

Studies in the genus *Lotononis* (Crotalarieae, Fabaceae). 2. Three new species of the section *Telina* from the Cape Province

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ABSTRACT

Three new species of the section *Telina* (E. Mey.) Benth. of *Lotononis* (DC.) Eckl. & Zeyh. are described: *L. azureoides* B-E. van Wyk, *L. gracilifolia* B-E. van Wyk and *L. lamprifolia* B-E. van Wyk. These species appear to be very rare and are known from only a few localities in marginal fynbos areas of the south-western and southern Cape.

UITTREKSEL

Drie nuwe soorte van die seksie *Telina* (E. Mey.) Benth. van *Lotononis* (DC.) Eckl. & Zeyh. word beskryf: *L. azureoides* B-E. van Wyk, *L. gracilifolia* B-E. van Wyk en *L. lamprifolia* B-E. van Wyk. Hierdie soorte skyn baie skaars te wees en is bekend van slegs enkele lokaliteite in marginale fynbosgebiede van die Suidwes- en Suid-Kaap.

INTRODUCTION

The section *Telina* (E. Mey.) Benth. of *Lotononis* (DC.) Eckl. & Zeyh. comprises a group of prostrate or procumbent suffrutices easily recognized by their large, usually solitary flowers that are borne on long slender peduncles. The very large standard petal is a particularly useful diagnostic character.

Meyer (1836) included this group as one of three sections in his genus *Telina*, namely the section *Chasmonaeae*. When Bentham (1843) changed the status of *Telina* to a section of *Lotononis*, he excluded the sections *Cytisoides* and *Brachypodae* and referred both of these to the section *Krebsia* (Eckl. & Zeyh.) Benth. *Chasmonaeae* E. Mey. and *Telina* (E. Mey.) Benth. are therefore synonymous. Most of the species which Ecklon & Zeyher (1836) included in their concept of *Lotononis* belong to this section.

The section as circumscribed by Dümmer (1913) is not a natural group. Polhill (1973) and Van Wyk (1987) respectively, transferred *Lotononis bracteata* Benth. to *Pearsonia* Dümmer and *L. magnistipulata* Dümmer to *Argyrobium* Eckl. & Zeyh. Some more changes are necessary, but these will be motivated elsewhere (Van Wyk in prep.). My own concept of the group does not include *L. minor* Dümmer & Jennings, *L. macrocarpa* Eckl. & Zeyh., *L. solitudinis* Dümmer and *L. marlothii* Engl. It does however include the three new species that are described below.

Lotononis azureoides B-E. van Wyk, sp. nov., *L. azureae* Eckl. & Zeyh. similis, sed habitu denso ramossissimo, foliolis conduplicatis valde recurvatis, stipulis anguste lanceolatis, inflorescentiis subterminalibus (in speciebus omnibus aliis *Telinae* foliis oppositis) atque vexillo pro ratione parvo carinam aequanti (vexillum quam carina valde longius in speciebus omnibus aliis *Telinae*) differt.

TYPE.—Cape, 3222 (Beaufort West): Beaufort West, Karoo National Park, at Blouput on steep rocky and

bouldery sandstone slope (–BC), 2.11.1984, *Bengis* 442 (PRE, charta 1, holo.; PRE, charta 2, iso.).

Procumbent, densely branched shrublet, ± 0,3 m wide. *Branches* smooth, glabrous; twigs densely strigillose, conspicuously white at the ends. *Leaves* digitately trifoliolate; petiole (2–) 3–4 (–7) mm long; leaflets conduplicate, strongly recurved, obovate, (2–) 4–6 (–8) × (1–) 2–3 (–5) mm, abaxially strigillose, adaxially glabrous. *Stipules* consistently present, single at each node, elliptic-oblong to narrowly lanceolate, 2–3 (–5) mm long. *Inflorescences* terminal or subterminal on lateral branches, slender, long-pedunculate, 25–40 mm long, invariably single-flowered; bracts small, up to 1 mm long; bracteoles absent. *Flowers* 12–14 mm long, deep blue; pedicel 2–3 mm long. *Calyx* 7–8 mm long, with the upper and lateral lobes on either side fused higher up in pairs, minutely strigillose. *Standard* broadly ovate to orbicular, 11–13 mm long, with a line of hairs dorsally along the middle, deep blue with yellow at the base. *Wing petals* oblanceolate, slightly longer than the keel; apex obliquely truncate; sculpturing upper basal and upper left central, in 4 rows of inter- and intracostal lunae. *Keel petals* semicircular, obtuse, auriculate and pocketed near the base. *Anthers* dimorphic. *Pistil* 12–14 mm long; ovary linear, 8–10 mm long. *Fruit* (slightly immature) 20 × 4–5 mm, laterally much inflated, lower suture sunken, upper suture verrucose, surface wrinkled, glabrous. *Seed* unknown. Figure 1.

This species is similar to *L. azurea* Eckl. & Zeyh. but differs in the dense and much branched habit, the conduplicate and strongly recurved leaflets, the narrowly lanceolate stipules, the subterminal inflorescences (leaf-opposed in all other species of *Telina*) and the relatively small standard petal, which is as long as the keel (standard petal much longer than the keel in all other species of *Telina*). The flower structure is reminiscent of some species in the section *Polylobium* (Eckl. & Zeyh.) Benth., but the slender single-flowered inflorescence and the shape of the calyx and wing petals are typical of other species in the section *Telina*.

L. azureoides is known only from two collections from the Nuweveld Mountains at Beaufort West (Figure 2). It was found on a rocky south-eastern slope in grassy dwarf shrubland at an altitude of 1 600 m. The specific

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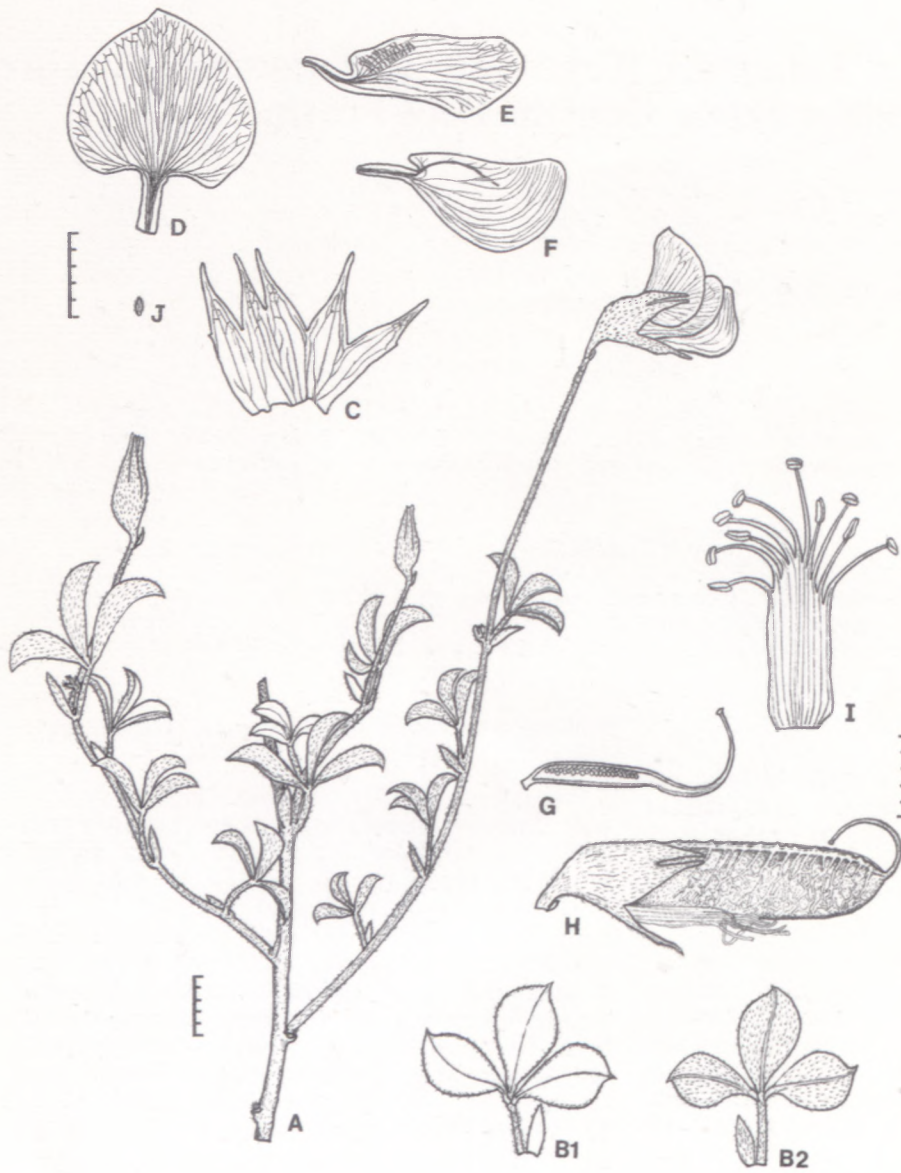


FIGURE 1.—*Lotononis azureoides*. A, flowering branch, showing the slender peduncles and conduplicate, recurved leaflets; B1, B2, leaves with leaflets opened out, showing the single stipule and sparsely strigillose vestiture: B1, adaxial view, B2, abaxial view; C, calyx opened out, with the upper lobes to the left, vestiture not shown; D, standard petal; E, wing petal; F, keel petal; G, pistil; H, fruit (slightly immature), showing the wrinkled surface and verrucose upper suture; I, androecium; J, bract (all from Bengis 442). Scales in mm.

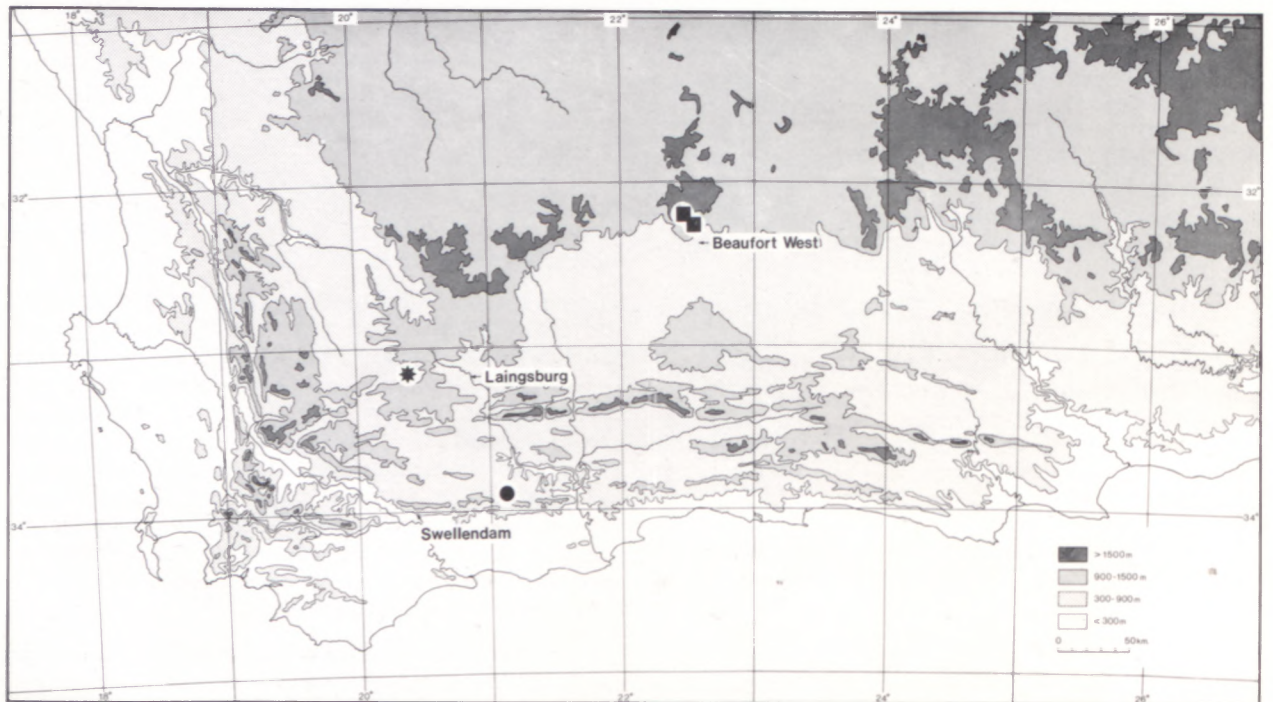


FIGURE 2.—The known geographical distribution of *Lotononis azureoides*, ■; *L. gracilifolia*, ★; and *L. lamprifolia*, ●.

epithet suggests a similarity with *L. azurea* Eckl. & Zeyh. which it superficially resembles, but the affinities of the species are not clear. More material is needed for a detailed study. Available evidence indicates that the *Telina*-type flower and inflorescence have evolved more than once from different lines in the sections *Aulacanthus* (E. Mey.) Benth. and *Polylobium*. The distinction between the latter two sections and indeed also the section *Telina* is becoming more and more obscured. Some newly discovered species such as *L. azureoides* have combinations of those characters previously used diagnostically for each of the three sections.

CAPE.—3222 (Beaufort West): Nuweveld Mountain, Mountain view, roadside near FM tower (-AB), *D. Shearing* 2.2.85 (private herbarium on the farm Layton, Fraserburg District); Beaufort West, Karoo National Park, at Blouput on steep rocky and bouldery sandstone slope (-BC), 2.11.1984, *Bengis* 442 (PRE, holo.; PRE, iso.).

Lotononis gracilifolia B-E. van Wyk, sp. nov., *L. argenteae* Eckl. & Zeyh. et speciebus aliis sectionis *Telinae* similis, sed distinctissima foliis gracilibus acicularibus, stipulis inconspicuis, lobis calycis subulatis. *L. dissitinodi* B-E. van Wyk (sectionis *Aulacanthus*) valde similis sed habitu nano suffrutescente, folio-

lis valde angustioribus, stipulis inconspicuis, pedunculis longioribus et lobis calycis angustissimis differt.

TYPE.—Cape, 3320 (Montagu): Laingsburg District, Tweedside (-AB), 27.9.1951, *Barker* 7482 (NBG, charta 2, holo.; NBG, charta 1, iso.).

Dwarf suffrutescent perennial up to 0,15 m tall. Branches procumbent from a central rootstock; sparsely branched and sparsely leafy; young twigs densely silky-sericeous. Leaves digitately trifoliolate, very slender, densely silky-sericeous; petiole up to 22 mm long; leaflets acicular, variable in length, (2-) 7-15 (-25) mm long, slightly conduplicate, almost terete. Stipules inconspicuous, caducous, rarely present, up to 0,5 mm long when present. Inflorescences subterminal or leaf-opposed on short lateral branches, 1-flowered, rarely 2-flowered; peduncle slender, variable in length, (3-) 20-50 (-60) mm long; bract small, oblong, up to 2 mm long; bracteoles absent. Flowers large, up to 18 mm long, yellow; pedicel 2-4 mm long. Calyx 10-13 mm long; lobes long, subulate, with the lateral ones on either side fused higher up in pairs, densely sericeous. Standard very large, broadly ovate to orbicular, 18-20 mm

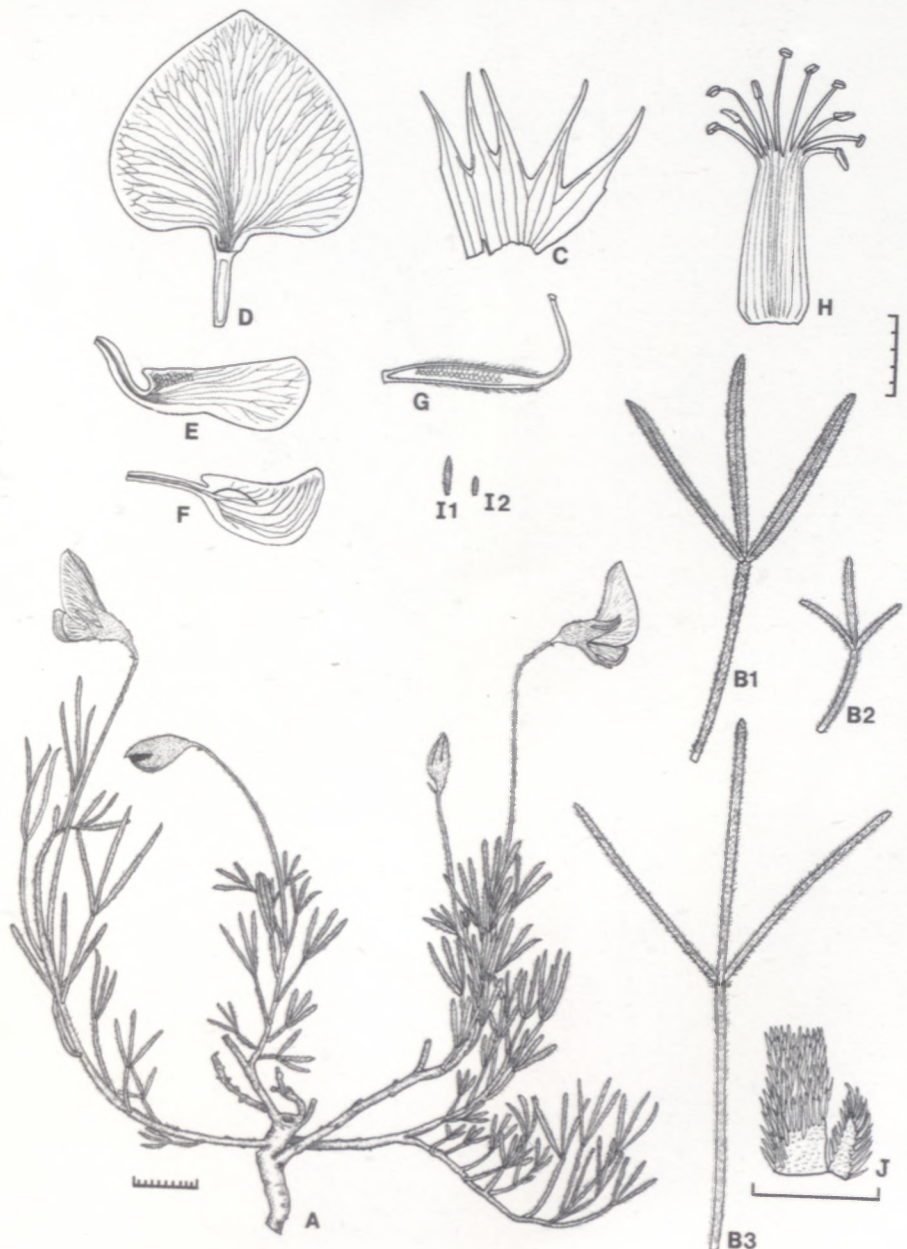


FIGURE 3.—*Lotononis gracilifolia*.

A, habit, showing the procumbent flowering branches, acicular leaves and slender peduncles; B1, leaf in adaxial view, with leaflets opened out, B2, B3, leaves in abaxial view, showing variation in size, leaflets not opened out; C, calyx opened out with upper lobes to the left, showing fusion of the lateral lobes; D, standard petal; E, wing petal; F, keel petal; G, pistil; H, androecium; I1, I2, bracts; J, petiole base with vestiture partly removed to show the single, inconspicuous stipule (all from *Barker* 7482). Scales in mm.

long, with hairs dorsally along the middle. *Wing petals* as long or slightly longer than the keel, oblanceolate, ± 15 mm long; apex obliquely obtuse; sculpturing upper basal, in 3–4 rows of mostly intercostal lunae. *Keel petals* semicircular, obtuse, auriculate and pocketed near base. *Anthers* dimorphic. *Pistil* long; ovary linear, ± 10 mm long. *Fruit* and *seed* unknown. Figure 3.

This species is similar to *L. argentea* Eckl. & Zeyh. and other species of the section *Telina*, but it is very distinct in the acicular leaflets, the inconspicuous stipules and the subulate calyx lobes. It is remarkably similar to *L. dissitinodis* B-E. van Wyk (section *Aulacanthus*), but differs from this species in the dwarf and suffrutescent habit, the much narrower leaflets, the inconspicuous stipules, the longer peduncles and the very narrow calyx lobes.

L. gracilifolia appears to be a very rare species and is only known from the type collection (Figure 2). I have so far been unable to locate the plant. The slender, acicular leaves are a useful diagnostic character and the species is unlikely to be confused with any other. This very distinctive character has suggested the specific epithet.

CAPE.—3320 (Montagu): Tweedside, Laingsburg (–AB), 27.9.1951, *Barker 7482* (NBG, holo.; NBG, iso.).

Lotononis lamprifolia B-E. van Wyk, sp. nov., *L. argenteae* valde affinis, sed habitu diffusiore, stipulis obovatis foliis valde similibus (in *L. argentea* linearibus vel lanceolatis), floribus flavis (in *L. argentea* caeruleis) et vexillo depresso ovato (in *L. argentea* late ovato vel orbiculato; etiam *L. acuminatae* Eckl. & Zeyh. similis, sed ab hac specie indumento dense sericeo et petiolis valde longioribus differt.

TYPE.—Cape, 3321 (Ladismith): Riversdale and Swellendam Districts, between Muiskraal and Lemoenshoek (–CC), 6.8.1951, *Barker 7374* (NBG, holo.).

Dwarf suffrutescent perennial $\pm 0,2$ m tall. *Branches* sparse, woody at the base; young twigs densely sericeous. *Leaves* digitately trifoliolate, densely and silvery sericeous; petiole relatively thick, variable in length, 3–4 (–10) mm long, leaflets oblanceolate to obovate, (3–) 4–5 (–8) mm long, slightly conduplicate, thick in texture. *Stipules* present or absent; when present closely resembling the leaflets in shape, size and vestiture, usually single to each node, strongly persistent. *Inflorescences* leaf-opposed on short lateral branches, invariably single-flowered; peduncle slender, 18–35 mm

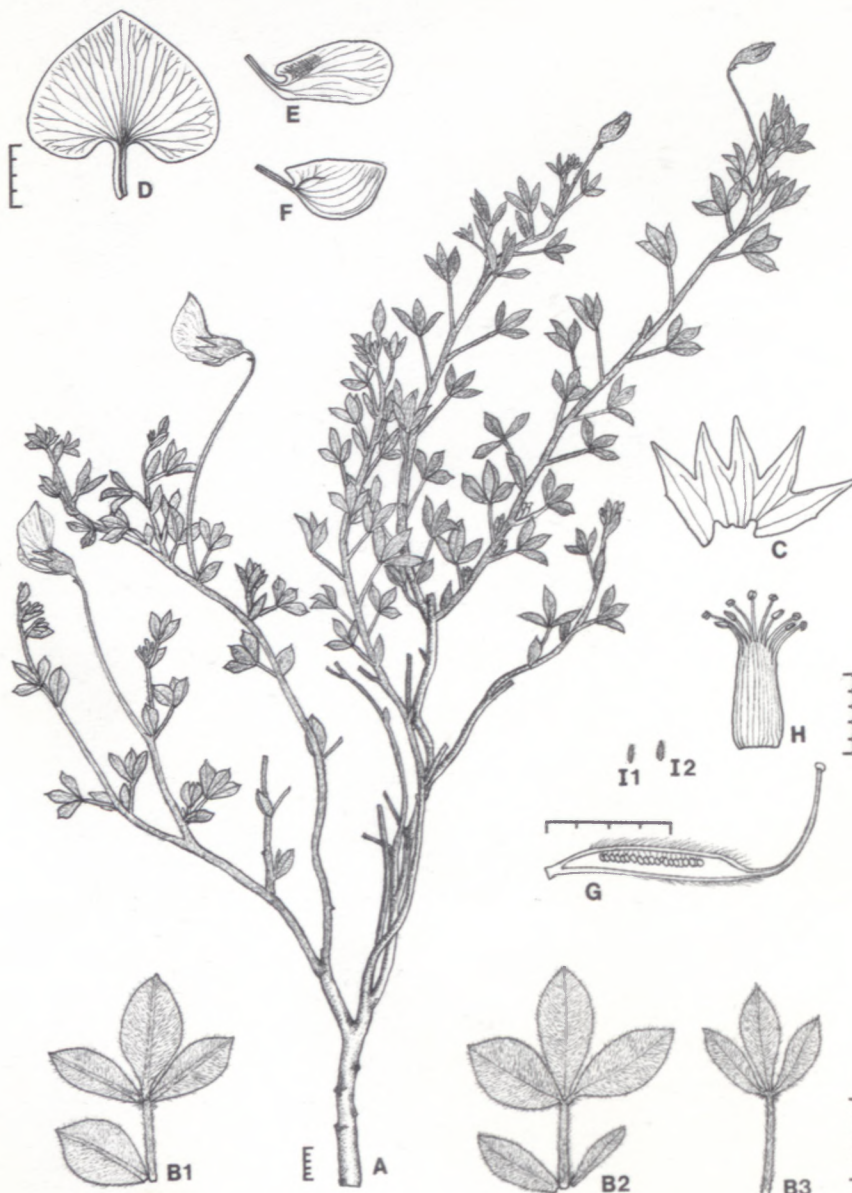


FIGURE 4.—*Lotononis lamprifolia*. A, habit; B1, B2, B3, leaves: B1, abaxial view, showing the single stipule and sericeous vestiture; B2, adaxial view, showing paired stipules; B3, adaxial view, stipules absent; C, calyx opened out, upper lobes to the left, showing the very slight fusion of the lateral lobes; D, standard petal (note the shape); E, wing petal; F, keel petal; G, pistil; H, androecium; I1, I2, bracts (all from *Barker 7374*). Scales in mm.

long; bracts small, oblong, ± 1 mm long; bracteoles absent. *Flowers* 10–12 mm long, yellow; pedicel 1–2 mm long. *Calyx* 6–7 mm long; lobes triangular, with the lateral ones on either side fused only slightly higher up in pairs, densely sericeous. *Standard* large, broadly depressed ovate, ± 12 mm long, with hairs dorsally along the middle. *Wing petals* longer than the keel, broadly oblanceolate, ± 10 mm long; apex obtuse, rounded; sculpturing upper basal and upper left central, in 4–5 rows of mostly intercostal lunae. *Keel petals* semicircular, obtuse, auriculate and pocketed near base. *Anthers* dimorphic. *Pistil* short; ovary linear, ± 7 mm long. *Fruit* and *seed* unknown. Figure 4.

This species is closely related to *L. argentea* Eckl. & Zeyh. but differs in the more diffuse habit, the obovate stipules which closely resemble the leaflets (linear to lanceolate in *L. argentea*), the yellow flowers (blue in *L. argentea*) and the depressed ovate standard (widely ovate to orbicular in *L. argentea*). It is also similar to *L. acuminata* Eckl. & Zeyh. but differs from this species in the densely sericeous vestiture and the much longer petioles.

L. lamprifolia is only known from a single specimen collected along the northern foothills of the Langeberg near Barrydale (Figure 2). The shining and silky appearance of the leaflets is very distinct (as in *L. argentea*), hence the specific epithet. The latter species is also very poorly represented in southern African herbaria and collectors are requested to look out for more complete material. Fruiting material in particular is required for a more detailed study of the full range of variation in these two

closely related species and to verify the diagnostic features of the new species.

CAPE.—3321 (Ladismith): Riversdale and Swellendam Districts, between Muiskraal and Lemoenshoek (–CC), 6.8.1951, *Barker 7374* (NBG, holo.)

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