, *Beyers 192* (BOL, K, MO, NBG, NY, PRE, WU, Z); W of Rooiberg Pass, on ridge of Rooiberg, 1100 m, (–DA), 01-10-1958, *Wurts 1638* (NBG).
—3322 (Oudtshoorn): Kammanassie Mtns, Kleinberg Forest Reserve, Kleinplaas R. valley, (–DA), 1130 m, 11-08-1983, *Matthews 1209* (NBG).

—3323 (Willowmore): Antoniesberg, (–AD), 19-10-1955, *Esterhuysen* 24977 (BOL); lower S slopes of Antoniesberg, on farm Misgund, (–AD), 1300 m, 24-09-1990, *Vlok* 2378 (K, NBG, PRE).

EASTERN CAPE.—3323 (Willowmore): Baviaanskloof Mtns, W-end of range, above farm Verlorenrivier, 1350 m, (–BD), 2-05-1995, *Euston-Brown* s.n (NBG); *ibid.*, above farm Vaalkrans, 1400 m, 26-05-1995, *Euston-Brown* 551 (K, NBG, PRE).

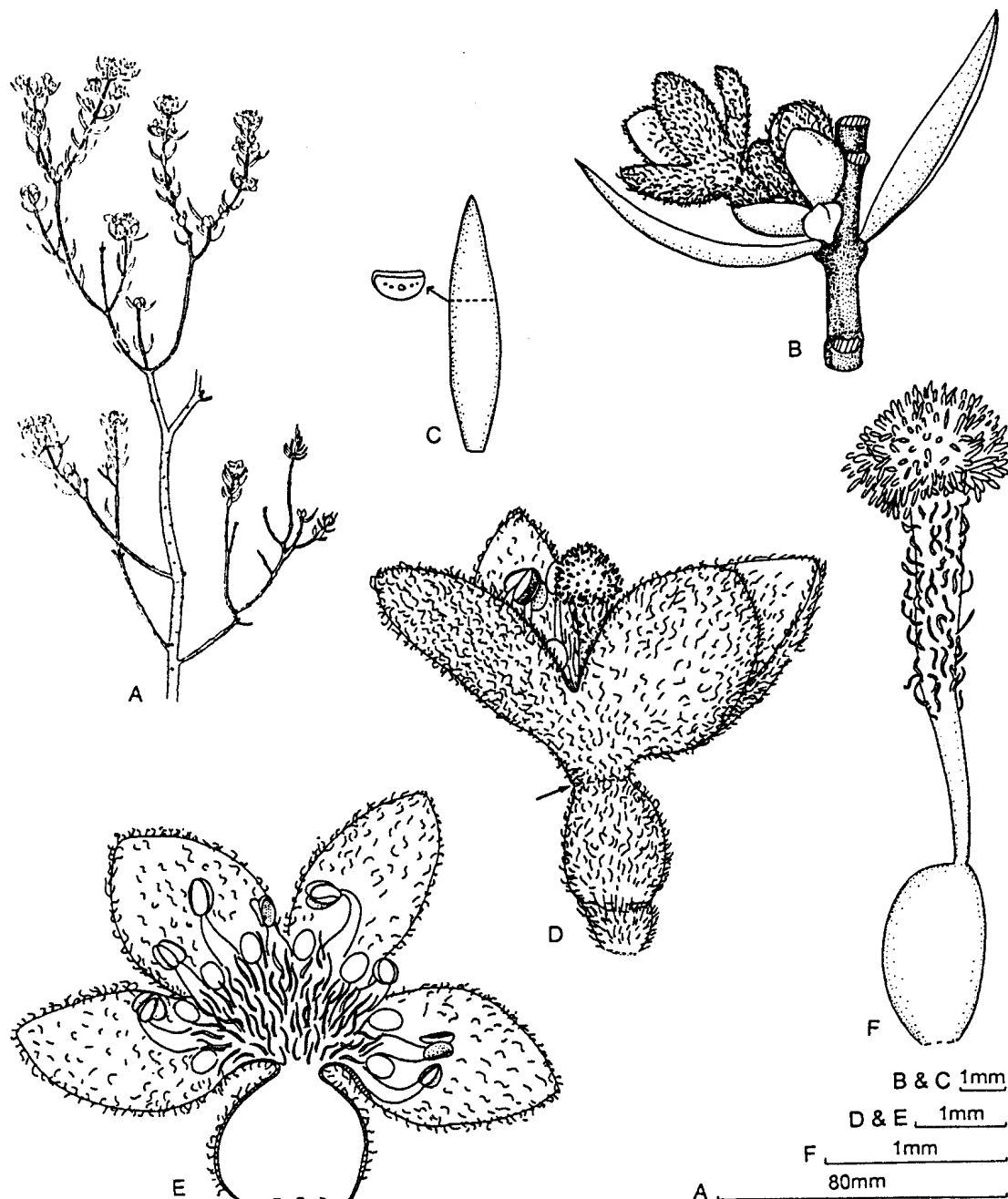


FIGURE 7.49—*Lachnaea glomerata*, *Beyers* 192 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D, flower, note circumscription zone (arrowed); E, flower split longitudinally with gynoecium removed; F, gynoecium.

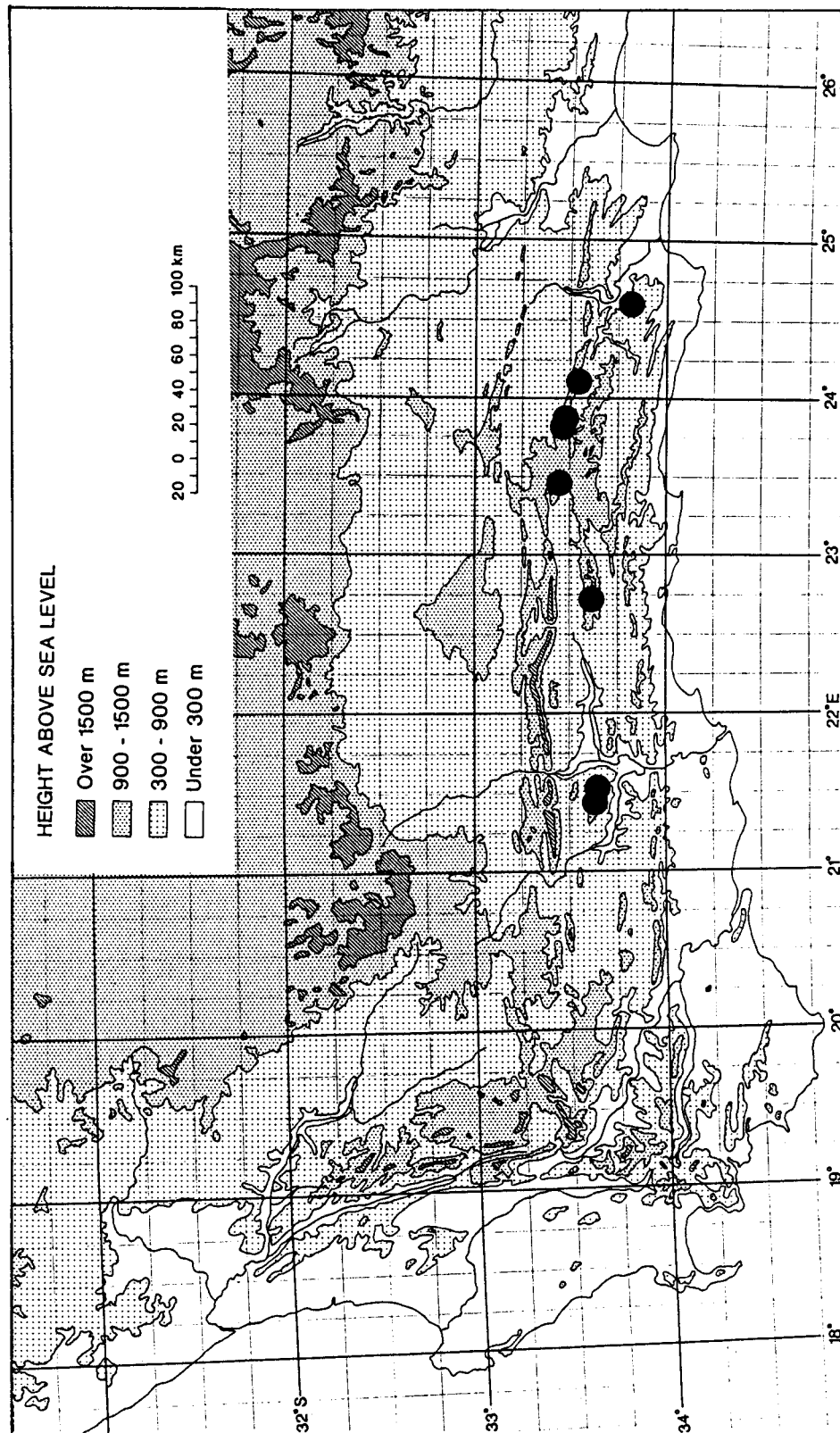


FIGURE 7.50—Known distribution of *Lachnaea glomerata*.

—3324 (Steytlerville): Baviaanskloof Mtns, Bosrug Track, N slopes, 1185 m, (–CA), 21-08-1993, *Euston-Brown 116* (NBG); *ibid.*, Bosrug, S slopes, 1215 m, 21-06-1993, *Euston-Brown 117* (BOL, NBG); *ibid.*, Bosrug, on top, 1200 m, 6-05-1995, *Euston-Brown 476* (GRA, NBG), *Euston-Brown 477* (GRA, NBG), *Euston-Brown 478* (GRA, NBG); *ibid.*, S of Bosrug Track, 1430 m, 7-06-1995, *Euston-Brown 485* (GRA, NBG); Humansdorp Div., Kleinhoek, 330 m, (–DC), Sept. 1909, *Fourcade 445* (BOL).

26. ***Lachnaea laniflora*** (C. H. Wright) Bond, Journal of South African Botany 48, 4: 527 (1982). *Passerina laniflora* C.H. Wright in Flora capensis 5,2: 11 (1915). Type: Clanwilliam Div., Cederberg Range, Sneeuksop, 4500 ft., *Bodkin in Herb. Bolus 9086* (BOL, holo.!, NBG!, iso.).

Rounded, compact, much branched shrub up to 1 m tall and up to 2 m in diameter, single-stemmed at base, branching close to the ground; reseeder. *Branches* ascending to patent, subrigid to flexuose, terete, at first tomentose, later glabrescent, leafy, becoming naked with prominent leaf scars. *Leaves* decussate, usually strictly four-ranked, ascending, slightly incurved, imbricate, internodes one-fifth to half length of leaves, sessile, epistomatic, coriaceous, narrowly ovate to narrowly elliptic, $2.5\text{--}7.0 \times 0.9\text{--}1.3$ mm, glabrous, adaxially obtusely concave or concave, enervate, white-punctulate, dull, abaxially convex, keeled, usually more so towards apex, glossy, apex rounded or occasionally mucronulate, base rounded or obtuse; two distal leaf pairs subtending inflorescence bract-like, elliptic to widely elliptic or obovate, $2.9\text{--}5.1 \times 2.1\text{--}3.0$ mm, coriaceous, glabrous, green or green tinged reddish-brown, adaxially concave, abaxially convex, keeled towards apex, margin glabrous or occasionally ciliolate, apex subacute, base cuneate or rounded. *Inflorescence* a terminal, sessile, pseudobracteate, ± 15 -flowered, capitate-like umbel with up to 14 open flowers at a time, 5–15 mm in diameter, on main flowering branches; umbel appears to be enclosed at base by 2 pairs of involucre bracts but vegetative shoots were observed to develop in axils of bract-like leaves. *Flowers* $\pm$ actinomorphic, pink, white, white tinged violet-blue, white turning pink with age or occasionally dark red to reddish brown, pedicellate. *Pedicel* 0.2–0.7 mm long, not noticeably elongating in fruit, sericeous. *Hypanthium* 2.3–4.0 mm long, circumscissile $\pm$ third to midway from base, circumscission zone not clearly defined, upper portion funnelshaped, sericeous or sericeous-tomentose outside, sericeous within, basal portion ellipsoid, outside puberulent to sericeous in upper half, rest glabrous, within glabrous. *Sepals* patent, $\pm$ equal, elliptic to widely elliptic, $1.6\text{--}4.2 \times 1.0\text{--}2.3$ mm, adaxially sericeous

to sparsely adpressed hairy, occasionally glabrous, abaxially sericeous, apex rounded. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 0.9–1.7 mm long, inner 0.6–1.3 mm long; anthers widely ellipsoid to spheroid, 0.2–0.5 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, narrowly ellipsoid or narrowly obovoid, 0.4–1.0 mm long, glabrous, yellow or white in fresh state. *Ovary* ellipsoid, 0.7–1.0 mm long, glabrous. *Style* linear-obconical, 2.1–3.4 mm long, sericeous in upper half. *Stigma* brush-like (Figure 7.51).

Distribution and ecology

Lachnaea laniflora is known from Pilaarsberg in the northern Cederberg southwards along the Skurweberge and the Groot Winterhoek Mountains to Brandwag Peak northwest of Worcester and eastwards to the western end of the Langeberg near Montagu, usually growing amongst rocks or in rock crevices, at altitudes between 1000 and 2200 m (Figure 7.52). Flowering has been recorded from July to March.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters and relationships

Lachnaea laniflora is easily distinguished by the imbricate, usually four-ranked leaves which are slightly incurved and keeled abaxially, the pseudobracteate capitulum-like umbels with $\pm$ actinomorphic flowers and terete pedicels which hardly elongate in the fruiting stage. Its taxonomic affinities are unclear.

Specimens examined

WESTERN CAPE.—3218 (Clanwilliam): Clanwilliam Dist., Pilaarsberg N of Pakhuis Pass, 1000 m, (–BB), Sept, 1967, *Kerfoot 5913* (NBG).

—3219 (Wuppertal): Cederberg Mtns [precise locality not known], Nov. 1939, *Stokoe 8029* (BOL); Cederberg Mtns, Krakadouwsberg, in rock crevices, 2000 m, (–AA), 22-09-2942, *Esterhuysen 8053* (BOL); Krakadouws Peak, in rock crevices, 1830 m, (–AA), 20-10-1945, *Esterhuysen 12104* (BOL); North Cederberg, Peak at Koupoort, in rock crevices, 1665 m, (–AA), 23-10-1945, *Esterhuysen 12177* (BOL);

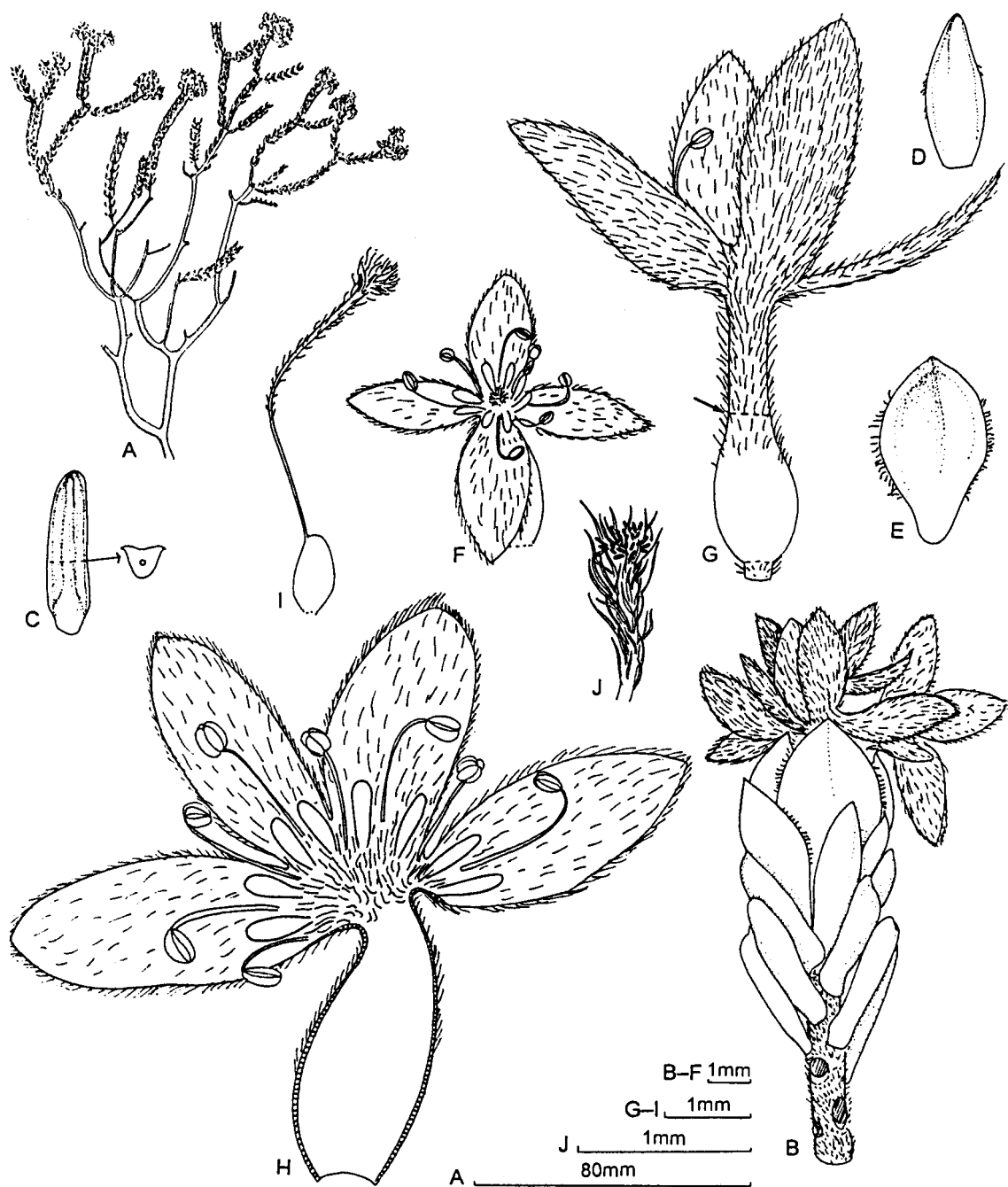


FIGURE 7.51—*Lachnaea laniflora*, Oliver 10679 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F & G, flowers: F, view from above; G, side view, note circumscession zone (arrowed); H, flower split longitudinally with gynoecium removed; I, gynoecium; J, stigma and upper portion of style (enlarged).

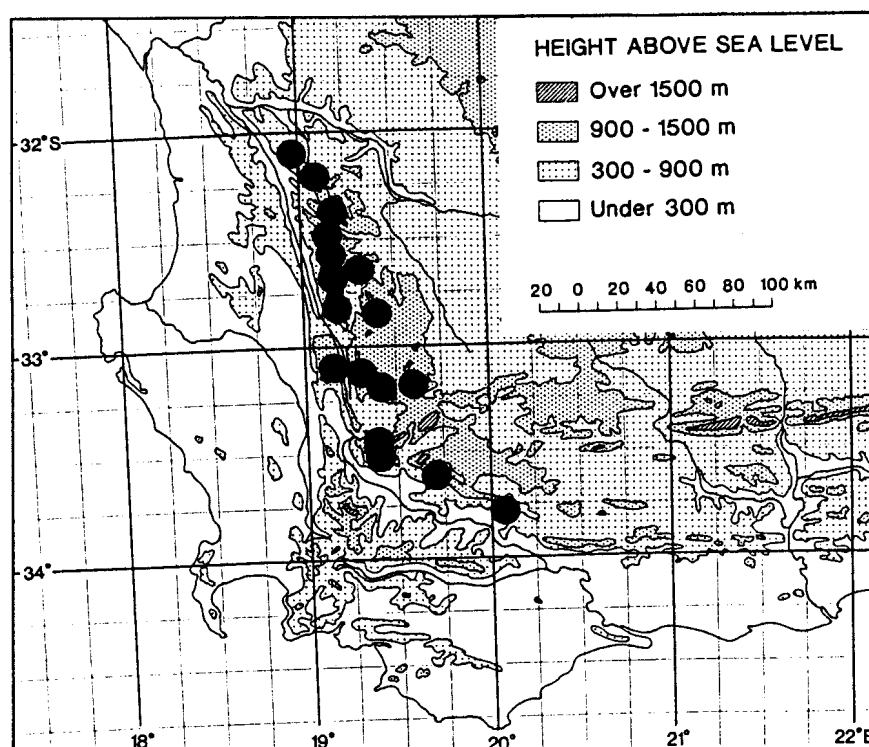


FIGURE 7.52—Known distribution of *Lachnaea laniflora*.

Cederberg, Sneeuksop, ± 1300 m, (–AC), 04-10-1897, *Bodkin BOL 9086* (BOL, NBG); Cederberg, Sneeuksop, summit 1665 m (–CA), 22-07-1972, *Andrag 106* (NBG); *ibid.*, slopes, 22-07-1972, *Andrag 108* (NBG); *ibid.*, 1420 m, 05-09-1985, *Brown 500* (NBG); *ibid.*, mountain slopes, 1730 m, 18-10-1923, *Pocock 395* (NBG); *ibid.*, hut area, koppie SE of hut, steep NE slope, ± 1500 m, 24-09-1983, *Taylor 10686* (NBG); *ibid.*, rocky (TMS) summit ridge, 2000–2200 m, 01-09-1963, *Taylor 5089* (NBG); *ibid.*, summit, 2000–2200m, 04-12-1964, *Taylor 6146* (NBG); *ibid.*, E aspect, steep slope, 19-11-1996, *Van Rooyen, Steyn & De Villiers 227* (NBG); *ibid.*, summit, 2020 m, 01-03-1983, *Viviers 1052* (NBG); Cederberg, Langberg, 2065 m, (–AC), 15-12-1941, *Compton 12745* (NBG); *ibid.*, rock crevices, 2000 m, 15-12-1941, *Esterhuysen 7324* (BOL); *ibid.*, ridge running SE, 1700 m, (AC), 7-12-1995, *Oliver 10679* (BOL, K, MO, NBG, PRE); *ibid.*, *Oliver 10679a* (NBG, PRE); Clanwilliam Dist., Elandsbloof, S slope, crevices in cliffs, ± 1500 m, (–CA), 03-10-1940, *Esterhuysen 3304* (BOL, NBG); Cederberg, Middelberg, mountain slopes, 1330 m (–CA), 15-10-1923, *Pocock 270* (NBG); Cederberg, Donkerbloofkop, (–CA), Jan. 1945, *Stokoe SAM 58583* (SAM); South Cederberg, Apex-Breekrock of Breekkrans-Hondverbrand area, ± 1580 m, (–CA), 17-12-1983, *Taylor 10843* (NBG); Cederberg Forest Reserve, top of Heksberg, between rocks in deep sand, (–CA), 03-12-1983, *Viviers 1220* (NBG); Gideonskop, Rietbloof, SE aspect, ± 1600 m, (–CB), 27-11-1979, *Forsyth 51* (NBG); Gideonskop, 1600 m, (–CB), 31-10-1987, *Oliver 9045* (NBG); *ibid.*, 03-11-1986, *Winter s.n. NBG 140939* (NBG); NW border of Ceres Div., near Gideonskop, (–CB), *Stokoe SAM 54497* (SAM); Ceres, Cold Bokkeveld Mts, Skoongesig, (–CC), 9-09-1966, *Hanekom 667* (NBG); Skurweberg, N of Bokkeveld Tafelberg, rock crevices, 2000 m, (–CD), 11-10-1952, *Esterhuysen 20642* (BOL).

—3319 (Worcester): Groot Winterhoek Mtns, Sneeuogat Peak, rocky summit, 2000 m, (–AA), 30-12-1951, *Esterhuysen 19752* (BOL); Groot Winterhoek, on cliffs, S aspect, 1665 m, (–AA), 12-12-1965, *Esterhuysen 31443* (BOL); *ibid.*, ± 2000 m, (–AA), 27-11-1916, *Phillips 1668* (SAM); *ibid.*, *Phillips s.n.* (NBG); Groot Winterhoek Peak, rocky ridge leading NW, rock crevices facing E, ±1900 m, (–AA), 16-11-1977, *Taylor 9737* (NBG); Ceres Dist., Hansiesberg, 2000 m, (–AB), 17-12-1944, *Compton 16706* (NBG, S); *ibid.*, 2000 m (–AB), Dec. 1944, *Lewis 1567* (SAM); Cold Bokkeveld, Gydoberg, 2000 m, (–AB), 19-01-1897, *Schlechter 10220* (BOL, GRA); Schurfdeberg near Ceres, on slopes [precise locality not known], 1600 m, (–AB/AD), Dec. 1891, *Bolus HNAA 1355* (BOL, SAM); Hex River Mtns, Buffelshoek Twins, rock crevices, 2000 m, (–AD), 25-12-1942, *Esterhuysen 8393* (BOL); Worcester Div., Hex River Mtns, Mount Brodie, 2000 m, (–AD/BC), 25-12-1942, *Esterhuysen 8543* (BOL); Ceres Dist., Baviansberg, amongst rocks or in rock crevices, 1830–2100 m, (–BA), 04-11-1962, *Esterhuysen 29824* (BOL, S); *ibid.*, in cracks on rocky summit, 1800 m, 05-11-1989, *Forsyth 507* (NBG); *ibid.*, 1930 m, Oct. 1937, *Stokoe 5010* (BOL); Worcester Dist., Brandwacht Peak, S side of summit, at base of rock, 1965 m, (–CB), 08-11-1959, *Esterhuysen 28358* (BOL); Naudesberg, Worcester side, (–DA), Aug. 1932, *Thorne SAM 50384* (SAM).

—3320 (Montagu): Robertson Div., Langeberg, near Montagu Ridge, (–CA/CC), 27-10-1954, *Esterhuysen 23813* (BOL).

27. *Lachnaea elsiae* Beyers, sp. nov. *L. penicillatae* structura florae affinis, sed differt umbello pseudobracteato floribus apertis usque ad quaternis simul, stylo glabro.

TYPE.—Western Cape, 3219 (Wuppertal): Cold Bokkeveld, Tafelberg at Boplaas, S–SE of Tafelberg, slopes, 1350 m, (–CD), 4-04-1998, *Hanekom 3013* (NBG, holo.!; BOL!, K!, MO!, NY!, P!, PRE!, S!, Z!, iso.).

Compact, rounded or diffuse spreading, much branched, shrub to 0.6 m tall, single-stemmed at base branching near the ground, or multistemmed at base; reseeders or resprouters. *Branches* ascending to patent, slender, terete, felted, tomentose or villous-tomentose, leafy, later glabrescent and naked without prominent leaf scars. *Leaves* decussate, adpressed or subadpressed, scattered, internodes half to as long as leaves, those below inflorescence crowded, sessile, epistomatic, narrowly ovate to ovate or narrowly elliptic to elliptic, 1.0–4.5 × 0.4–1.1 mm, coriaceous, adaxially concave, enervate, dull, abaxially convex, subkeeled or keeled, glossy, glabrous, margin of distal leaves below inflorescence sparsely villous-ciliate, apex rounded, villous-tufted, base rounded; distal two leaf pairs subverticillate, bract-like, partially enclosing inflorescence, coriaceous, green or occasionally tinged maroon, glabrous, adaxially concave, abaxially convex, subkeeled or keeled in upper half; distal pair elliptic or obovate to widely obovate, 1.6–3.3

× 0.9–2.0 mm, margin membranous or brown scarious, ciliate, apex subacute to obtuse or emarginate; subdistal pair narrowly elliptic to elliptic, ovate or obovate, 1.8–4.0 × 0.9–1.5, margin membranous or brown scarious, villous-ciliate, apex acute to rounded.

Inflorescence a terminal, sessile, 3–13-flowered, pseudobracteate umbel with 1–4 open flowers at a time, up to 2 mm in diameter, on main flowering branches or also on short lateral flowering branches just below main inflorescence or for some distance down the main flowering branch, thus either forming a cluster of inflorescences at apex of main flowering branches or appearing racemose-like on main flowering branches. *Flowers* subactinomorphic, cream, pale pink or cream turning pink or pale, dull red with age, pedicellate. *Pedicel* 0.3–1.4 mm long, covered with long silky, ascending hairs becoming villous with age, elongating in fruiting stage. *Hypanthium* 1.2–2.3 mm long, circumscissile ± midway, upper portion shortly funnel-shaped, sericeous outside, adpressed hirsute within, basal portion ellipsoid or oblong, outside puberulent in upper half to upper third, glabrous below, within glabrous. *Sepals* erect-patent to patent, subequal, ovate to widely ovate or elliptic to widely ovate, 1.0–1.9 × 0.5–1.4 mm, apex subacute or rounded, adaxially glabrous or sparsely adpressed hairy in upper half, abaxially sericeous. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, outer 0.4–1.0 mm long, inner 0.3–0.8 mm long; anthers ellipsoid to spheroid, 0.2–0.4 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted in mouth of hypanthium immediately below antipetalous stamens, obovoid, 0.2–0.6 mm long, glabrous, translucent white or pale yellow in fresh state. *Ovary* narrowly ellipsoid to obovoid, 0.6–1.1 mm long, glabrous. *Style* linear-obconical, 1.1–2.2 mm long, glabrous. *Stigma* capitate, elongate-papillate (Figure 7.53).

Distribution and ecology

Lachnaea elsiae ranges from Sneekop in the Cederberg southwards to the Northeast Cold Bokkeveld and eastwards along the mountains of the Little Karoo as far east as Seweweekspoort in the Ladismith District. It seems to occur on shale bands and adjacent sandstone-derived soil at altitudes between 1250 and 2300 m (Figure 7.54).

Heavily grazed individuals have a dense, compact and rounded habit, appearing quite different from the ungrazed ones which have a loose, slender, almost decumbent habit. Flowering has been recorded throughout the year.

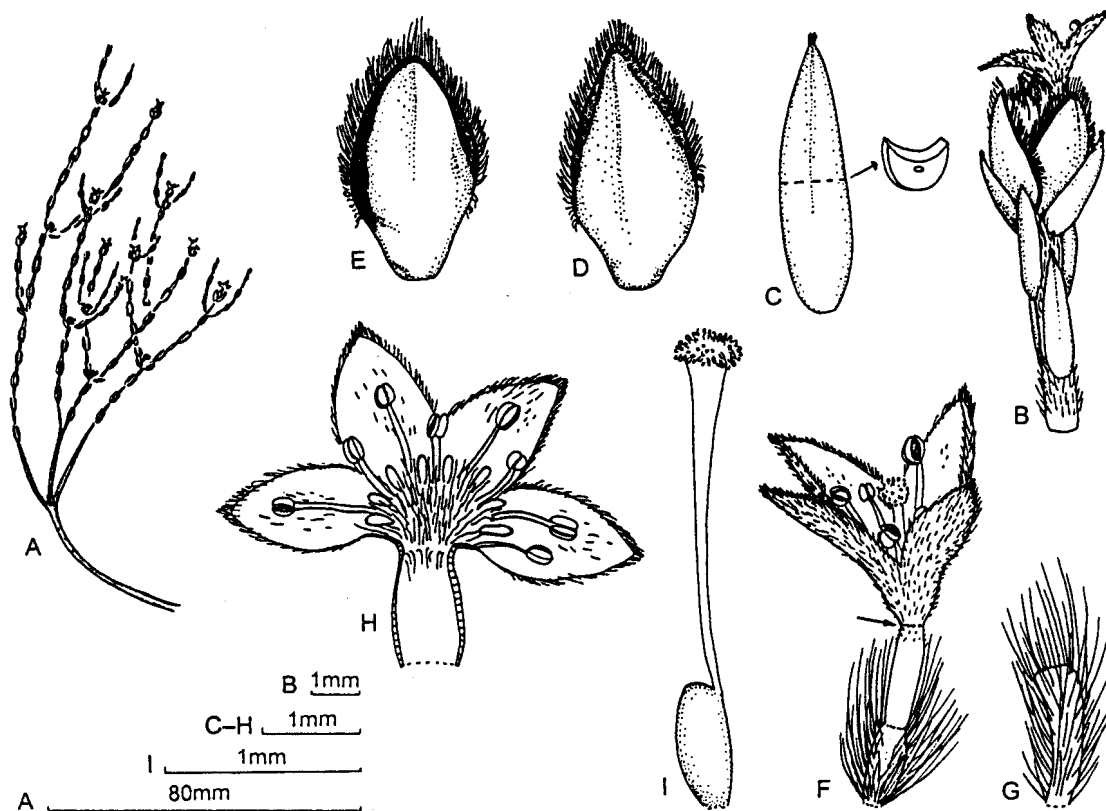


FIGURE 7.53—*Lachnaea elsieae*. A, portion of plant; B, flowering branch; C, leaf (cross section); D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F, flower, note circumscission zone (arrowed); G, elongated pedicel in fruiting stage; H, flower split longitudinally with gynoecium removed; I, gynoecium. A, *Boucher 5077* (NBG); B–I, *Hanekom 3013* (NBG).

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters and relationships

Lachnaea elsieae superficially resembles *L. penicillata*, a distantly related species, but differs in having a pseudobracteate umbel, with up to four open flowers at a time, and a glabrous style.

Eponymy

This species is dedicated to Ms Elsie Esterhuysen, one of southern Africa's most eminent plant collectors of the 20th Century. Her collections of especially the montane species of *Lachnaea* have been invaluable in the classification of the group.

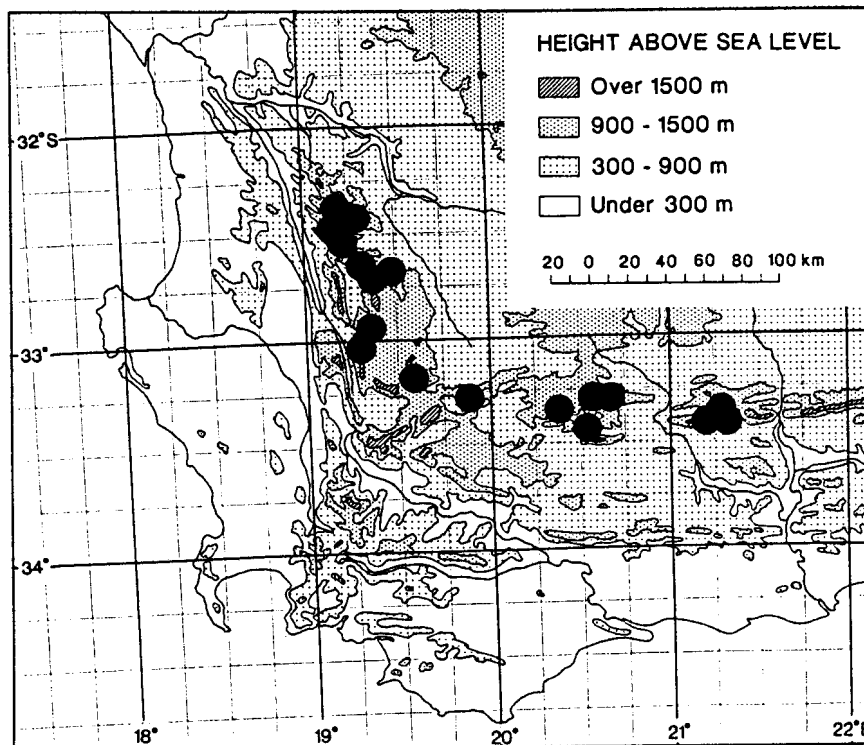


FIGURE 7.54—Known distribution of *Lachnaea elsieae*.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Cederberg, near Bushman's Cave, (precise locality unknown), ± 1930 m, 23-09-1930, *Barnes BOL 19425* (BOL); Cederberg, shale band, (precise locality unknown), 1665 m, Sept. 1930, *Levy's 2965* (BOL); *ibid.*, Nov. 1939, *Stokoe 8032* (BOL); *ibid.*, Sept. 1942, *Stokoe SAM 58591* (SAM); Cederberg Mtns, Langberg, 1665–2000 m, (–AC), 15-12-1941, *Esterhuysen 7322* (BOL); *ibid.*, Sneeukop, shale band, 1665 m, 02-01-1942, *Esterhuysen 7541* (BOL); *ibid.*, S of Tafelberg, shale band, 1330–1665 m, 24-06-1942, *Esterhuysen 7882* (BOL); *ibid.*, Tafelberg, shale band, 1665 m, 25-09-1942, *Esterhuysen 8081* (BOL, PRE); *ibid.*, foot of Tafelberg, 1330 m, 08-10-1946, *Esterhuysen 13055* (BOL, PRE); Cederberg State Forest, Sneeukop Hut vicinity, 1700 m, (–AC), 06-09-1979, *Forsyth 35* (NBG); Cederberg State Forest, Sneeuberg, W slopes, ± 1400 m, (–AC), 02-12-1969, *Kruger 972* (NBG); *ibid.*, upper shale band around higher slope, 1830 m, 02-09-1963, *Taylor 5103* (NBG); *ibid.*, shale band, 1830 m, 16-05-1966, *Taylor 6821* (NBG, PRE); *ibid.*, 1300 m, 01-03-1983, *Viviers 1051* (NBG); Cederberg, kloof W of Sneeukop, 1830 m, (–AC), 13-10-1923, *Pocock 221* (NBG); Cederberg, Sederhoutkop, deep

shale soil of shale band, $\pm$ 1440 m, (–AC), 07-08-1987, *Taylor 11775* (NBG, PRE, S); Cederberg, near Wolfberg Arch, 1630 m, (–AD), 10-09-1978, *Campbell 11275* (NBG); Cederberg, Wolfberg, 1330 m, (–AD), 26-12-1953, *Esterhuysen 22454* (BOL); S Cederberg, Apollo peak, 1330 m, (–CA), 13-12-1950, *Esterhuysen 18055* (BOL); Donkerkloof Peak, (–CA), Jan. 1945, *Stokoe 9217* (BOL, PRE); Cederberg, Donkerkloofkop, 1665 m, (–CA), Jan. 1945, *Stokoe SAM 58592* (SAM); NE Cold Bokkeveld, Blinkberg summit, near Grootrivier crossing, 1500 m, (–CB), 01-11-1983, *Boucher 5077* (NBG); *ibid.*, near summit, $\pm$ 1400 m, 01-11-1983, *Taylor 10751* (NBG); Ceres Div., Blaauwkop, Cold Bokkeveld Plateau, E slopes, $\pm$ 1665 m, (–CB), 01-10-1958, *Esterhuysen 27906* (BOL); NW border of Ceres Div., Gideonskop, (–CB), Nov. 1939, *Stokoe SAM 54496* (SAM); Ceres Div., Bokkeveld Tafelberg, S slopes, (–CD), 14-08-1955, *Esterhuysen 24387* (BOL); *ibid.*, at Boplaas, S–SE of Tafelberg, slopes, 1350 m, 4-04-1998, *Hanekom 3013* (BOL, K, MO, NBG, NY, P, PRE, S, Z); *ibid.*, lower S slopes, 17-11-1966, *Thompson 246* (NBG); Ceres Dist., Bokkeveld Sneekop, $\pm$ 1665 m, (–CD), 31-03-1963, *Esterhuysen 30116* (BOL).

—3319 (Worcester): Cold Bokkeveld, Wagedrift, 1665 m, (–AB), 21-01-1897, *Schlechter 10072* (BOL, K, NBG, S, Z); Ceres Div., Baviansberg, (–BA), Jan. 1937, *Stokoe 4504* (BOL); Worcester Dist., Bonteberg, 1330 m, (–BD), 03-11-1940, *Compton 10173* (NBG, NBG); *ibid.*, Eikenbosch Hoek, summit of ridge, 1330 m, 03-11-1940, *Esterhuysen 3705* (BOL, PRE).

—3320 (Montagu): SE Touwsrivier, Koegaberge, S of Witteberge, Pramkop, 1250m, (–AD), 25-10-1998, *Helme 1611* (NBG); Laingsburg, Witteberg, 1665 m, (–BC), 31-10-1924, *Compton 2692* (BOL); *ibid.*, 1500 m, 11-05-1941, *Compton 10810* (NBG); *ibid.*, 1000–1330 m, 11-05-1941, *Esterhuysen 5143* (BOL, PRE); *ibid.*, near summit of ridge, S side, 1630-1665 m, 31-01-1961, *Esterhuysen 28866* (BOL); Witteberg, Matjiesfontein, 1500 m, (–BC), 14-10-1928, *Compton 3334* (NBG); Laingsburg, Witteberg (Bantams), 1665 m, (–BC), 27-10-1941, *Compton 12217* (BOL, NBG, S); Laingsburg, Witteberg (Whitehill), 1665 m, (–BC), 10-10-1944, *Compton 16295* (NBG); Anysberg Nature Reserve, on Skerpkran's mountain, NW of farm Vrede, 1265 m, (–BC), 24-07-1990, *Vlok 2343* (NBG).

—3321 (Ladismith): Ladismith Div., Swartberg, Towerkop, rocky slopes of shale band, S aspect, (–AC), 15-12-1956, *Esterhuysen 26771* (BOL); Klein Swartberg, Toorkop, S summit slopes, 2300 m, (–AC), 16-12-1991, *Forsyth 532* (NBG); Prince Albert Dist., Klein Swartberg W of Ridge Peak, 2100 m, (–AC/AD), 27-12-1928, *Andreae 1240* (PRE); *ibid.*, 2330 m, 27-12-1928, *Stokoe 1850* (NBG); Ladismith Div., Seweweekspoortberg, 1665–2330 m, (–AD), 00-12-1928, *Barnard SAM 46302* (SAM); Klein Swartberg, Radio Tower track E of Seweweekspoort, $\pm$ 1930 m, (–AD), 14-10-1980, *Bond 1780* (NBG); Seweweekspoortberg Plateau, 1830 m, (–AD), 13-10-1955, *Esterhuysen 24822* (BOL); Elandskloof between Vleiland and Seweweekspoort, 1460 m, (–AD), 21-02-1986, *Moffett & Steensma 3863* (NBG, PRE); Ladismith Dist., Klein Swartberg at Besemfontein, mountains E of Seweweekspoort, 1890 m, (–AD), 22-09-1990, *Oliver 9689* (BOL, K, NBG, NY, P, PRE); top of Klein Swartberg Mtns, at end of Besemfontein track, 2166 m, (–AD), 03-02-1986, *Vlok 1402* (NBG).

28. *Lachnaea villosa* Beyers, sp. nov. primo ad aspectu *L. funicaulis* similis, sed differt inflorescentia pseudobracteata (non bracteata), parte superiore hypanthii

sepalorumque extra villosa-tomentosa (non tomentosa-sericea), squamis exsertis et in ore hypanthii insertis (non inclusis).

TYPE.—Western Cape, 3319AD (Worcester): Ceres Dist., Schoonvlei, 480 m, 24-01-1989, *Beyers 125* (NBG, holo.!; BOL!, K!, MO!, NY!, P!, PRE!, iso.).

Compact or sparsely branched, erect to sprawling shrub up to 0,5 m tall, single-stemmed at base or branching at base appearing multistemmed; reseeder. *Branches* ascending to inclined, slender, terete, felted, leafy, later glabrescent and naked without prominent leaf-scars. *Leaves* decussate, adpressed, scattered, internodes two-thirds to one and a half times as long as leaves, those below inflorescence crowded, sessile, epistomatic, lanceolate or narrowly elliptic, $2.8-5.0 \times 0.6-1.2$ mm, coriaceous, glabrous with lanate-ciliate margin, terminal hairs simulating a mucro, later margins glabrescent, adaxially concave, smooth, dull, abaxially convex, keeled or subkeeled, glossy, apex rounded or acute, base rounded; distal two leaf pairs subverticillate, bract-like, broader and thinner than other leaves, margin brown, lanate-ciliate; distal pair obovate or widely elliptic, $2.3-3.1 \times 1.6-2.2$ mm, apex rounded or obtuse; subdistal pair elliptic or obovate, $2.7-3.2 \times 1.1-1.4$ mm, apex rounded. *Inflorescence* a terminal, sessile, 12–20-flowered, capitate-like, pseudobracteate umbel with 1–3, occasionally 5 open flowers at a time, 3–6 mm in diameter, on main and sometimes on short lateral flowering branches just below main inflorescence forming a cluster of inflorescences at apex; umbel appears to be enclosed at base by two pairs of involucre bracts but vegetative shoots were observed to develop in axils of distal bract-like leaf pair. *Flowers* $\pm$ actinomorphic, cream, sweetly scented, pedicellate. *Pedicel* 0.7–2.8 mm long, covered with ascending, crisped hairs in fresh state, villous in dry state, elongating in fruiting stage. *Hypanthium* 2–3 mm long, circumscissile third to two-thirds from base, upper portion funnel-shaped, villous-tomentose outside, villous-hirsute within, basal portion ellipsoid, outside towards circumscission zone puberulent, below glabrous, glabrous within. *Sepals* erect-patent, subequal, elliptic to widely elliptic or ovate to widely ovate, $1.2-1.7 \times 0.8-1.1$ mm, apex rounded or obtuse, adaxially glabrous or distal third villous-tomentose, abaxially villous-tomentose. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals usually close to rim of hypanthium, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, outer 0.5–0.9 mm long, inner 0.4–0.6 mm long; anthers spheroid, 0.2–0.3 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of

hypanthium just below antipetalous stamens, capitate, 0.2–0.4 mm long, glabrous, yellow in fresh state. *Ovary* narrowly obovoid, ovoid or ellipsoid, 0.4–1.0 mm long, glabrous. *Style* linear-obconical, 1.0–2.3 mm long, glabrous. *Stigma* capitate, papillate (Figure 7.55).

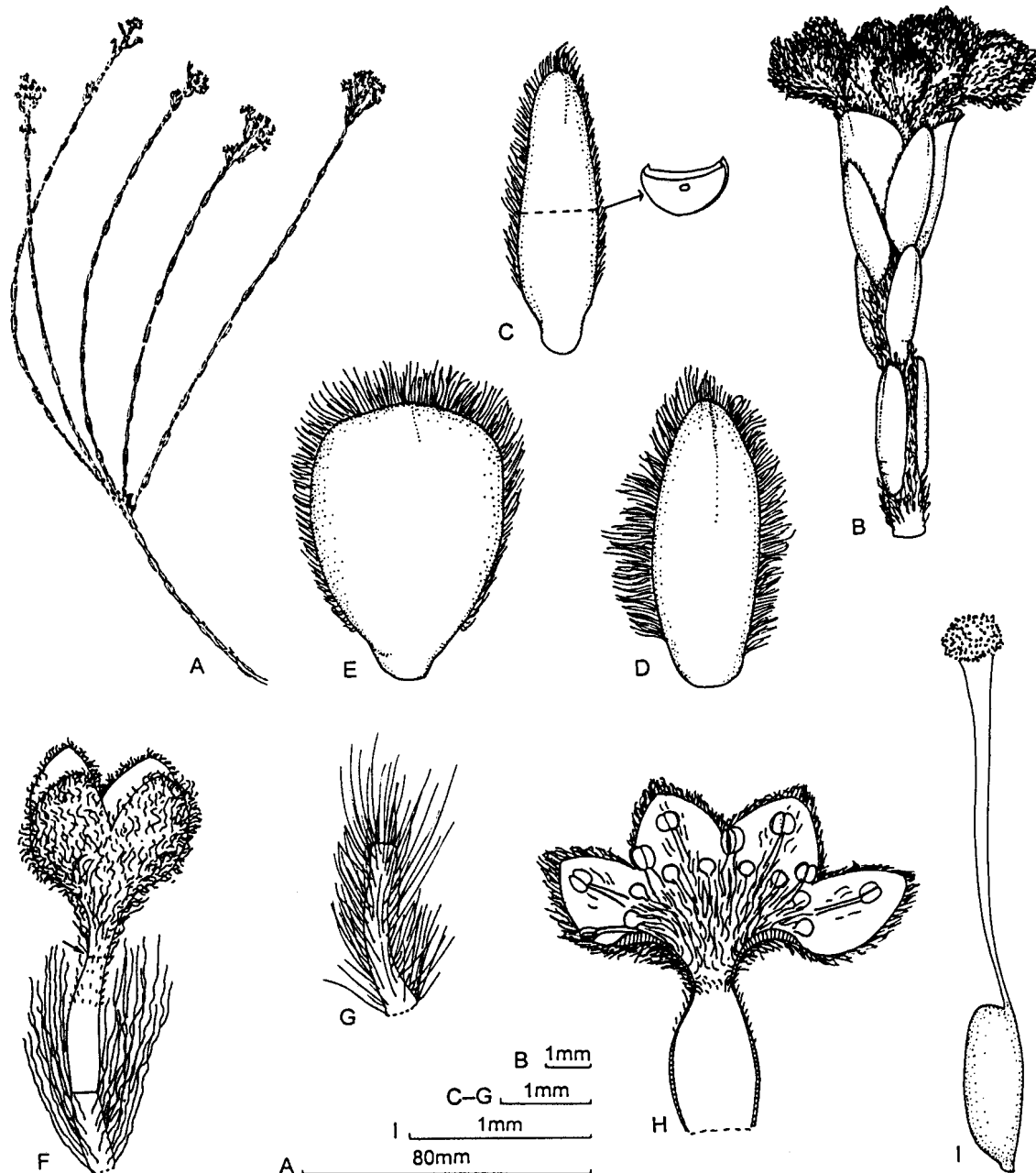


FIGURE 7.55—*Lachnaea villosa*, Beyers 125 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F, flower, note circumscission zone (arrowed); G, elongated pedicel in fruiting stage; H, flower split longitudinally with gynoecium removed; I, gynoecium.

Distribution and ecology

Lachnaea villosa has been recorded from the Northern Bokkeveld in the Citrusdal District southwards to Schoonvlei north of Ceres in sandy or stony soil on the lower slopes and flats at altitudes between 480 and 1500 m (Figure 7.56). Flowering has been recorded throughout the year.

Conservation status: Lower Risk Least Concern (LRlc).

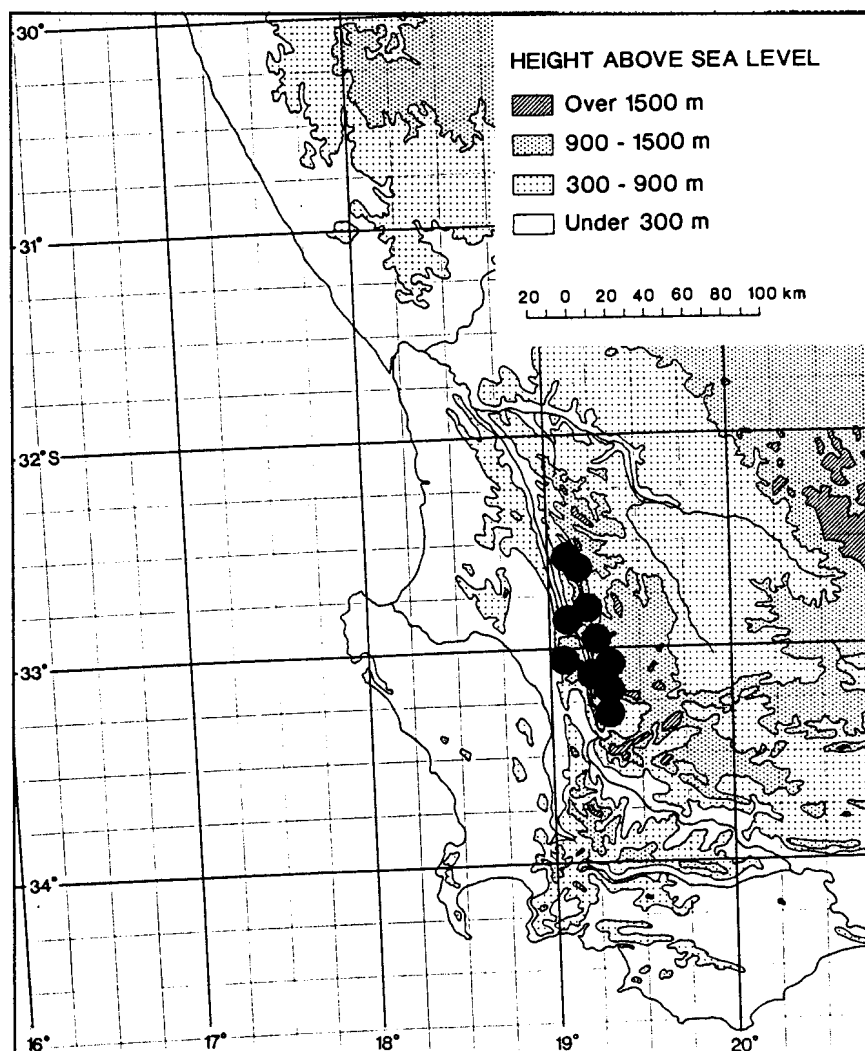


FIGURE 7.56—Known distribution of *Lachnaea villosa*.

Diagnostic characters and relationships

Lachnaea villosa superficially resembles *L. funicaulis* but differs in its inflorescence and floral structure. In *L. villosa* the inflorescence is pseudobracteate [bracteate], the upper

portion of the hypanthium and sepals are villous-tomentose [tomentose-sericeous on the outside] and the scales are exserted [enclosed], inserted in the mouth of the hypanthium, [inserted midway to four-fifths way down the upper portion of the hypanthium]. It is allied to *L. elsieae* but can be distinguished from it by being a reseeder, having lanate-ciliate leaves, the upper portion of the hypanthium and sepals being villous-tomentose and the capitate scales.

Etymology

The specific epithet, *villosa*, refers to the long, soft crooked trichomes in the indumentum on the sepals.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Ceres Dist., Elandskloof, (–CA), 25-03-1951, *Barker 7282* (NBG); *ibid.*, 700 m, 02-09-1956, *Dahlgren & Peterson 270* (K, NBG); *ibid.*, 26-09-1936, *Lewis BOL 22023* (BOL); Citrusdal, Middelberg, 1100 m, (–CA), 3-11-1997, *Hanekom 2952* (BOL, K, MO, NBG, PRE); *ibid.*, SSE of Witberg (Beacon 92), 820 m, 13-10-1994, *Oliver 10581* (NBG); *ibid.*, between Grootberg and Witberg, SE slopes, 1000 m, 18-08-1998, *Oliver 11109* (NBG); Citrusdal, Kleinplaas-East, approximately 3 km N from peak of Middelberg Pass along hiking trail, 1100 m, (–CA), 6-11-1997, *Hanekom 2952* (NBG, K, MO, PRE, WU); Cold Bokkeveld, New Pass to Citrusdal, 1500 m, (–CA), 04-10-1948, *Levy's 9266* (BOL); 48 km from Ceres to Citrusdal, farm Boboskloof, (–CA), 11-09-1968, *Marsh 758* (NBG); Cederberg, Citrusdal, (–CA), 14-01-1998, *Van Rooyen, Steyn & De Villiers 770* (NBG); Clanwilliam Dist., Cardouw Pass, E side, (–CC), 15-09-1953, *Barker 8120* (NBG, NBG); Porterville Mtns, Grootfontein farm, ± 440 m, (–CC), 27-10-1972, *Boucher 1973* (NBG, S); Cold Bokkeveld, Farm Appelfontein, three-quarters up mountain, (–CC), 09-10-1990, *Du Toit s.n.* (NBG); sandy mountain plateau above Monte Cristo near Porterville, 666 m, (–CC), May 1912, *Edwards 59* (BOL); Keerom, near stream in sandy rocky hills, W bank of Olifants River, (–CC), 03-12-1950, *Esterhuysen 17892* (BOL); Ceres Dist., Vredelus, Cold Bokkeveld, slopes in valley at E-base Olifants River, (–CC), 02-09-1962, *Esterhuysen 29671* (BOL); Ceres, Donkerkloof, Middeltuyn, (–CC), 13-05-1970, *Hanekom 1369* (NBG); Piketberg Div., E slopes of Cardouw Pass, (–CC), 15-09-1953, *Lewis 3977* (SAM); *ibid.*, *Lewis SAM 66792* (PRE, NBG); Porterville Mtns, Berghof, near Ratelrivier, sandy slopes, 866 m, (–CC), 27-09-1972, *Oliver 3922* (NBG); E slope of Grasruggens Mtns, (–CC), 26-11-1938, *Pillans 8710* (BOL); Grasruggens, Olifantsrivier Mtns, Porterville, ± 730 m, (–CC), 14-09-1982, *Van Zyl 3092* (NBG); Ceres Dist., De Keur, (–CD), 11-11-1946, *Compton 18788* (NBG); *ibid.*, *Leighton 2284* (BOL).

—3319 (Worcester): Agter Witzenberg, Koue Bokkeveld, Rosendaal Farm, low rocky ridge near sandflats at potential dam site, ± 550 m, (–AA), 05-02-1991, *Boucher 5674* (NBG); Visgat, upper Olifants River valley, (–AA), 28-12-1946, *Esterhuysen 13419* (BOL); Twentyfour Rivers Mtns above Porterville, (–AA), 22-10-1949, *Esterhuysen 16155* (BOL); *ibid.*, 10-10-1953, *Esterhuysen 21900* (BOL); Groot Winterhoek State

Forest, between forest station and Groot Kliphuis (–AA), 14-09-1991, *Hansford 20* (NBG); Groot Winterhoek State Forest, Drieboschfontein, 680 m, (–AA), 19-01-1974, *Haynes 910* (NBG); Groot Winterhoek, along path to Die Hel, (–AA), 26-05-1979, *Low 859* (NBG, PRE); *ibid.*, 680 m, 07-04-1980, *Low 915* (NBG); Groot Winterhoek, 1500 m, (–AA), Nov. 1896, *Marloth 2346* (PRE); Visgat between Schurftberg and Groot Winterhoek Mtns, (–AA), Oct. 1953, *Stokoe SAM 63187* (SAM); Ceres Dist., Witzenberg Vlakte, (–AA/AB), 11-01-1960, *Esterhuysen 28403* (BOL); Cold Bokkeveld, stony slopes in rocks, (–AB), 25-09-1936, *Adamson 1063* (BOL); Ceres Dist., Agter Witzenberg, Slagboom, (–AB), Sept. 1989, *Cillie s.n.* (NBG); Cold Bokkeveld, Hartebeeskloof, lower SE slopes of Vaalbokskloofberg, 1060 m, (–AB), 27-02-1991, *Oliver 9808* (NBG); *ibid.*, 1080 m, 13-11-1993, *Oliver 10400* (NBG); Cold Bokkeveld, Kleinvlei at base of Skurftberg, 980 m, (–AB), 13-02-1992, *Oliver 10039* (NBG); pass over S end of Schurftberg near Gydouw Pass, (–AB), 28-11-1941, *Pillans 9702* (BOL); Cold Bokkeveld, Kleinvlei, sandy area, 1500 m, (–AB), 20-01-1897, *Schlechter 10066* (BOL, S, Z); Gydo Pass, top of pass, (–AB), Mar. 1951, *Stokoe SAM 66793* (SAM); Skurftberg, N section, ± 1230 m, (–AB), 09-11-1973, *Taylor 8668* (NBG, S); Cold Bokkeveld, slopes NW of Op Die Berg Village, sandy flats and slopes, 980 m, (–AB), 28-07-1973, *Thompson 1752* (NBG); Rocklands farm, about 30 km N of Ceres, ± 1200 m, (–AB), 10-03-1981, *Van Wyk 465* (NBG); Ceres, Schoonvlei, 480 m, (–AD), 24-01-1989, *Beyers 125* (BOL, K, MO, NBG, NY, P, PRE); *ibid.*, *Cillie s.n.* (NBG); *ibid.*, 480 m, Feb. 1989, *Cillie 50* (NBG); Schoonvlei Industrial area 4 km outside Ceres, 480 m, (–AD), 06-07-1987, *Cloete & Cillie 15* (NBG). Grid ref. unknown: Ceres Dist., brought to Ceres Flower Show [precise locality unknown], 13-10-1994, *Comm. Beyers s.n.* (NBG); Ceres Div., Koekoedouw Kloof, sandy plateau, 03-01-1954, *Esterhuysen 22552* (BOL); mountains W of Porterville, Nov. 1912, *Edwards BOL 16153* (BOL).

29. ***Lachnaea marlothii* Schltr.** in *Journal of Botany, British and Foreign* 34: 503 (1896). Syntypes: In south-western region: Matroosberg, in grassy mountain slopes, alt. 6000–6500 ft., Dec. 1895, *R. Marloth, 2218* (NBG, lecto.! here designated; BOL!, PRE!, isolecto.); *Marloth 2276* (PRE!).

Note: Schlechter did not annotate any of the above sheets, but he most probably saw the material during his two visits to South Africa between 1891 and 1898 (Gunn & Codd 1981). *Marloth 2218* consisting of three sheets, one in each of the main South African herbaria, is chosen as the lectotype.

Slender, spreading or cushioned, moderately branched, shrub up to 0.3 m tall, appearing multistemmed at base; regeneration unknown. *Branches* ascending to patent, slender, terete, felted or thinly tomentose, leafy, later becoming glabrous and naked without prominent leaf scars. *Leaves* decussate, adpressed or ascending, scattered, internodes quarter to three-quarters as long as leaves, those below inflorescence crowded,

sessile, epistomatic, narrowly elliptic, $2.5\text{--}4.2 \times 0.6\text{--}1.0$ mm, coriaceous, adaxially concave, enervate, dull, abaxially convex, subkeeled in upper half, glossy, glabrous, apex rounded, at first villous-tufted, later naked, base rounded; distal two leaf pairs subverticillate, partially enclosing inflorescence, broader than other leaves, bract-like, coriaceous, green or green with maroon tinge, glabrous, adaxially concave, abaxially convex keeled in upper half; elliptic or obovate, $2.9\text{--}4.1 \times 1.2\text{--}2.7$ mm, margin villous-ciliate, apex acute to obtuse. *Inflorescence* a terminal, sessile, 5–8-flowered, pseudobracteate umbel with 2–4 open flowers at a time, 5–10 mm in diameter, on main flowering branches. *Flowers* subactinomorphic, cream or cream with pink tinge, pedicellate. *Pedicel* 0.5–0.7 mm long, villous, elongating in fruiting stage. *Hypanthium* 1.8–3.2 mm long, circumscissile midway to two-thirds from base, upper portion funnel-shaped, sericeous-pilose outside, adpressed hirsute within, basal portion ellipsoid, glabrous on both sides. *Sepals* erect-patent, subequal, elliptic, $2.0\text{--}2.4 \times 0.8\text{--}1.3$ mm, apex rounded or obtuse, adaxially glabrous or adpressed hairy in upper quarter, abaxially sericeous-pilose. *Stamens* exerted, outer, antisealous whorl inserted a third-way up on sepals, inner, antipetalous whorl inserted on rim of hypanthium; filaments filiform, outer 0.7–1.0 mm long, inner 0.6–1.0 mm long; anthers ellipsoid to spheroid, 0.3–0.5 mm long, abaxially without broad connective tissue. *Scales* exerted, inserted immediately below antipetalous stamens in mouth of hypanthium, capitate or obovoid, 0.2–0.4 mm long, glabrous, yellow in fresh state. *Ovary* ellipsoid, 0.8–1.0 mm long, glabrous. *Style* linear-obconical, 1.8–2.5 mm long, glabrous. *Stigma* capitate, elongate-papillate (Figure 7.57).

Distribution and ecology

Lachnaea marlothii is confined to the Hex River Mountains at altitudes between 1800 and 2330 m (Figure 7.58). Flowering has been recorded in August and December.

I have not been able to study this species in the live state and unfortunately very little information could be obtained from the herbarium labels.

Conservation status: This species has a restricted, localised distribution and although its mode of regeneration is not known, the status of Vulnerable (VU D2) seems appropriate.

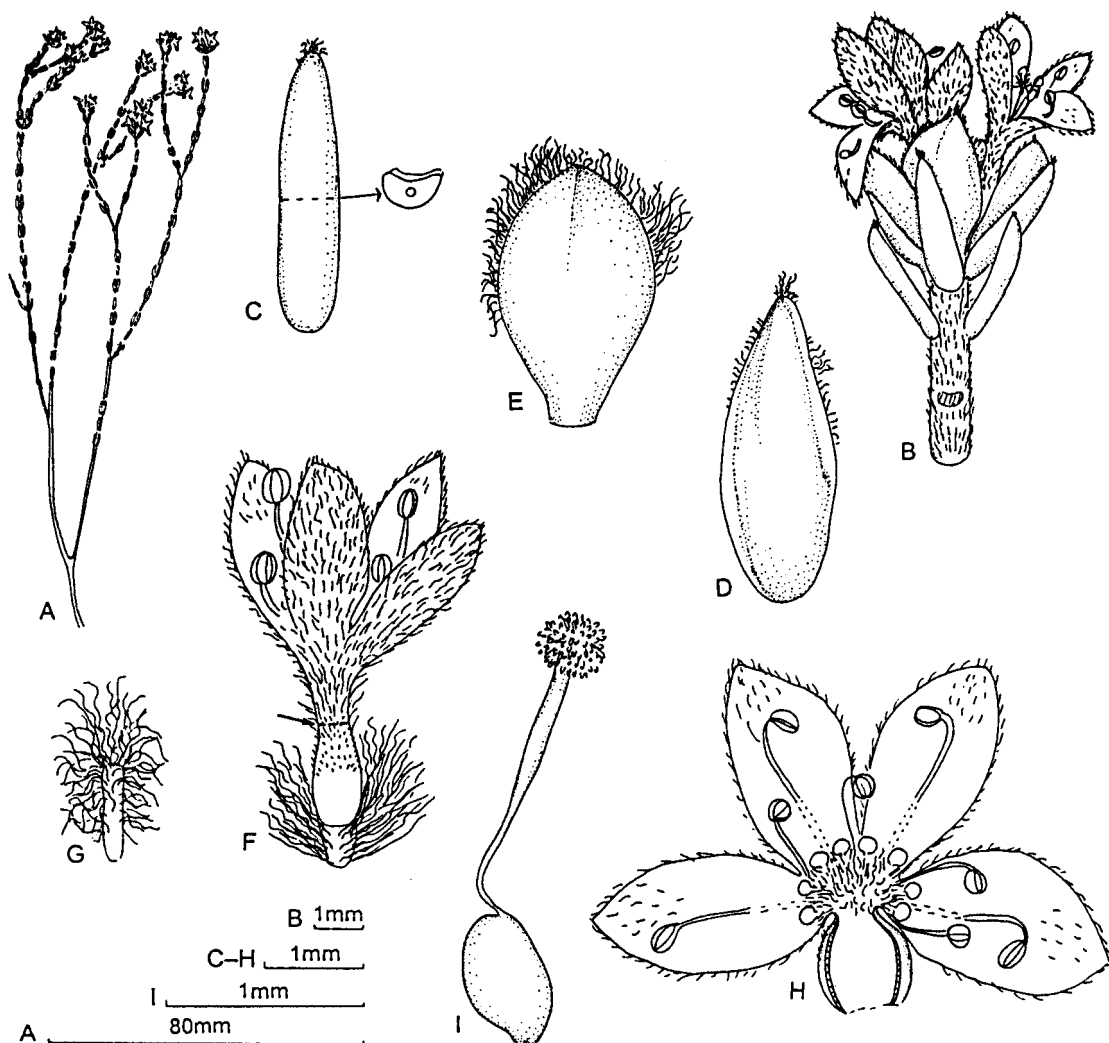


FIGURE 7.57—*Lachnaea marlothii*, Kotze 124 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F, flower, note circumscession zone (arrowed); G, elongated pedicel in fruiting stage; H, flower split longitudinally with gynoecium removed; I, gynoecium.

Diagnostic characters and relationships

Lachnaea marlothii can easily be confused with *L. elsieae*, a distant relative. Both belong to the group of species having pedicels that elongate in the fruiting stage. *L. marlothii*, however, is distinguished from *L. elsieae* by the upper portion of the hypanthium and the sepals being villous-pilose on the outside, the capitate or obovate scales and the antisepalous stamens inserted a third-way up the sepals.

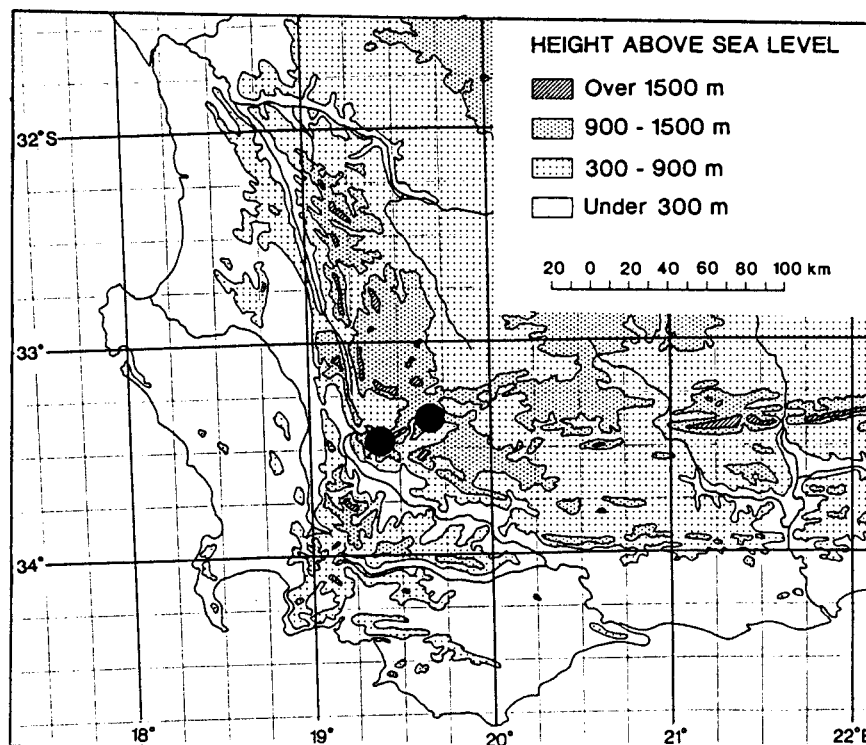


FIGURE 7.58—Known distribution of *Lachnaea marlothii*.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Hex River Mtns, Buffelshoek Peak, 2000 m, (–AD), 16-12-1957, *Esterhuysen* 27443 (BOL); Matroosberg, 2000 m, (–BC), Dec. 1895, *Bolus A. sub Guthrie* 3939 (BOL); *ibid.*, Spekrivierkloof, 1800 m, 10-12-1981, *Kotze* 124 (NBG); *ibid.*, 2000 m, Dec. 1895, *Marloth* 2276 (PRE); *ibid.*, slopes of mountains, 2000 m, Dec. 1895, *Marloth* 2218 (BOL, NBG, PRE); *ibid.*, ridge N of main peak, minor peaklet in rocky flat area, 2000 m, 19-08-1999, *E.G.H. & I.M. Oliver* 11304 (NBG); *ibid.*, near Laken Vlei, ± 2330 m, Dec. 1917, *Phillips* 2051 (SAM).

30. *Lachnaea greytonensis* Beyers sp. nov. *L. funicaulis* structura floris simili arte affinis, sed inflorescentia pseudobracteata, parte superiore hypanthii cyathiformi basi in tubo perangusto angustata, extra villosa-tomentosa, intra villosa-hirsuta, sepalis extra villosa-tomentosa.

TYPE.—Western Cape, 3419 (Caledon): Riviersonderend Mountains, Greyton, Boesmanskloof, jeeptrack to Die Galg, 640 m, (–BA), 12-11-1992, *Beyers* 209 (NBG, holo.!; BOL!, K!, MO!, NY!, PRE!, S!, Z!, iso.).

Sparsely to much-branched, erect shrub up to 0.45 m tall, single-stemmed at base, corymbosely branched near the ground; reseeder. *Branches* ascending to inclined, slender, terete, felted, leafy, later becoming glabrous and naked without prominent leaf scars. *Leaves* decussate, adpressed, scattered, internodes three-quarters to one and a half times as long as leaves but those below inflorescence crowded, sessile, epistomatic, narrowly elliptic, $2.8\text{--}4.5 \times 0.8\text{--}1.2$ mm, coriaceous, glabrous with villous-ciliate margin, later margins glabrous, adaxially obtusely concave or concave, dull, faintly white-punctulate, abaxially convex, smooth or subkeeled, glossy, apex rounded, base rounded; distal two leaf pairs subverticillate, broader than other leaves, bract-like, margin villous-ciliate; distal pair obovate, $2.9\text{--}3.5 \times 1.9\text{--}2.3$ mm, abaxially subkeeled, apex rounded or obtuse; subdistal pair obovate, $3.4\text{--}4.2 \times 1.6\text{--}2.0$ mm, abaxially keeled, apex acute or rounded. *Inflorescence* a terminal, sessile, 12–30-flowered, capitate-like, pseudobracteate umbel with 1–5 open flowers at a time, 5.0–7.0 mm in diameter, on main and sometimes also on short lateral flowering branches just below main inflorescence forming a cluster of inflorescences at apex of main flowering branches; umbel appears to be enclosed at base by 2 pairs of involucre bracts but vegetative shoots were observed to develop in axils of distal bract-like leaf pair. *Flowers* $\pm$ actinomorphic, cream, pedicellate. *Pedicel* 0.5–2.7 mm long, villous, elongating in fruiting stage. *Hypanthium* 2.5–4.2 mm long, circumscissile midway to one-fifth from base, upper portion cup-shaped narrowing into a very short tube at base, villous-tomentose outside, within villous-hirsute below scales, glabrous above, basal portion ellipsoid, outside distal third tomentose, rest glabrous, within glabrous. *Sepals* erect-patent, subequal, widely to very widely ovate, $0.8\text{--}1.3 \times 0.8\text{--}1.3$ mm, apex rounded or obtuse, adaxially glabrous or distal half villous-tomentose, abaxially villous-tomentose. *Stamens* outer, antisepalous whorl exserted, inserted at base of sepals or rim of hypanthium, inner, antipetalous whorl enclosed or semi-exserted, inserted a quarter to third-way down upper portion of hypanthium; filaments filiform, outer 0.3–0.7 mm long, inner 0.2–0.7 mm long; anthers widely ellipsoid or spheroid, 0.3–0.4 mm long, abaxially without broad connective tissue. *Scales* enclosed, inserted midway to three-quarters way down upper portion of hypanthium, widely obovoid, 0.2–0.3 mm long, glabrous, white later turning yellow in fresh state. *Ovary* narrowly obovoid or obovoid, 0.6–0.8 mm long, glabrous. *Style* linear-obconical, 0.8–2.2 mm long, glabrous. *Stigma* capitate or subcapitate, papillate (Figure 7.59).

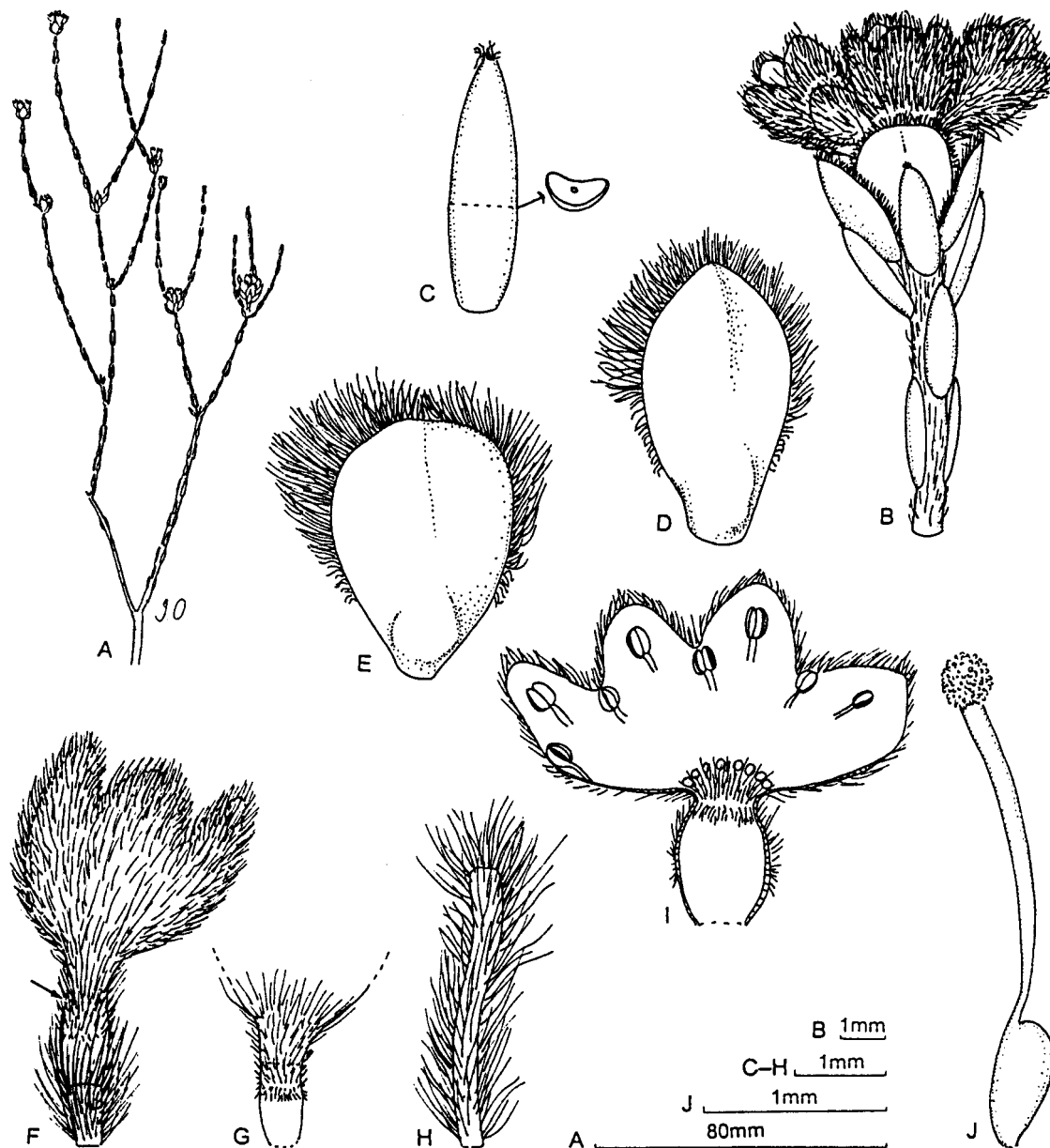


FIGURE 7.59—*Lachnaea greytonensis*, Beyers 209 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F, flower, note circumscession zone (arrowed); G, hypanthium; H, elongated pedicel in fruiting stage; I, flower split longitudinally with gynoeceum removed; J, gynoeceum.

Distribution and ecology

Only known from the Riviersonderend Mountains above Genadendal and Greyton in sandy soil at altitudes between 640 and 830 m (Figure 7.60). Flowering has been recorded from September to January.

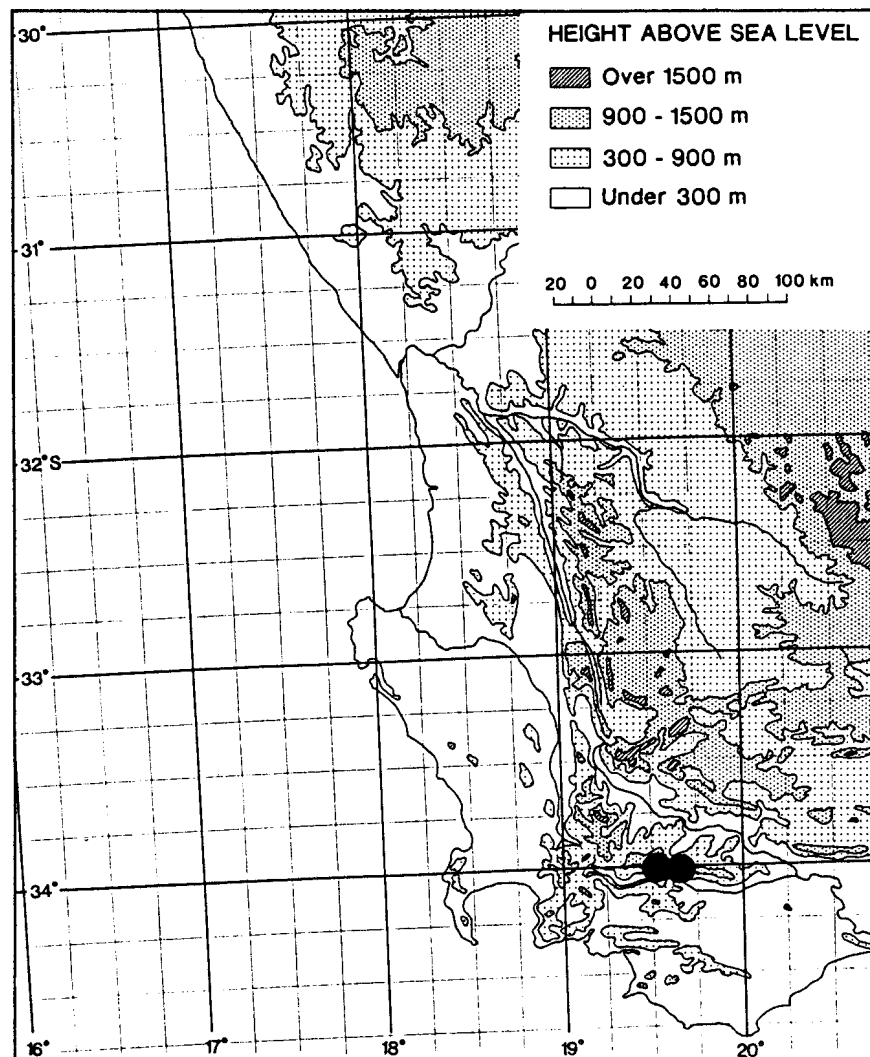


FIGURE 7.60—Known distribution of *Lachnaea greytonensis*.

Conservation status: Vulnerable (VU D2). This species has a restricted, localised distribution and being a reseeder, would be vulnerable to frequent fires.

Diagnostic characters and relationships

This species is allied to *Lachnaea funicaulis* which has a similar flower structure but also differs in several respects. *L. greytonensis* has a pseudobracteate umbel, the upper portion of the hypanthium is cup-shaped narrowing into a very short tube at base, which is villous-tomentose outside and villous-hirsute within and the sepals are abaxially villous-tomentose. In *L. funicaulis* the umbel is bracteate, the upper portion of the hypanthium funnel-shaped, tomentose-sericeous outside and adpressed hairy within and the sepals abaxially tomentose-sericeous.

Etymology

The picturesque town of Greyton, which lies at the foot of the Riviersonderend Mountains, has prompted the specific epithet.

Specimens examined

WESTERN CAPE.—3419 (Caledon): Riviersonderend Mtns, Greyton, Boesmanskloof, jeeptrack to Die Galg, 640 m, (–BA), 12-11-1992, *Beyers 209* (BOL, K, MO, NBG, NY, PRE, S, Z); *ibid.*, 24-09-1992, *Hansford 21* (NBG); *ibid.*, S slopes, ± 730 m, 21-04-1971, *Kruger 1215* (NBG); Riviersonderend Mtns, Paardekop, (–BA), Oct. 1940, *Stokoe 8031* (BOL); Greyton, Paardekop Peak, 830 m, (–BA), Jan. 1940, *Stokoe 9464* (BOL, PRE), *Stokoe SAM 58594* (SAM).

31. *Lachnaea funicaulis* Schinz in Bulletin de l'herbier Boissier 3: 112 (1895); C.H. Wright: 25 (1915). Type: South Africa: In valley only in sand [Mostertshoek], 3000 ft. alt., 31-01-92, *Schlechter 401* (Z, holo.!, NY, iso.!).

Sparsely to moderately branched, erect shrub up to 0.45 m tall, single-stemmed at base, corymbosely branched near the ground or higher up the stem; reseeder. *Branches* erect, slender, terete, felted, leafy, later glabrescent and naked without prominent leaf-scars. *Leaves* decussate, adpressed, scattered, internodes as long as to one and a half times as long as the leaves, sessile, epistomatic lanceolate, narrowly elliptic or narrowly obovate, 3.8–5.0 × 0.8–1.4 mm, coriaceous, glabrous with lanate-ciliate margin, adaxially concave, smooth, dull, abaxially convex, smooth or subkeeled, glossy, apex obtuse, base rounded. *Inflorescence* a terminal, sessile, bracteate, 8–12-flowered umbel with 3–6 open flowers at a time, 4.0–8.0 mm in diameter, on main and sometimes on short lateral flowering branches just below main inflorescence forming a cluster of inflorescences at apex. *Involucral bracts* 4, coriaceous, green, glabrous, margin brown, lanate-ciliate; inner pair obovate, 3.0–4.0 × 2.2–2.5 mm, apex truncate or sub-emarginate; outer pair narrowly obovate or obovate, 3.5–4.6 × 1.8–2.5 mm, apex obtuse or truncate. *Flowers* subactinomorphic, cream, pedicellate. *Pedicel* 0.6–2.4 mm long, covered with long silky, ascending hairs, elongating in fruiting stage. *Hypanthium* 2.7–3.5 mm long, circumscissile ± midway to a third from base, upper portion funnel-shaped, outside tomentose-sericeous but around circumscission zone puberulent, within adpressed hairy, basal portion ellipsoid,

outside glabrous except near circumscission zone puberulent, within glabrous. *Sepals* erect-patent, subequal, shape variable, ovate to widely ovate, elliptic or obovate to widely obovate, 1.0–1.6 × 0.8–1.5 mm, apex rounded or obtuse, adaxially glabrous or at apex adpressed hairy, abaxially tomentose-sericeous. *Stamens* exserted, or only outer, antisepalous whorl exserted and inner, antipetalous whorl semi-exserted, outer whorl inserted at base of sepals or rim of hypanthium, inner whorl inserted a quarter to two-thirds way down upper portion of hypanthium; filaments filiform, outer 0.5–0.9 mm long, inner 0.4–0.6 mm long; anthers ellipsoid, 0.3–0.4 mm long, abaxially without broad connective tissue. *Scales* enclosed, inserted midway to four-fifths way down upper portion of hypanthium, narrowly ellipsoid or clavate, 0.2–0.3 mm long, glabrous. *Ovary* narrowly ellipsoid or narrowly ovoid, 0.6–1.6 mm long, glabrous. *Style* linear-obconical, 1.9–2.5 mm long, glabrous. *Stigma* sub-capitate, elongate-papillate or capitate, papillate (Figure 7.61).

Distribution and ecology

Recorded from the mountains east and south of Ceres in sandy or stony soil at altitudes between 500 and 1000 m (Figure 6.62). Flowering has been recorded from July to March.

Conservation status: Vulnerable (VU D2). Only known from a few collections, most of which are old. This species has a restricted distribution and being a reseeder, would be vulnerable to frequent fires.

Diagnostic characters and relationships

Lachnaea funicaulis can easily be confused with *L. villosa* as the habit and inflorescence structure appear somewhat similar. However, the inflorescence, flower structure and indumentum of the two species are quite different. In *L. funicaulis* the inflorescence is bracteate, the upper portion of the hypanthium and sepals are tomentose-sericeous on the outside, and the scales are enclosed, inserted midway to four-fifths way down the upper portion of the hypanthium. *L. villosa*, on the other hand, has a pseudobracteate inflorescence, the upper portion of the hypanthium and the sepals are villous-tomentose on the outside and the scales, which are inserted in the mouth of the

hypanthium, are exerted. From its sister species, *L. oliverorum* it can be distinguished by having an 8–12-flowered umbel, smaller flowers (up to 5 mm long), a funnel-shaped hypanthium and the sepals being tomentose-sericeous on the outside.

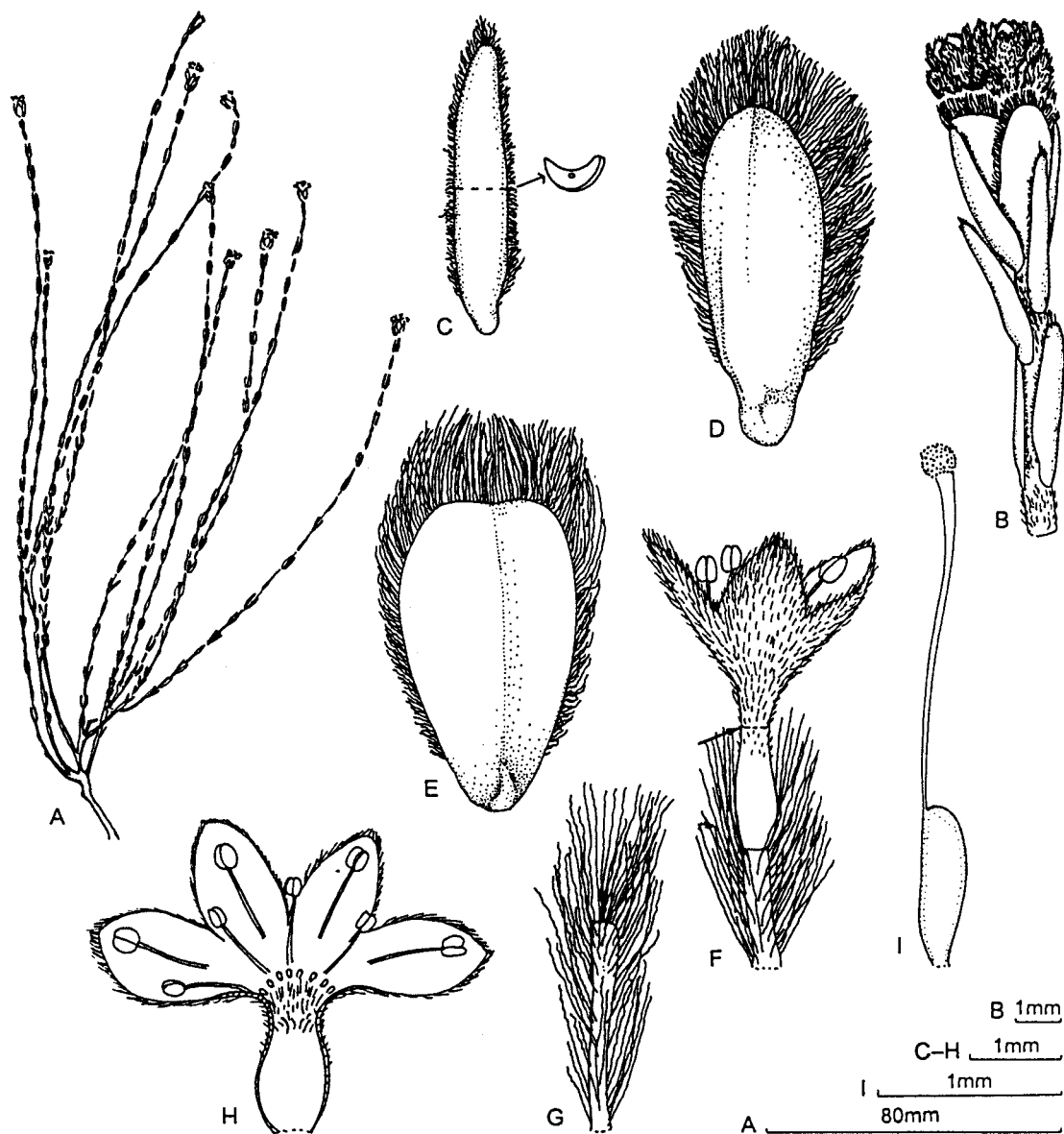


FIGURE 7.61—*Lachnaea funicaulis*, Bolus 53169 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D & E, involucral bracts: D, from subdistal pair; E, from distal pair; F, flower, note circumscission zone (arrowed); G, elongated pedicel in fruiting stage; H, flower split longitudinally with gynoecium removed; I, gynoecium.

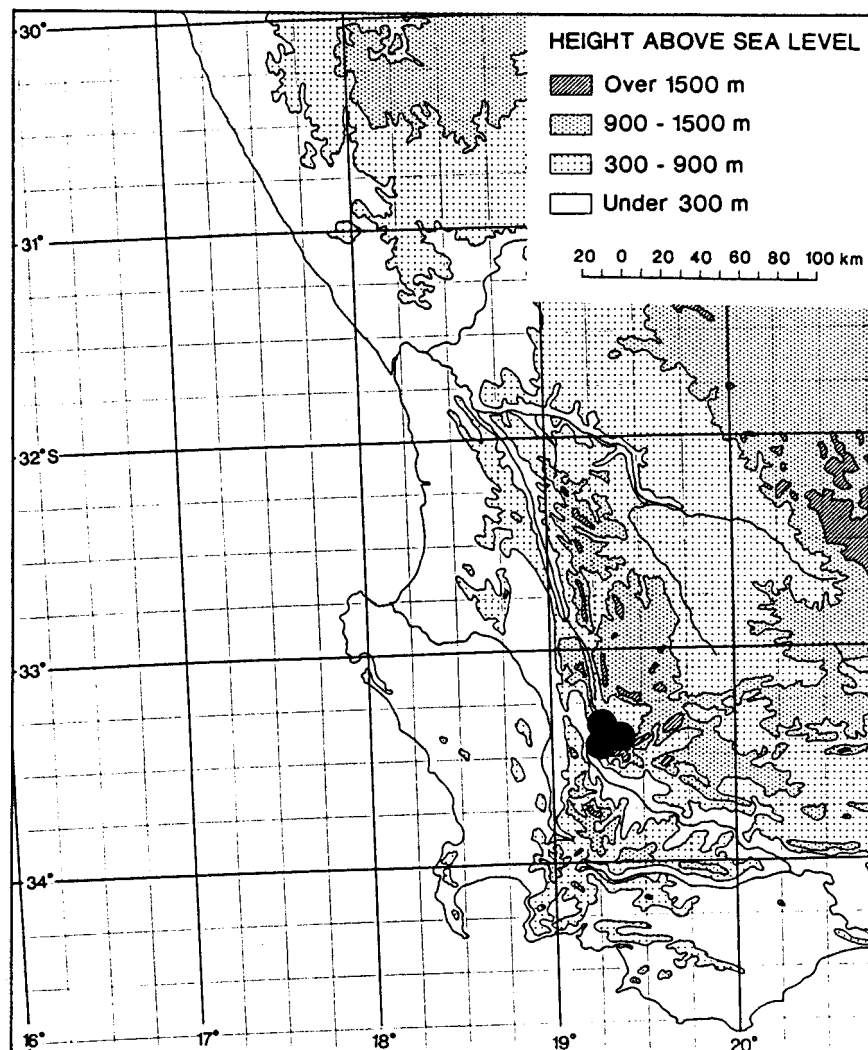


FIGURE 7.62—Known distribution of *Lachnaea funicaulis*.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Ceres [precise locality unknown], 565 m, Dec. 1891, *Bolus* 1357 (BOL), *Bolus* HNAA 1357 (BOL, NBG, S, Z), *MacOwan & Bolus* 1357 (NBG); *ibid.*, 630 m, Mar. 1882, *Bolus* 5316 (GRA, NBG, SAM); *ibid.*, Jul. 1941, *Dreyer* STEU 26078 (NBG); *ibid.*, 510 m, Jan. 1892, *Guthrie* 2197 (NBG); *ibid.*, 500 m, Feb. 1918, *Rogers* 17637 (GRA, Z); *ibid.*, Dec.–Jan. 1929–30, *Thode* A2280 (K); Ceres Div., Waaihoek Mtns, peak E of Tarantula Peak, 1000 m, (–AD), 07-10-1953, *Esterhuysen* 21813 (BOL); Ceres Div., Skurfberg range between Bertsberg and Buffelshoek Peak, (–AD), 10-10-1956, *Esterhuysen* 26402 (BOL); kloof to Ceres, Dorpsdam, 600 m, (–AD), 05-02-1980, *Hugo* 2332 (NBG); Mostertshoek, in mountain valley growing in sand, 1000 m, (–AD), 31-01-1892, *Schlechter* 401 (NY, Z); Mitchells Pass, 665 m, (–AD), 15-01-1897, *Schlechter* 9961 (BOL, S, Z); *ibid.*, summit, 1-08-1932, *Salter* 2662 (K). Without locality: *Bolus* SAM 1488 (SAM).

32. ***Lachnaea oliverorum* Beyers, sp. nov.** *L. greytonensis* similis, sed differt inflorescentia bracteata, floribus duplo longioribus, parte superiore hypanthii cyathiformi basi in tubo partem cyathiformem aequanti et verticillis ambobus staminum exsertis.

TYPE.—Western Cape, 3320 (Montagu): Montagu District, Waboomsberg, east of Pypsteelfontein, on level, sandy area, 1280 m, (–CA), 13-07-1994, *Oliver 10478* (NBG, holo.!; BOL!, K!, MO!, PRE, S!, iso.).

Sparsely to much-branched, erect shrub up to 0.5 m tall, single-stemmed at base; reseeder. *Branches* ascending to inclined, slender, terete, felted, leafy, later glabrescent and naked without prominent leaf-scars. *Leaves* decussate, adpressed or ascending, scattered, internodes a third to twice as long as leaves, sessile, narrowly elliptic or lanceolate, 3.0–5.0 × 0.8–1.5 mm, those below inflorescence crowded, ovate or elliptic, 3.2–5.4 × 1.8–2.2, coriaceous, glabrous with lanate-ciliate margin, later margins glabrous, adaxially obtusely concave or concave, dull, faintly white-punctulate, abaxially convex, smooth or subkeeled, glossy, apex rounded, base rounded. *Inflorescence* a terminal, sessile, 18–22-flowered, capitate-like, bracteate umbel with 2–6 open flowers at a time, 8.0–15.0 mm in diameter, on main and also on short lateral flowering branches just below main inflorescence forming a cluster of inflorescences at apex of main flowering branches. *Involucral bracts* 4, coriaceous, green or green with a maroon tinge, glabrous, margin lanate-ciliate; distal pair ovate or obovate, 5.3–7.0 × 3.3–3.9 mm, adaxially concave, abaxially convex, subkeeled in upper half, apex rounded; subdistal pair elliptic or obovate, 4.7–6.3 × 2.3–3.7 mm, adaxially concave, abaxially convex, subkeeled in upper half, apex acute or rounded. *Flowers* ± actinomorphic, cream, pedicellate. *Pedicel* 0.7–4.6 mm long, at first covered with long, ascending, silky hairs later becoming villous, elongating in fruiting stage. *Hypanthium* 5.0–6.2 mm long, circumsissile a quarter to one third from base, upper portion cup-shaped narrowing into a tube at base, villous outside, cup-shaped portion glabrous within, tubular portion adpressed hairy; basal portion of hypanthium narrowly ellipsoid or narrowly obovoid, outside distal two-thirds puberulent, rest glabrous, within glabrous. *Sepals* erect-patent, subequal, ovate to widely ovate, 2.1–3.3 × 1.4–2.2 mm, apex rounded, adaxially glabrous in lower half, pilose in upper half, abaxially villous-tomentose. *Stamens* exserted, outer, antisepalous whorl inserted near base of sepals or on rim of hypanthium, inner, antipetalous whorl inserted midway to two-thirds way down cup-shaped portion of upper portion of hypanthium; filaments filiform, outer 0.9–1.6 mm long,

inner 0.8–1.7 mm long; anthers ellipsoid, 0.5–0.6 mm long, abaxially without broad connective tissue. *Scales* enclosed, inserted two-thirds to three-quarters way down cup-shaped portion of upper portion of hypanthium, widely obovoid or capitate, 0.4–0.6 mm long, glabrous, translucent white in fresh state. *Ovary* narrowly ellipsoid or ellipsoid, 0.9–1.4 mm long, glabrous. *Style* linear-obconical, 3.8–4.3 mm long, glabrous. *Stigma* subcapitate, elongate-papillate (Figure 7.63).

Distribution and ecology

Only known from Waboomsberg in the Montagu District where it grows in sandy soil at altitudes between 1280 and 1400 m (Figure 7.64). Flowering has been recorded in June to August.

Conservation status: Vulnerable (VU D2). This is a localised species with a restricted distribution and being a reseeders would be vulnerable to frequent fires.

Diagnostic characters and relationships

Lachnaea oliverorum can be distinguished from its sister species, *L. funicaulis* by having 18–22-flowered umbels, larger flowers (up to 9 mm long), a villous-tomentose indumentum on the flowers and the cup-shaped upper portion of the hypanthium. It superficially resembles *L. greytonensis*, a distant relative, which has a similar floral structure but differs in having bracteate inflorescences, larger flowers, the hypanthium above the circumscission zone which is cup-shaped in the upper half and narrowing into a well developed tube below, and the exerted stamens.

Eponymy

This species is named after Ted and Inge Oliver, two of my colleagues, who have been a constant source of inspiration. They have always been on the look out for material of *Lachnaea* on their plant collecting trips.

Specimens examined

WESTERN CAPE.—3320 (Montagu): Montagu Dist., Waboomsberg, E of Pypsteelfontein; level area, sandy, 1280 m, (–CA), 13-07-1994, *Oliver 10478* (BOL, K, MO, NBG, S); *ibid.*, on farm

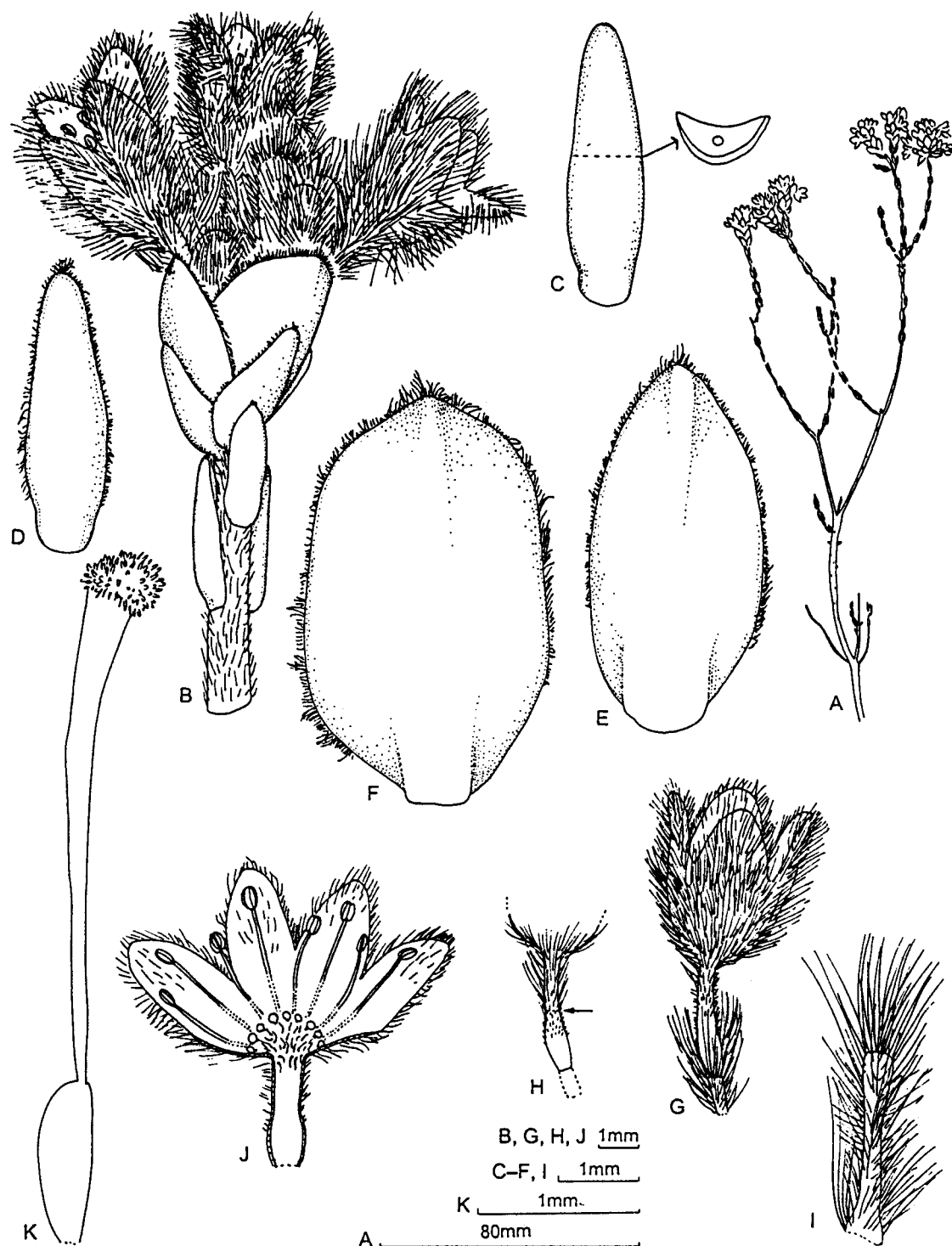


FIGURE 7.63—*Lachnaea oliverorum*, Oliver 10478 (NBG). A, portion of plant; B, flowering branch; C & D, leaves: C, abaxial view and cross section; D, leaf subtending inflorescence (abaxial view); E & F, involucral bracts: E, from subdistal pair; F, from distal pair; G, flower; H, hypanthium, note circumscription zone (arrowed); I, elongated pedicel in fruiting stage; J, flower split longitudinally with gynoecium removed, K, gynoecium.

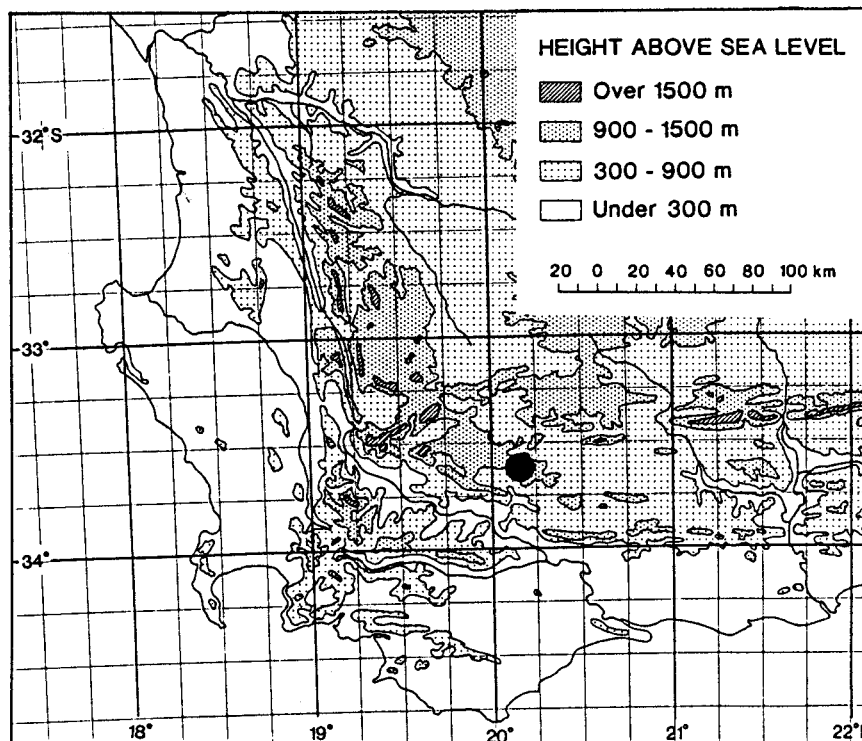


FIGURE 7.64—Known distribution of *Lachnaea oliverorum*.

Pypsteelfontein, 1365 m, (–CA), 05-08-1989, *Viviers & Vlok 430* (NBG); *ibid.*, N of Montagu, 1400 m, (–CA), 03-06-1968 *Williams 1195* (NBG, PRE).

33. *Lachnaea pendula* Beyers, sp. nov. *distincta, inflorescentia parva pendula bracteata in ramis principalibus et pubescentia pallide aurea in pagina abaxiali sepalorum facile dignoscenda.*

TYPE.—Western Cape, 3319 (Worcester): Worcester Dist., Fonteintjiesberg, Meiring's Plateau, on shaly slopes, 1330–1665 m, (–AD), 20-10-1963, *Esterhuysen 30420* (BOL, holo.!, S!, iso.).

Sparsely to moderately branched, erect to decumbent shrub to 0.45 m tall, single-stemmed at base, branching near the ground; reseeder. *Branches* ascending to patent, slender, terete, felted or covered with adpressed long silky hairs admixed with crisped hairs, leafy, later glabrescent and naked without prominent leaf scars. *Leaves* decussate, adpressed, scattered, internodes two-thirds to as long as leaves, sessile, narrowly elliptic to elliptic or narrowly ovate to ovate, $1.8\text{--}2.4 \times 0.6\text{--}0.8$ mm, coriaceous, glabrous, adaxially

concave, enervate, dull, abaxially convex enervate or subkeeled, glossy, apex rounded, villous-tufted, base rounded. *Inflorescence* a terminal, sessile, pendulous, bracteate, up to $\pm$ 35-flowered umbel with 5–8 open flowers at a time, 3–5 mm in diameter, on main flowering branches. *Involucral bracts* 4, elliptic or obovate to widely obovate, $2.0\text{--}2.5 \times 1.2\text{--}2.2$ mm [distal pair always wider], coriaceous, green, glabrous, adaxially concave, abaxially convex, keeled in upper half, margin tinged brown in upper half, white-ciliate, apex rounded or obtuse. *Flowers* subactinomorphic, cream or pale yellow, pedicellate. *Pedicel* 0.5–1.5 mm long, villous, elongating in fruiting stage. *Hypanthium* 1.5–2.2 mm long, circumscissile two-thirds to four-fifths from base, upper portion shortly funnel-shaped, sericeous outside, adpressed hirsute within, basal portion ellipsoid or obovoid, outside pubescent in upper third to upper half, glabrous below, within glabrous. *Sepals* patent, subequal, ovate or elliptic, $0.9\text{--}1.7 \times 0.6\text{--}0.9$ mm, apex subacute or rounded, adaxially glabrous, abaxially sericeous, pale gold-coloured. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium; filaments filiform, outer 0.6–0.9 mm long, inner 0.3–0.8 mm long; anthers widely ellipsoid or depressed spheroid, 0.2–0.3 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted in mouth of hypanthium near rim just below antipetalous stamens, narrowly obovoid or obovoid, 0.3–0.6 mm long, glabrous. *Ovary* ellipsoid or obovoid, 0.6–0.9 mm long, glabrous. *Style* linear-obconical, 1.1–1.3 mm long, sericeous in upper half, glabrous below. *Stigma* capitate, elongate-papillate (Figure 7.65).

Distribution and ecology

Lachnaea pendula has been recorded from the Skurweberg and Witsenberg northwest of Ceres and from the Hex River Mountains southeast of Ceres, on stony slopes at altitudes between 1330 and 2000 m (Figure 7.66). Flowering has been recorded from September to December.

Conservation status: Data Deficient (DD). Only known from a few herbarium collections of which the most recent was collected in 1963.

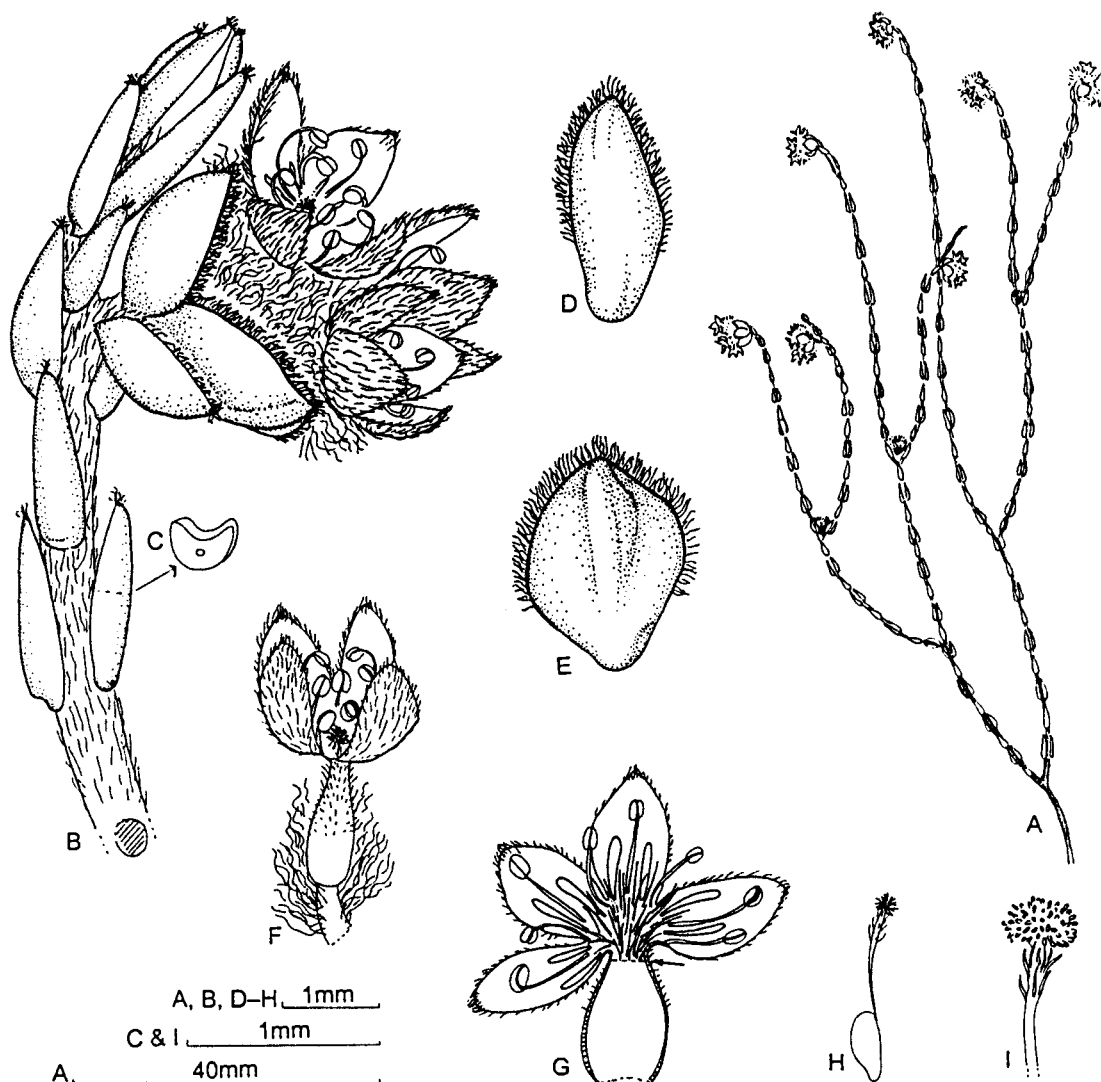


FIGURE 7.65—*Lachnaea pendula*, Esterhuysen 30420 (BOL). A, portion of plant; B, flowering branch; C, leaf (cross section); D & E, involucral bracts: D, from subdistal pair; E, from distal pair; F, flower; G, flower split longitudinally with gynoecium removed, note circumscription zone (arrowed); H, gynoecium; I, stigma and upper portion of style.

Diagnostic characters and relationships

Lachnaea pendula is a sister species of *L. penicillata* based on the shared characters—inflorescence borne on the main flowering branches and a pubescent style. *L. pendula* can easily be distinguished by its small, pendulous, bracteate inflorescences and the pale gold-coloured pubescence on the abaxial side of the sepals.

Etymology

The specific epithet refers to the inflorescences facing downwards.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Tulbagh Div., slopes of Witsenberg [precise locality not known], 1330 m, (–AA/AC), Sept. 1939, *Esterhuysen s.n.* (BOL); Ceres Div., Schurftberg [precise locality not known], (–AB/AD), 08-10-1953, *Esterhuysen 21858* (BOL); Hex River Mtns, Roode-elsberg, NE aspect, stony slopes, 2000 m, (–BC), 02-10-1927, *Andreae 1144* (NBG, PRE); *ibid.*, Outer Sanddrift Peaks, E aspect, on stony slopes, 1330 m, 28-10-1962, *Esterhuysen 29780* (BOL, S); Ceres Div., Conical Peak, (–BC), Dec. 1940, *Stokoe SAM 58632* (SAM); Worcester Dist., Meirings Plateau, Fonteintjiesberg area, shaly slopes, 1330–1665 m, (–CB), 20-10-1963, *Esterhuysen 30420* (BOL, S).

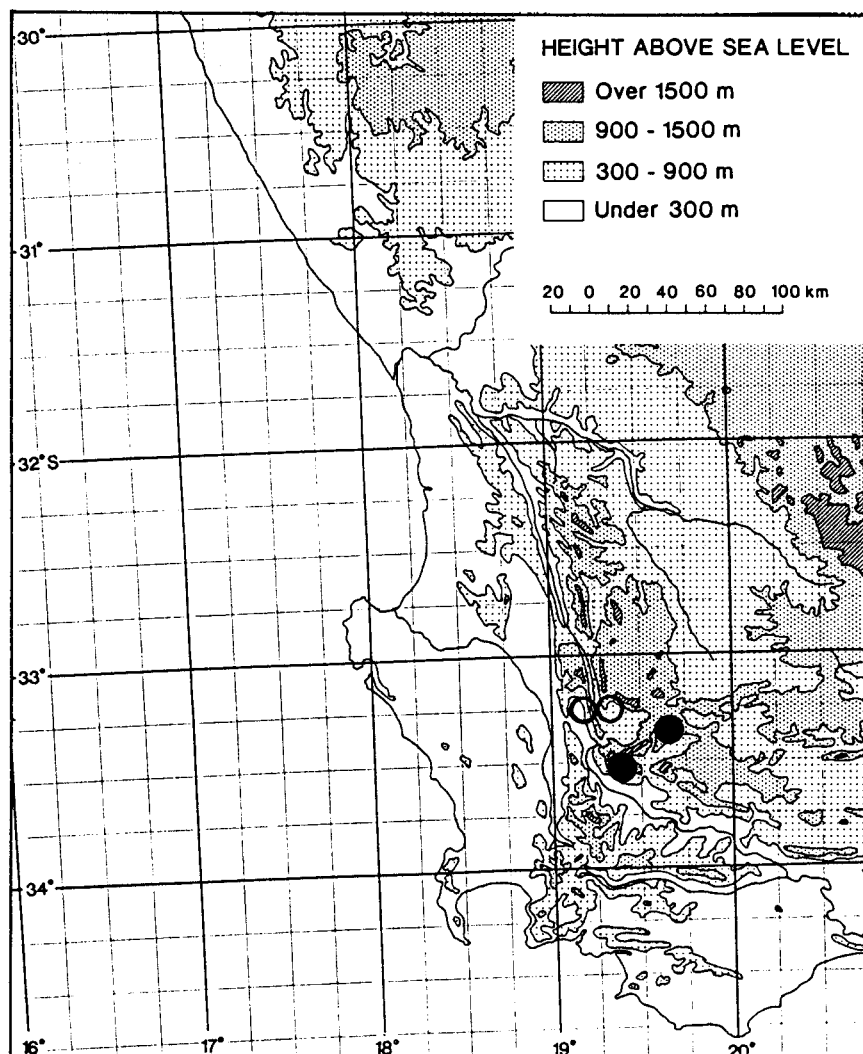


FIGURE 7.66—Known distribution of *Lachnaea pendula*. White dots are inexact localities.

34. ***Lachnaea penicillata* Meisn.** in *Linnaea* 14: 421 (1840); Meisn.: 579 (1857); C.H.Wright: 25 (1915). Type: between Sparrbosch and Tradouw, in rocky area, 2000–2500 ft. (IV. A.), *Drège s.n.* (NY, holo.!, P!, S!, SAM!, iso.).

Lachnaea passerinoides N.E.Br. in *Kew Bulletin* 1901: 132 (1901); C.H.Wright: 25 (1915). Type: Cape Colony. Riversdale Division: on the mountains of Garcias Pass, alt. 1200 ft., *Galpin 4497* (K, holo.!, BOL!, iso.).

Passerina filiformis L. var. *depauperata* E.Mey. ex Meisn.—*nom. nud.* in *Linnaea* 14: 422 (1840) in synonymy.

Passerina brunioides Eckl. & Zeyh. (ex parte) ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis*. 14: 579 (1857) in synonymy.

Passerina bruniades Eckl. & Zeyh. (ex parte) ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 579 (1857) in synonymy.

Compact, round, much branched, shrub to 0.4 m tall, single-stemmed at base, corymbosely branched near the ground, or multi-stemmed at base; reseeders or resprouters. *Branches* ascending or inclined, slender, lax, terete, felted, leafy, later glabrescent and naked without prominent leaf scars. *Leaves* decussate, adpressed, scattered, internodes two-thirds to three-quarters as long as leaves, sessile, epistomatic, lanceolate or narrowly elliptic, 2.0–3.7 × 0.6–1.0 mm, coriaceous, adaxially concave, enervate, dull, abaxially convex, subkeeled or keeled, glossy, glabrous, margin lanate-ciliate, later glabrescent, apex obtuse, tufted, base rounded. *Inflorescence* a terminal, sessile, 3–12-flowered, bracteate umbel with a single open flower at a time, 3–4 mm in diameter, on main flowering branches. *Involucral bracts* 4, coriaceous, green; distal pair narrowly obovate or obovate, 3–4 × 1–2 mm, adaxially concave, abaxially convex, enervate or keeled, glabrous, margin scarious, brown, ciliate in upper half, lanate-ciliate in lower half, apex emarginate; subdistal pair narrowly elliptic or elliptic, 3.0–4.0 × 1.0–1.3 mm, adaxially concave, abaxially convex, keeled, glabrous, margin scarious, brown, lanate-ciliate or ciliate in upper half and lanate-ciliate in lower half, apex rounded. *Flowers* subactinomorphic, cream, pedicellate. *Pedicel* 0.5–2.0 mm long, covered with long silky, ascending hairs, elongating in fruiting stage. *Hypanthium* 2.2–3.0 mm long, circumscissile ± midway from

can easily be distinguished from *L. pendula* by the erect inflorescences and the leaf margins which are lanate-ciliate, later glabrescent.

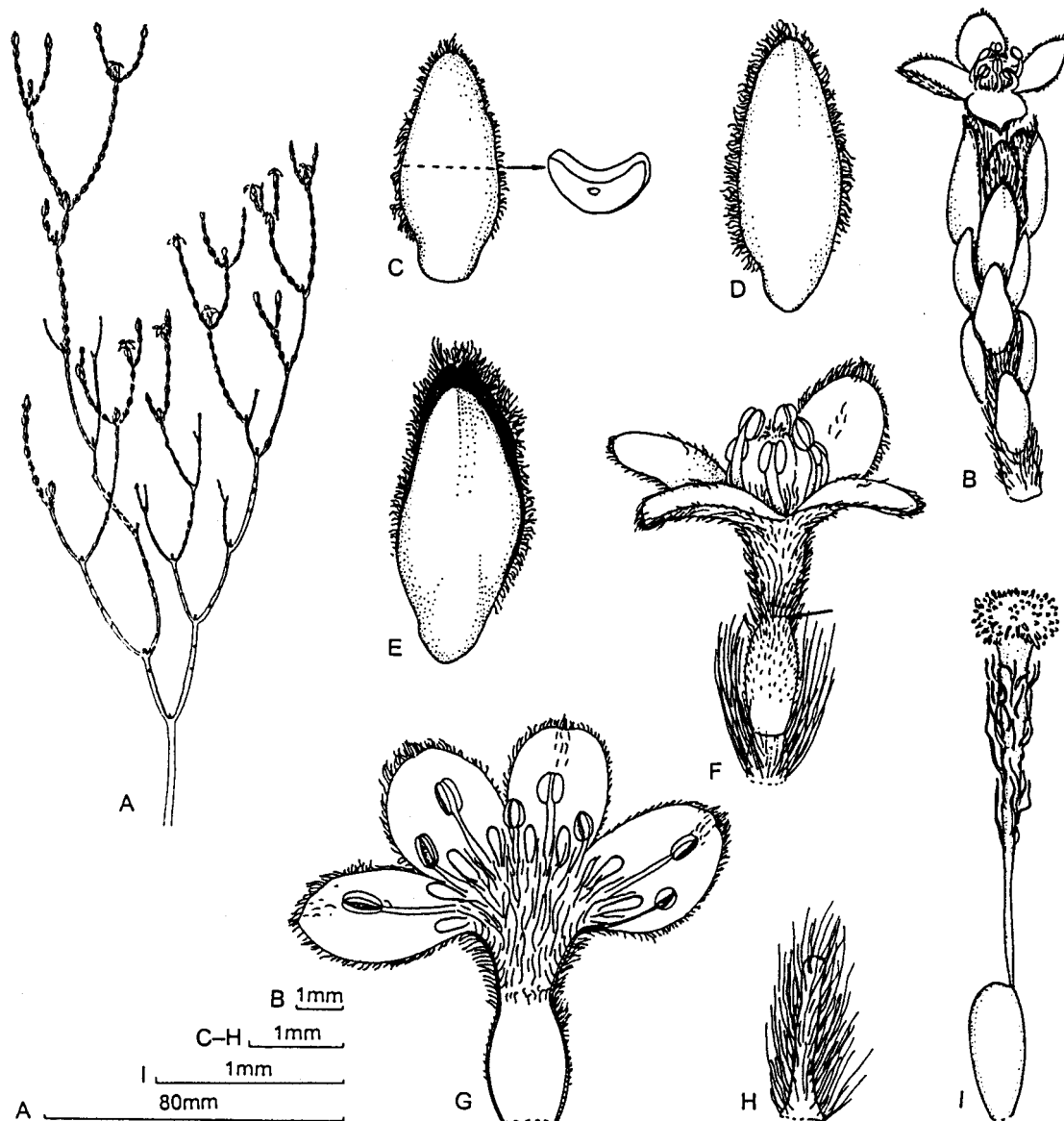


FIGURE 7.67—*Lachnaea penicillata*, Beyers 173 (NBG). A, portion of plant; B, flowering branch; C, leaf (abaxial view and cross section); D & E, involucral bracts: D, from subdistal pair; E, from distal pair; F, flower, note circumscription zone (arrowed); G, flower split longitudinally with gynoecium removed; H, elongated pedicel in fruiting stage; I, gynoecium.

Specimens examined

WESTERN CAPE.—3320 (Montagu): Montagu, farm Rietfontein, (–CC), 29-09-1979, *Bohnen* 6723 (NBG); Langeberg, S of Barrydale, 330–500 m, (–DC), *Barnard* SAM 28787 (SAM); between Sparrbosch and Tradouw, in rocks on mountain (IV, A), 665–830 m, (–DC), 28-07-1831, *Drège* 3542 (NY, P); *ibid.*, Jul., *Drège* SAM 19776 (SAM); Tradouw Pass, (–DC), 29-05-1954, *Esterhuysen* 22919 (BOL); *ibid.*, Oct. 1897,

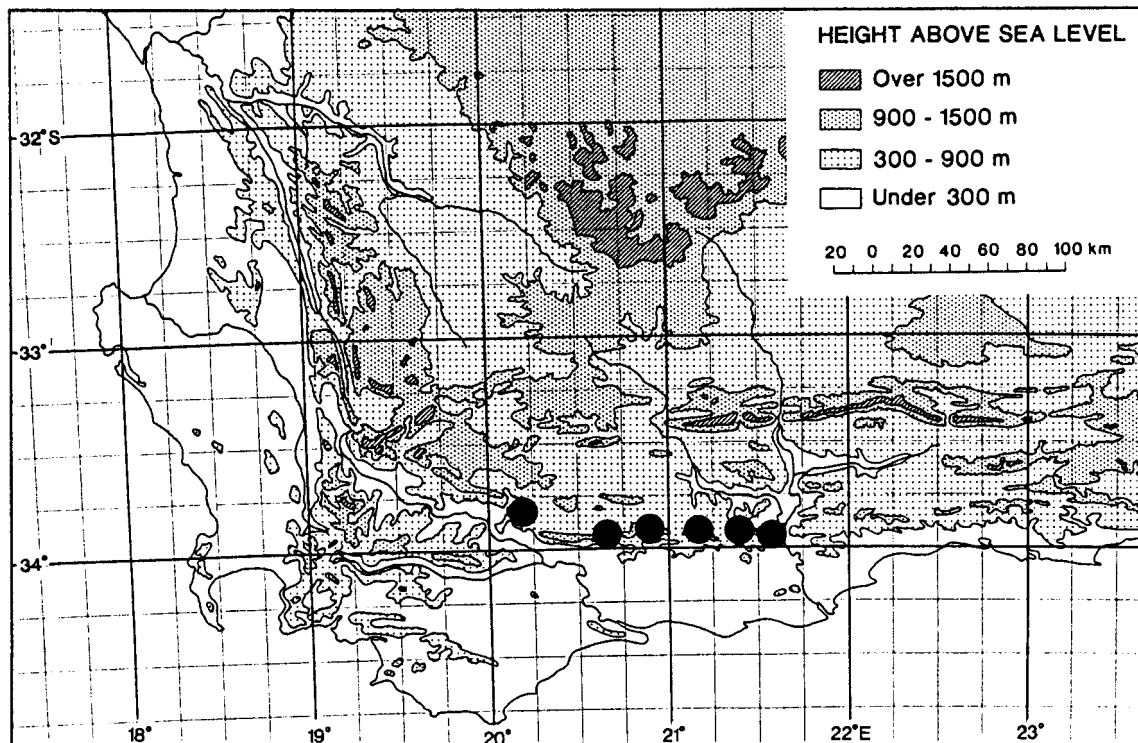


FIGURE 7.68—Known distribution of *Lachnaea penicillata*.

Galpin 4495 (GRA); *ibid.*, ridge, 730 m, Oct. 1923, *Levy's 620* (BOL, NBG); *ibid.*, Jun. 1939, *Walgate BOL 46938* (BOL); Zuurbraakberg, dry hot N slopes, $\pm$ 400 m, (–DC), 21-11-1950, *Taylor 233* (BOL, NBG); Langeberg, Swellendam Div., Lemoenshoek Peak, S slopes, 1330 m, (–DD), 15-09-1944, *Esterhuysen 10448* (BOL); Grootvadersbosch, Helderfontein, SE aspect, 1330 m, (–DD), 26-06-1987, *Forsyth 442* (NBG); Langeberg, Boosmansbos Wilderness Area, sandstone ridges E of Grootberg, 700 m, (–DD), 05-12-1986, *McDonald 1251* (NBG); *ibid.*, S of farm 'Lifford', 600 m, 04-08-1987, *Van der Merwe 199* (NBG); Muurrivier between Doornrivier and Lemoenshoek on N facing slopes of Langeberg, 630 m, (–DD), 04-08-1987, *McDonald 1353* (NBG).

—3321 (Ladismith): Riversdale, between Muiskraal and Cloetes Pass, (precise locality unknown), 04-04-1959, *Barker 8900* (NBG); *ibid.*, left side of Langeberg, 04-04-1959, *Lewis 5391* (NBG, S); Riversdale, N-end of Garcias Pass, 665 m, (–CC), 23-09-1949, *Acocks 15436* (BOL); *ibid.*, 20-05-1950, *Esterhuysen 17036* (BOL); Riversdale, W side of Garcias Pass, (–CC), 05-08-1951, *Barker 7366* (NBG); Langeberg, N entrance to Garcias Pass, above road cutting, 440 m, (–CC), 15-12-1989, *Beyers 173* (NBG); *ibid.*, 530 m, 15-09-1981, *Fellingham 117* (NBG); *ibid.*, 440 m, 09-10-1988, *McDonald 1631* (NBG); Muiskraal, foothills of Langeberg, 370 m, (–CC), 17-05-1990, *Bohnen 9075* (NBG); *ibid.*, 370 m, 10-08-1983, *Bohnen 8251* (NBG); *ibid.*, 600 m, 19-07-1927, *Levy's 2119* (BOL); *ibid.*, slopes, 665 m, 16-07-1957, *Levy's 10743* (BOL); *ibid.*, S of farmstead and below dam, clay slope, 420 m, 07-06-1989, *Oliver & Fellingham 9145* (NBG); between Garcias Pass and Muiskraal, $\pm$ 600 m, (–CC), Oct. 1904, *Bolus 11372* (BOL, PRE); Garcias Pass, 400 m, (–CC), 30-09-1897, *Galpin 4497* (BOL, K); *ibid.*, slopes, 700 m, 12-10-1927, *Levy's 2298* (BOL); *ibid.*, Sept. 1908, *Phillips 407* (SAM); *ibid.*, 09-08-1949 *Steyn 301* (NBG); *ibid.*, 665–1000 m, *Thorne SAM 38928* (SAM); N slopes of Langeberg, Garcia's Pass, $\pm$ 565 m, (–CC), 13-05-1971, *Kruger 1269* (NBG); 37 miles

from Barrydale to Garcia's Pass, foothills near pass, W slope, $\pm$ 500 m, (–CC), 29-01-1969, *Marsh 1157* (NBG); Langeberg, road to Langkloof, $\pm$ 3 km from turnoff, sandy flats, 630 m, (–CD), 13-03-1987, *Boucher 3694* (NBG); Riversdale, Waterval on Muiskraal-Gourits Road, 600 m, (–CD), 21-07-1962, *Levy's 11284* (BOL); Riversdale, Langeberg above Kampsch Berg, 600 m, (–CD), 30-08-1923, *Muir 2710* (BOL); mountains on side of Gourits River, (–CD/DC), Nov., *Ecklon & Zeyher 42* (SAM); Swellendam, in Kannaland, near Gourits River, (–CD/DC), Nov., *Ecklon & Zeyher 95.11* (S); Langeberg, E of Garcia's Pass, Tygerberg, N slopes, W of Huisrivier, 300 m, (–DC), 15-12-1989, *Beyers 175* (NBG); Langeberg, Tygerberg, on vlakte below Witelsberg on N side, deep sand, 455 m, (–DC), 30-10-1990, *McDonald 1980* (NBG). Grid ref. unknown: Riversdale Div. Forestry Div., Nov. 1949, *Stokoe SAM 64625* (NBG, SAM).

35. *Lachnaea eriocephala* L., *Species plantarum*, edn 1, 1: 560 (1753); L.: 514 (1762); Crantz: 128 (1766); Burm.f.: 12 (1768); Lam.: 374 (1792); Willd.: 434 (1799); Andrews: t. 104 (1800); C.F.Gaertn.: 195, t. 215 (1807); Sims: t. 1295 (1810); W.T.Aiton: 415 (1811); Loisel.: t. 234 (1820); Meisn.: 411 (1840); Meisn.: 575 (1857); C.H.Wright: 20 (1915). *Passerina eriocephala* (L.) Spreng.: 240 (1825); non Thunb. 75 (1794); non Thunb.: 375 (1823). Type: Hottentots Holland Mtns, Sir Lowry's Pass, foot of pass, (–BB), *Beyers 270* (NBG, neo., BM!, BOL!, K!, MO!, NY!, P!, PRE!, S!, Z!, isoneo.). *Note*: No original material used by Linnaeus as basis for the name is available.

Lachnaea purpurea Andrews in *The botanists repository* 5: t. 293 (1803); W.T.Aiton: 415 (1811); Sims: t. 1594 (1813); Wikstr.: 323 (1818); Lodd.: t. 273 (1818); C.H.Wright: 21 (1915); *L. eriocephala* L. var. *purpurea* (Andrews) Meisn.: 576 (1857). Type: Andrews, *The botanist repository*: t. 293 (icono.).

Lachnaea rosea Baill., *Natural history of plants* 6:108 (1880). Type: Baill. *Natural history of plants* 6, illustration [figs 74, 75 & 76] on page 108 (icono.).

Passerina cephalophora Thunb., *Prodomus plantarum capensium*, part 1:75 (1794); Wikstr.: 321 (1818); Thunb.: 375 (1823). Type: *Thunberg* (as 9571 UPS, holo.—NBG, photo!; S [Herb. Montinii]!, iso.).

Erect, sparsely to moderately branched shrub up to 0.6 m tall, single-stemmed at base; reseeder. *Branches* ascending, subrigid, terete, at first sericeous-hirtellous, later glabrescent, leafy, becoming naked with leaf scars. *Leaves* decussate, ascending or subadpressed, imbricate, sessile, epistomatic, coriaceous, lanceolate or narrowly elliptic,

5.2–15.0 × 1.0–2.5 mm, glabrous, adaxially flat to concave, enervate, white-punctulate, dull, abaxially convex and keeled, usually more so towards apex, glossy, margin at first ciliate later glabrous, apex rounded or acute, base rounded; distal 2 or 3 leaf pairs subtending inflorescence bract-like, elliptic to widely elliptic, oblate, or obovate to very widely obovate, 5.2–17.0 × 3.6–14.0 mm (distal pair the broadest), coriaceous, green or green tinged maroon, adaxially concave, glabrous, abaxially convex, keeled in upper half, glabrous to sparsely adpressed hairy, margin membranous, ciliate, apex acuminate to mucronulate, base cuneate or obtuse. *Inflorescence* a terminal, sessile, pseudobracteate, more than 40-flowered, capitate-like umbel with up to 30 open flowers at a time, 25–55 mm in diameter, on main flowering branches; umbel appears to be enclosed at base by 2 or 3 pairs of involucre bracts but vegetative shoots develop in axils of distal bract-like leaves, although branching usually occurs below subdistal pair of bract-like leaves. *Flowers* zygomorphic, cream or mauve, pedicellate. *Pedicel* linear, abaxially elongated beyond insertion of flower, 2–6 mm long, elongating in fruiting stage, villous, responsible for woolly appearance of old inflorescence. *Hypanthium* 5.8–15.0 mm long, circumscissile ± one-fifth from base, circumscission zone not clearly defined, upper portion narrowly funnel-shaped, sericeous-hirsute outside, sericeous within, basal portion narrowly ovoid, puberulent or glabrescent outside, glabrous within. *Sepals* patent, unequal, anterior and lateral ones directed outwards, anterior one elliptic, 6.2–10.3 × 2.5–4.8 mm, lateral ones elliptic, 4.5–9.5 × 1.7–3.5 mm, posterior one ovate, 2.3–5.5 × 1.2–3.0 mm, always shorter than other three, adaxially sparsely sericeous, abaxially sericeous, apex rounded. *Stamens* exserted, outer, antiseptalous whorl inserted at or near base of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 1.2–4.5 mm long, inner 1.0–3.0 mm long; anthers ellipsoid, 0.7–1.2 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, obscured by hairs in mouth, linear, 0.6–1.0 mm long, glabrous, translucent white in fresh state. *Ovary* narrowly ovoid or ellipsoid, 1.0–2.0 mm long, glabrous. *Style* linear, 5.2–10.5 mm long, sericeous in upper half to three-quarters. *Stigma* brush-like (Figure 7.69).

Distribution and ecology

Lachnaea eriocephala has been recorded from the Roodezand, Obiekwa and Voëlvele Mountains near Tulbagh, as far west as Dassenberg near Malmesbury and

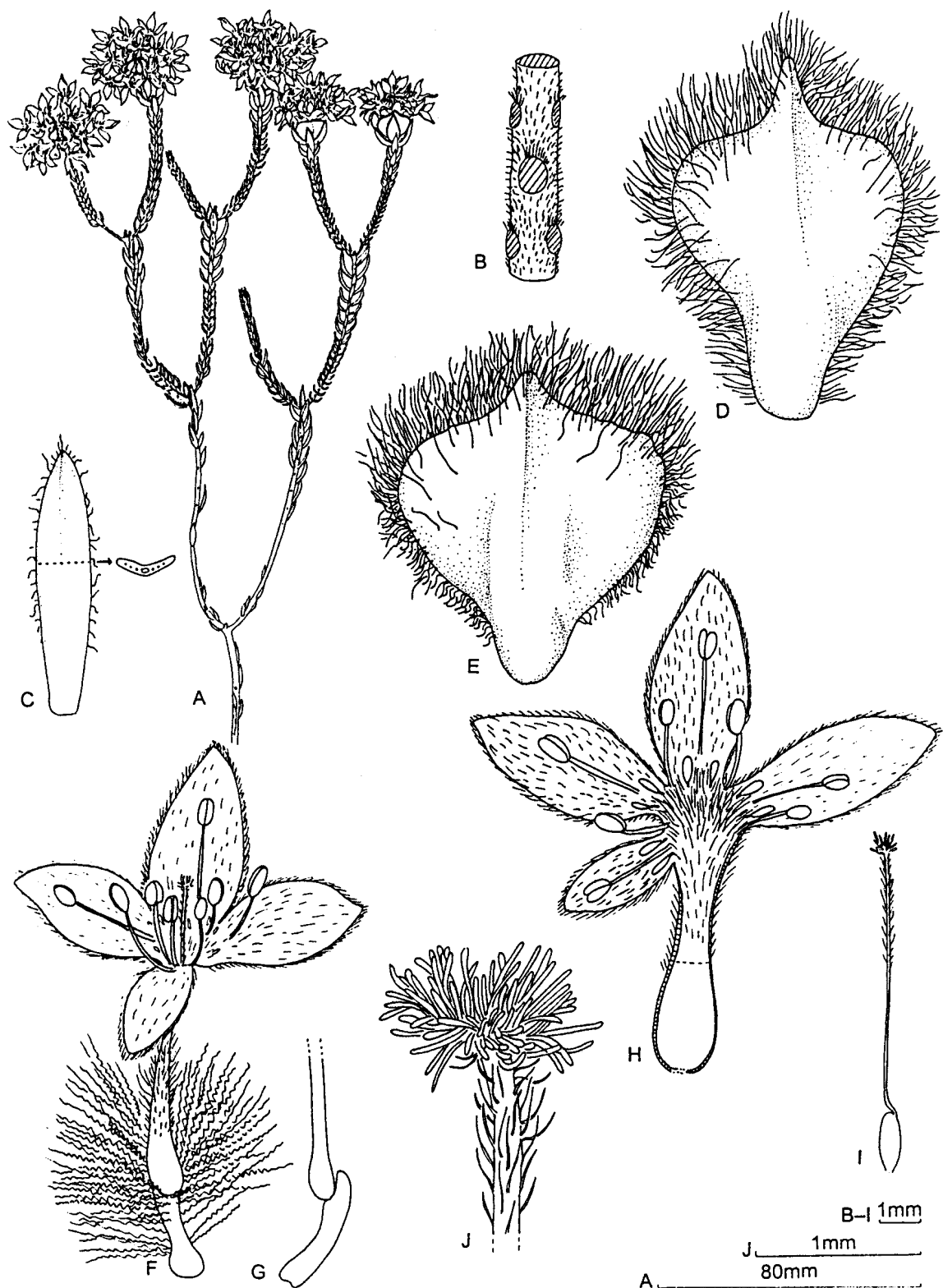


FIGURE 7.69—*Lachnaea eriocephala*, Beyers 54 (NBG). A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F, flower; G, pedicel abaxially produced beyond point of attachment of flower (lateral view); H, flower split longitudinally with gynoecium removed, note circumscission zone (arrowed); I, gynoecium; J, stigma and upper portion of style.

southwards to Betty's Bay at altitudes between 100 and 500 m (Figure 7.70). The collection by Thunberg from the hot water springs in the Swartberg at Caledon is probably incorrect. No other collections have been made from this area. In the vicinity of Tulbagh the plants are predominantly mauve-flowered, rarely cream-flowered, whereas southwards all the plants have cream flowers. Flowering has been recorded from July to November.

Conservation status: Lower Risk Least Concern (LRlc).

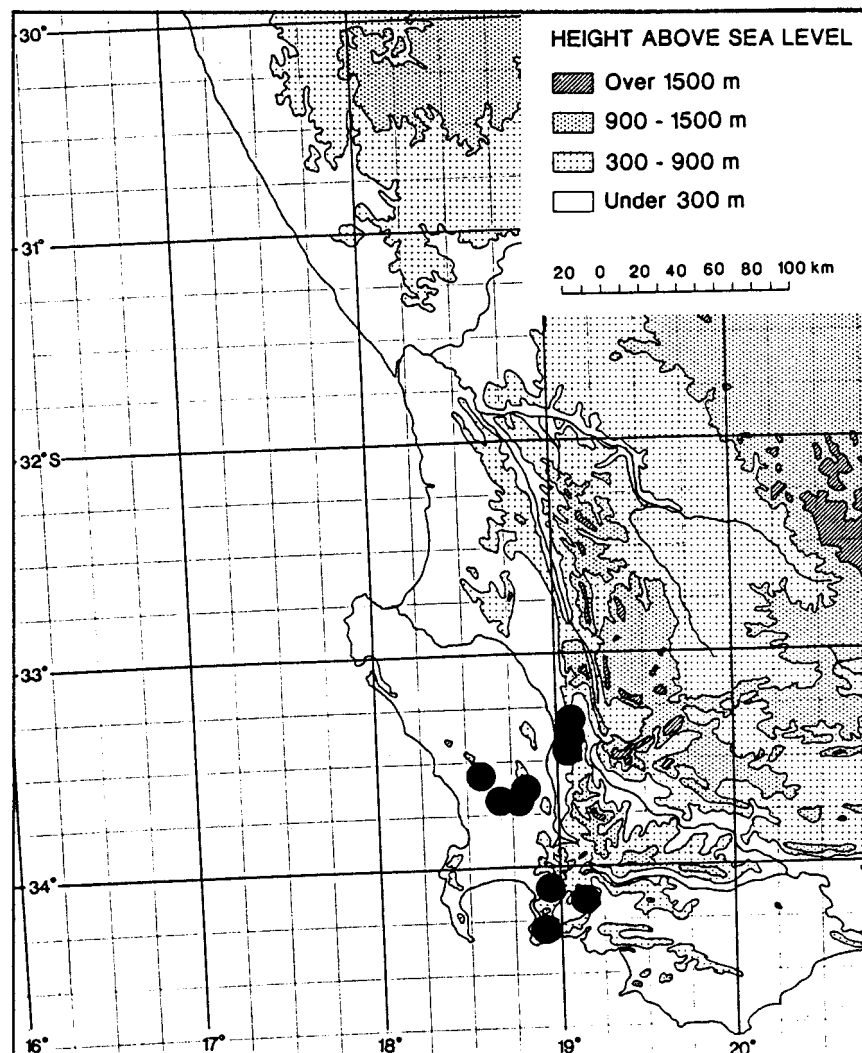


FIGURE 7.70—Known distribution of *Lachnaea eriocephala*.

Diagnostic characters and relationships

Lachnaea eriocephala is distinguished from the other species with large, showy inflorescences with zygomorphic flowers by the decussate, imbricate, lanceolate to

narrowly elliptic leaves, which are abaxially keeled and the pedicels which elongate abaxially beyond the point of the flower attachment. It is easily distinguished from the species with the latter type of pedicels by the strongly zygomorphic flowers.

Specimens examined

WESTERN CAPE.—3318 (Cape Town): Darling Wild Flower Show [exact locality unknown], 17-09-1981, *Bean 676* (BOL); Malmesbury Dist., Paardeberg, SE slopes above Hoornbosch, (–AB), 29-09-1974, *Esterhuysen 33634* (BOL); Malmesbury Div., NE base of southern prolongation of Dassenberg, (–AB), 03-09-1933, *Pillans 6880* (BOL); Dassenberg, E slope, sandy soil, 165 m, (–AB), 07-08-1966, *Rourke 498* (NBG); between Paardeberg and Dassenberg, below 130 m, (–BC/DB), 18-09-1927, *Drège s.n.* [(III, D, a) (a)] (P); Dassenberg, between Paardeberg and Groenkloof, below 160 m, (–DA), Sept., *Drège s.n.* [*L. eriocephala* Lam. a] (K, S); Klipheuwel, 18 km from N1 on R304, at radio masts, 100 m, (–DA), 09-09-1994, *Rugge s.n.* (K, NBG, PRE); between Paardeberg and Grootfontein, below 130 m (–DB), 30-07-1828, *Drège s.n.* [(III, D, a) (a)] (P).

—3319 (Worcester): Tulbagh Wild Flower Show [exact locality unknown], 13-09-1950, *Esterhuysen 17458* (BOL); *ibid.*, 13-09-1969, *Van der merwe s.n. sub STE* (NBG); Worcester, Tulbagskloof (Nieuwekloof), Tulbaghstahl, foot of Winterhoeksberg, (–AA/AC), Sept., *Ecklon & Zeyher 77.9* (NY); *ibid.*, Witsenberg, Sept., *Zeyher NBG 52647* (NBG), as *Zeyher PRE 49152* (PRE); Worcester, Nuwekloof, foot of Winterhoeksberg, Witsenberg, (AA/AC), Sept., *Ecklon & Zeyher 77.9* (S, NY, Z); Tulbagh Dist., Obiekwa Mtns, farm Oudekloof, W slopes S of Oukloof Pass, 500 m, (–AC) 29-09-1994, *Beyers 237* (NBG); Tulbagh Dist., Oukloofberg, SW slopes above Oukloof Pass, 300 m (–AC) 29-09-1994, *Beyers 238* (BOL, K, MO, NBG, PRE); near Tulbaghkloof, in mountains, (–AC), Oct. 1895, *Bolus 13641* (BOL); Wellington area, Welbedagt farm, shallow sand over rocky clay, 160 m, (–AC) 12-07-1978, *Boucher 3831* (NBG); Nuwekloof, 330 m, (–AC), 18-10-1828, *Drège 1202* (P); *ibid.*, *Drege s.n.* [*L. eriocephala* Lam. b] (K); *ibid.*, near Tulbagh, in mountains, 400 m, Oct. 1885, *MacOwan HNAA 541* (BOL, SAM, Z); mountains, Tulbagh, (–AC), Sept., *Ecklon & Zeyher 31* (SAM); W slopes of Vogelvllei Mtns near Gouda, (–AC), 09-09-1951, *Esterhuysen 18794* (BOL, NBG); Roodezand, Oukloof, (–AC), *Niven s.n.* (K).

—3418 (Simonstown): Sir Lowry's Pass, 400 m, (–BB), 14-10-1928, *Adamson BOL 46855* (BOL); *ibid.*, 28-09-1942, *Barker 1729* (BOL); *ibid.*, foot of pass, 03-09-1988, *Beyers 54* (NBG, PRE); *ibid.*, 200 m, Oct. 1880, *Bolus 5553* (BOL, GRA, SAM, Z); *ibid.*, 200 m, 22-09-1972, *Boucher 1885* (NBG); *ibid.*, 140 m, 22-10-1984, *Brits 45* (NBG); *ibid.*, 23-07-1955, *Clemitsen s.n.* (NBG); *ibid.*, 09-11-1941, *Compton 12328* (BOL); *ibid.*, 03-09-1942, *Compton 13485* (BOL); *ibid.*, 01-09-1943, *Compton 14714* (BOL); *ibid.*, foot of Hottentots Holland Mtns, 06-08-1950, *Esterhuysen 17405* (BOL); *ibid.*, 11-07-1890, *Guthrie & Guthrie 2003* (BOL); *ibid.*, *Hoekstra BOL 46856* (BOL); *ibid.*, Oct. 1943, *Levyens 8557* (BOL); *ibid.*, Nov. 1944, *Lewis 1574* (SAM); *ibid.*, 18-08-1958, *Loubser 1056* (NBG); *ibid.*, ±160 m, *MacOwan 3178* (GRA); *ibid.*, lower N slopes, 200 m, 07-09-1975, *Oliver 6033* (NBG); *ibid.*, 150 m, 31-10-1946, *Parker 4143* (BOL, K, NBG); *ibid.*, 260 m, 17-09-1983, *Richardson 15* (NBG); *ibid.*, NW slopes, 15-09-1976, *Spreeth 141* (NBG); *ibid.*, 100 m, 15-07-1892, *Schlechter 1128* (GRA, SAM, Z); *ibid.*, Aug. 1951, *Stokoe s.n.* (NBG); *ibid.*, 23-09-1959, *Van Rensburg 441* (NBG); below Sir Lowry's Pass, foot of Hottentots Holland Mtns, S of Nat. Rd, (–

BB), 19-09-1956, *Dahlgren & Peterson 366* (NBG); Somerset West Dist., W lower slopes of Hottentots Holland Mtns, NE Nat. Rd, 500 m, (–BB) 27-11-1956, *Dahlgren & Peterson 1296* (K, NBG); Hottentots Holland, (–BB), 09-09-1928, *Hutchinson 312* (BOL, K); *ibid.*, *Pappe SAM 19789a* (SAM); Sir Lowry's Pass Fort, (–BB), 03-08-1951, *Martin 786* (BOL); Hottentots Holland Mtns, (–BB), Oct., *Pappe SAM 43747* (SAM); *ibid.*, 22-09-1846, *Prior s.n.* (Z); Sir Lowry's Pass Village, SW slope of Sir Lowry's Pass Road, (–BB), 29-09-1974, *Schabert 1* (NBG); Betty's Bay, (–BD), 20-08-1952, *Brunt BOL 46854* (BOL). —3419 (Caledon): Houhoek, (–AA), Sept., *Pappe SAM 19789* (SAM); *ibid.*, 28-09-1826, *Von Ludwig* (NY). Grid ref. unknown: *Drège s.n. SAM 19788* (SAM); mountains between Hottentots Holland and Caledon, Oct.–Nov., *Ecklon & Zeyher 101* (S, Z); Cape of Good Hope, 1775, *Thunberg [P. cephalophora]* (S). Without locality: Oct. 1820, *Ecklon s.n.* (S).

36. *Lachnaea naviculifolia* Compton in *Journal of Botany* 72: 21 (1934b). Type: Cape Province; Ceres Div., precise locality unknown. Exhibited at Ceres Wild Flower Show, October 1932, *Compton 4158* (BOL, holo.!, K, iso.!).

Erect, sparsely to moderately branched shrub up to 1.5 m tall, multistemmed at base; resprouter. *Branches* ascending, slender, terete, puberulent to sericeous below inflorescence [± 6 pairs of distal leaves], below glabrous or occasionally covered with short adpressed hairs, leafy, becoming naked with prominent leaf scars. *Leaves* decussate, ascending, erect or with apex turned inward, scattered, internodes quarter to two-thirds as long as leaves, those below inflorescence crowded, sessile, epistomatic, glaucous, narrowly elliptic to elliptic, occasionally narrowly ovate to ovate, $7.5\text{--}16.0 \times 1.5\text{--}5.5$ mm, coriaceous or subfleshy, glabrous, adaxially obtusely concave, enervate, white-punctulate, dull, abaxially obtusely convex, enervate, glossy or dull, margin inflexed, apex rounded, base rounded; distal 3 pairs below inflorescence becoming gradually larger upward and bract-like, winged, elliptic to very widely elliptic or obovate to very widely obovate, $6.0\text{--}21.5 \times 4.0\text{--}13.0$ mm, coriaceous, glaucous or green tinged red, greeny yellow tinged red or reddish, adaxially concave, abaxially convex, subkeeled towards the apex, glabrous or adpressed hairy at apex, margin membranous, ciliolate, more so in upper half, apex cuspidate or mucronate, base rounded or cuneate. *Inflorescence* a terminal, sessile, more than 20-flowered, pseudobracteate, capitate-like umbel with 8–15 open flowers at a time, 18–35 mm in diameter, usually only on main flowering branches; ebracteate umbel appears to be enclosed at base by 2 or 3 pairs of involucre bracts but vegetative shoots develop in axils of these bract-like leaves, although generally branching occurs below subdistal pair of bract-like leaves. *Flowers* subactinomorphic, white or white tinged pink or mauve, or

cream, pale pink, pale blue, pale yellow or yellowish green, scented. *Pedicel* dorso-ventrally flattened, abaxially produced beyond point of attachment of flower, rectangular, 2.0–4.5 mm long, elongating in fruiting stage, adaxially villous, abaxially sericeous. *Hypanthium* 7–13 mm long, circumscissile fifth to two-fifths from base, upper portion narrowly funnel-shaped, sericeous on both sides, basal portion ellipsoid or obovoid, outside puberulent in upper third, rest glabrous, within glabrous. *Sepals* patent, $\pm$ equal or occasionally subequal, adaxially glabrous or occasionally sparsely sericeous along midvein, abaxially sericeous, elliptic, rounded to obtuse, anterior one 4.0–8.0 $\times$ 2.2–4.0 mm, lateral ones 3.4–6.2 $\times$ 2.0–4.0 mm, posterior one 3.6–6.5 $\times$ 1.6–3.8. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 3.0–5.5 mm long, inner 1.4–3.5 mm long; anthers oblong or ellipsoid to widely ellipsoid, 0.6–1.3 mm long, abaxially with broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, linear, 0.8–2.0 mm long, glabrous, translucent white in fresh state. *Ovary* ellipsoid or obovoid, 1.6–2.4 mm long, glabrous. *Style* linear-obconical, 8.0–14.5 mm long, sericeous in upper half. *Stigma* brush-like (Figure 7.71).

Distribution and ecology

Lachnaea naviculifolia ranges from the central Cederberg in the north, along the eastern side of the Cold Bokkeveld to as far south as Watervalsberg at altitudes between 1000 and 1865 m, occurring in sandy, flat areas and steep, rocky slopes (Figure 7.72).

Both narrow and broad leaved-forms occur. Those with usually narrow leaves occur in the central Cederberg. Around Sneeuwberg and Kromrivier both leaf forms occur, whereas southwards the leaves are broader and slightly succulent. Flowering has been recorded from August to November.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters and relationships

Lachnaea naviculifolia is allied to *L. eriocephala*. Both have the derived character state of pedicels abaxially produced beyond the flower attachment. It is easily

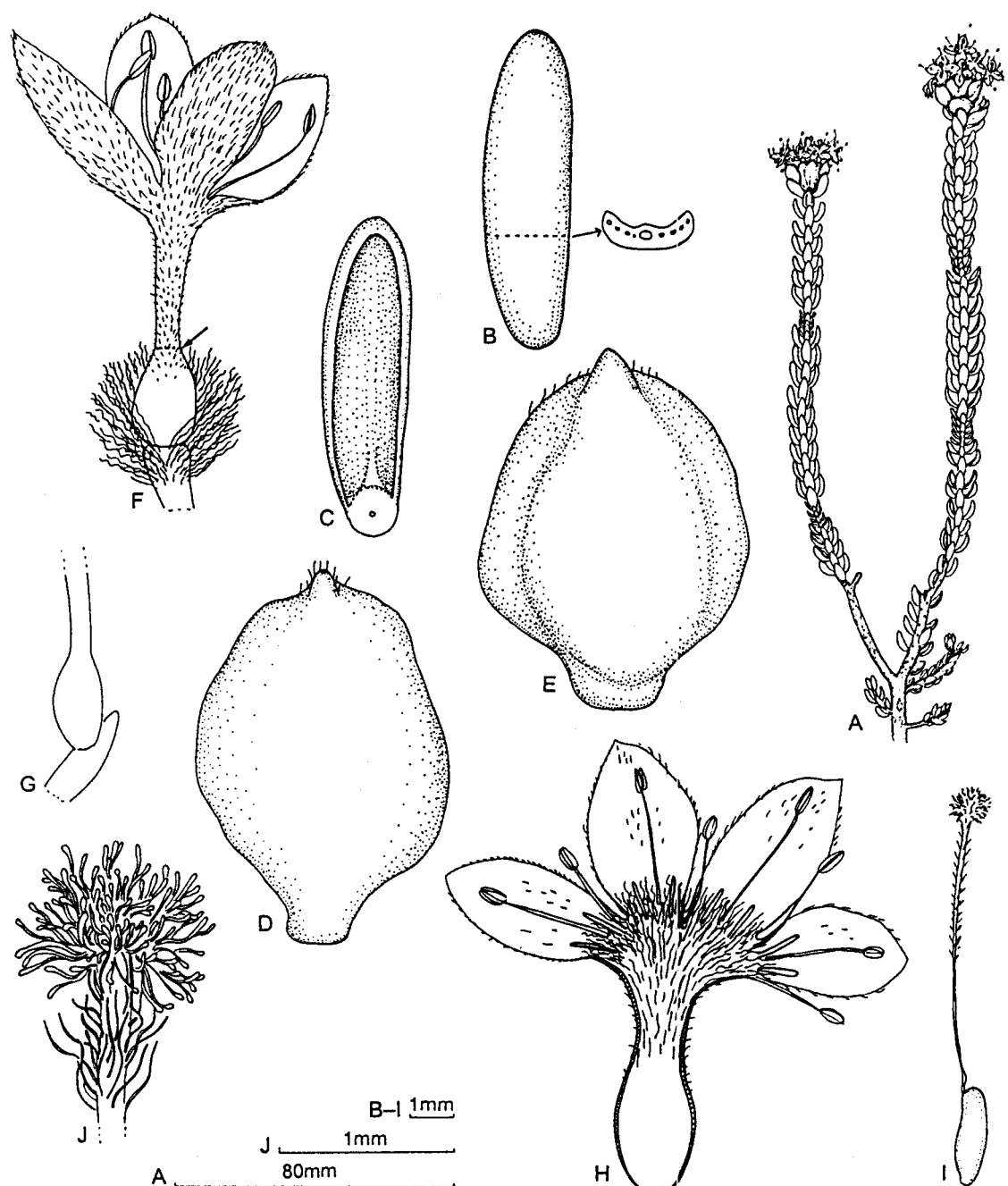


FIGURE 7.71—*Lachnaea naviculifolia*, Forsyth 525 (NBG). A, portion of plant; B & C, leaves: B, abaxial view and cross section; C, adaxial view; D & E, bract-like leaves subtending inflorescence: D, from subdistal pair; E, from distal pair; F, flower, note circumscission zone (arrowed); G, pedicel abaxially produced beyond point of attachment of flower (lateral view); H, flower split longitudinally with gynoecium removed; I, gynoecium; J, stigma and upper portion of style.

distinguished from *L. eriocephala* by the glaucous, naviculoid (boat-shaped) leaves, more or less regular flowers, rectangular pedicels which are dorso-ventrally flattened and the linear scales which are not obscured by hairs in the mouth of the hypanthium.

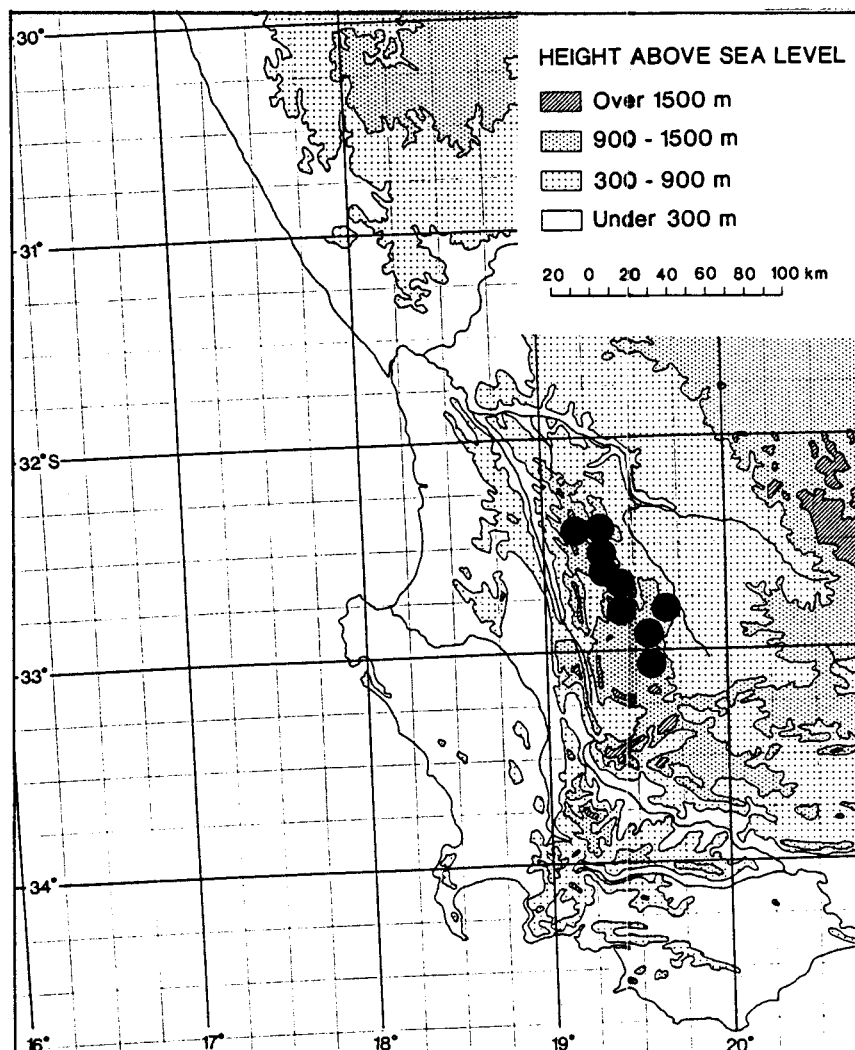


FIGURE 7.72—Known distribution of *Lachnaea naviculifolia*.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Clanwilliam Dist., Cederberg [precise locality unknown], 24-09-1964, *Dose s.n.* (NBG); Clanwilliam Dist., Cederberg Mtns, Waterkloof [locality unknown], 1165–1330 m, 26-09-1942, *Esterhuysen 8109* (BOL, NBG); Cederberg Mtns [precise locality unknown], Nov. 1939, *Stokoe 8033* (BOL); Cederberg, Sneeuweb hut, near water, (–AC), 22-07-1972, *Andrag 105* (NBG); *ibid.*, NW aspect, ± 1450 m, 24-09-1983, *Taylor 10676* (NBG); *ibid.*, moist seepage below sandflats, 1350 m, 18-09-1984, *Taylor 11058* (NBG); *ibid.*, rocky places, 06-07-1964, *Venter NBG 77433* (NBG); Cederberg, Welbedachtvloof, 1066 m, (–AC), 03-09-1973, *Andrag 233* (NBG); *ibid.*, near Tafelberg, 1865 m, 23-09-

1930, *Barnes BOL 19295* (BOL); *ibid.*, 1500 m, Sept. 1930, *Barnes BOL 46927* (BOL); Cederberg Mtns, Sneeuberg, along path from hut to Maltese Cross, (–AC), 23-10-1988, *Beyers 114* (NBG); Cederberg, near Sneeuberg hut, rocky slopes and small kloofs, (–AC), 04-09-1975, *Durand 55* (NBG); *ibid.*, 1400 m, 03-09-1971, *Haynes 583* (NBG); South Cederberg, Sneeuberg, shale band on E side, 1330 m, (–AC), 11-10-1946, *Esterhuysen 13087* (BOL); *ibid.*, sandy, rocky slopes, 1330 m, 01-09-1963, *Esterhuysen 30299* (BOL, S); Cederberg State Forest, Hoogvertoon, W aspect, ± 1400 m, (–AC), 30-08-1973, *Haynes 816* (NBG); *ibid.*, in sand, 1300 m, 17-08-1982, *Viviers 522* (NBG); Cederberg, Wolfberg, Gabriel's Pass, stony slopes, (–AC), 12-09-1995, *Hansford, M.s.n.* (NBG); Cederberg, Hoogvertoon near Sneeuberg, moist sandy areas between rocks, 1300 m, (–AC), 07-09-1982, *Le Maitre 328* (NBG); Cederberg, along path to Welbedacht Cave, (–AC), 05-09-1965, *Reinecke s.n. sub Mattatia 30* (BOL); Cederberg, rocky pass beyond hut en route to Maltese Cross, E slope, 1300 m, (–AC), 09-12-1982, *Taylor 10510* (NBG); Cederberg below Wolfberg cracks, burnt slopes, (–AC), 26-09-1970, *Wicomb s.n.* (NBG); Cederberg, Wolfberg, rocky SE slopes, (–AD), 03-10-1952, *Esterhuysen 20577* (BOL, S); Cederberg, Kromrivier, 830 m, (–CB), 27-09-1934, *Compton 4896* (BOL, NBG); *ibid.*, amongst rocks, 04-10-1952, *Esterhuysen 20484* (BOL); *ibid.*, Aug. 1949, *Stokoe SAM 62666* (SAM), *Stokoe SAM 62667* (SAM); Ceres Dist., Zandfontein Peak, 1330 m, (–CB), 05-04-1947, *Compton 19441* (NBG); Cold Bokkeveld, Bloukop, rocky slopes, 1330–1665 m, (–CB), 01-10-1958, *Esterhuysen 27910* (BOL); Southern Cedarberg, Bloukop, E-facing slope, rocky soils, 1200 m, (–CB), 13-10-1990, *Forsyth 525* (NBG); NE Cold Bokkeveld, Blinkberg, E-facing upper rocky slopes, 1500 m, (–CB), 01-11-1983, *Oliver 8062* (NBG); South Cederberg, Gideonskop, rocky dry N slopes, 1600 m, (–CB), 31-10-1987, *Oliver 9038* (NBG); *ibid.*, 1500 m, 25-10-1966, *Rourke 663* (NBG); between Kleinveld and Sonderwater, rocky, sandy fynbos, (–CD), 28-10-1977, *Emdon 215* (NBG); Zuurvlakte, N of Rozendal Farm, 1080 m, (–CD), 04-02-1990, *Hugo 2266* (NBG); Ceres Dist., Skurweberg, top of pass on flat area in sand, (–CD), 21-09-1985, *Viviers 1504* (BOL); Ceres Karoo, Kaggakamma, outcrops before gate, (–DA), 18-09-1994, *Hansford 40* (NBG); Swarttruggens, Katbakkies, 1330 m, (–DC), 27-09-1926, *Adamson 1902* (BOL); Swarttruggens; Zuurvlakte, on road to Katbakkies Pass, near turnoff Lord's Acre, 1020 m, (–DC), 14-11-1993, *Beyers 221* (NBG).
—3319 (Worcester): Worcester, Watervalsberg, in dry sand, (–BA), 29-11-1990, *Powrie 352* (NBG). Grid ref. unknown: Ceres Show, 03-10-1932, *Compton 4158* (BOL); Ceres Wild Flower Show, Oct. 1931, *Compton 3986* (BOL, NBG); *ibid.*, 01-10-1934, *Compton 4894* (BOL, NBG); Cold Bokkeveld, Dwarsberg, 1000 m, 29-09-1926, *Levy's 1943* (BOL); Ceres mountains, Sept. 1824, *Marloth 6250* (NBG); Clanwilliam, July 1967, *Meyer s.n.* (NBG).

37. *Lachnaea rupestris* Beyers, sp. nov. a *L. marlothii* pubescentia exili ramorum, foliis glabris, pedicellis ventraliter complanatis et abaxialiter trans flores elongatis, staminibus antisepalis in base sepalorum insertis, squamis anguste ellipsoideis vel angusta obovoideis dignoscenda.

TYPE.—Western Cape, Stettynsberg, south-western slopes, 3319CD, *Esterhuysen 11102* (BOL, holo.!, PRE!, iso.).

Low straggling, moderately branched, shrub up to 0.2 m tall, single-stemmed at base branching near the ground; reseeder. *Branches* ascending to patent, slender, terete, clothed with short crisped hairs admixed with short, retrose ones, leafy, later glabrescent and naked without prominent leaf scars. *Leaves* decussate, subadpressed or ascending, scattered, internodes one-third to as long as leaves, sessile, epistomatic, lanceolate or narrowly elliptic, $3.0\text{--}5.4 \times 0.6\text{--}1.0$ mm, coriaceous, adaxially concave, enervate, dull, abaxially convex, often subkeeled in upper half, glossy, glabrous, apex rounded or subacute, base rounded; distal two leaf pairs subverticillate, partially enclosing inflorescence, broader than other leaves, bract-like, coriaceous, green or green with maroon tinge, glabrous, adaxially concave, abaxially convex keeled in upper half; elliptic to widely elliptic or obovate to widely obovate, $3.2\text{--}5.0 \times 1.6\text{--}2.9$ mm, margin ciliate, apex mucronulate or acute. *Inflorescence* a terminal, sessile, 12–22-flowered, pseudobracteate umbel with 3–5 open flowers at a time, 5–7 mm in diameter, on main flowering branches or also on a few, short, lateral branches immediately below main inflorescence forming a compact glomerule at apex of main flowering branch; umbel appears to be enclosed by two pairs of involucre bracts but vegetative shoots develop in axils of these bract-like leaves, although new shoots mostly arise from axils of subdistal pair of bract-like leaves. *Flowers* subactinomorphic, mauve or cream with mauve tinge, pedicellate. *Pedicel* dorso-ventrally flattened, abaxially produced beyond point of attachment of flower (more noticeable in fruiting stage), oblong, 0.4–1.2 mm long, slightly elongating in fruiting stage, villous. *Hypanthium* 2.0–2.5 mm long, circumscissile two-thirds to midway from base, upper portion funnel-shaped, sericeous outside, adpressed hirsute within, basal portion ellipsoid, outside for most part glabrous but in vicinity of circumscission zone puberulous, within glabrous. *Sepals* patent, subequal, ovate to elliptic, $1.6\text{--}1.9 \times 0.8\text{--}1.4$ mm, apex subacute or rounded, adaxially sparsely adpressed hairy or glabrous, abaxially sericeous. *Stamens* exserted, outer, antiseptalous whorl inserted at base of sepals, inner, antipetalous whorl inserted on rim of hypanthium, shorter than outer whorl; filaments filiform, outer 1.0–1.2 mm long, inner 0.7–0.9 mm long; anthers widely ellipsoid to spheroid, 0.3–0.4 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted immediately below antipetalous stamens in mouth of hypanthium, narrowly obovoid or narrowly ellipsoid, 0.4–0.6 mm long, glabrous. *Ovary* ellipsoid, ± 1.0 mm long, glabrous. *Style* linear-obconical, 1.9–2.2 mm long, covered with silky ascending hairs in upper half. *Stigma* brush-like (Figure 7.73).

Distribution and ecology

Lachnaea rupestris is known from the Stettynsberg north of Villiersdorp to Riviersonderend Mountains above Genadendal, where it grows in rocky places at altitudes above 1500 m (Figure 7.74). Flowering has been recorded in October to December.

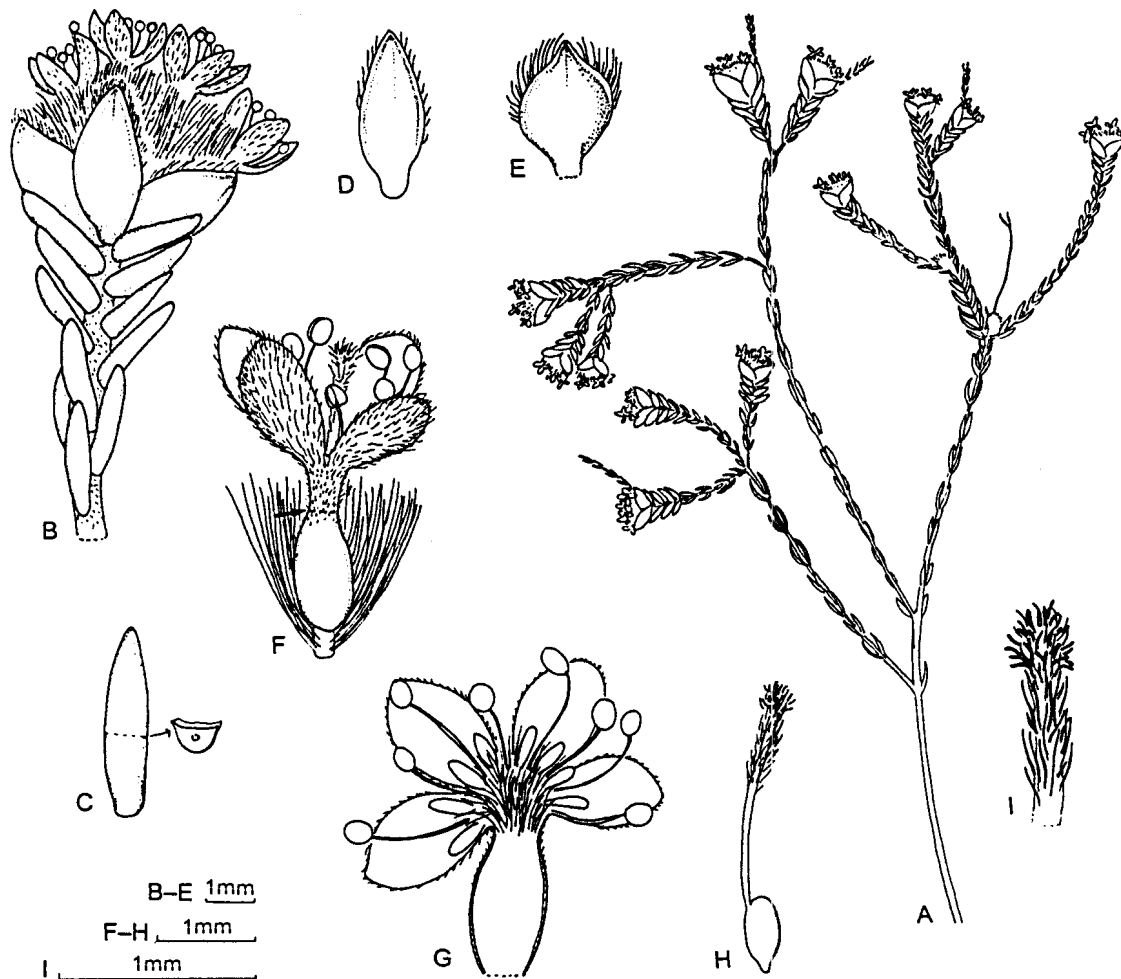


FIGURE 7.73—*Lachnaea rupestris*, Esterhuysen 11102 (BOL). A, portion of plant (life size); B, flowering branch; C, leaf (abaxial view and cross section); D & E, bract-like leaves subtending inflorescence; D, from subdistal pair; E, from distal pair; F, flower, note circumscription zone (arrowed); G, flower split longitudinally with gynoecium removed; H, gynoecium; I, stigma and upper portion of style.

As I have not seen this species in the wild, the descriptions are based solely on herbarium specimens.

Conservation status: Vulnerable (VU D2). Only known from a few localities and being a reseeders, it would be vulnerable to frequent fires.

Diagnostic characters and relationships

Lachnaea rupestris is allied to *L. eriocephala* and *L. naviculifolia*, but is easily distinguished by its low straggling habit. It is superficially very similar to *L. marlothii* from which it can be distinguished by the thin pubescence of the branches, glabrous leaves, dorso-ventrally flattened pedicels which are abaxially produced beyond the point of attachment of the flower, antisepalous stamens inserted at the base of the sepals and the narrowly ellipsoid or narrowly obovoid scales.

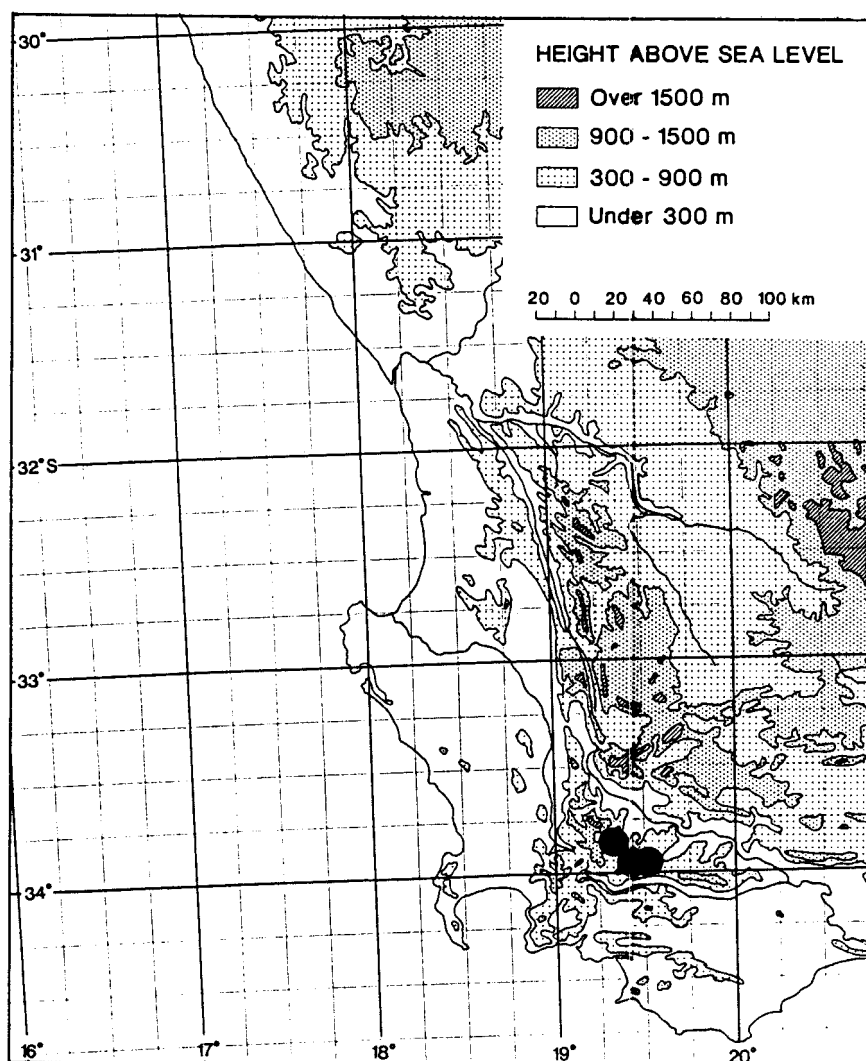


FIGURE 7.74—Known distribution of *Lachnaea rupestris*.

Etymology

The rocky habitat favoured by this species has prompted the specific epithet, which means rock-dwelling.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Stettynsberg, SW slopes, 1665 m, (–CD), 16-12-1944, *Esterhuysen 11102* (BOL, PRE); Caledon/Worcester Dist., Langberg, 1665 m (–CD), Oct. 1965, *Oliver s.n.* (NBG).
—3419 (Caledon): Genadendal Mtns, top of Bavianskloof, 1500 m, (–BA), Nov. 1930, *Stokoe 2524* (BOL); *ibid.*, 1500 m, 1930, *Stokoe 2533* (PRE).

38. ***Lachnaea globulifera* Meisn.**, *Linnaea* 14: 412 (1840); Meisn.: 576 (1857); C.H.Wright: 24 (1915). Type: In sandflats near Goudini, alt. 800–1200 ft (IV. B. b.), *Drège s.n.* (NY, holo!; K!, P!, S!, SAM!, iso.).

Gonophylla setosa Eckl. & Zeyh. ex Meisn.—*nom. nud.* in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 576 (1857) in synonymy.

Two subspecies are recognized on the basis of regeneration strategy, indumentum of the branches and geographic separation.

38a. subsp. *globulifera*.

Slender, erect, sparsely to moderately branched shrub up to 0.6–(0.9) m tall, single-stemmed at base; reseeder. *Branches* ascending, slender, wiry or semi-rigid, terete, at first covered with short, crisped hairs, later glabrescent, leafy, becoming naked without prominent leaf-scars. *Leaves* (excluding bract-like leaf pair subtending inflorescence) decussate, adpressed or ascending, scattered with internodes a quarter to one and a half as long as leaves, sessile, epistomatic, narrowly elliptic or lanceolate, 5.4–12.0 × 0.7–1.7 mm, coriaceous, glabrous, adaxially obtusely concave to concave, enervate, ± white punctulate, dull, abaxially convex, subkeeled, glossy, apex acute to mucronate, sometimes tinged red, base rounded; those below inflorescence gradually wider to 2.5 mm wide, apex acuminate, margin occasionally ciliate; bract-like leaf pair subtending inflorescence narrowly elliptic to widely elliptic, ovate or obovate, 3.5–6.8(–10.0) × 1.7–3.5(–6.0) mm, coriaceous, green

with maroon tinge, glabrous, margin membranous, ciliate, apex acute to acuminate, base attenuate. *Inflorescence* a terminal, sessile, bracteate, $\pm$ 50-flowered, capitate-like umbel with up to 14 open flowers at a time, 5–20(–25) mm in diameter, on main flowering branches and also on a few short lateral branches immediately below main inflorescence forming a compact glomerule; bracteate umbel appears to be enclosed at base by 2 pairs of involucre bracts but only 1 pair immediately below flowers may be regarded as being true bracts as vegetative shoots develop in axils of subdistal pair. *Involucre bracts* 2, widely elliptic to widely obovate, 4.5–6.0(–10.0) $\times$ 2.3–4.5(–7.0) mm, coriaceous, green with maroon tinge, glabrous, adaxially concave, abaxially convex, keeled, margin membranous, ciliate, apex acute, mucronate or acuminate. *Flowers* $\pm$ actinomorphic, cream, cream with pink tinge or pale mauve, others cream turning mauve with age, unscented, pedicellate. *Pedicel*, dorso-ventrally flattened, oblong to linear, abaxially elongated beyond insertion of flower, 0.3–2.2 mm long, elongating in fruiting stage, densely villous. *Hypanthium* 2.2–3.6(–7.0) mm long, circumscissile quarter to midway from base, upper portion narrowly funnel-shaped, sericeous outside, within adpressed hairs, basal portion ovoid to obovoid, outside puberulent in upper third to four-fifths, glabrous below, within glabrous. *Sepals* patent, $\pm$ equal, adaxially sparsely sericeous or glabrescent, abaxially sericeous, elliptic to widely elliptic, ovate to widely ovate or widely obovate, 1.5–3.5(–4.5) $\times$ 1.3–2.5 mm, rounded. *Stamens* exerted, outer, antisepalous whorl inserted at base of sepals, $\pm$ length of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 1.3–3.0(–4.4) mm long, inner 0.8–2.1(–3.5) mm long; anthers oblong to spheroid, 0.3–0.4(–0.8) mm long, abaxially without broad connective tissue. *Scales* exerted, inserted at mouth of hypanthium immediately below antipetalous stamens, obscured by hairs in mouth, filiform, 0.2–0.6 mm long, glabrous, translucent in fresh state. *Ovary* narrowly obovoid or narrowly ellipsoid to ovoid, 0.8–1.5 mm long, glabrous. *Style* filiform, 1.7–4.0(–8.0) mm long, adpressed hairy in the upper half to upper three-quarters. *Stigma* brush-like (Figure 7.75).

Distribution and ecology

Lachnaea globulifera subsp. *globulifera* has been recorded from the lower mountain slopes and flats of the Winterhoeks Mountain north of Tulbagh southwards through Bainskloof to Du Toit's Kloof and southeast to Stettyn Mountain near Villiersdorp. It grows in sandy or sandy, stony soil at altitudes between 200 and 1100 m (Figure 7.76).

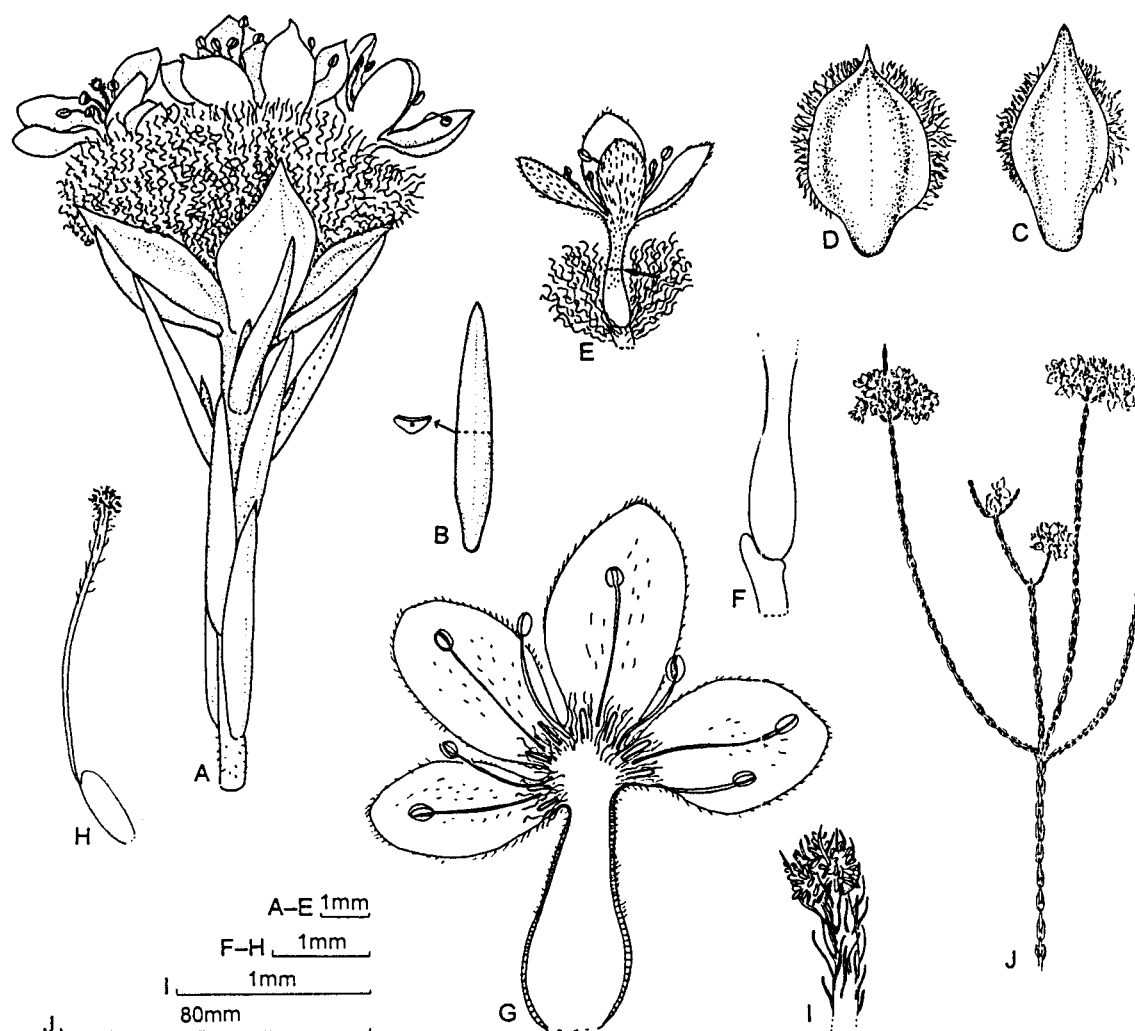


FIGURE 7.75—*Lachnaea globulifera* subsp. *globulifera*, Beyers 240 (NBG): A, flowering branch; B, leaf (abaxial view and cross section); C, bract-like leaf from pair subtending inflorescence; D, involucral bract; E, flower, note circumscription zone (arrowed); F, pedicel abaxially produced beyond point of attachment of flower (lateral view); G, flower split longitudinally with gynoecium removed; H, gynoecium; I, stigma and upper portion of style. *L. globulifera* subsp. *incana*, Brown 575 (NBG): J, portion of plant.

Flowering has been recorded mostly in July to November and occasionally in January, February and May.

Conservation status: Lower Risk Least Concern (LRlc). Being a reseed, frequent fires may impact negatively on this species.

Diagnostic characters and relationships

Lachnaea globulifera subsp. *globulifera* is allied to *L. montana* and *L. pedicellata* based on the shared characters—inflorescence borne on main flowering branches and on short lateral flowering branches and the bracteate umbel with two involucre bracts, which is subtended by two bract-like leaves. It differs from *L. montana* by the ciliate involucre bracts, the smaller flowers and the filiform scales obscured by hairs in the mouth of the hypanthium. It is distinguished from *L. pedicellata* by the ciliate involucre bracts, the densely villous, oblong to linear pedicels and the filiform scales obscured by hairs in the mouth of the hypanthium.

Specimens examined

WESTERN CAPE.—3319 (Worcester): Tulbagh [precise locality unknown], *Pappe* (K); Winterhoeksberg, Tulbagh, (–AA), Nov., *Pappe SAM 1474* (SAM); Tulbagh Dist., Voëlvelei Mtns, summit, 500 m, (–AC), Oct. 1920, *Andreae 638* (NBG); Tulbagh Dist., Watervlei, E slopes W of the waterfall on sandy flats, 350 m, (–AC), 29-09-1994, *Beyers 240* (NBG); *ibid.*, on sandy flats amongst reeds, 350 m, 10-05-1991, *Hansford 16* (NBG); Tulbagh Waterfall, 500 m, (–AC), Nov. 1879, *Bolus 5259* (BOL, Z); *ibid.*, mountains above waterfall, Oct. 1882, *Bolus 5318* (BOL); *ibid.*, 16-11-1941, *Compton 12402* (NBG); *ibid.*, 330–665 m, Nov., *Ecklon & Zeyher 1.11* (GRA, NBG, Z); *ibid.*, 16-09-1928, *Hutchinson 398* (BOL, K); *ibid.*, mountain next to waterfall, *Pappe Herb. MacOwan* (Z); *ibid.*, above waterfall, 465 m, 26-05-1966, *Rycroft 2956* (NBG); *ibid.*, close to waterfall, 200 m, 04-09-1892, *Schlechter 1393* (GRA, K, S, Z); *ibid.*, 500 m, 15-02-1896, *Schlechter 7460* (BOL, K, Z); mountain slopes between Ontongskop and Tulbagh Waterfall, (–AC), 08-10-1980, *Burgers 2590* (NBG); slopes at E-base of Ontongskop, above Tulbagh Waterfall forestry area, (–AC), 25-10-1973, *Esterhuysen 33282* (BOL, S); Tulbagh-Zevenfontein Nature Reserve A, sandy soil in firebreak, ± 500 m, (–AC), 10-06-1969, *Haynes 108* (NBG); Tulbagh Waterfall Forest Reserve, Ontongskop, E-slopes, ± 465 m, (–AC), 11-07-1968, *Haynes 237* (NBG); *ibid.*, waterfall, E slope, NE of the kop, 700 m, 25-09-1991, *Oliver 9903* (NBG); Kluitjieskraal State Forest, Suurvlaakte, ± 465 m, (–AC), 23-10-1973, *Haynes 852* (NBG); plateau between Tulbagh Waterfall and Kluitjieskraal, (–AC), 04-11-1976, *Hugo 767* (NBG); Kluitjieskraal Forest Station, W side, on mountain, (–AC), 04-11-1976, *Spreeth 143* (NBG, PRE); Mostertsberg, ± 315 m, (–AD), 30-01-1892, *Schlechter 856* (Z); *ibid.*, 1100 m, 31-01-1892, *Schlechter 934* (Z); Worcester Dist., Wolwekloof Forest Reserve, Bainskloof, in swamp, (–CA), 20-10-1946, *Barker 4234* (NBG); Bainskloof, (–CA), 30-08-1946, *Compton 18268* (NBG, S); *ibid.*, centre of kloof, N side, 14-11-1928, *Gillett 204* (NBG); *ibid.*, old Toll Gate, 30-08-1946, *Leighton 1980* (BOL, NY); *ibid.*, Nov. 1949, *Stokoe SAM 62668* (SAM); Worcester Div., N end of Du Toits Peak, slopes, E-aspect, 1000 m, (–CA), 06-10-1951, *Esterhuysen 18911* (BOL, NBG, PRE); Worcester Dist., Du Toits Kloof, 265 m, (–CA), 19-07-1962, *Walters 8* (NBG); Rawsonville, veld opposite Gevonden farmstead, (–CA), 19-07-1962, *Walters 475* (NBG); *ibid.*, Slanghoek, farm Ruigtevlei, 07-11-1976, *Walters 1559* (NBG); Goudini, sandflats (IV, B, b), 330 m, (–CB), 08-01-1829, *Drege s.n.* (NY, P, SAM); Rawsonville, hillside opposite Florence farm, (–CB),

30-09-1975, *Walters 859* (NBG); Worcester Dist; Stettyn Mtns, lower E slopes on farm Stettyn, 600 m, (–CD), 27-10-1994, *Beyers 253* (NBG). Grid ref. unknown: Ceres Div., St. Sebastians Kloof on ground level, Sept. 1939, *Stokoe 7102* (BOL, NBG). Without locality: *Ecklon & Zeyher PRE 12303* (PRE); *Liehmans s.n.* (NY).

38b. subsp. ***incana*** *Beyers*, subsp. nov. a subsp. *globulifera* habitu repullante, ramulis incanis, distributione magis septentrionali differt.

TYPE.—Western Cape, 3219 (Wuppertal): Citrusdal, Middelberg, stony, sandy soil against a rocky incline, (–CA), 3-11-1997, *Hanekom 2939* (NBG, holo!; BOL!, K!, MO!, NY!, PRE!, S!, Z!, iso.).

L. globulifera var. *coerulescens* Eckl. & Zeyh. ex Meisn. in A.P. de Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 576 (1857); C.H. Wright: 24 (1915). Type: [80] *Gonophylla coerulescens* [Clanwilliam, mountains at Brakfontein, July = 76.7], *Ecklon & Zeyher s.n.*, (NY, holo!; S!, SAM!, Z!, iso.).

Slender, erect or decumbent shrub, 0.3–0.6–(1.0) m tall, single-stemmed or multistemmed at base; resprouter. *Branches* felted, the older glabrescent. *Leaves* scattered, internodes half to three-quarters length of leaves, narrowly elliptic to lanceolate, 4.4–7.3 × 0.9–1.7 mm; bract-like leaf pair subtending bracteate inflorescence, ovate to elliptic, 3.7–5.3 × 1.9–3.5 mm, glabrous or towards abaxial margins adpressed pillose. *Inflorescence* 5.0–20.0 mm in diameter. *Involucral bracts* ovate to elliptic to widely elliptic, 4.0–5.7 × 2.0–3.7 mm, glabrous or towards abaxial margin adpressed pillose. *Hypanthium* 3.2–4.5 mm long, circumscissile two-fifths to three-fifths from base, basal portion outside puberulent in upper half, trichomes variable, ellipsoid to ± clavate or acicular as in upper portion. *Sepals* ovate, elliptic to widely elliptic or rotund, 2.6–3.8 × 1.7–2.7 mm, apex acute, rounded or obtuse. *Ovary* ovoid to obovoid, 0.8–1.2 mm long.

Distribution and ecology

The known distribution of *L. globulifera* subsp. *incana* extends from the Pakhuis Mountains in the north near Clanwilliam southwards to the Agter Witzenberg Flats in the Ceres District. It seems to occur in sandy or stony soil at altitudes between 650 and 1665 m

(Figure 7.76). Flowering has been recorded in all the months of the year with the exception of June.

Conservation status: Lower Risk Least Concern (LRlc).

Diagnostic characters and relationships

Differs from the typical subspecies in resprouting after a fire and in having branches which are white-felted, at least when young. The two subspecies are allopatric.

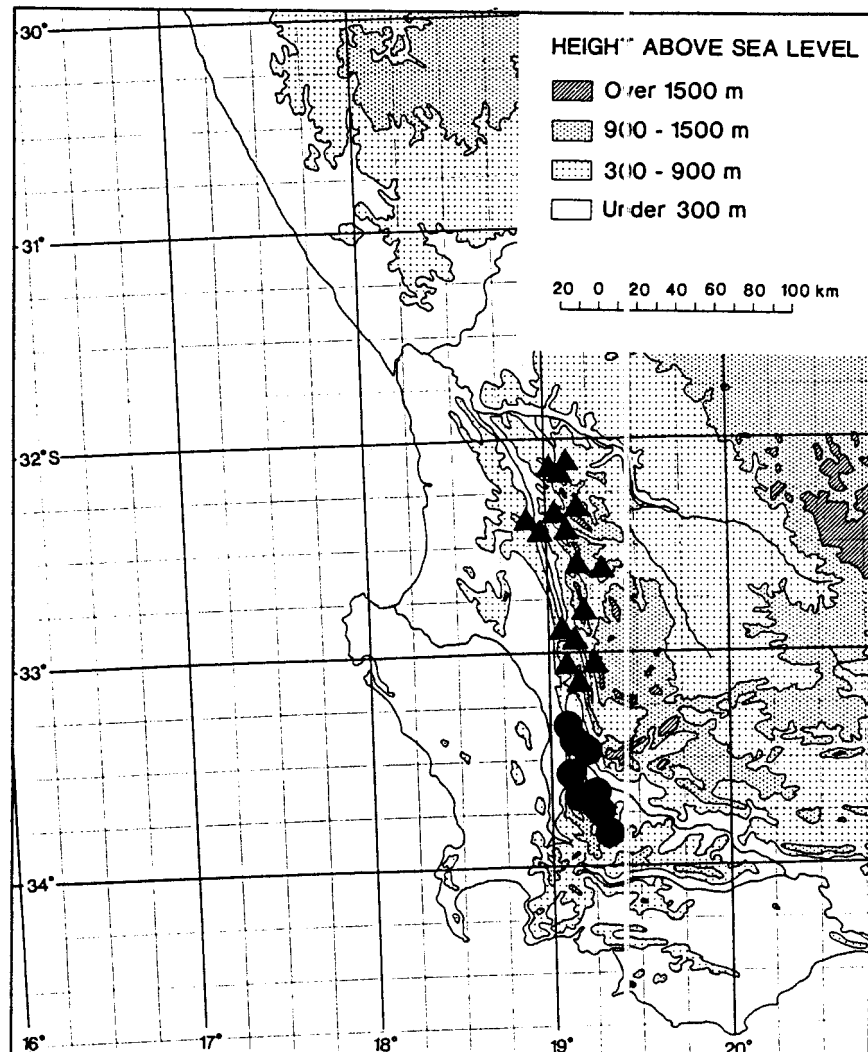


FIGURE 7.76—Known distribution of *Lachnaea globulifera* subsp. *globulifera* (●); and *L. globulifera* subsp. *incana* (▲).

Specimens examined

WESTERN CAPE.—3218 (Clanwilliam): Clanwilliam, Olifantsrivier and Brakfontein, (–BD), Jul., *Ecklon & Zeyher* 76.7 (NY, Z); Clanwilliam, mountains at Brakfontein, (–BD), Jul., *Ecklon & Zeyher* 80 (NY, S, SAM); Clanwilliam, N slopes of Skimmelberg, (–BD), 12-10-1939, *Pillans* 9099 (BOL).
—3219 (Wuppertal): Clanwilliam, Cederberg [precise locality unknown], Nov. 1913, *Pattison* BOL 14474 (BOL); Pakhuis Pass, 1000 m, (–AA), 29-09-1940, *Compton* 9551 (NBG); *ibid.*, Jan. 1935, *Leipoldt* BOL 46890 (BOL); *ibid.*, Oct. 1925, *Leipoldt* STEU 25888 (NBG); plateau S of Pakhuis Pass, 650 m, (–AA), 28-10-1956, *Dahlgren & Peterson* 896 (NBG); Pakhuis, SE slopes, (–AA), 29-09-1940, *Esterhuysen* 3303 (BOL); *ibid.*, 28-12-1941, *Esterhuysen* 7400 (BOL); *ibid.*, 1000 m, 28-12-1948, *Esterhuysen* 14977 (BOL, NBG); *ibid.*, 1000 m, 07-09-1953, *Esterhuysen* 21759 (BOL); *ibid.*, sandy plateau, 830 m, 12-10-1953, *Esterhuysen* 21915 (BOL); *ibid.*, slopes and plateau, 1000 m, 12-10-1953, *Esterhuysen* 21930 (BOL); *ibid.*, mountain, 1165 m, Dec. 1940, *Leipoldt* 3502 (BOL); *ibid.*, N of pass, rocky edge of vlaktes, ± 1050 m, 12-08-1983, *Taylor* 10601 (NBG); Cederberg, Heuning Vlei, (–AA), Dec. 1942, *Stokoe* SAM 58596 (SAM); North Cederberg, gully above Kliphuis, upper stony, rocky slope, ± 900 m, (–AA), 28-09-1983, *Taylor* 10728 (NBG); Pakhuis Peak, 1000 m, (–AA), September 1936, *Thorpe* SAM 52689 (SAM); Cederberg, Scorpionsberg, 1330–1665 m, (–AC), Jan. 1930, *Barnard* SAM 48247 (SAM); Clanwilliam Dist., Uitkyk Pass, (–AC), 16-12-1941, *Bond* 1414 (NBG); Cederberg State Forest, slopes of Grootberg, above Nieuwoudt's Pass Rd, 600 m, (–AC), 27-10-1989, *Brown* 575 (NBG); *ibid.*, 08-08-1984, *Le Maitre* 384 (NBG); *ibid.*, *Le Maitre* 385 (NBG); 3 km W of Algeria, (–AC), 04-11-1956, *Dahlgren & Peterson* 1036 (NBG); *ibid.*, *Dahlgren & Peterson* 1037 (K, NBG); Cederberg, Uitkyk Peak, (–AC), 16-12-1941, *Esterhuysen* 7371 (BOL); South Cederberg, Duiwelsgat (Sneeuberg area), 1000 m, (–AC), 11-10-1946, *Esterhuysen* 13137 (BOL); Cederberg, top of Heksekloof above Algeria, (–AC), 02-11-1974, *Goldblatt* 3263 (NBG); 3 km S of Algeria, rocky sandstone slope, (–AC), 10-11-1979, *Goldblatt* 5319 (S); Clanwilliam, Middelberg, near the Grootkloof Valley, sandy soil, (–AC), Aug. 1891, *Leipoldt* 897 (SAM, NBG, BOL, Z); slopes leading up from Algeria to Middelberg plateau, 1000 m, (–AC), 00-09-1927, *Levy's* 2223 (BOL); Cederberg, Koupoort, 1000–1330m (–AC), 22-10-1923, *Pocock* 542 (NBG); Cederberg near Algeria, (–AC), 03-09-1938, *Salter* 7572 (BOL); Algeria Forest Station., Nieuwoudt's Pass, W of labourers' quarters, (–AC), 15-11-1976, *Spreeth* 148 (NBG); Algeria Forest Station, (–AC), Mar. 1940, *Stokoe* SAM 58597 (SAM); *ibid.*, 15-11-1996, *Van Rooyen, Steyn & De Villiers* 127 (NBG); Cederberg, slopes above Lookout on Vensterberg slopes in Algeria Valley, ± 1320 m, (–AC), 23-06-1984, *Taylor* 10971 (NBG); Middelberg, 1665 m, (–AC), 20-08-1982, *Viviers* 511 (NBG); Syferfontein, summit Maraisberg, (–AC), 08-05-1984, *Viviers* 1324 (NBG); S Cederberg; lower slopes SW of Kafferskop above farm Ysterplaat, 1000 m, (–CA), 13-10-1994, *Beyers* 246 (NBG); Ceres Dist., De Straat, 930 m, (–CA), 26-09-1936, *Compton* 6543 (NBG); *ibid.*, 09-12-1940, *Compton* 10096 (NBG); Ceres Dist., Elandskloof, 1665 m, (–CA), 30-09-1944, *Compton* 16198 (NBG); Elandskloof, E-end, (–CA), 09-12-1940, *Esterhuysen* 3959 (BOL); Citrusdal Dist., lower slopes of Elands Pass, (–CA), 04-08-1974, *Goldblatt* 2236 (NBG); *ibid.*, slopes, 1330 m, 15-12-1935, *Levy's* 5118 (BOL); *ibid.*, Dec. 1940, *Stokoe* SAM 58595 (NBG, SAM); Citrusdal, Middelberg, stony, sandy soil against a rocky incline, (–CA), 3-11-1997, *Hanekom* 2939 (BOL, K, MO, NBG, NY, PRE, S, Z); near Waterval between Citrusdal and Elandskloof, (–CA), Aug. 1940, *Stokoe* 8030 (BOL); Cederberg, foothills of Sneeuberg, (–CA),

Jan. 1945, *Stokoe SAM 58598* (SAM); between Grootrivier and Elands-kloof, (–CA/CB), Oct. 1939, *Leipoldt 3503* (BOL); Gideonskop, (–CB), 22-04-1957, *Stokoe NBG 101814* (NBG); Porterville Mtns, Berghof farm, deep, dry, sandy soil near stream, ± 2665 m, (–CC), 28-10-1972, *Boucher 1990* (NBG); Cardouw Pass, 1000 m, (–CC), 04-11-1951, *Maguire 1214* (NBG); Porterville Mtns, NW end of Zuurvlaakte, 1130 m, (–CC), 28-09-1972, *Oliver 3949* (NBG); Berghof, Cardouw, Porterville Plateau, (–CC), 02-11-1976, *Spreeth 142* (NBG); *ibid.*, *Spreeth 145* (NBG); Skurftberg on Visgat, W slopes overlooking Olifants River, ± 900 m, (–CC), 05-11-1973, *Taylor 8644* (NBG); Koue Bokkeveld, S of Hexberg, 1260 m, (–CC), 04-12-1989, *Taylor 12097* (NBG).

—3319 (Worcester): on road to Visgat, Agterwitzenberg Flats, (–AA), 29-10-1977, *Emdon 256* (NBG); Piketberg Div., Twenty Four Rivers Mtns above Porterville, (–AA), 23-10-1949, *Esterhuysen 16584* (BOL); Visgat vicinity, flat area, ± 800 m, (–AA), 02-02-1980, *Hugo 2210* (NBG); Piketberg Dist., mountain above Porterville, (–AA), Dec. 1957, *Loubser 1046* (NBG); Groot Winterhoek, W-facing slopes above De Tronk, ± 1100 m, (–AA), 05-10-1980, *Low 1089* (NBG); road between Rosendalfontein and Visgat, (–AA), 25-11-1941, *Pillans 9676* (BOL); Ceres Div., Visgat, between Schurftberg and Groot Winterhoek Mtns, (–AA), Oct. 1953, *Stokoe SAM 63186* (SAM); Ceres Dist., 6 miles from Visgat towards De Vlakte, 665 m, (–AA), 30-12-1962, *Taylor 4561* (NBG); Tulbagh Dist., E slopes of Witzenberg, (–AC), Dec. 1919, *Andreae 192* (NBG); Ceres Dist., Witzenberg Vlakte, (–AC), 11-01-1960, *Esterhuysen 28395* (BOL). Grid ref. unknown: Cederberg, 15-05-1972, *Andrag 5* (NBG); Ceres Wild Flower Show, 09-10-1990, *Comm. Cillie* (NBG); *ibid.*, 05-10-1936, *Comm. Compton 6711* (NBG); mtns near Porterville, [precise locality unknown], Feb. 1912, *Edwards BOL 14447* (BOL).

39. ***L. montana* Beyers**, sp.nov. primo aspectu *L. eriocephalae* similis, sed distincta inflorescentia bracteata, foliis bracteatis bracteisque involucretis eciliatis, sepalis plerumque plus minusve regularibus, sepalo anteriore ubi irregulari nunquam duplo sepalo posteriore, squamis linearibus in ore hypanthii pilis non tectis.

TYPE.—3218 (Clanwilliam): Piketberg Mountain, farm Vergesig, northwest of homestead on west slope, 765 m, (–DC), 7-09-1997, *Beyers 267* (NBG, holo.!, BOL!, K!, MO!, PRE!, iso.).

Erect, moderately branched shrub up to 0.6 m tall, single-stemmed at base; reseeder. *Branches* ascending to inclined, semi-rigid, terete, at first covered with short, crisped or straight hairs later glabrescent, leafy, becoming naked without prominent leaf-scars. *Leaves* decussate, adpressed or ascending, scattered with internodes quarter to three-quarters as long as leaves, sessile, epistomatic, narrowly elliptic or lanceolate, 4.2–15.0 × 1.0–2.4 mm, coriaceous, glabrous, adaxially concave, enervate, ± white-punctulate, dull, abaxially convex, enervate or subkeeled towards apex, glossy, apex mucronate, base

rounded; distal leaf pair subtending inflorescence bract-like, elliptic or obovate, 6.5–12.0 × 3.5–8.5 mm, coriaceous, green, adaxially concave, glabrous, abaxially convex, keeled, glabrous to tomentose abaxially, margin membranous, more so in upper half, yellow tinged maroon, apex mucronate or cuspidate, base cuneate. *Inflorescence* a terminal, sessile, bracteate, up to ± 40-flowered, capitate-like umbel with up to 20 open flowers at a time, up to 30 mm in diameter, on main flowering branches or also on a few short lateral branches immediately below main inflorescence forming a compact glomerule at apex of main flowering branch; bracteate umbel appears to be enclosed at base by 2 pairs of involucrel bracts but only 1 pair immediately below flowers may be regarded as true bracts as vegetative shoots develop in axils of subdistal pair. *Involucrel bracts* 2, elliptic to widely ovate or obovate, 7.5–12.0 × 4.0–6.0 mm, coriaceous, green, adaxially concave, glabrous, abaxially convex, keeled, glabrous to tomentose abaxially, margin membranous, more so in upper half, yellow tinged maroon, apex mucronulate or cuspidate, base cuneate. *Flowers* ± actinomorphic, cream, mauve or dirty violet, pedicellate. *Pedicel* linear, abaxially elongated beyond the insertion of the flower, 0.8–3.5 mm long, densely villous, elongating in fruiting stage. *Hypanthium* 7–17 mm long, circumscissile fifth to third-way from base, upper portion narrowly funnel-shaped, sericeous or sericeous-hirsute outside, sericeous within, basal portion narrowly ellipsoid to ovoid, outside puberulent in upper quarter, rest glabrous, glabrous within. *Sepals* patent, ± equal to subequal, adaxially glabrous, abaxially sericeous, narrowly elliptic to elliptic, 3.5–8.0 × 1.5–4.0 mm, acute to rounded. *Stamens* exserted, outer, antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 2.2–4.7 mm long, inner 1.2–3.1 mm long; anthers ellipsoid, 0.8–1.2 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, linear, 0.4–2.1 mm long, glabrous, translucent in fresh state. *Ovary* narrowly ellipsoid to obovoid, 1.1–2.3 mm long, glabrous. *Style* linear, 5.5–16.0 mm long, sericeous in upper half to upper three-quarters, rest glabrous. *Stigma* brush-like (Figure 7.77).

Distribution and ecology

Lachnaea montana has a disjunct distribution. It is known from the Piketberg Mountain in the west, the Hex River Mountains south and southeast of Ceres and the Keeromsberg northeast of Worcester, at altitudes between 765 and 2330 m. It grows in

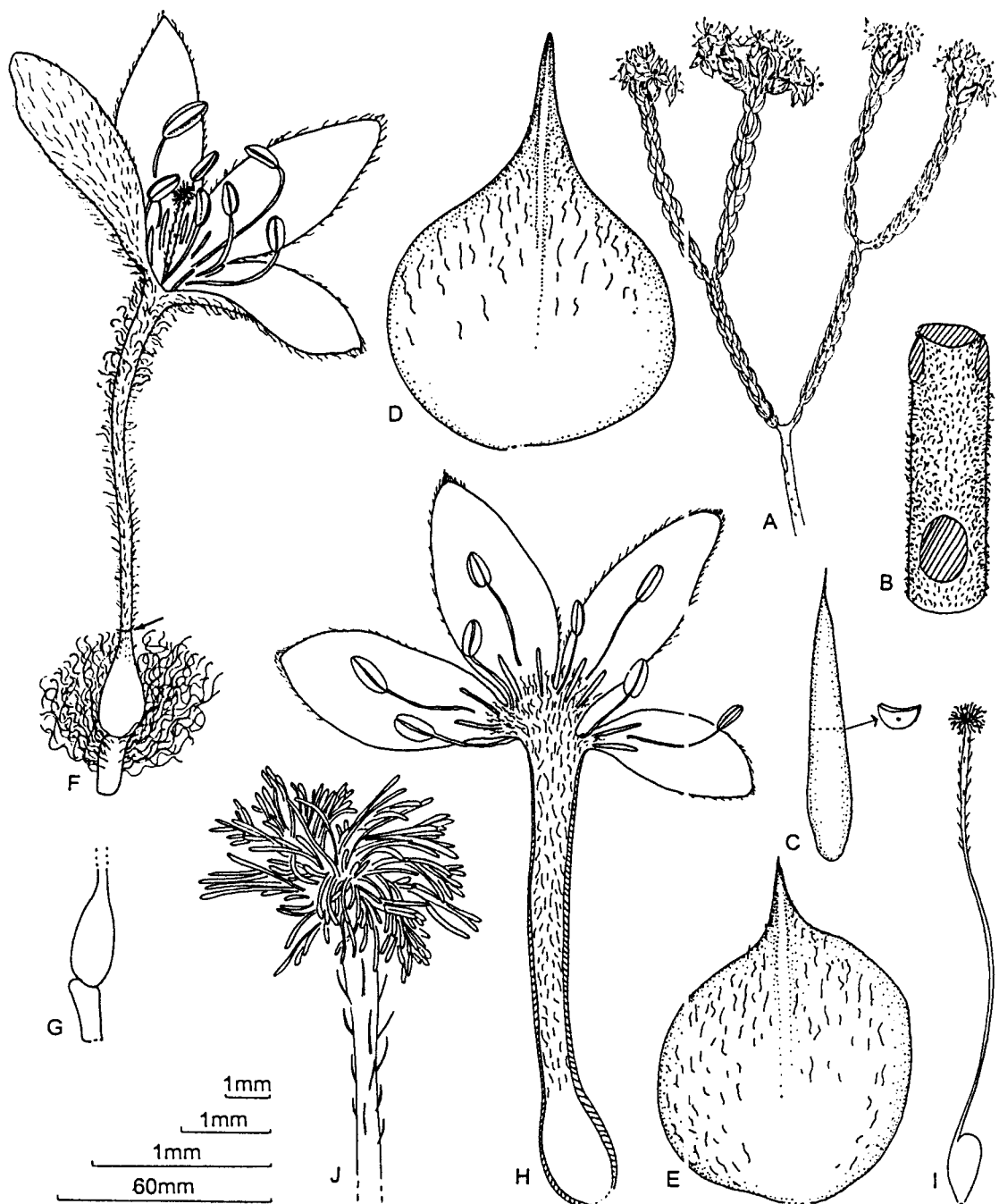


FIGURE 7.77—*Lachnaea montana*. A, portion of plant; B, branch with leaves removed; C, leaf (abaxial view and cross section); D, bract-like leaf from pair subtending inflorescence; E, involucral bract; F, flower, note circumscription zone (arrowed); G, pedicel abaxially produced beyond point of attachment of flower (lateral view); H, flower split longitudinally with gynoecium removed; I, gynoecium; J, stigma and upper portion of style. A, *Beyers 141* (NBG); B–J, *Beyers 267* (NBG).

stony soils probably derived from shale (Figure 7.78). Flowering has been recorded in September to February.

Conservation status: Lower Risk Near Threatened (L.Rnt). The localised and scattered distribution of the populations puts the species at risk.

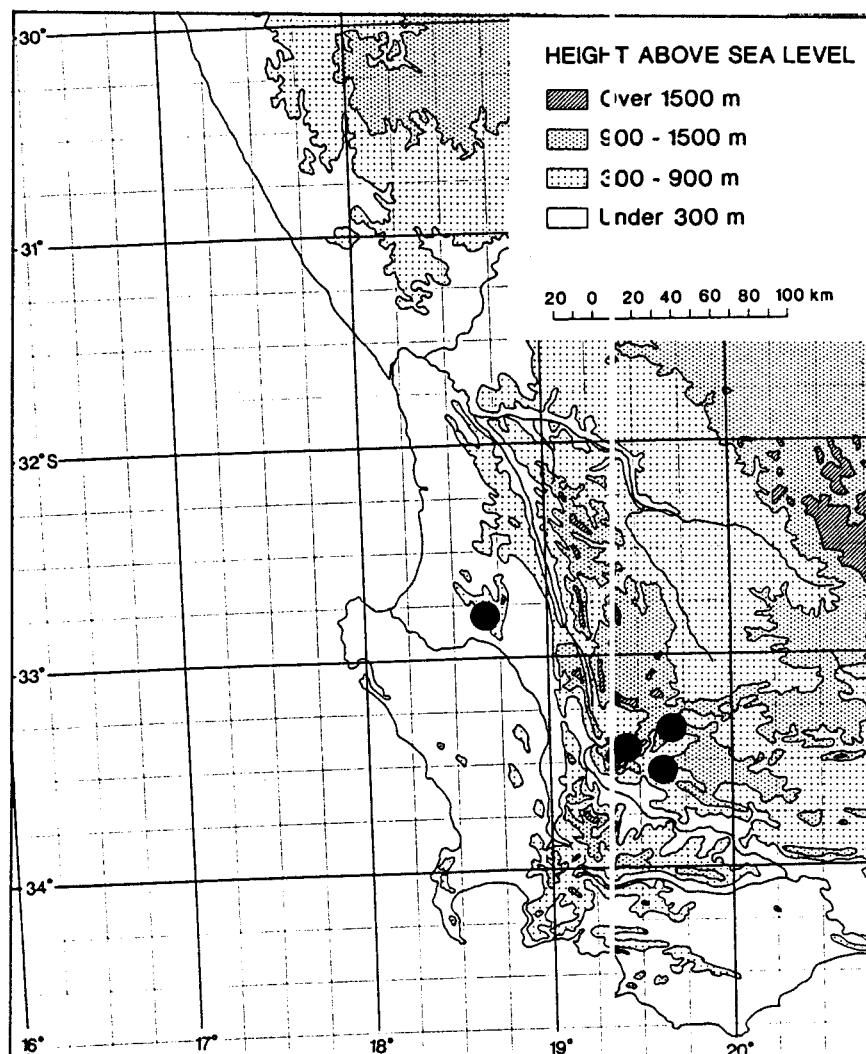


FIGURE 7.78—Known distribution of *Lachnaea montana*.

Diagnostic characters and relationships

Lachnaea montana superficially resembles *L. eriocephala*, but is easily recognised by its bracteate inflorescence, bract-like leaves and involucre bracts which are eciliate, sepals usually more or less regular (when irregular, anterior sepal never twice the size of the posterior one), and linear scales not obscured by hairs in mouth of hypanthium. It is allied to *L. globulifera*, from which it differs by the membranous, eciliate involucral bracts, narrowly elliptic to elliptic sepals and the linear scales which are not obscured by hairs in

the mouth of the hypanthium. It is also closely related to *L. pedicellata*, from which it can be distinguished by the larger flowers and the linear, villous pedicels.

Specimens examined

WESTERN CAPE.—3218 (Clanwilliam): Piketberg, (–DC), Sept. 1921, *Anon STEU 10205* (NBG); *ibid.*, *Anon STEU 10206* (NBG); Piketberg Mountain, farm Vergesig, north-west of homestead on west slope, 765 m, (–DC), 7-09-1997, *Beyers 267* (BOL, K, MO, NBG, PRE); *ibid.*, from flower show, 400 m, 07-09-1929, *Krige STEU 10529* (NBG); *ibid.*, from flower show, *Krige STEU 10539* (NBG).
—3319 (Worcester): Ceres Dist., Ceres Flower Show [precise locality unknown], 13-10-1989, *Beyers 141* (K, MO, NBG, PRE) and *Beyers 142* (NBG); in grassy mountain, "Hex River" [precise locality unknown], Dec. 1895, *Marloth 2231* (PRE); Worcester Div., Waaihoek Mtns, S slope, 1665 m, (–AD), 15-12-1942, *Esterhuysen 8304* (BOL); Hex River Mtns, Buffelshoek Peak, 2000 m, (–AD), 25-12-1942, *Esterhuysen 8421* (BOL); *ibid.*, shale band below Milner Peak, 1830 m, 11-11-1943, *Esterhuysen 9315* (BOL); *ibid.*, Milner Peak, SW aspect, 2000 m, *Esterhuysen 35524* (BOL, S); Waaihoek Peak, 2000 m, (–AD), 25-12-1950, *Esterhuysen 18234* (BOL); *ibid.*, stony SW slopes, 1665–2000 m, 03-11-1953, *Esterhuysen 22225* (BOL); Matroosberg, 1930 m, (–BC), 02-01-1897, *Bolus A. sub Herb. Guthrie 4390* (NBG); *ibid.*, W slopes, shale band, 2000 m, 08-11-1964, *Esterhuysen 30826* (BOL); *ibid.*, beside beacon, in shadow of large rocks, 1900 m, 10-12-1981, *Kotze 114* (NBG); *ibid.*, Spekrivierkloof, 1600 m, 10-12-1981, *Kotze 115* (NBG); *ibid.*, Spekrivierkloof, 1800 m, *Kotze 118* (NBG); *ibid.*, in grassy mountain, 1700 m, Dec. 1895, *Marloth 2263* (PRE); *ibid.*, 1800 m, Dec. 1895, *Marloth 2356* (BOL); *ibid.*, near Lalen Vlei, 2330 m, 03-12-1917, *Phillips 2049* (SAM); *ibid.*, rocky NW slopes, well drained TMS amongst low fynbos, 2105 m, 10-12-1981, *Winter 248* (NBG, PRE); Ceres Div., Roodeberg, lower slopes of shale band, ± 1665 m, (–BC), Jan. 1940, *Esterhuysen 1582* (BOL); *ibid.*, shale band on W slopes, (–BC), 1830 m, 02-12-1947, *Esterhuysen 14188* (BOL); Ceres Dist., slopes of Valsch Gat Kloof between Roodeberg and Matroosberg, ± 1665 m, (–BC), 11-10-1962, *Esterhuysen 29730* (BOL, S); Ceres Dist., Bokkerivier Farms, ridge on top of Roodeberg Mtns, (–BC), 10-11-1963, *Woods s.n.* (NBG); Worcester Div., Keeromsberg, SW side, 1333 m, (–DA), 07-11-1943, *Esterhuysen 9201* (BOL). Grid ref. unknown: Piketberg & Clanwilliam exhibit, Cape Town Flower Show, 08-10-1930, *Anon BOL 19276* (BOL). Locality unreliable: Hottentots Holland, Feb. 1921, *Stokoe 6462* (BOL). Locality uncertain: Ceres Div., probably Conical Peak, Dec. 1940, *Stokoe 8045* (BOL).

40. *L. pedicellata* *Beyers* sp. nov. *L. montanae* affinis sed ab ea differt floribus brevioribus, pedicellis dorsoventraliter complanatis et anguste obovatis ad obovatis apice plerumque emarginatis abaxialiter sericeis adaxialiter villosis.

TYPE.—3319 (Worcester): Ceres Dist., Waboomsberg, level area west of beacon, 1770 m, (–AD), 24-11-1995, *Beyers 260* (NBG, holo.; BOL!, K!, PRE!, iso.).

Passerina eriocephala Thunb. Prodr. plantarum capensium: 75 (1794); Thunb.: 375 (1823). Type: *Thunberg 9575* [*Passerina eriocephala*] (UPS, lecto. here designated, —NBG, photo!, —PRE, microfiche!; S! [*L. eriocephala* sub *Herb. Montinii*], S! [*L. eriocephala* sub *Herb. Alstroemerii*], isolecto.).

Erect, moderately branched shrub up to 0.6 m tall, single-stemmed at base, branching close to the ground; reseeder. Branches ascending to inclined, slender, lax, terete, at first covered with short, crisped or straight hairs, later glabrescent, leafy, becoming naked without prominent leaf-scars. *Leaves* decussate, adpressed to ascending, scattered with internodes a quarter to three-quarters as long as leaves, those below inflorescence crowded, sessile, epistomatic, linear to narrowly elliptic, $4.5\text{--}12.0 \times 0.8\text{--}1.5$ mm, those below inflorescence gradually broader, ovate, up to 2.5 mm wide coriaceous, glabrous, adaxially $\pm$ flat to concave, enervate, white-punctulate, dull, abaxially convex, enervate, glossy, apex mucronate, base rounded; distal leaf pair subtending inflorescence bract-like, obovate to widely obovate, $5.5\text{--}7.2 \times 3.2\text{--}5.0$ mm, coriaceous, glabrous, green, adaxially concave, glabrous, abaxially convex, keeled, margin membranous, more so in upper half, yellow usually tinged maroon, apex apiculate to cuspidate, base cuneate. *Inflorescence* a terminal, sessile, bracteate, $\pm$ 20-flowered, capitate-like umbel with up to 8 open flowers at a time, up to 15.0 mm in diameter, on main flowering branches and also on a few short lateral branches immediately below main inflorescence forming a compact glomerule; bracteate umbel appears to be enclosed at base by 2 pairs of involucral bracts but only 1 pair immediately below flowers may be regarded as being true bracts as vegetative shoots develop in axils of subdistal pair. *Involucral bracts* 2, elliptic, or obovate to widely obovate occasionally emarginate, $6.0\text{--}7.5 \times 3.0\text{--}7.0$ mm, coriaceous, glabrous, green, adaxially concave, abaxially convex, keeled, margin membranous, more so in upper half, yellow usually tinged maroon, apex mucronulate or shortly cuspidate, base cuneate. *Flowers* $\pm$ actinomorphic, cream, pedicellate. *Pedicel* dorso-ventrally flattened, abaxially produced beyond point of attachment of flower, narrowly obovate to obovate in outline, 0.9–3.0 mm long, elongating in fruiting stage, adaxially sericeous, abaxially villous, apex usually emarginate. *Hypanthium* 3.0–4.4 mm long, circumscissile a third to midway from base, upper portion narrowly funnel-shaped, sericeous on both sides, basal portion ellipsoid, outside puberulent in upper quarter, rest glabrous, within glabrous. *Sepals* patent, $\pm$ equal, adaxially glabrous, abaxially sericeous, elliptic to widely elliptic or widely ovate to very widely ovate, $2.1\text{--}3.8 \times 1.6\text{--}2.6$ mm, rounded to obtuse. *Stamens* exserted, outer,

antisepalous whorl inserted at base of sepals, inner, antipetalous whorl inserted at rim of hypanthium, shorter than outer whorl; filaments filiform, outer 1.2–3.1 mm long, inner 0.7–2.5 mm long; anthers ellipsoid to widely ellipsoid, 0.4–0.8 mm long, abaxially without broad connective tissue. *Scales* exserted, inserted at mouth of hypanthium immediately below antipetalous stamens, narrowly oblong or narrowly ellipsoid, 0.7–1.1 mm long, $\pm$ half to as long as antipetalous filaments, glabrous, pale yellow in fresh state. *Ovary* ellipsoid or obovoid 0.9–1.3 mm long, glabrous. *Style* linear or linear obconical, 3.0–4.3 mm long, sericeous in upper half to upper third, rest glabrous. *Stigma* brush-like (Figure 7.79).

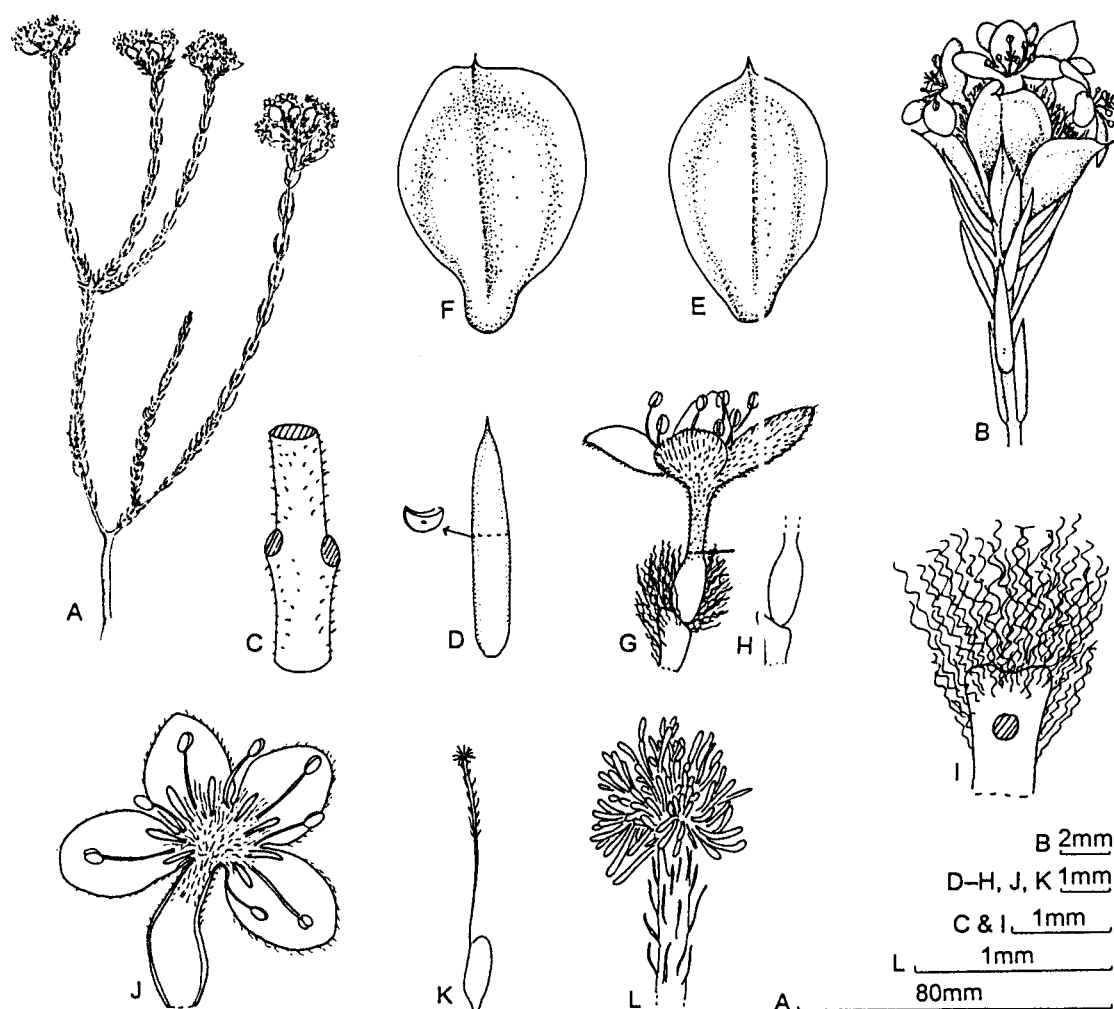


FIGURE 7.79—*Lachnaea pedicellata*, Beyers 260 (NBG). A, portion of plant; B, flowering branch; C, branch with leaves removed; D, leaf (abaxial view and cross section); E, bract-like leaf from pair subtending inflorescence; F, involucral bract; G, flower, note circumscission zone (arrowed); H, pedicel abaxially

produced beyond point of attachment of flower (lateral view); I, pedicel (adaxial view); J, flower split longitudinally with gynoecium removed; K, gynoecium; L, stigma and upper portion of style.

Distribution and ecology

Lachnaea pedicellata has been recorded from the Cold Bokkeveld at altitudes between 1760 and 1830 m, growing in sandy loam soil probably on underlying shale (Figure 7.80). Flowering has been recorded from October to January.

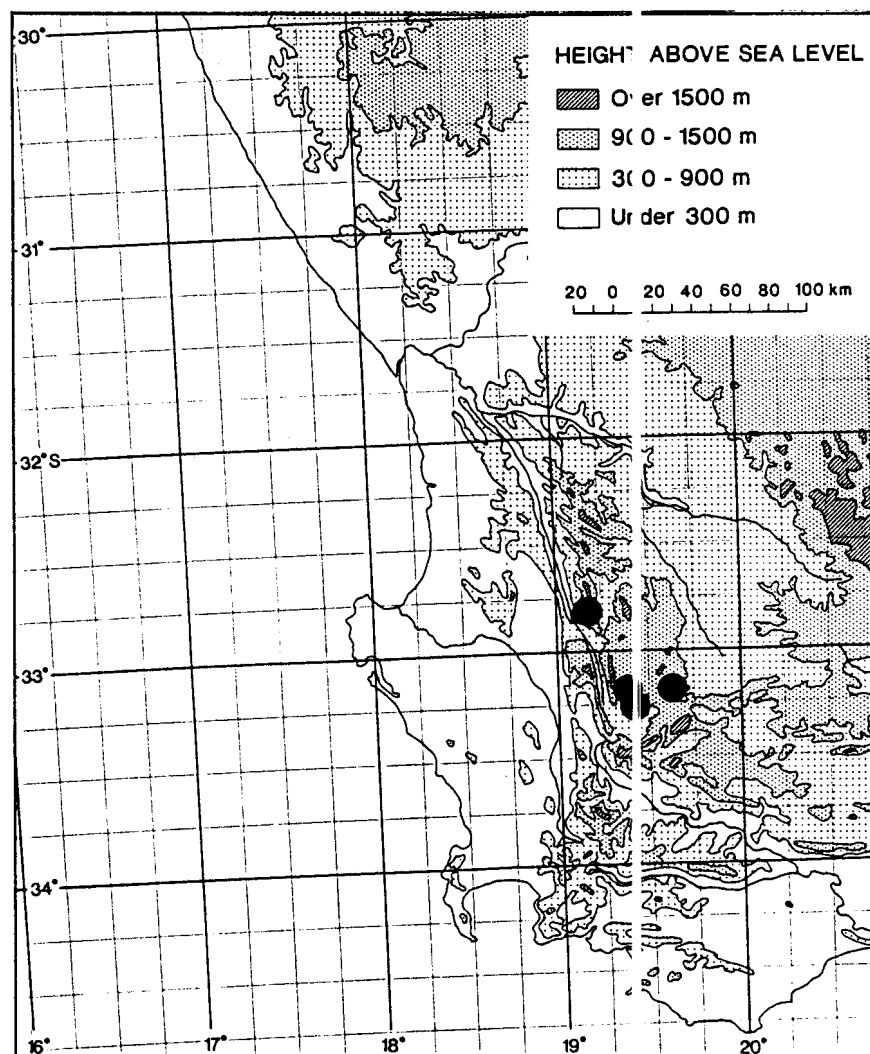


FIGURE 7.80—Known distribution of *Lachnaea pedicellata*.

Conservation status: Vulnerable (VU D2). Known from only a few collections most of which are old. It appears to be a localised species and being a reseeders, would be vulnerable to frequent fires.

Diagnostic characters and relationships

Lachnaea pedicillata is allied to *L. montana*, from which it is distinguished by the shorter flowers and the dorso-ventrally flattened pedicels which are narrowly obovate to obovate in outline with apex usually emarginate, sericeous abaxially, villous adaxially. The only other member of the genus with similar pedicels is *L. naviculifolia*.

Etymology

The distinct pedicels in this species, shared only by one other species in the genus, prompted the specific epithet which is derived from the Latin, *pedicellatus*.

Specimens examined

WESTERN CAPE.—3219 (Wuppertal): Koue Bokkeveld, on farm Appelfontein, (–CC), 09-10-1990, *Du Toit s.n.* (NBG, PRE).
—3319 (Worcester): Ceres, in vlakte [precise locality unknown], Sept. 1938, *Van der merwe s.n.* (NBG); Ceres mountains [precise locality unknown], Sept. 1924, *Marloth 625 ?* (PRE); Ceres Dist., Gydo, 1830 m, (–AB), 10-11-1946, *Compton 18719* (NBG); Ceres Div., Gydoberg, (–AB), 10-11-1946, *Leighton 2219* (BOL); Ceres Dist., Waboonsberg, level area W of beacon, 1770 m, (–AD), 24-11-1995, *Beyers 260* (BOL, K, NBG, PRE); *ibid.*, S of beacon, 1760 m, (–AD), 12-11-1989, *Oliver 9282* (NBG); Ceres Dist., Baviaansberg, 1830 m, (–BA), 02-01-1942, *Compton 12844* (NBG). Grid ref. unknown: Africa, *Thunberg [L. eriocephala* Linn. non Lam.] (S).

7.4 EXCLUDED SPECIES

Lachnaea ciliata (L.) Crantz, Institutiones rei herbariae: 1:9 (1766). *Passerina ciliata* L., Species plantarum, edn 1, 1:559 (1753) —description is inadequate and cited illustrations in the protologue are not *Lachnaea* species.

Lachnaea conglomerata L., Species plantarum, edn 1, 1:560 (1753)—*Phylica stipularis* L (Cafferty & Beyers 1999).

Lachnaea dodecandra (L.) Crantz, Institutiones rei herbariae: 129 (1766)—*Struthiola dodecandra* (L.) Druce in Report, Botanical Exchange Club of the British Isles 1913: 425 (1914).

Lachnaea dubia Gand., Bulletin de la Société Botanique de France 60: 417 (1913)—Type: Cape, Table Mountain, *Debeaux s.n.* (LY, holo!) identified as *Gnidia laxa* (L.f.) Gilg. *L. filiformis* (L.) Crantz, Institutiones rei herbariae: 129 (1766)—*Passerina filiformis* L., Species plantarum, edn 1, 1: 559 (1753); C.H. Wright: 10 (1915).

Lachnaea hirsuta (L.) Crantz, Institutiones rei herbariae: 129 (1766). *Passerina hirsuta* L., Species plantarum, edn 1, 1: 559—description inadequate, however according to the locality, 'Hispania', cited it is not a *Lachnaea* species.

Lachnaea laevigata (L.) Crantz Institutiones rei herbariae: 129 (1766). *Passerina laevigata* L., Species plantarum, edn 2, 1: 513 (1762)—*Gnidia oppositifolia* L. (Wright 1915).

Lachnaea sericea (L.) Crantz Institutiones rei herbariae: 129 (1766). *Passerina sericea* L., Species plantarum, edn 2, 1: 513 (1762)—*Gnidia sericea* (L.) L. (Wright 1915).

Lachnaea sphaerocephala Burm. f. Flora indica: 12 (1768) —the brief description indicates that this is not a *Lachnaea* species since none of the *Lachnaea* species has adpressed, twisted leaves.

Cryptadenia ciliata (Thunb.) Meisn. in Linnaea 14: 407 (1840). *Passerina ciliata* Thunb., Prodrum plantarum capensium, 1: 75 (1794) non L.: 559 (1753)—*Gnidia penicillata* Licht. ex Meisn. (Peterson 1959).