

A note on the *Stachys aethiopica* Complex

L. E. CODD

ABSTRACT

The *Stachys aethiopica* Complex is examined and a key provided to the species recognized. The combination *S. natalensis* Hochst. var. *galpinii* (Briq.) Codd is effected and two new species, *S. reticulata* Codd and *S. arachnoidea* Codd are described.

RESUME

NOTE SUR LE COMPLEXE DES STACHYS AETHIOPICA

Le complexe des *Stachys aethiopica* est examiné et une clé est fournie pour les espèces reconnues. Une nouvelle combinaison est opérée: *S. natalensis* Hochst. var. *galpinii* (Briq.) Codd; et deux espèces nouvelles sont décrites: *S. reticulata* Codd et *S. arachnoidea* Codd.

Among the South African species of *Stachys* one of the main taxonomic problems concerns the delimitation of species in the *S. aethiopica* Complex. These comprise mainly soft, nondescript, somewhat straggly perennial herbs with small ovate cordate leaves and relatively small, inconspicuous flowers. The complex extends from the south-western extremity of the Cape Province, through the eastern summer-rainfall parts of southern Africa northwards into tropical Africa.

S. aethiopica L., Mant. 1: 82 (1767) was the first to be described and was presumably based on material from the south-western Cape Province. Further species have been distinguished on the basis of differences in tomentum, whether the leaves are petiolate or sessile, on the number of flowers per verticil and, to some extent, on leaf shape.

Our species were reviewed by Skan in Fl. Cap. 5,1: 336-367 (1910), who upheld 19 species in this complex, namely: *S. rehmannii* Skan, *S. malacophylla* Skan, *S. sessilifolia* E. Mey. ex Benth., *S. galpinii* Briq., *S. transvaalensis* Guerke, *S. rudatisii* Skan, *S. parilis* N.E. Br., *S. aethiopica* L., *S. scabrida* Skan, *S. cooperi* Skan, *S. harveyi* Skan, *S. serrulata* Burch. ex Benth., *S. attenuata* Skan, *S. fruticetorum* Briq., *S. leptoclada* Briq., *S. flexuosa* Skan, *S. cymbalaria* Briq., *S. priorii* Skan, and *S. sublobata* Skan, while the following were treated as "imperfectly known" species: *S. capensis* Presl, *S. graciliflora* Presl, *S. hispidula* Hochst. and *S. natalensis* Hochst. The only species added since then is *H. villosissima* H. M. Forbes from Natal.

Most of these entities represent local variations of restricted extent which may or may not warrant the rank of species. Due to inadequate collecting, many of them are still very poorly known and a good deal more material is required before their status can be assessed.

In the present study the above 24 "species" are reduced to 11, while two additional species are described from the eastern Transvaal and Swaziland. In few cases are there clear-cut differences between species and it is often necessary to rely on a combination of characters.

The picture which emerges is of two widespread and variable species, from which a number of segregate species have arisen or are in the process of developing. The two widespread "parent" species,

which can usually be separated on the basis of pubescence, are:

(1) *S. aethiopica* L., with a mainly southern distribution from the south-western Cape to Natal, Lesotho and the Orange Free State, with the lower surfaces of the leaves and calyces thinly tomentulose to hispid or densely glandular;

(2) a more northerly species, to which the name *S. natalensis* Hochst. is applied, extending from Natal to Swaziland, Transvaal and Rhodesia, with the lower surfaces of the leaves and calyces hispid-villous (sometimes only on the nerves) to densely villous (often obscuring the surface), and with scarcely any glands.

The two species meet in Natal, where a gradation in pubescence occurs. In this critical area, however, one can separate them on another character, the number of flowers per verticil. In *S. natalensis* the verticils are 2-flowered throughout its entire range; in *S. aethiopica* the verticils appear to be always 4-6-flowered in Natal, Lesotho and the Orange Free State. In the Cape occasional specimens, some of them rather depauperate, are found with 2 or 3 flowers per verticil, but these do not have villous pubescence and would not be confused with *S. natalensis*. In this way, the two species can be maintained as distinct and some of the confusion of the past concerning the limits of *S. aethiopica* can be clarified.

With regard to the number of flowers per verticil, it must be remembered that there are certain segregate species related to *S. aethiopica* which have 2-flowered verticils (*S. rudatisii*, *S. cymbalaria* and *S. sublobata*), in the same way that there are species with villous to densely tomentose pubescence related to *S. natalensis* but with 4-6-flowered verticils (*S. malacophylla* and the newly described *S. reticulata*). In other species the number of flowers per verticil is not constant and may vary from 2-6 (*S. rehmannii*, *S. scabrida* and *S. flexuosa*).

From the foregoing it will be realized that the construction of a key that will work satisfactorily for every specimen is not an easy matter. The following key must, therefore, act mainly as a guide. With the increase in knowledge as further material comes in, it is quite likely that our species concepts will be modified.

Key to species in the *S. aethiopica* Complex

- Leaves and calyx villous, often densely so, the lower surface of the leaves sparingly hispid-villous to densely tomentose:
- Pubescence stellate.....3. *S. rehmannii*
- Pubescence not stellate:
- Verticils 2-flowered:
- Leaves discolorous, sparingly pubescent and greenish-brown above, white tomentose below; bracts leaf-like.....2. *S. arachnoidea*
- Leaves concolorous; bracts usually differentiated from the leaves:
- Leaves densely matted-tomentose below obscuring the surface.....6. *S. sessilifolia*
- Leaves densely to sparingly strigose or hispid below, often mainly on the nerves:
- Inflorescence compact, 3–6 cm long; corolla purple, the lower lip up to 8 mm long, longer than the tube.....13. *S. flexuosa*
- Inflorescence fairly compact to lax, (4–) 6–15 cm long; corolla whitish, the lower lip 5–7 mm long, shorter than the tube.....7. *S. natalensis*
- Verticils normally 4–6-flowered (an occasional 2-flowered verticil may be present):
- Stem with longish appressed retrorse hairs; leaves often discolorous and reticulate-veined below.....4. *S. reticulata*
- Stem spreading-pilose to villous or with short retrorse hairs; leaves concolorous:
- Leaves densely matted-tomentose below, obscuring the surface:
- Leaves petiolate; uppermost bracts shorter than the calyx.....5. *S. malacophylla*
- Leaves usually sessile or subsessile; uppermost bracts longer than the calyx....6. *S. sessilifolia*
- Leaves strigose to hispid below, mainly on the nerves:
- Leaves drying greenish, truncate to subcordate at the base; inflorescence usually compact.....13. *S. flexuosa*
- Leaves usually drying brownish, deeply cordate at the base; inflorescence usually lax..8. *S. aethiopica*
- Leaves and calyx subglabrous to hispid or glandular-tomentulose, the lower surface of the leaves glabrous to hispid (mainly on the nerves) or glandular-puberulous:
- Verticils 2-flowered:
- Lower surface of leaf and calyx gland-dotted:
- Leaves 2–4, 5 × 1, 5–2, 5 cm, fairly thick-textured; margin finely and regularly crenulate..1. *S. rudatisii*
- Leaves less than 2 cm long or, if longer, margin rather coarsely toothed:
- Leaves broadly ovate to suborbicular, shallowly crenate.....11. *S. cymbalaria*
- Leaves ovate, usually thin-textured, margin rather coarsely toothed.....8. *S. aethiopica*
- Lower surface of leaves and calyx eglandular or nearly so:
- Stem glabrous to sparingly retrorse-scabrid or with scattered longish hairs:
- Leaves drying dark brown, ovate-deltoid; hairs on upper leaf surface, when present, bulbous-based.....10. *S. scabrida*
- Leaves drying greenish-brown; hairs on upper leaf surface not bulbous-based:
- Leaf blade broadly ovate to suborbicular, 8–15 × 6–12 mm; margin shallowly crenate.....11. *S. cymbalaria*
- Leaf blade narrowly triangular, 10–15 × 4–6 mm; margin deeply crenate.....12. *S. sublobata*
- Stem variously pubescent but not as above:
- Stem and rhachis usually hispid-villous, fairly rigid, eglandular (Natal, Swaziland, Transvaal).....7. *S. natalensis*
- Stem and rhachis shortly retrorse-pubescent to softly pilose often glandular (western Cape).....8. *S. aethiopica*
- Verticils 4–6-flowered (an occasional 2-flowered verticil may be present):
- Stem subglabrous to sparingly retrorse-scabrid or with scattered multicellular retrorse hairs; hairs on upper leaf surface, when present, bulbous-based.....10. *S. scabrida*
- Stem variously pubescent but not as above:
- Inflorescence of 1–4 (rarely more) verticils, often subcapitate to somewhat spaced below; calyx, rhachis and leaves eglandular; stem shortly and softly retrorse-pubescent.....9. *S. graciliflora*
- Inflorescence usually slender of few to several spaced verticils (rarely subcapitate); glandular hairs or gland-dots often present on calyx, rhachis and lower surface of leaves; stem variously pubescent.....8. *S. aethiopica*

1. *Stachys rudatisii* Skan in Fl. Cap. 5, 1: 347 (1910); Ross, Fl. Natal 304 (1972). Type: Natal, Dumisa, *Rudatis* 405 (K, holo.; NH!, PRE!).

Stems glandular hispidulous with retrorse multicellular hairs and copious short glandular hairs. Leaves petiolate, rather large; blade ovate, (2–) 3–4, 5 × (1, 5–) 2–2, 5 cm, the lower surface densely glandular-hispidulous; margin finely crenulate. Bracts leaf-like to somewhat differentiated. Verticils 2-flowered. Calyx glandular hispid.

A little-known species from southern Natal where it apparently grows in damp grassy places among rocks and in shady thickets.

NATAL.—3029 (Kokstad): Ngeli Mt. (–DA), Hilliard & Burt 3488. 3030 (Port Shepstone): Dumisa (–AD), *Rudatis* 405.

S. aethiopica (p. 186) often has densely glandular stems and leaves but the leaves are usually smaller,

broadly ovate and rather coarsely toothed, while the verticils are normally 4–6-flowered, not 2-flowered as in *S. rudatisii*. In the type, *Rudatis* 405, the bracts are large and leaf-like, while in Hilliard & Burt 3488 the bracts are reduced, making it somewhat intermediate with *S. aethiopica*. A specimen from the Hogsback, Rattray sub BOL 14275, may belong here, but the leaves are broadly ovate and subsessile. If the specimen were included here, the known area of the species would be extended considerably but more material, especially from the type area, is required before the limits of the species can be assessed.

2. *Stachys arachnoidea* Codd, sp. nov., a *S. natalensis* Hochst. foliis discoloribus, subtus dense albo-tomentosus et minute flavo-punctatis differt.

Herba, perennis, aromaticus; caules procumbens vel subscaendens, ramosus, usque ad 1 m longus, quadrangularis, sulcatus, dense et molliter albotomentosus. *Folia* subsessilia vel breviter petiolata; petiolus usque ad 1 cm longus; lamina late ovato-deltaeidea vel subrotunda, 1,8–4 cm longa, 1,5–3 cm lata, chartacea, supra olivacea tenuiter pubescens, subtus dense albo-arachnoidea et minute flavo-punctata, apice obtuso vel rotundato, basi cordata, margine crenulata. *Inflorescentia* laxa, 5–15 cm longa; bractea foliiformes versus apicem leviter parviores; verticillastri 2-floribus; pedicelli 1,5 mm longi. *Calyx* tubuloso-campanulatus, 8–9 mm longus, dense et molliter albo-tomentosus et minute punctatus; dentes deltoideo-lanceolati, 3–4 mm longi. *Corolla* alba, malvino-maculata, subtiliter glanduloso-pubescens; tubus 8–9 mm longus, 2 mm diam.; labium posticum ascendens, concavum, 3–4 mm longum, 3 mm latum, apicem rotundato; labium anticum horizontale, 8–9 mm longum, lobo medio obcordato, 4 mm longo, lobis lateralibus rotundatis, 1,5 mm longis. *Stamina* 4, 2–3 mm fauce exserta. *Stylus* bifidus, 2 mm exsertus.

Type.—Swaziland, near Mbabane, *Compton* 25890 (PRE, holo.!).

Perennial aromatic herb; stems procumbent to subscaendent, branched, up to 1 m long, 4-angled, grooved, densely and softly white tomentose. *Leaves* subsessile to shortly petiolate; petiole up to 1 cm long; blade broadly ovate-deltoid to subrotund, 1,8–4 cm long, 1,5–3 cm broad, chartaceous, greenish and thinly pubescent above, the lower surface with a dense white web-like tomentum and freely supplied with minute yellowish pustule-like gland-dots; apex obtuse to rounded, base cordate; margin crenulate. *Inflorescence* lax, 5–15 cm long; bracts leaf-like, slightly smaller towards the apex; verticils 2-flowered; pedicels 1,5 mm long. *Calyx* tubular-campanulate, 8–9 mm long, densely and softly white tomentose and minutely gland-dotted; teeth deltoid-lanceolate, 3–4 mm long. *Corolla* white spotted with mauve, finely glandular-pubescent; tube 8–9 mm long, 2 mm in diameter; upper lip ascending, concave 3–4 mm long, 3 mm broad, apex rounded; lower lip horizontal, 8–9 mm long, median lobe obcordate, 4 mm long, lateral lobes rounded, 1,5 mm long. *Stamens* 4, exserted by 2–3 mm. *Style* bifid, exserted by 2 mm. Fig. 1.

Found in forest margins and on grassy slopes in the mountains of eastern Transvaal and northern Swaziland at altitudes of 1 300–2 000 m.

TRANSVAAL.—2329 (Pietersburg): near Haenertsburg (–DD), *Codd* 9453. 2330 (Tzaneen): Westfalia Estate (–CA), *Scheepers* 729; Woodbush Forest (–CC), *Mogg* 20300; Agatha (CC), *McCallum* s.n. 2430 (Pilgrims Rest); Mariepskop (–DB), *Van der Schijff* 4401; 5139. 2530 (Lydenburg): 18 km W. of Sabie (–BA), *Codd* 9858.

SWAZILAND.—2531 (Komatiport): Havelock area (–CC), *Miller* 5858; *Compton* 30650. 2631 (Mbabane); Forbes Reef (–AA), *Compton* 30492; near Mbabane (–AC), *Bolus* 12242 (BOL); *Compton* 25890; 26481.

Although first collected as early as 1905 by Bolus near Mbabane in Swaziland, this species has been confused with *S. transvaalensis* (now included in *S. natalensis*, p. 185) and *S. rudatisii*. It was listed under both these names by Compton, Fl. Swaz. 66 (1966), but can be distinguished by the rounder, discolorous leaves with white cobwebby tomentum and minute yellow gland-dots on the lower surfaces. It shows no close relationship to any other species and is probably the most clear-cut member of the *S. aethiopia* complex.



FIG. 1.—*Stachys arachnoidea*, near Mbabane, Swaziland (*Compton* 25890 in PRE, holotype), $\times \frac{1}{3}$.

3. *Stachys rehmannii* *Skan* in Fl. Cap. 5, 1: 345 (1910). Type: Transvaal, Houtbosch, *Rehmann* 6178 (K, holo.!).

Stem sparsely to densely stellate-hispid. *Leaves* petiolate, blade ovate-deltoid to subrotund, 1,6–2,2 \times 1,5–2 cm, densely grey stellate-hispid on both surfaces. *Bracts* differentiated from the leaves towards the apex. *Verticils* usually 2-flowered but sometimes 4–6-flowered. *Calyx* densely and shortly stellate-villosus.

Found among rocks in mountain grassland at altitudes of 1 300–2 200 m in the northern and north-eastern Transvaal.

TRANSVAAL.—2328 (Baltimore): Blouberg (–BB), *Codd* & *Dyer* 9022; *Van der Schijff* 5399; *Strey* & *Schlieben* 8515. 2329 (Pietersburg): Houtboschberg (–DD), *Schlechter* 4454. 2330 (Tzaneen): 2 km E. of Steilkop, New Agatha (–CC), *Muller* & *Scheepers* 73. 2430 (Pilgrims Rest): The Downs (–DD), *Rogers* 22027.

Readily distinguished from all other members of the *S. aethiopia* complex by the presence of dense stellate pubescence on all parts of the plant.

4. *Stachys reticulata* *Codd*, sp. nov., a *S. aethiopia* L. foliis discoloribus, subtus reticulatis dense tomentosis, dentibus calyce patentibus differt.

Herba, perennis, aromaticus; caules decumbens vel procumbens, ramosus, usque ad 60 cm longus, inflorescentiis adscendentibus, dense retrorso-pilosus. *Folia* petiolata; petiolus 5–12 mm longus; lamina ovato-deltaeidea, late ovata vel subreniformis, 1–2,5 \times 0,8–2,2 cm, subcoriacea, plerumque discolor,

supra hispida, subtus reticulata, dense glanduloso-tomentosa, basi late cordata, apice obtuso vel subacuto, margine crenulata. *Inflorescentia* laxa, 4–8 cm longa, interdum subcapitata; bracteae reductae, superis calyce breviores; verticillastri 4–6 floribus; pedicelli 1 mm longi. *Calyx* tubuloso-campanulatus, 7–8 mm longus, dense glanduloso-hispidus; dentes lineari-lanceolati, acuminati, 2,5–3 mm longi, patentes. *Corolla* alba vel lilacina, subtiliter glanduloso-pubescent; tubus 8–9 mm longus, 2 mm diam.; labium posticum horizontale, oblongum, 4–5 mm longum, concavum; labium posticum deflexum, 6–7 mm longum, lobo medio subrotundo, 4 mm longo, lobis lateralibus 2 mm longis. *Stamina* 4, 4 mm fauce exserta; filamenta puberula. *Stylus* bifidus, 4 mm exsertus.

Type.—Transvaal, Mariepскоп, Werdermann & Oberdieck 1868 (PRE, holo.!).

Perennial aromatic herb; stems decumbent to procumbent, branched, up to 60 cm long with the inflorescences ascending, 4-angled, fairly densely retrorse pilose. *Leaves* petiolate; petiole 5–12 mm long; blade ovate-deltoid to broadly ovate or subreniform, 1–2,5 × 0,8–2,2 cm, fairly firm textured, usually discolorous, upper surface hispid, lower surface reticulate-veined, densely glandular-tomentose; base broadly cordate, apex obtuse to subacute; margin crenulate. *Inflorescence* lax, 4–8 cm long, occasionally subcapitate; bracts reduced, the upper ones shorter than the calyx; verticils 4–6-flowered; pedicels 1 mm long. *Calyx* tubular-campanulate, 7–8 mm long, densely glandular-hispid; teeth linear-lanceolate, acuminate, 2,5–3 mm long, spreading. *Corolla* white to pale mauve, finely glandular-pubescent; tube 8–9 mm long, 2 mm in diameter; upper lip horizontal, oblong, 4–5 mm long, concave; lower lip deflexed, 6–7 mm long median lobe subrotund, 4 mm long, lateral lobes 2 mm long. *Stamens* 4, exserted by 4 mm; filaments puberulous. *Style* bifid, exserted by 4 mm. Fig. 2.

Found among rocks in exposed situations in mountain grassland in the Pilgrims Rest District of the eastern Transvaal at altitudes of 1 500 to 2 200 m.

TRANSVAAL.—2430 (Pilgrims Rest): Mariepскоп (–DB), Meeuse 9963; Killick & Strey 2391; Werdermann & Oberdieck 1868; Bos 1028; Van der Schijff 4456; 4823; near Pilgrims Rest, Black Hill, Galpin 14342; W. of Pilgrims Rest, Meeuse 10047; God's Window, 10 km N. of Pilgrims Rest, Davidson & Mogg 33093.

Although confused in the past with *S. aethiopica*, *S. reticulata* may be distinguished by the usually discolorous leaves, reticulate and densely tomentose below, and by the spreading calyx teeth. The tomentum on the stems is also characteristic being fairly densely appressed pilose. The stem pubescence of *S. aethiopica* varies from retrorse to antrorse or spreading, but is usually short and hispid.

From *S. natalensis* it differs in the 4–6-flowered verticils, the reticulate venation on the undersides of the leaves and in the spreading calyx teeth, while from *S. rehmannii* it can readily be separated by the simple, not stellate, pubescence.

It was first collected on the exposed summits of hills near Pilgrims Rest by Galpin in 1937 and appears to be restricted to the mountains of the Pilgrims Rest District, where it usually grows among rocks of the Black Reef quartzite formation.

5. *Stachys malacophylla* Skan in Kew Bull. 1909: 421 (1909); Fl. Cap. 5, 1: 345 (1910). Lectotype: Cape, Queenstown, Galpin 1955 (K, lecto.; PRE!).



FIG. 2.—*Stachys reticulata*, Mariepскоп, Transvaal (Werdermann & Oberdieck 1868 in PRE, holotype), × $\frac{1}{3}$.

Stem fairly densely spreading-pilose. *Leaves* petiolate, blade broadly ovate, 1,4–3 × 1–2,2 cm, densely appressed pilose above, matted velvety pilose below. *Bracts* differentiated from the leaves. *Verticils* usually 4–6-flowered but sometimes 2- or 3-flowered. *Calyx* densely hispid-villous.

A little-known species from mountains in the eastern Cape Province.

CAPE.—3126 (Queenstown); near Queenstown (–DD), Galpin 1955; 5891. 3227 (Stutterheim): King William's Town (–CD), Sim 19590.

Closely related to *S. sessilifolia* from which it is separated by the petiolate leaves and usually 4–6-flowered verticils, while the tomentum on the stems and leaves is less densely woolly. Both species are very poorly known and further collecting is required in order to establish how reliable these distinctions are. See also notes under *S. reticulata* from the eastern Transvaal.

6. *Stachys sessilifolia* E. Mey. ex Benth. in E. Mey., Comm. 239 (1837); Drège, Zwei Doc. 151 (1843); Benth. in DC., Prodr. 12: 476 (1848); Skan in Fl. Cap. 5, 1: 345 (1910) Type: Cape, between Umzimvubu and Umsikaba Rivers, Drège 4752 (K, holo.!).

S. bachmannii Guerke in Bot. Jahrb. 26: 75 (1898). Type: Cape, Pondoland, Bachmann 1169.

Stem densely and softly villous. *Leaves* shortly petiolate below, sessile above; blade ovate to ovate-deltoid or narrowly ovate, 1–2,2 × 0,7–1,1 cm,

densely appressed villous above, densely matted-villous below. *Bracts* leaf-like, becoming smaller towards the apex. *Verticils* usually 2-flowered (but up to 6-flowered according to Fl. Cap.). *Calyx* densely shaggy-villous.

Found in dense grassland in the eastern Cape Province.

CAPE.—3029 (Kokstad): Mt. Currie (–AD), *Tyson* 1331. 3129 (Port St Johns): between Umzimvubu and Umsikaba Rivers (–BD?), *Drège* 4752 (K).

A little-known species closely related to *S. natalensis* and which may be only an extreme form of that species, distinguished by the densely matted-villous lower surface of the leaves. Further material is required in order to determine how meaningful this distinction is.

A specimen from northern Natal, Grid 2730 (Vryheid): near Luneburg (–BC), *Galpin* 9870, has this type of tomentum and 2-flowered verticils but differs in having petioles up to 7 mm long. It is tentatively included in *S. sessilifolia* until more material is forthcoming in order to assess the importance of sessile versus petiolate leaves. It may be noted that this character varies a good deal in the material included in *S. natalensis* below.

The type of *S. bachmannii* has not been seen; the species was included in *S. sessilifolia* by Skan and, judging by its description, this decision appears to be correct.

7. *Stachys natalensis* Hochst. in Flora 28:65 (1845). Type: Natal, Table Mt., *Krauss* 1139.

Stems variously pubescent from densely to sparingly villous or shortly scabrid to softly pubescent. *Leaves* sessile or petiolate; blade ovate to ovate-deltoid, variable in size, 1–4 × 0.6–2.4 cm shortly and sparingly appressed pubescent to densely strigose above, less dense, more spreading and mainly on the nerves below often with some glandular hairs but not conspicuously glandular. *Bracts* differentiated towards the apex. *Verticils* 2-flowered. *Calyx* densely villous to densely and shortly pubescent, usually without glands.

A widespread and variable species found in grass on stony hillsides, in semi-shady kloofs and wooded places in the mountains of northern central and eastern Transvaal, Swaziland, northern and coastal Natal as far south as Durban, with an occasional record from the eastern Cape. Also recorded from Rhodesia.

No material of the type, *Krauss* 1139 from Table Mt., near Pietermaritzburg, has been traced, but the description is considered adequate to identify it with the present concept, though Skan, l.c., lists it as an “imperfectly known species.” The specimen *Schlechter* 2894 from near Verulam, Natal, may be regarded as representative and, if no material of the type can be found, would be a suitable specimen to select as a lectotype.

Two varieties, based mainly on the degree of pubescence, are recognized.

Key to varieties

- Pubescence on stem, leaves and calyx sparingly villous to shortly scabrid or tomentose. (a) var. *natalensis*
 Pubescence on stem, leaves and calyx densely villous. (b) var. *galpinii*

(a) var. *natalensis*.

Stachys natalensis Hochst. in Flora 65 (1845); Skan in Fl. Cap. 5, 1: 367 (1910); Ross, Fl. Natal 303 (1972). Type: Natal, Table Mt., *Krauss* 1139. *S. transvaalensis* Guerke in Bot. Jahrb.

28: 316 (1901); Skan, l.c. 346 (1910). Type: Transvaal, Lydenburg District, *Wilms* 1136 (BM). *S. leptoclada* Briq. in Bull. Herb. Boiss. ser. 2, 3: 1084 (1903); Skan, l.c. 351 (1910); Ross, Fl. Natal 303 (1972). Type: Natal, Bluekrantz River, *Schlechter* 6865 (Z, holo. !; BOL !). *S. aethiopica* sensu Letty, Wild Flow. Transv. 284, t. 141: 3 (1962); sensu Compton, Fl. Swaz. 66 (1966).

Stems shortly scabrid or tomentose to sparingly or fairly densely villous. *Leaves* petiolate, blade hispid-villous above, less so and mainly on the nerves below. *Calyx* hispid-villous.

Distribution and ecology more or less as for the species but not prevalent in the mountain grassland of the eastern Transvaal. Also occurs in Rhodesia.

TRANSSVAAL.—2329 (Pietersburg): Louis Trichardt (–BB), *Breyer* sub *TRV* 20926; Spelonken (–BD), *Junod* 123. 2330 (Tzaneen): Tshakoma (–AB), *Obermeyer* sub *TRV* 31569. 2428 (Nylstroom): Geelhoutkop (–AD), *Breyer* sub *TRV* 18105; Sterkkrivierdam Nature Reserve (–BC), *Jacobsen* 2004; Moorddrift (–BD), *Leendertz* sub *TRV* 7330; N. of Warmbaths (–CD), *Repton* 792; *Sidey* 1339; *Smuts & Gillett* 3089; *Strey* 3947; Naboomfontein (–DA?), *Galpin* 13481. 2430 (Pilgrim's Rest): Ohrigstad Dam Nature Reserve (–DC), *Jacobsen* 1436; 1766; 2909. 2527 (Rustenburg): Scheerpoort (–DD), *Leendertz* sub *TRV* 27126; farm Uitkomst 499 (–DD), *Coetzee* 654. 2528 (Pretoria): Wonderboom Reserve (–CA), *Pole Evans* 340; *C. A. Smith* 104; 240; Koedoespoort (–CB), *Leendertz* sub *TRV* 8570; *Obermeyer* sub *TRV* 27657; Botanic Garden (–CB), *Codd* 855; 35 km E. of Pretoria (–CD), *Repton* 582; Trigaartspoort (–DB), *Bruce* 97; 18 km N.E. of Bronkhorstspuit (–DB), *Codd* 2694. 2529 (Witbank): Bundu Inn (–AC), *Mauve* 4916; Loskop Dam (–AD), *Theron* 1376. 2530 (Lydenburg): Crocodile Valley (–AD), *Burt Davy* 7662; Nelspruit (–BD), *Liebenberg* 2596; Cythna Letty Nature Reserve (–DD), *Muller* 2219. 2531 (Komatipoort): Barberton (–CC), *Edwards* 46.

SWAZILAND.—2631 (Mbabane): Komati Bridge (–AA), *Compton* 26835; 26931; near Mbabane (–AC), *Hardy* 27; Hlatikula (–CD), *Compton* 26265; 30228.

NATAL.—2730 (Vryheid): Utrecht (CB), *Wahl* sub *TRV* 15536. 2732 (Ubombo): Pongola Poort (–AC), *Repton* 6020. Mpangazi (–DA), *Strey* 5090; Mbazwane (–DA), *Vahrmeijer* 1133. 2829 (Harrismith), 34 km N. of Ladysmith (–BB), *Codd* 8622; Bloukrans River (–DD), *Schlechter* 6865 (Z). 2830 (Dundee): Tugela Ferry (–CD), *Galpin* 14780; Kranskop (–DD), *Galpin* 14764. 2832 (Mtubatuba): Hluhluwe Game Reserve (–AA), *Hitchins* 366; 526; 643. 2929 (Underberg): Estcourt (–BB), *West* 1332; *Pentz* 497. 2930 (Pietermaritzburg): near Durban (–DD), *Medley Wood* 59; 6437. 2931 (Stanger): near Verulam (–CA), *Schlechter* 2894; *Moll* 1990.

CAPE.—3228 (Butterworth): Kentani (–CB), *Pegler* 187.

In general the pubescence is sparingly to fairly densely villous and grades somewhat into the very densely villous pubescence of var. *galpinii*. In Natal some specimens have hispid or shortly tomentose pubescence, resembling the condition often found in *S. aethiopica*, but may be separated from that species by the 2-flowered verticils. The type of *S. leptoclada* Briq., *Schlechter* 6865 (Z) from Bloukrans River near Ladysmith is such a plant. *Schlechter* 6865 may be a mixed gathering because the specimen in PRE with this number is *S. grandifolia* E. Mey. ex Benth. or, more likely, the material may have become mixed when it was distributed. The type of *S. transvaalensis* Guerke is more densely pubescent than typical var. *natalensis*.

(b) var. *galpinii* (Briq.) Codd, stat. nov.

S. galpinii Briq. in Bull. Herb. Boiss. ser. 2, 3: 1082 (1903); Skan in Fl. Cap. 5, 1: 346 (1910); Compton, Fl. Swaz. 66 (1966); Ross, Fl. Natal 303 (1972). Type: Transvaal, near Barberton, *Galpin* 681 (K!, PRE!, SAM!). *S. lupulina* Briq., l.c. 1082 (1903). Type: “Natal, near Claremont, *Schlechter* 4651” (Z, holo. !; BOL!). *S. parilis* N.E. Br. in Kew Bull. 1901: 131 (1901); Skan, l.c. 347 (1910); Ross, l.c. 303 (1972). Type: Natal, Drakensberg, Tiger Cave Valley, *Evans* 387 (K, holo. !; NH!). *S. villosissima* H. M. Forbes in Bothalia 4: 38 (1941); Ross, l.c. 304 (1972). Type: Natal, Entumeni, *Forbes* 783 (NH, holo. !; PRE!).

Stems erect, branching from the base, 12–20 cm tall or decumbent to straggling 30–40 cm long; stem densely villous. *Leaves* sessile or petiolate, densely villous on both surfaces. *Calyx* densely villous.

Found in dense grass, often among rocks at high and medium altitudes in central and eastern Transvaal and northern Swaziland, extending to northern Natal.

TRANSVAAL.—2428 (Nylstroom): Moorddrift (–BD), *Leendertz* sub TRV 7330. 2528 (Pretoria): Wonderboompoort (–CA), *Mogg* 15860; near Zoo (–CA), *C. A. Smith* 3272; Hennops River (–CC), *Repton* 1115. 2529 (Witbank): Middelburg (–CD), *Young A* 20. 2530 (Lydenburg): 27 km W. of Lydenburg (–AB), *Codd* 8063; Dullstroom (–AC), *Galpin* 13051; near Belfast (–CA), *Leendertz* sub TRV 9178; *Leistner* 510; Machadodorp (–CB), *Galpin* 13109; 18 km S.E. of Sewefontein (–CD), *Codd* 8114. 2531 (Komatiipoort): near Barberton (–CC), *Galpin* 681; *Thorncroft* sub TRV 4337; *Mauve* 4424. 2630 (Carolina): near Carolina (–AA), *Bolus* 12241.

SWAZILAND.—2531 (Komatiipoort): near Havelock Mine (–CC), *Miller* 3033. 2631 (Mbabane): near Mbabane (–AC), *Codd* 9511; *Compton* 24559; 25270; 25379; 26707; 26754.

NATAL.—2731 (Louwsburg): Pongola Experimental Farm (–BC), *Nel* 199. 2829 (Harrismith): Willowford Station (–DD), *Acocks* 10599. 2831 (Nkandla): 6 km S. of Mtonjaneni (–AD), *Codd* 1808; near Melmoth (–CB), *Mogg* 4549; 6163; Entumeni (–CD), *Forbes* 783. 2832 (Mtubatuba): Dukuduku (–AD), *Strey* 5511; Richard's Bay (–CC), *Venter* 4975.

This variety can be recognized by the combination of densely villous pubescence and 2-flowered verticils; it grades into var. *natalensis* and many specimens may be regarded as transitional between the two. In var. *galpinii* the leaves may be petiolate or sessile and the latter specimens come near to *S. sessilifolia*, in which the lower surfaces of the leaves are densely matted-villous and the stems are softly tomentose. In *S. malacophylla* the lower surfaces of the leaves are also densely pubescent, but the verticils are usually 6-flowered. The types of *S. lupulina* Briq., *S. parilis* N.E. Br. and *S. villosissima* H. M. Forbes are not appreciably distinct from that of *S. galpinii*.

Skan, *l.c.*, draws attention to the confusion concerning the type of *S. lupulina*. Briquet cites the specimen as "Natal, Claremontplats prope Claremont, *Schlechter* 4651, ann. 1892." On the type sheet in Z and an isotype in BOL the label reads: "Claremont flats prope Cape Town, *Schlechter* 465, 9. III. 1892". It is undoubtedly conspecific with *S. natalensis* var. *galpinii*, which does not occur in the Cape, but could have been collected in northern Natal or the eastern Transvaal. Skan concluded that it had probably been introduced at the Cape but there is no evidence to support this.

8. *Stachys aethiopica* L., Mant. 1: 82 (1767); Burm. f., Fl. Cap. Prodr. 16 (1768); Ait., Hort. Kew. 2: 302 (1879); Willd., Sp. Pl. 3: 102 (1800); Thunb., Fl. Cap. ed. Schult. 447 (1823); Benth., Lab. 548 (1834); in E. Mey., Comm. 239 (1837); in DC., Prodr. 12: 476 (1848); Bol. & Wolley-Dod in Trans. S. Afr. Phil. Soc. 14: 310 (1904); Skan in Fl. Cap. 5, 1: 348 (1910); Marloth, Fl. S. Afr. 3, 2: 180, t. 47B (1932); Salter in Fl. Cape Penins. 697 (1950); Jacot-Guill., Fl. Lesotho 237 (1971); Ross, Fl. Natal 303 (1972). Type: Cape Province, LINN 736. 13 (lecto.).

Betonica capensis Burm. f., Fl. Cap. Prodr. 16 (1768). Type: Pluk., Almagest. Bot. t. 315, f. 3 (1696).

S. aethiopica var. *grandiflora* Burch. ex Benth. in E. Mey., Comm. 239 (1837). Type: Cape, Klein Winterhoek, *Drège* 75d (K, holo.). —var. *hispidissima* Benth., *l.c.* 239 (1837); Skan in Fl. Cap. 5, 1: 348 (1910). Type: Cape, Hex River Kloof, *Drège* 75h (K, holo.). —var. *glandulifera* Skan, *l.c.* 348 (1910); Phill. in Ann. S.A. Mus. 16: 244 (1917); Jacot-Guill., Fl. Lesotho 237 (1971). Syntypes: several, incl. Zwartkei River, *Baur* s.n. (K; PRE!). —var. *parviflora* Skan, *l.c.* 348 (1910); Salter in Fl. Cape Penins. 697 (1950). Syntypes: several, incl. Cape Peninsula, Signal Station, *Wolley-Dod* 3048 (K; BOL!). *S. pulchella* Salisb., Prodr. 83 (1796), nom. illegit. Type: based on *S. aethiopica* L. *S. serrulata* Burch. ex Benth., Lab. 549 (1834); in DC., Prodr. 12: 477 (1848); Skan, *l.c.* 350 (1910). Type: Cape, near Knysna, *Burchell* 5155 (K, holo.). *S. capensis* Presl, Bot. Bemerk. 100 (1844); Skan, *l.c.* 366 (1910). Type: Cape, without locality, *Krebs* 273. *S. hispidula* Hochst. in Flora

66 (1845); Skan, *l.c.* 367 (1910). Type: Cape, Humansdorp District, *Krauss* 1125. *S. fruticetorum* Briq. in Bull. Herb. Boiss. ser. 2, 3: 1083 (1903); Skan, *l.c.* 351 (1910). Type: Cape, Sir Lowry's Pass, *Schlechter* 1179 (Z, holo.); BOL!). *S. harveyi* Skan, *l.c.* 350 (1910). Type: Cape, near Cape Town, *Harvey* s.n. (TCD, holo.). *S. attenuata* Skan, *l.c.* 351 (1910). Syntypes: Cape, near Bainskloof, *Bolus* 2896 (K, BOL!), Paarl Mt., *Drège* 75b (K).

Stems decumbent or ascending, up to 50 cm long or more, rather slender, sparingly to freely branched, variously pubescent with short antrorse hairs, short or long retrorse hairs often mixed with longish spreading hairs or glandular hairs, or (especially the rhachis) densely glandular-tomentulose. Leaves petiolate; blade broadly ovate to ovate-deltoid, usually about 0.8–3.5 × 0.6–2.5 cm, but up to 6 × 4 cm (Natal coastal form), upper surface usually shortly hispid to pilose, lower surface hispid to pilose, mainly on the nerves, often with some glands, to densely glandular-puberulous, rarely almost glabrous. Inflorescence usually tapering, of many whorls, occasionally with few whorls and subcapitate. Bracts differentiated from the leaves towards the apex. Verticils usually 4–6-flowered occasionally 2–3-flowered (mainly depauperate specimens). Calyx sparingly to densely hispid and often glandular.

Distributed from Clanwilliam District to the Peninsula and along the coast to the eastern Cape Province and to Natal, Lesotho and the Orange Free State; found in a variety of habitats from fynbos to dry woodland and coastal dune bush, extending to mountain grassland where it is usually found among sandstone rocks.

O.F.S.—2827 (Senekal): near Senekal (–BC), *Goossens* 918; near Ficksburg (–DD), *Potts* 3184; *Galpin* 13831. 2828 (Bethlehem): near Bethlehem (–AB), *Flanagan* 2114; *Phillips* s.n.; *Scheepers* 1412; *Werger* 244; *Slabberts* (–AC), *Stam* 179; Fouriesburg (–CA), *Potts* 3265; Clarens (CB), *Van Hoepen* sub TRV 18163. 2926 (Bloemfontein): Thaba Nchu (–BB), *Roberts* 2246.

NATAL.—2830 (Dundee): 14 km S.W. of Nqutu (–BA), *Codd* 2400; Kranskop (–DD), *Strey* 4288 (NH). 2831 (Nkandla): Babanango (–AC), *King* 255; Melmoth (–CB), *Mogg* 6167. 2929 (Underberg): Tabamhlope Pasture Research Station (–BA), *West* 550; near Sani Pass (–CB), *Marias* 1434. 2930 (Pietermaritzburg): Tweedie (–AC), *Mogg* 6764; Dargle (–CA), *Hilliard* and *Burt* 3194; Pietermaritzburg (–CB), *Goossens* 131; *Mogg* 2235; Byrne (–CC), *Galpin* 11929; Durban (–DD), *Strey* 4347; 11318; Isipingo (–DD), *Ward* 3775. 2931 (Stanger): Mt. Edgecombe (–CA), *Medley Wood* 1126. 3030 (Port Shepstone): Dumisa (–AD), *Huntley* 166 (NH); Port Shepstone (–CB), *Dimock-Brown* 475 (NH).

LESOTHO.—2828 (Bethlehem): Leribe (–CC), *Dieterlen* 101; Maluti Mts. (–DD), *Staples* 85. 2927 (Maseru): Teyateyaning (–BA), *Collett* 477; Mamathes (–BB), *Jacot-Guillarmod* 866; 869; Tebetebeng River, *Jacot-Guillarmod* 359; Roma (–BC), *Ruch* 1689; Mafeteng (–CC), *Gerstner* 226. 2929 (Underberg): Sehlabathebe (–CC), *Jacot-Guillarmod*, *Getliffe* and *Mzambane* 154.

CAPE.—3027 (Lady Grey): Barkly East (–DC), *Gerstner* 206. 3028 (Matatiele): 6 km E. of Kenegha (–BC), *Strey* 524. 3029 (Kokstad): 19 km N. of Swartberg (–AB), *Codd* 8533; near Kokstad (–CB), *Coleman* 467; Bizana (–DD), *Acocks* 12225. 3127 (Lady Frere): Cala (–DA), *Pegler* 1646. 3129 (Port St. Johns): Port St. Johns (–DA), *Howlett* 10. 3219 (Wuppertal): Cedarberg (–AC), *Galpin* 10546; Citrusdal (–CA), *Hanekom* 1164. 3224 (Graaff Reinet): Graaff Reinet (–BC), *Sister Francis* 37. 3225 (Somerset East): National Mountain Zebra Park (–AB), *Liebenberg* 6431; Boschberg (–DA), *MacOwan* 559 partly. 3226 (Fort Beaufort): Mungo Mt. (–CB), *Galpin* 11550; 16 km N. of Fort Beaufort (–DC), *Strey* 2224; Garfield (–DD), *Acocks* 23513. 3227 (Stutterheim): Windvoëlberg (–AC), *Roberts* 1798; near Happy Valley (–AD), *Johnson* 1298; Kabaku Hills (–CB?), *Acocks* 9271; King William's Town (–CD), *Sim* 19593; near Komga (–DB), *Flanagan* 414. 3228 (Butterworth): near Mazeppa Bay (–BC), *Hilner* 422; Kentani (–CB), *Pegler* 231. 3318 (Cape Town): near Hopefield (–AB), *Letty* 61; Darling (–AD), *Bolus* sub TRV 4657; Cape Town (–CD), *Young* sub TRV 26635; *Mrs. Southey* sub *Galpin* 7849; Lions Head (–CD), *Ecklon* s.n.; *Marloth* 65; Camps Bay (–CD), *Thode* A143; Sea Point (–CD), *C. A. Smith* 2889; Paarl Mt. (–DB), *Kruger* M118; near Stellenbosch (–DB), *Parker* 3895; *Bos* 135; *Kerfoot* 6081. 3319 (Worcester): near Gouda (–AC), *Esterhuysen* 18787;

Prospect Peak (-BC), *Esterhuysen 15902*; Gydouw (-AD), *Leipoldt s.n.*; Veld Reserve (-CB), *Olivier 35*; French Hoek Pass (-CC), *Boucher 2343*; near McGregor (-DD), *Van Breda & Joubert 1973*. 3322 (Oudtshoorn): between Wilderness & Knysna (-DC), *Wells 3723*. 3323 (Willowmore): near Joubertina (-DD), *Van Breda 1168*. 3325 (Port Elizabeth): near Kenkelbosch (-DB), *Archibald 5995*; *Paterson 55*; Port Elizabeth (-DC), *Borle 15*. 3326 (Grahamstown): Alicedale (-AC) *Rogers 12016*; Port Alfred (-DB), *Tyson s.n.*; *Rogers 16654*; Kowie (-DB), *Britten 810*. 3327 (Peddie): East London (-BB), *Galpin 1879*. 3418 (Simonstown): Hout Bay Nek (-AB), *Hutchinson 103*; Muizenberg (-AB), *Pillans 3678*. 3419 (Caledon): Enon (-AB), *Thode A2741*. 3420 (Bredasdorp): National Bontebok Park (-AB), *Liebenberg 6431*; Kompanjies River (-AB), *Marsh 581*; De Hoop (-AD), *Van der Merwe 1158*; Fort Beaufort (-BD), *Marsh 820*; Nachtwacht (-CA), *C. A. Smith 3053*. 3423 (Knysna): Keurboomstrand (-AB), *Codd 3565*.

Skan attempted to reduce the confusion which existed in this complex by isolating certain discordant elements as separate species, and by upholding four varieties within *S. aethiopica*. With the advent of a good deal of modern material, the position is still confused, but it appears that a broader concept of the species should be adopted, while the separation of varieties within *S. aethiopica* seems scarcely justified.

Several of the peripheral species upheld by Skan are still maintained, such as *S. rudatisii*, *S. graciliflora* (= *S. cooperi*), *S. scabrida* (= *S. priorii*), *S. flexuosa*, *S. cymbalaria* and *S. sublobata*, and the distinguishing characters are discussed under the respective headings. Others, such as *S. harveyi*, *S. serrulata*, *S. attenuata* and *S. fruticetorum* are now included in *S. aethiopica*.

Regarding the typification of *S. aethiopica*, Linnaeus refers to Pluk., Alm. 245, t. 315, f. 3, while the description indicates that he had a specimen before him. Of these two elements, the specimen in the Linnaean Herbarium No. 736.13 may be regarded as the type and is a plant with retrorse to spreading pubescence and lacking glandular hairs. In both elements the plant referred to has 2-flowered verticils, but this must be regarded as exceptional as most specimens which match the type have 2-6-flowered verticils. The typical form occurs mainly in the south-western Cape Province, but it grades into the varieties upheld by Skan.

Bentham based his var. *hispidissima* on a Drège gathering with denser and more stiffly spreading hairs on stems and leaves, but this is scarcely distinct from the typical form. The other two varieties, described by Skan, are possibly more distinct but, due to the many intermediates, it is preferred to regard them as forms rather than give them taxonomic rank.

In the plants placed by Skan in var. *parviflora*, the hairs on the stem are antrorse and shortly scabrid, the petioles tend to be shorter and the flowers smaller. Salter in Fl. Cape Penins. 697 (1950) upheld this variety but, as one moves away from the Peninsula, the distinction becomes less clear.

The form separated as var. *glandulifera* is usually recognizable under magnification by the glandular-puberulous pubescence on most parts of the plants, especially the under-surface of the leaf, the rhachis and the calyx. It appears to be the prevalent form in the eastern, summer-rainfall part of South Africa, especially along the Drakensberg escarpment. Towards the west it grades into typical *S. aethiopica* and the type of *S. fruticetorum*, *Schlechter 1179* from Sir Lowry's Pass, is an intermediate specimen.

Another form has been observed along the coast of Natal in which the leaves are much larger than usual, up to 6×4 cm. It appears to be a semi-weed in disturbed areas, and serious consideration was given to according it separate status of some sort.

However, there is a gradation in leaf size and many intermediate specimens cannot be allocated with certainty. At present it is regarded as a form growing under favourable subtropical conditions. The pubescence is somewhat similar to the plants discussed under var. *glandulifera*.

To summarize, the pubescence in *S. aethiopica* is mainly hispid, either antrorse, retrorse or spreading, sometimes with scattered longish hairs and often finely glandular, especially on the calyx and under-surface of the leaves. This can usually be distinguished from the villous pubescence of *S. natalensis* but there should be no confusion between the two because, in the eastern summer-rainfall areas, *S. aethiopica* always has 4-6-flowered verticils, while *S. natalensis* is strictly 2-flowered. The two overlap in Natal and the extreme eastern Cape Province. *S. aethiopica* is absent from the Transvaal and rare in Swaziland, but a very glandular form occurs in Lesotho and the eastern Orange Free State.

As it often happens in variable species, *S. aethiopica* tends to be a repository for specimens which cannot satisfactorily be placed elsewhere. For example, a few specimens of rather distinct facies, with stiff stems and very densely glandular-puberulous stems, leaves and calyces, but with 2-flowered verticils, have been collected in the eastern Cape Province, namely: Stutterheim District, *Acocks 2971* and *Sim s.n.*; Port St. Johns District, *Flanagan 2595*. If *S. aethiopica* were divided into formal varieties, these specimens would probably be worthy of varietal rank.

S. aethiopica normally has a slender tapering inflorescence of several to many verticils. On the other hand some specimens in the southern Cape Province have few verticils with an almost subcapitate inflorescence, resembling the condition found in *S. graciliflora* (= *S. cooperi*) and to some extent in *S. scabrida*. The plants previously included in *S. cooperi* usually have larger leaves, while those described as *S. scabrida* have subglabrous to sparingly retrorse-scabrid stems and subglabrous leaves. The type of *S. graciliflora* is somewhat intermediate but it seems possible to maintain all three species, though occasional specimens, especially from the Knysna-Tsitsikama area, may be difficult to place with certainty (see next species).

9. *Stachys graciliflora* Presl, Bot. Bemerk. 100 (1844); Benth. in DC., Prodr. 12: 496 (1848); Skan in Fl. Cap. 5, 1: 366 (1910) Type: Cape, without locality, *Krebs s.n.* (PRC, holo!), as to left-hand specimen on sheet labelled *S. graciliflora* Presl; PRE, photo.)

S. cooperi Skan in Kew Bull. 1909: 420 (1909); Fl. Cap. 5, 1: 343 (1910); Ross, Fl. Natal 303 (1972). Syntypes: Cape, Albany Division, *Cooper 15*(K!); Kentani, *Pegler 908*, collected April 1909 (K!, PRE!).

Stem shortly and often sparingly retrorse-pubescent. Leaves petiolate, blade ovate to broadly ovate, often thin-textured, 2-6, 5×1, 4-5 cm, eglandular, sparingly hispidulous or shortly and sparingly pilose, the hairs on the upper leaf surface soft and not bulbous-based. Inflorescence of 1-4 (rarely more) verticils, somewhat lax below or often subcapitate, verticils 4-6-flowered; bracts differentiated towards the apex. Calyx sparingly or softly hispid, eglandular.

A soft straggling herb of moist places in forest margins, in grass, fynbos or coastal scrub from southern Natal to Knysna in the Cape.

NATAL.—3030 (Port Shepstone): Horseshoe Farm (–CC), *Strey* 6169.

CAPE.—3129 (Port St. Johns): Umgazi River Mouth (–CB), *Wells* 3494. 3226 (Fort Beaufort): Katberg (–BC), *Galpin* 2069. 3227 (Stutterheim): Pirie Forest (–CC), *Sim A*; *Acocks* 9284; near Komga (–DB), *Flanagan* 1752. 3228 (Butterworth): Kentani (–CB), *Pegler* 908. 3322 (Oudtshoorn): Wilderness (–DC), *Van Niekerk* 236. 3325 (Port Elizabeth): Addo National Park (–BC), *Brynard* 363. 3423 (Knysna): Knysna: (–AA), *Keet* 635; Keurboomstrand (–AB), *Fourcade* 6119; *Taylor* 4914; Storms River Mouth (–BB), *Liebenberg* 7765. 3424 (Humansdorp): Humansdorp (–BB), *Galpin* 4427.

There is a gradation in leaf size from the specimens with larger and softer leaves, described as *S. cooperi* Skan, to those occurring further west with smaller and firmer leaves, which match the type of *S. graciliflora* Presl. The stem pubescence of the latter tends to be slightly more scabrid and thus approaches the condition found in *S. scabrifolia* Skan (see below). However in *S. scabrifolia* the leaves are somewhat thicker in texture, dry dark brown and the hairs on the upper leaf surface are thicker with distinctly swollen bases. On these grounds *S. scabrifolia* is kept distinct, but the two overlap from southern Transkei to Knysna and further study in this area is required.

As mentioned under the previous species, *S. aethiopica* sometimes has few, fairly condensed verticils which resemble those of *S. graciliflora*. However, these plants usually have a coarser pubescence on the stems, while gland-dots are often present on the calyx and on the lower surface of the leaves. No glandular hairs are found in *S. graciliflora*.

Specimens with large leaves resemble *S. tubulosa* MacOwan, a species not included in the present treatment, but may be separated, when flowers are available, by the shorter corolla tube which does not exceed 10 mm in length. In *S. tubulosa* the corolla tube is 12–18 mm long and the species has a more northerly distribution from East Griqualand to Swaziland.

10. *Stachys scabrifolia* Skan in Fl. Cap. 5, 1: 349 (1910). Lectotype: Cape, Bruintjieshoogte, *Burchell* 3037 (K, lecto.!; PRE!).

S. priorii Skan, l.c. 353 (1910). Type: Cape, Algoa Bay, *Prior* s.n. (K, holo.!).

Stems subglabrous to scabrid with few strong retrorse-scabrid hairs to longer scattered multicellular retrorse hairs. *Leaves* petiolate, firm-textured and usually drying dark brown, ovate to ovate-deltoid, 1,2–3 × 0,8–2 cm, subglabrous to sparingly hispid, the upper surface with scattered short to longish bulbous-based hairs. *Inflorescence* fairly slender, of few verticils, spaced below; bracts differentiated towards the apex. *Calyx* sparingly hispid, eglandular.

A straggling herb in grass, fynbos or coastal scrub, extending from the southern Transkei to Knysna and, inland, to Steynsburg and Somerset East Districts.

CAPE.—3125 (Steynsburg): Suurburg (–BD), *Schonland* 3177. 3225 (Somerset East): Bruintjieshoogte (–CB), *Burchell* 3037. 3227 (Stutterheim): Hanover (–CD), *Sim* s.n. 3228 (Butterworth): “Gekau” River (–BC?), *Drège* s.n. (K). 3324 (Steytlerville): Assegai Bosch (–CD), *Breyer* sub *TRV* 23323; 20 km W. of Cambria (–DA), *Strey* 2445. 3325 (Port Elizabeth): Van Stadens Mts. (–CC), *Zeyher* 831 (K); Perseverance (–DC), *Long* 816. 3326 (Grahamstown): Coldspring (–AD), *Gane* sub *TRV* 25270; near Grahamstown (–BC), *MacOwan* 559, partly. 3423 (Knysna): (–AA), *Breyer* sub *TRV* 23365.

S. scabrifolia appears to be related to *S. graciliflora*, but the pubescence is coarser and more scabrid, while the leaves are thicker-textured and the hairs on the upper leaf surface tend to be bulbous-based. The inflorescences tend to be more slender, rather

than subcapitate, as in *S. graciliflora*. The distinction is by no means clear-cut, as indicated in the discussion of the latter species, and specimens such as *Strey* 2445 tend to be somewhat intermediate.

11. *Stachys cymbalaria* Briq. in Bull. Herb. Boiss. ser. 2, 3: 1088 (1903); Skan in Fl. Cap 5, 1: 352 (1910); Ross, Fl. Natal 303 (1972). Type: Cape, Cradock, *Cooper* 416 (K, holo.!; W!).

S. aethiopica L. var. *tenella* Kuntze, Rev. Gen 3, 2: 262 (1898). Type: Cape, Cradock, *Kuntze* s.n. *S. cymbalaria* var. *alba* Skan, l.c. 352 (1910). Type: Natal, Richmond, *Medley Wood* 1846 (K, holo.; NH!).

Stems slender, wiry, subglabrous or with a few long slender spreading hairs or occasionally shortly glandular-pubescent. *Leaves* petiolate, blade small, broadly ovate-deltoid to suborbicular, 8–15 × 6–12 mm, subglabrous to thinly appressed-pubescent or glandular-puberulous. *Inflorescence* lax of 1–5 verticils; verticils 2-flowered; bracts differentiated, the upper shorter than the calyx. *Calyx* puberulous to hispidulous.

Found among rocks in exposed mountain grassland, at altitudes of 1 000–1 800 m; recorded from a few disjunct localities in southern Natal and the eastern Cape Province.

NATAL.—2930 (Pietermaritzburg): Zwartkop (–CB), *Medley Wood* 11120; Richmond (–CD), *Medley Wood* 1846 (NH). 3029 (Kokstad): Ngeli area (–DA), *Hilliard & Burt* 5834 (NU); 7554 (NU); *Strey* 6337 (NH).

CAPE.—3039 (Kokstad): Mt. Insizwa (–CB), *Schlechter* 6467; *Hilliard & Burt* 6568. 3224 (Graaff Reinet): Reitvlei (–AB), *Galpin* 10011; Lootsberg Pass (–BD), *Acocks* 13546. 3225 (Somerset East): Mountain Zebra National Park (–AD), *Brynard* 295; *Liebenberg* 7107.

The species is closely related to *S. aethiopica* but is characterized by the many wiry stems radiating from the apex of a slender taproot, the small ovate to roundish leaves and the 2-flowered verticils.

12. *Stachys sublobata* Skan in Fl. Cap. 5, 1: 354 (1910). Lectotype: Cape, Swellendam District, Barrydale, *Galpin* 4425 (K, lecto.; PRE!).

Stems slender, sparsely hispidulous, occasionally with some longish spreading hairs. *Leaves* petiolate, blade small, narrowly triangular, 10–15 × 4–6 mm, thickish in texture, sparingly hispidulous on both surfaces, sometimes with gland-dots below, margin deeply crenate or almost lobed with 3–5 lobe-like teeth. *Inflorescence* lax of 2–5 verticils; verticils 2–(or rarely 6–) flowered; bracts leaf-like below, differentiated towards the apex. *Calyx* thinly glandular-hispid.

Found on hillsides in fynbos at altitudes of 300–900 m in the south-western Cape Province; known from a few localities between Caledon and Mossel Bay and, inland, to Ladismith and Oudtshoorn Districts.

CAPE.—3320 (Montagu): Barrydale (–DC), *Galpin* 4425. 3321 (Ladismith): Rooiberg Pass (–DA), *Acocks* 20779. 3322 (Oudtshoorn): Cango Caves (–AC), *Bolus* 12244. 3419 (Caledon): 10 km W. of Rietpoel Station (–BD), *Acocks* 22582. 3421 (Riversdale): Klein Berg (–BB), *Galpin* 4426, partly.

This species resembles *S. cymbalaria* and, like that species, is closely related to *S. aethiopica*, but can be recognized by the narrowly triangular leaves, rather thickish in texture and with deeply crenate, almost lobed margins. It normally has 2-flowered verticils, but one portion of *Galpin* 4426 in PRE, which matches *S. sublobata*, has 6-flowered verticils. The other specimen mounted on the same sheet has larger leaves and is *S. aethiopica*.

13. *Stachys flexuosa* Skan in Fl. Cap. 5,1: 352 (1910). Type: Cape, Stockenstroom District, old Katberg Pass, Galpin 2393 (wrongly listed in Fl. Cap. as 2093) (K, holo.; PRE!, SAM!).

Stems fairly densely villous-pilose with long spreading hairs and some short glandular hairs. Leaves petiolate, blade ovate, 1-2 × 0,6-1,5 cm, somewhat appressed-villous with some bulbous-based hairs above, hispid mainly on the nerves below, base not deeply cordate. Inflorescence fairly dense, of few to several 2-6-flowered verticils; bracts leaf-like below, becoming smaller towards the apex. Calyx hispid, often with some glands.

Known from a few localities in the eastern Cape Province, among rocks in mountain grassland.

CAPE.—3126 (Queenstown): near Hopewell (-DC?), Galpin 8379. 3129 (Port St. Johns): Port St. Johns District (CB?), Swinny & Baker sub TRV 14143. 3226 (Fort Beaufort): old Katberg Pass (-BC), Galpin 2393; Hogsback (-DB), Rattray 403.

The species is included here because the small ovate leaves with a rather wide sinus at the base are reminiscent of the *S. aethiopica* complex, but the relationship appears to be with another complex which includes *S. obtusifolia* and *S. tysonii*. From these it differs mainly in the smaller leaves, and less densely villous stems and leaves, in contrast to the markedly glandular pubescence of *S. tysonii*. As in many other species of *Stachys*, a good deal more material is required before the status of *S. flexuosa* can be reliably determined.

UITTREKSEL

Die *Stachys aethiopica*-kompleks word ondersoek en 'n sleutel voorsien tot die soorte wat erken word. Die kombinasie *S. natalensis* Hochst. var. **galpinii** (Briq.) Codd word gemaak en twee nuwe soorte, *S. reticulata* Codd en *S. arachnoidea* Codd word beskryf.