The South African species of *Hemizygia* (Lamiaceae)

L. E. CODD*

**ABSTRACT**


**INTRODUCTION**

*Hemizygia* was initially proposed by Bentham as a section of *Ocimum* in DC., Prodr. 12:41 (1848), to accommodate the single species *O. teurifolium* Hochst., in which the filaments of the lower (anticous) pair of stamens are fused at the base, in contrast to the free filaments of typical *Ocimum* species. Briquet raised the section to generic rank in Pflanzenfam., 4,3a:368 (1897) and subsequently described several species. He also noted on the fused filaments of the anticus stamens, in which respect it resembled *Syncolostemon* E. Mey. ex Benth., but differed from *anticous* stamens, in which respect it resembled *Hemizygia* var. heterotricha Codd, *H. cinerea* Codd, *H. incana* Codd, *H. modesta* Codd, *H. parvifolia* Codd, *H. punctata* Codd and *H. ramosa* Codd.

Baker in Fl. Trop. Afr. 5:365 (1900) and N. E. Brown in Fl. Cap. 5,1:237 (1910) included *Hemizygia* in *Orthosiphon*, the latter author pointing out that the union of the filaments may vary in some species and even on the same plant.

Ashby in J. Bot. Lond. 73:312, 343 (1935) resuscitated the genus *Hemizygia*, remarking that although the degree of union of the filaments varies, only very rarely are they free to the base. He also noted other differences in the androecium of *Hemizygia* and *Orthosiphon*. The anticus pair of stamens in *Hemizygia* are contiguous at their insertion at the mouth of the corolla tube, while in *Orthosiphon* they are well separate at their insertion, which is at a short distance within the corolla tube, or rarely in the throat. The posterior stamens are inserted from about the middle to near the base of the corolla tube in *Hemizygia* (with one exception, *H. gerrardii*) and are well exserted (with the exceptions of *H. pretoriae* and *H. persimilis*), while in typical *Orthosiphon* the upper stamens are inserted near the throat and are only shortly exserted. It may also be noted that in *Hemizygia* the filaments are usually pubescent in the lower part, but in typical *Orthosiphon* they are glabrous.

He also drew attention to certain differences in corolla structure between the two. In *Hemizygia* the corolla tube is usually dilated at the throat and truncate at the mouth; the posterior lip is small and the anterior lip larger and often deflexed at maturity. In contrast, typical *Orthosiphon* rarely has the corolla tube widened at the throat, the mouth is not truncate but the two lips meet laterally and are about equal in length. He concludes that the exceptions are sufficiently few that they should not necessitate the merging of *Hemizygia* in *Orthosiphon*.

This view is supported in the present study and reference may be made to my review of the South African *Orthosiphon* species in Bothalia 8:149 (1964).

Here it was noted that the species separated by Bremerkamp in his genus *Nautochilus*, together with those of *Orthosiphon* sect. *Serratia* Ashby, form an aberrant group, which was placed as *Orthosiphon* subgen. *Nautochilus* (Brem.) Codd. In these species the filaments of the posterior stamens are attached near the base of the corolla tube and are pubescent, as in *Hemizygia*, while the anterior filaments are free to the base, as in *Orthosiphon*. The corolla shape in these species, although somewhat intermediate, agrees better with *Orthosiphon* than with *Hemizygia*.

Differences between *Hemizygia* and *Syncolostemon* must also be found if the former genus is to be upheld, and these are discussed in another article (Bothalia 11: 21 1976). The corolla and androecium characters are virtually the same in the two genera and it is mainly the calyx which provides a basis for distinguishing them. In *Hemizygia* the upper calyx tooth is broadly ovate and decurrent on the tube while the lower 4 teeth are usually subulate to spinescent; in typical *Syncolostemon*, on the other hand, the calyx is subequally 5-toothed. Two intermediate species were noted in which the upper tooth was elliptic or broadly elliptic, not decurrent on the tube. These were included in *Syncolostemon* because of their close affinity with *S. rotundifolius* and *S. densiflorus*.

*Orthosiphon, Syncolostemon* and *Hemizygia* form a closely related series of which *Orthosiphon* (1830) is the oldest name. The great majority of species can be allocated without great difficulty to one of the three genera now upheld and this appears to be sufficient justification for continuing with their present circumscription.

A striking feature of some *Hemizygia* species is the strong development of the apical bracts of the inflorescence into a persistent colourful tuft or coma.
The genus *Bouetia* A. Chev. in Mem. Soc. Bot. Fr. 2:200 (1917) was based on such a species, *B. ocimoides* A. Chev., which is generally regarded as a synonym of *Hemizygia bracteosa* (Benth.) Briq.

**HEMIZYGIA**


Type species: *H. teutrifolia* (Hochst.) Briq.

*Orthosiphon* sensu Bak. in Fl. Trop. Afr. 5: 365 (1900), partly; sensu N.E. Br. in Fl. Cap. 5,1;237 (1910), partly. filaments free, usually pubescent below and occasionally higher; lower pair attached at the upper tooth the largest, broadly ovate to subrotund, decurrent on the tube; lower 4 teeth subulate to spinescent, rarely deltoid-lanceolate. *Corolla* bilabiate; tube longer than the calyx, widening from about the middle to a truncate mouth and sometimes slightly narrowed again at the mouth; upper lip small, usually much shorter than the lower lip; lower lip concave, horizontal to deflexed. *Stamens* 4, exerted (upper pair included in *H. pretoriae*), didynamous; upper pair affixed about or below the middle of the corolla tube (above the middle in *H. gerrardii*), filaments free, usually pubescent below and occasionally higher; lower pair attached at the corolla throat, filaments connate for part or the entire length (occasionally almost free), glabrous. *Style* exerted, usually minutely bifid, occasionally clavate. Nutlets ovoid.

**Key to Species**

Stellate (branched) hairs present on leaves and other parts, often intermingled with simple hairs:

- Upper (posterior) stamens included in the corolla tube ........................................15b. *H. pretoriae* subsp. *heterotricha*
- Upper (posterior) stamens exerted from the corolla tube, usually well exerted:
  - Leaf margin flat, not revolute:
    - Leaf margin crenate-dentate (sometimes indistinct in *H. incana*, *H. cinerea* and *H. parvifolia*):
      - Verticillasters 3–6-flowered:
        - Leaf blade 5–9 cm long; inflorescence laxly branched, up to 60 cm long; calyx setose in the throat ..........................................................1. *H. macrophylla*
        - Leaf blade less than 5 cm long (rarely to 6 cm in *H. obermeyerae*); inflorescence lax to dense, up to 25 cm long; calyx not setose in the throat:
          - Leaf blade ovate, 2.5–6 cm long, subglabrous and rugose above .2. *H. obermeyerae*
          - Leaf blade lanceolate to narrowly elliptic, grey-velvety above:
            - Calyx 8–9 mm long; corolla 12–15 (tube 10–12) mm long; leaves 15–35 × 6–12 mm, upper surface coarsely velvety .............................................5. *H. incana*
            - Calyx 5–7 mm long; corolla 8–11 (tube 6–9) mm long; leaves 7–20 × 2–7 mm, upper surface finely velvety, often darker than the lower ........6. *H. cinerea*
      - Verticillasters 2-flowered:
        - Leaf blade small, rarely exceeding 2.5 cm long, upper surface subglabrous, rugose; petiole up to 2 mm long:
          - Leaf blade lanceolate-elliptic, 15–25 mm long; apical bracts conspicuous, up to 15 mm long........................................15. *H. rugosifolia*
          - Leaf blade ovate, 6–11 mm long; apical bracts inconspicuous, up to 3.5 mm long........................................4. *H. parvifolia*
        - Leaf blade ovate, usually exceeding 2.5 cm long, sparsely to densely floccose on both surfaces; petiole 5–8 mm long, densely floccose ................................9. *H. floccosa*
  - Leaf margin entire:
    - Leaf blade lanceolate-elliptic to linear-elliptic, upper side often darker and with finer tomentum; bracts inconspicuous, about 5 mm long ..................................................6. *H. cinerea*
    - Leaf blade ovate-lanceolate to broadly ovate, densely grey velvety on both surfaces; bracts colourful, 7–10 mm long:
      - Calyx 5 mm long; upper stamens pubescent to above the middle; stigma capitate ..........................................................7. *H. elliottii*
      - Calyx 8–10 mm long; upper stamens pubescent only in the lower part; stigma shortly bifid .........................................................8. *H. gerrardii*
  - Leaf margin revolute:
    - Corolla tube widening towards the mouth; stamens exerted well beyond the anterior lip of the corolla:
      - Bracts 10–15 mm long, colourful .................................................................10. *H. stenophylla*
      - Bracts up to 7 mm long, inconspicuous:
        - Leaves finely grey velvety on both surfaces; stem finely grey tomentulose .6. *H. cinerea*
        - Leaves coarsely stellate-pubescent and often yellowish below, much darker and rugose above; stems villous ..............................................................11. *H. rehmannii*
    - Corolla tube cylindrical, often slightly narrowed at the mouth; stamens exerted scarcely beyond the anterior lip of the corolla:
      - Lower internodes of main stems usually more than 2 cm long; leaves 3–6 mm or more broad, especially the lower ........13. *H. teutrifolia*
      - Lower in ternodes of main stems less than 2 cm long; leaves usually not more than 4 mm broad ..................................................12. *H. subvelutina*
Stellate (branched) hairs absent:
Leaves narrow, leathery, revolute at the margin, thickly tomentose beneath with long white hairs, somewhat varnished above...........................................14.  *H. albiflora*
Leaves broad or narrow, not revolute at the margin, glabrous to tomentose beneath but not as above:
Terminal bracts of the inflorescence like the lower ones, deciduous, small and inconspicuous:
Upper (posterior) stamens included in the corolla tube...15a.  *H. pretoriae* subsp. *pretoriae*
Upper (posterior) stamens exserted from the corolla tube:
Verticillasters 2-flowered; leaves 6-15 × 3–7 mm:
Stems 12–25 cm tall, usually sparingly branched, arising annually from a woody rootstock...........................................16.  *H. modesta*
Stems 60–120 cm tall, shrubby, much branched...............17.  *H. punctata*
Verticillasters 4–6-flowered, leaves usually longer than above:
Leaves elliptic-ovate to broadly ovate, obverse to rounded at the apex, obtuse or broadly cuneate at the base; stems 25–40 cm arising annually from a woody rootstock.......................18.  *H. bolusii*
Leaves linear to ovate, apex acute, base cuneate; annual or perennial herbs not arising from a perennial woody rootstock:
Stem and leaves with pubescence of short or fairly dense and often crisped hairs:
Leaves ovate-lanceolate to ovate; petiole 6–14 mm long........24.  *H. petiolata*
Leaves linear to lanceolate or, rarely, ovate-lanceolate; petiole usually less than 5 mm long......................25.  *H. canescens*
Stem villous to subglabrous, not as above; leaves subglabrous or sparingly pubescent to canescent or villos, often with long and short hairs intermingled:
Leaves linear or with some leaves on a plant up to 5 mm broad, subglabrous; stems subglabrous with few long hairs, often somewhat varnished............................26.  *H. linearis*
Leaves linear-lanceolate to ovate-lanceolate, usually more than 5 mm broad; stems and leaves sparingly to densely villos................................27.  *H. petrensis*
Terminal bracts of inflorescence distinct from the lower ones, membranous, forming a persistent colourful coma (often small but coloured in *H. petiolata* and *H. petrensis*):
Stamens not exserted beyond the lower lip of the corolla; filaments of upper pair of stamens pubescent from the base to near the apex.....................23.  *H. persimilis*
Stamens exserted beyond the lower lip of the corolla; filaments of upper pair pubescent only near the base:
Verticillasters 2-flowered:
Stems shrubby, up to 1 m tall, much-branched; leaves obovate to oblong-lanceolate, 15–25 × 6–11 mm; corolla 25–28 mm long...................19.  *H. ramosa*
Stems up to 30 cm long arising annually from a woody rootstock; leaves ovate, usually exceeding 25 mm long and 11 mm wide; corolla 12–15 mm long
21.  *H. foliosa*
Verticillasters 4–6-flowered:
Terminal bracts ovate to linear-lanceolate, cuneate at the base, pairs of bracts often spaced 1–2 cm apart, more than twice as long as broad (sometimes less in *H. transvaalenensis* but then corolla tube more than 12 mm long):
Corolla tube more than 12 mm long; terminal bracts ovate to lanceolate, rarely linear-lanceolate.................................20.  *H. transvaalenensis*
Corolla tube less than 12 mm long; terminal bracts lanceolate to linear-lanceolate..........................22.  *H. thorncroftii*
Terminal bracts broadly ovate, not cuneate at the base, densely crowded, usually less than twice as long as broad:
Petiole of mature leaves more than 5 mm long; leaves covered beneath with a fine greyish-white pubescence...........................................24.  *H. petiolata*
Petiole of mature leaves less than 5 mm long or leaves sessile; underside of leaves glabrous to variously pubescent:
Terminal bracts conspicuous, violet or white, up to 14 × 9 mm; corolla white...............................28.  *H. bracteosa*
Terminal bracts small, often purplish, about 5 × 3 mm; corolla mauve 27.  *H. petrensis*

1.  *Hemizygia macrophylla* (Guerke) Codd. comb. nov.


*Orthosiphon macrophyllus* (Guerke) N. E. Br. in Fl. Cap. 5: 241 (1910).

Soft shrub 1–1.5 m tall, branching from the base, highly aromatic; stems several, woody at the base, arising from a perennial woody rootstock, sparingly branched, leafy towards the base, densely grey pubescent. Leaves shortly petiolate; petiole up to 4 mm long; blade obovate-lanceolate to lanceolate, 6–9 cm long, 2.5–3 cm broad, both surfaces densely and coarsely stellate-velvety, tending to fold along the midrib and then somewhat falcate; apex acute, base cuneate, tapering into the petiole; nerves impressed above, reticulate beneath; margin regularly serrate in the upper two-thirds. Inflorescence very lax, branched, up to 60 cm long and 25 cm broad; rachis glandular-hispid; bracts early caducous, broadly ovate, acute, 6–8 mm long, concave, with a white margin and patches of white tomentum; verticillasters 3–6-flowered, up to 2 cm or more apart. Calyx 7 mm long, glandular-hispid, setose in the throat, becoming swollen and narrow at the mouth when in the fruiting stage; upper lip ovate, acuminate, 2 mm long; lower 4 teeth deltoid-subulate, 2 mm long. Corolla purple, 17–18 mm long, pubescent on the lobes; tube 11–12 mm long, widening to 5–6 mm at the mouth; upper lip a small appendage, 1 mm long; lower lip concave, 5–6 mm long, horizontal. Stamens exserted
well beyond the lower lip, curled upwards; upper pair attached below the middle of the corolla tube, puberulous near the base; lower pair united to near the apex. *Stigma* bífid.

Recorded from the foothills of the Drakensberg in northern Natal and southern Transvaal, in dense grass, often among dolerite rocks, at altitudes from 1 500 to 1 800 m. Flowering is mainly from January to April.

**Transvaal.**—2730 (Vryheid): Mooihoek (-BC), Devenish 444, 9979; near Ingogo (-DB), Medley Wood 6398 (K); Obermeyer sub TR 35941; Codd 9694; Mayne s.n.

**Natal.—**2729 (Volksrus): Normandien Pass (-DC), Codd 9979; near Ingogo (-DB), Medley Wood 6398 (K); Obermeyer sub TRV 31556 (PRE, holo).

Distinguished from all other species by the large leaves covered on both surfaces with a dense, coarse stellate pubescence and by the large, laxly branched inflorescence. Its nearest affinity is probably with *Syncolostemon parviflorus* but the upper calyx tooth is broadly ovate. It is, therefore, somewhat intermediate between *Hemizygia* and *Syncolostemon*.


Soft shrub, freely branched, 1–1.5 mm tall; branches softly stellate tomentose. *Leaves* petiolate; petiole 6–12 mm long; blade broadly ovate to ovate-lanceolate, 3–6 cm long, 1.8–3 cm broad, subglabrous, brownish and rugose above, fairly densely grey stellate pubescence below; apex obtuse to rounded, base truncate to obtuse; margin finely crenate-dentate. *Inflorescence* usually branched, fairly dense, 8–18 cm long, up to 10 cm in diameter; rhachis stellate pubescent; bracts persisting at the apex, mauve-purple, ovate, acute, up to 10–15 × 5–10 mm, sparingly pubescent; *verticillasters* 6-flowered, 1–2 cm apart. *Calyx* 8 mm long, glundlar-setulose; upper lip ovate, 2 mm long, decurrent on the tube; lower 4 teeth deltoid-sulcate, the lowest pair the longest, 2 mm long. *Corolla* mauve-pink, 18–22 mm long, glabrous; tube 15–17 mm long, widening to 6–8 mm at the mouth; upper lip a small appendage, 1 mm long; lower lip concave, 4–6 mm long, horizontally, to slightly deflexed. *Stamens* exerted well beyond the lower lip, curved upwards; upper pair attached below the middle of the tube, puberulous at the base; lower pair united to the apex. *Stigma* bífid.

Grows with bracken and shrub on stony hillsides and forest margins at altitudes of 1 400 to 1 800 m in north-eastern Transvaal.

**Transvaal.**—2230 (Messina): Entabeni Forest Reserve (-CC), Obermeyer sub TR 31556; 876; Bruce & Kies 84A; Taylor 727; Codd 4188; 8593; Piesanghoek (-CC), Gerstner 5749; Pepiti Falls (-CD), Smuts & Gillett 3189; near Lake Funduzi (-CD), Weintroub sub J35682; Thato Vondo Forest Reserve (-CD), Van Graan & Hardy 564, 2330 (Tzaneen): Woodburn (-CC), Hutchinson 2238, 2430 (Pilgrim’s Rest); The Downs (–AA), Codd 9472; Marais 96; near The Downs (-AC), Vahrmeijer 2360.

A distinct species easily separated from others with stellate pubescence by the large, petiolate leaves. With its large purplish bracts and mauve-pink flowers, this is a showy species which grows well under humid conditions but has not succeeded in cultivation in the drier parts of the Transvaal.


Erect soft shrub, branched, probably about 1 m tall; branches shortly stellate tomentose. *Leaves* shortly petiolate; petiole 2–4 mm long; blade ovate-lanceolate to elliptic, 15–25 mm long, 6–10 mm broad, slightly coriaceous, upper surface rugose, puberulous and with nerves immersed, lower surface densely and shortly greyish stellate pubescent; apex obtuse, base cuneate; margin finely and regularly crenate-dentate. *Inflorescence* usually branched, medium lax, 8–13 cm long; rhachis puberulous and gland-dotted; bracts persisting at the apex, purplish, ovate, acute to acuminate, about 10 × 5 mm, subglabrous with a fringe of hairs; *verticillasters* 2-flowered, 1–1.5 cm apart. *Calyx* 10 mm long, glandular-hispidulous; upper lip ovate, 3 mm long, decurrent on the tube; lower 4 teeth deltoid-sulcate, the lowest pair much longer than the median; narrowly subulate, 3 mm long. *Corolla* 22 mm long; tube 18 mm long, widening to 5–6 mm at the mouth; upper lip a small appendage 1 mm long; lower lip concave, 4 mm long, usually deflexed. *Stamens* well exerted beyond the lower lip; lower pair united to near the apex. *Stigma* minutely bífid.

Known only from three gatherings near The Downs in north-eastern Transvaal, where it apparently grows at forest margins.

**Transvaal.**—2430 (Pilgrim’s Rest): The Downs (–AA), Junod 4342; Rogers 20188; Crundall s.n.

A small-leaved species related to the two species described below, *H. parvifolia* and *H. cinerea*. From *H. parvifolia*, which also has 2-flowered *verticillasters*, it differs in the longer, more lanceolate-elliptic leaves and the larger apical bracts; *H. cinerea* also has small bracts and 6-flowered *verticillasters* but the leaves, which are similar in shape to *H. rugosifolia*, are finely grey velvety pubescent on both sides.

*H. rugosifolia* is a little known species last collected in 1945.

4. *Hemizygia parvifolia* Codd, sp. nov., a *H. rugosifolia* Ashby folii parvioribus, ovatis, inflorescentiis brevioribus, bracteis parvioribus differit.

Frutex, ramosus, 50–100 cm altus; ramuli stellato-floccosi. *Folia* breviter petiolata; petioli 1–2,5 mm longi, dense stellato-floccosus; lamina ovata vel late ovata, 6–11 mm longa, 4–9 mm lata, discolor, supra rugosa, brunnea, hispidula vel subglabra, subitus cinerea, dense stellato-tomentosa, nervis supra impressis, subtus reticulatis, apice obtuso vel rotundato, basi obtusa vel truncata, margine minute crenatodentato. *Inflorescentia* simplex vel basins versus parce ramosa, 5–8 cm longa; rhachis stellato-floccosa; bracteae ovatae, 2,5–3,5 mm longae, caducae, basina versus stellato-pubescentes; *verticillastri* 2-flori; pedicelli 3–4 mm longi, stellato-hispidi. *Calyx* 9–10 mm longus, stellato-hispidus, glanduloso-punctatus; tubus 6 mm longus; lobus posticus 4 mm longus, acutus, suberectus, 2,5–3 mm longus, margine decurrente; dentes laterales deltoido-subulati, 1,5 mm longi; anteci subulati, 2,5 mm longi. *Corolla* alba, 15–17 mm longa, glabra vel extus labis puberulis; tubi 11–14 mm longi, recti, apicem versus sensim ampliati, ore 4 mm lato; labium posticum parvum; anticum concavum, 4–5 mm longum. *Stamina* 12–14 mm exserta; postica circa medium tubi corollae inserta, filamentis liberis, propre basina pubescentibus; antica fauce corollae inserta, filamentis omnino ad apicem connatis. *Stylus* 10–12 mm exsertus, apice breviter bilobato.

Type.—Transvaal, 2430 (Pilgrim’s Rest), farm Belvedere, overlooking Blyde River Gorge (–DB), Codd 10321 (PRE, holo.).

Shrub, branched, 50–100 cm tall; branchlets stellato-floccose. *Leaves* shortly petiolate; petiole 1–2,5 mm long, densely stellato-floccose; blade ovate to broadly ovate, 6–11 mm long, 9 mm broad, discolorous, upper surface rugose, brown, hispidulous to subglabrous,
lower surface grey, densely stellate-tomentose, nerves impressed above, reticulate below, apex obtuse to rounded, base obtuse to truncate, margin minutely crenate-dentate. Inflorescence simple or sparingly branched towards the base, 5–8 cm long; rhachis stellate-floccose; bracts ovate, 2.5–3.5 mm long, caducous, stellate-pubescent towards the base; verticillasters 2-flowered; pedicels 3–4 mm long, stellate-hispid. Calyx 9–10 mm long, stellate-hispid and gland-dotted; tube 6 mm long; posticus lobe broadly ovate, acute, suberect, 2–3 mm long, margin decurrent; lateral teeth deltoid-subulate, 1.5 mm long; anticus teeth subulate, 2.5 mm long. Corolla white 15–17 mm long, glabrous with outer surfaces of lips puberulous; tube 11–14 mm long, straight, widening gradually towards the apex, mouth 4 mm wide; posticus lip small; anticus lip concave, 4–5 mm long. Stamens exerted by 12–14 mm; posticus stamens inserted about the middle of the corolla tube filaments free, pubescent near the base; anticus stamens inserted in the corolla throat, filaments completely united to the apex. Style exerted by 10–12 mm, apex shortly bilobed. Fig. 1.

H. parvifolia is a much-branched shrub up to 1 m tall, related to H. rugosifolia Ashby, a species known as yet only from The Downs, grid 2430 (AA), some 100 km to the north-west of Blyde River Gorge, on the same escarpment. H. parvifolia may be separated on the basis of the smaller, more broadly ovate leaves, the grey indumentum of the underside of the leaves, the smaller inflorescence which is simple or sparingly branched, the shorter bracts and the presence of stellate hairs on the calyx.

It would be interesting to know whether either species or intermediates occur on the escarpment between The Downs and Blyde River Gorge. This is a relatively inaccessible area which is known to botanically. Further study is also required for the escarpment between the Blyde River Gorge and the other known locality on the Nelshoogte Forestry Station near Kaapsche Hoop.

5. Hemizygia incana Codd, sp. nov, a H. rugosifolia Ashby foliis dense griseo-tomentosis, bracteis parvioribus, calyce villosi differt.

Frutex parce ramosus, 60 cm altus; ramuli dense griseo-tomentosi, pilis stellatiss et longissim simplicibus. Folia sessilia vel subsessilia; lamina ovata vel lanceolata vel elliptico-lanceolata, 1.5–3.5 cm longa, 6–12 mm lata, dense stellato-vilvina, substau argentea. Supra cinerea, nervis obscuris, apice obtuse vel ro:undato, basi obtusa, margine supra medium minute crenato-dentato. Inflorescentia simplex vel basin versus parce ramosa, 8–20 cm longa; rhachis dense albo-tomentosa; bracteae late ovatae, acuminatae, caducae, parce vel dense pubescentes; verticillasti pluriumque 6-flori; pedicelli 2–3 mm longi villosi. Calyx 8–9 mm longus, purpureo-suffusus, glanduloso-villosus; tubus 5 mm longus; lobus posticus late ovatus, acutus, suberectus, 2–3 mm longus, margine decurrente; dentes laterales deltoidosublati, 1.5 mm longi; antici sublati, 2.5 longi. Corolla malvina, 12–15 mm longa, glabra vel exus labiis puberulis; tubus 10–12 mm longus, rectus, apicem versus sensim ampliatus, ore 3–4 mm latu; labium posticum 1.5 mm longum; anticum concavum, 3 mm longum. Stamina 10–12 mm exserta; postica prope basin tubi corollae inserta, filaments libris prope basin pubescentibus; antica fauce corollae inserta, filaments fere ad apicem connatis. Stylus 15 mm exsertus, apice breviter bifidus.

Type: Transvaal, 2530 (Lydenburg), Kaapsche Hoop (-DB), Codd 5758 (PR, holo.).

Shrub, sparingly branched, 60 cm tall; branchlets densely grey-tomentose with stellate and long simple hairs. Leaves sessile to subsessile; blade ovate or lanceolate to elliptic-lanceolate, 1.5–3.5 cm long, 6–12 cm broad densely stellate-velvety, silvery below, darker grey above, nerves obscure, apex obtuse to rounded, base obtuse, margin minutely crenate-dentate above the middle. Inflorescence simple or sparingly branched towards the base, 8–20 cm long; rhachis densely white-tomentose; bracts broadly ovate, acuminate caducous, sparingly to densely pubescent; verticillasters usually 6-flowered; pedicels 2–3 mm long, villous. Calyx 8–9 mm long, purple-tinted, glandular-villos with long white hairs and short gland-tipped hairs; tube 5 mm long; posticus lobe broadly ovate, acute, suberect, 2–3 mm long, margin decurrent; lateral teeth deltoid-subulate, 1.5 mm long; anticus teeth subulate, 2.5 mm long. Corolla mauve, 12–15 mm long, glabrous, with the outer surfaces of the lips puberulous; tube 10–12 mm

Fig. 1.—Hemizygia parvifolia (Codd 9802, PRE, holotype).

Found among quartzite rocks at altitudes of 1 300 to 1 500 m on the eastern Transvaal Drakensberg escarpment; in flower from October to March.

Transvaal: 2430 (Pilgrim’s Rest); 6 km N. of Vaalhoek (-DB), Codd 9802; farm Belvedere, overlooking Blyde River Gorge (-DB), Codd 10321; Blyde River Reserve (-DB), Davidson 2663; Blyde River hills (-DB), Raath & Schlieben 9689; Bourke’s Luck (-DB), Davidson & Moggy 33354; Davidson 73 (J); 2530 (Lydenburg): Nelshoogte Forestry Station. “The Knuckles” (-DD), Codd 9555.
long, straight, widening gradually towards the apex, mouth 3–4 mm wide; posticous lobe 1.5 mm long; anticous lobe concave 3 mm long. *Stamens* exserted by 10–12 mm; posticous stamens inserted near the base of the corolla tube, filaments free, pubescent near the base; anticous stamens inserted in the throat of the corolla, filaments united almost to the apex. *Style* exserted by 15 mm, apex shortly bifid. Fig. 2.

**Fig. 2.** *Hemizygia incana* (Codii 5758, PRE, holotype).

*Hemizygia incana* is related to *H. rugosifolia* Ashby but may readily be distinguished by the dense grey-white tomentum on both surfaces of the leaves, obscuring the veins, the smaller and more pubescent bracts and the villous calyx. For differences between this species and *H. cinerea* Codii, described below, see notes at the end of the latter description.

6. *Hemizygia cinerea* Codii, sp. nov., a *H. incana* Codii folii parvioribus, cinereis, floribus parvioribus differt.


*Frutex ramosus, 40–150 cm altus: ramuli stellato-tomentosi. Folia breviter petiolata; petioli 1–2 mm longus, dense stellato-tomentosus; lamina lanceolato-elliptica, oblanceolato-elliptica vel lineari-elliptica, 7–20 mm longa, 2–7 mm lata, discolor, dense stellato-tomentosa, supra grisea, subtus pallidior, reticulata, apex obtuso vel rotundatum, basi cuneata, margine integra vel supra medium minute crenato-dentato. *Inflorescencia* simplex vel basin versus parce ramosa, 7–15 cm longa; rachis stellato-tomentosa; bracteae late ovatae, acutae, 4–7 mm longae, caudacea, stellato-pubescentes; verticillastri plerumque 6-flori; pedicelli 2–3 mm longi, villosi. *Calyx* 5–7 mm longus, villosus, glanduloso-punctatus; tubus 4–5 mm longus; lobus posticus late ovatus, obtusus vel rotundatus, suberectus, 2 mm longus, margine decurrente; dentes laterales deltoideo-subulati, 1 mm longi; antic linearisubulati, 2 mm longi. *Corolla* pallide rosea vel malvina, 8–11 mm longa, glabra vel exuibus labiis puberulis; tubus 6–9 mm longus, rectus, apicem versus sigmoidus, orae 3 mm latae; labium posticum parvum; anticum concavum, 3 mm longum. * Stamina* 9–12 mm exserta; postica prope basin tubi corollae inserta, filamentis libris prope basin minute pubescentibus, antica fauce corollae inserta, filamentis fere ad apicem connotatis. *Stylus* 10 mm exserta, apice breviter bifidus.

Type.—Natal, 2829 (Harrismith), Cathedral Peak Forest Research Station (–CC), Killick 1644 (PRE, hol.).

Shrub, branched, 40–150 cm tall; branchlets stellato-tomentose. *Leaves* shortly petiolate; petiole 1–2 mm long, densely stellato-tomentose; blade lanceolate-elliptic to oblong-elliptic or linear-elliptic, 7–20 mm long, 2–7 mm broad, discolorous, densely stellato-tomentose, dark grey above, paler below, reticulate, apex obtuse to rounded, base cuneate, margin entire or minutely crenate-dentate above the middle. *Inflorescence* simple or spirally branched towards the base, 7–15 cm long; rachis stellato-tomentose; bracts broadly ovate, acute, 4–7 mm long, caducous, stellato-pubescent; verticillasters usually 6-flowered; pedicels 2–3 mm long, villous. *Calyx* 5–7 mm long, villous and freely gland-dotted; tube 4–5 mm long; posticus lobe broadly ovate, obtuse to rounded, suberect, 2 mm long, margin decurrent; lateral teeth deltoid-subulate, 1 mm long; anticus teeth linear-subulate, 2 mm long. *Corolla* pinkish to mauve, 8–11 mm long, glabrous with outer surfaces of lips puberulous; tube 6–9 mm long, straight, widening gradually towards the apex, mouth 3 mm wide; posticus lip small; anticus lip concave, 3 mm long. *Stamens* exserted by 9–12 mm; posticus stamens inserted near the base of the corolla tube, filaments free, minutely pubescent near the base; anticous stamens inserted at the throat of the corolla, filaments united almost to the apex. *Style* exserted by 10 mm, apex shortly bifid. Fig. 3.

*Found at altitudes of 1 700 to 2 300 m in the Natal Drakensberg between Mont-aux-Sources and Cathkin Peak where it is a common shrub along stream banks, at the foot of cliffs, and on mountain sides. It flowers mainly from December to April.*
The few specimens of this species which Ashby had at his disposal were confused with *H. elliottii* (Bak.) Ashby and *H. stenophylla* (Guerke) Ashby, and those specimens with entire leaf margins would tend to run to *H. elliottii* in his key. However, *H. elliottii* differs in having ovate-lanceolate leaves and a capitate stigma, while the calyx is stellate-pubescent, not villous as in *H. cinerea*. *H. elliottii* is essentially a plant of hot, dry savanna country, extending from Rhodesia to Botswana and to the western, northern and eastern Transvaal lowveld, but does not enter Natal.

*H. stenophylla*, on the other hand, has linear-lanceolate leaves with somewhat thickened and inrolled margins and colourful lanceolate bracts 12–15 mm long, while the calyx is glandular-hispid, short-haired, not villous as in *H. cinerea*. *H. elliottii* is essentially a plant of hot, dry savanna country, extending from Rhodesia to Botswana and to the western, northern and eastern Transvaal lowveld, but does not enter Natal.

*H. cinerea* is probably more closely allied to the two Transvaal species, *H. rugosifolia* Ashby and *H. incana* Codd (described above). From *H. rugosifolia* it differs in the dense tomentum on both surfaces of the leaf, the smaller bracts and the villous calyx. From *H. incana* it can be distinguished by the smaller leaves, which are usually dark grey on the upper surface and which are often entire or toothed only in the upper half, while the flower parts (calyx, corolla and stamens) are smaller. *H. cinerea* is known only from the Natal Drakensberg between Cathkin Park and Mont-aux-Sources, while *H. incana* appears to be restricted to the Kaapkloof Hoop area in the eastern Transvaal.


Soft shrub 35–60 cm tall, woody at the base; branches stellate-tomentose. Leaves subsessile to shortly petiolate; blade lanceolate to ovate, 4–12 mm broad, densely stellate grey velvety on both surfaces; apex acute, base obtuse; margin entire. Inflorescence simple or occasionally with a pair of branches near the base, 6–12 cm long; rachis densely and shortly stellate-tomentose; bracts broadly ovate to subrotund, persisting as a dense mauve-purple coma, 7–11×5–8 mm, stellate-pubescent near the truncate base, apex rounded; verticillasters 2–6–flowered, up to 12 mm apart. Calyx 5 mm long, sparsely stellate-tomentose mainly on the tube; upper lip subrotund, rounded at the apex, 2 mm long, markedly decurrent on the tube; lower 4 teeth deltoid-subulate, up to 2 mm long. Corolla white to pale mauve, 13 mm long, glabrous; tube 9 mm long, widening to 3 mm at the throat; upper lip a small appendage 1 mm long; lower lip concave, 4 mm long, often deflexed. Stamens shortly exserted, not or only slightly exceeding the lower corolla lip; upper pair attached about the middle of the tube, filaments pubescent for about two-thirds their length; lower pair attached at the throat, adhering loosely at the base for a few mm. Style capitale.

Found in dry, subtropical woodland in western, northern and eastern Transvaal, at altitudes of 300 to 1300 m, often on red sandy loam soil; also in Botswana and Rhodesia. Collected in flower between October and April.
THE SOUTH AFRICAN SPECIES OF HEMIZYGIA (LAMIACEAE)

A rare plant occurring along dry watercourses in the central Namib area of South West Africa.

S.W.A.—2014 (Welwitschia); near Bethanis (—AD), Giess 3029; 55 km W. of Welwitschia 1866 to Tötta Bay (—BC), De Winter & Hardy 8139. 2114 (Us); Brandberg (—AB), Liebenberg 5001.

Easily distinguished from other species in South West Africa by the dense floccose pubescence of stellate (branched) hairs on the relatively large petiolate leaves, and 2-flowered verticillasters.


Orthosiphon stenophyllus Guerke in Bot. Jahrb. 26: 84 (1898); N.E. Br. in Fl. Cap. 5, 1: 250 (1910).

Soft shrub 30–90 cm tall, branching from the base; branches arising from a perennial woody rootstock, ascending, sparingly to freely branched, densely leafy, shortly stellate-tomentose. Leaves sub-sessile; blade linear-lanceolate or elliptic-lanceolate to lanceolate, 12–30 mm long, 3–5 mm broad, upper surface, dark grey to blackish, finely and shortly pubescent with nerves impressed, lower surface densely grey stellate-velvety with nerves raised and almost parallel to the main nerve: apex tapering gradually, base obtuse; margin revolute, entire. Inflorescence simple or with one or two pairs of branches near the base, 8–18 cm long; rhachis glabrous-hispidulous often with some branched hairs; bracts as於 a colourful coma, lanceolate to ovate-lanceolate, 10–15 mm long, acute, mauve to purple, stellate-tomentose; verticillasters 4–6-flowered. Calyx 7–8 mm long, glabrous-hispidulous; upper lip ovate, rounded, 3 mm long, decurrent; lower 4 teeth subulate to bristle-like, the lowest pair the longest, up to 4 mm long. Corolla pale mauve to rosy-mauve, 13 mm long, glabrous except for the lips; tube 10 mm long, widening to 3 mm at the throat; upper lip a small appendage; lower pair attached about the middle of the tube, filaments pubescent in the lower part; upper pair attached at the throat, filaments connate to half-way up.* Stigma entire or minutely bifid.

Known from two gatherings, one in northern Natal and the other from southern Transvaal; found in grass among rocks.


Orthosiphon gerrardii N.E. Br. in Fl. Cap. 5, 1: 249 (1910).

Soft branched shrub ca. 1 m tall; branches stellate-pubescent, glabrescent with age, bark flaking off in strips. Leaves petiolate; petiole 1–3 mm long; blade ovate to broadly elliptic, ca. 15×10 mm, thickish, densely and somewhat coarsely stellate grey velvety on both surfaces; apex obtuse, base obtuse to truncate; margin entire. Inflorescence usually simple, 4–5 cm long; rhachis stellate-floccose; bracts broadly elliptical, persisting as a mauve-purple coma, ca. 8×5 mm, stellate-pubescent; verticillasters 2-flowered, 3–4 mm apart. Calyx 8–10 mm long, stellate-tomentose; upper lip ovate, 2 mm long, decurrent on the tube; lower 4 teeth deltoid-subulate, the lowest pair distinctly the longest, 3 mm long. Corolla mauve-pink; tube 17–20 mm long, pubescent; upper lip short; lower lip concave, 6 mm long. Stamens well exerted; upper pair attached near the throat; lower pair attached at the throat, filaments connate to half-way up.* Stigma entire or minutely bifid.

Known from two gatherings, one in northern Natal and the other from southern Transvaal; found in grass among rocks.


A soft shrublet 40–80 cm tall, woody below, sparingly branched; branches pale reddish-brown, loosely stellate-floccose, glabrescent with age. Leaves petiolate; petiole 1–3 mm long; blade ovate 2.5–8.5 cm long, 1.5–2.2 cm broad, loosely to densely stellate-floccose on both surfaces, nerves reticulate below; apex subacute, base obtuse; margin obscurely stellate-floccose on both surfaces, nerves reticulate below; apex subacute, base obtuse; margin obscurely and somewhat distinctly crenate-dentate. Inflorescence simple or with a pair of branches near the base, lax; rhachis glandular-hispidulous often with some branched hairs; bracts as於 a colourful coma, lanceolate to ovate-lanceolate, 10–15 mm long, acute, mauve to purple, stellate-tomentose; verticillasters 2–4-flowered. Calyx 11 mm long, glandular-strigose; upper lip broadly ovate, rounded, 2.5 mm long, decurrent; lower 4 teeth deltoid-subulate to spinosect, the lowest pair the longest, 3 mm long. Corolla pale mauve, 20 mm long, glabrous; tube 15 mm long widening from below the middle to 5 mm wide at the throat; upper lip broad, 3 mm long; lower lip concave, 5 mm long, usually deflexed. Stamens shortly exerted, not exceeding the lower lip of the corolla; upper pair attached near the middle of the tube, scarcely exerted, filaments pubescent below; lower pair attached at the throat, filaments 4 mm long, connate for about half their length. Stigma capitellate.

* Description of stamens taken largely from N. E. Brown, l.c.


Soft shrub branching from a perennial woody rootstock, forming a round bush 30–80 cm tall; branches erect or ascending, usually sparingly branched, with dense short stellate hairs and villous hairs intermingled, densely beset with leaves. *Leaves* sessile; blade narrowly elliptic to oblance-elliptic, 10–22 mm long, glandular-hispid; upper lip ovate, rounded, 2.5 mm wide, often slightly constricted at the throat, minutely bifid. *Inflorescence* simple or branched, 6–22 cm long; rhachis finely to coarsely stellate-pubescent; bracts small, ovate, acute, 5–6 mm long, stellate-pubescent; verticillasters 6-flowered, 10 mm apart. *Calyx* 9–10 mm long, glandular-hispid; upper lip ovate, rounded, 2–3 mm long, glandular-hispid, somewhat leaf-like; verticillasters 4–6-flowered, occasionally less, 5–10 mm apart. *Calyx* 5–6 mm long, stellate-hispid; upper lip ovate, acute, 2 mm long, decurrent; lower 4 teeth deltoid-subsulate, up to 2 mm long. *Corolla* white, often tinged with mauve, 12–16 mm long; tube 10–12 mm long, tubular, 2.5 mm wide, often slightly constricted at the throat, sparsely pubescent (densely so on the lips); upper lip 1.5 mm long; lower lip shallowly concave, 2–4 mm long. *Stamens* shortly exerted by 1.5–3 mm, not or scarcely exceeding the lower lip of the corolla; upper pair attached below the middle of the tube, filaments puberulous near the base; lower pair attached at the throat, filaments united only near the base or to about half their length. *Stigma* shortly bifid.

Localized on the eastern Transvaal mountains from Lydenburg and Pilgrim’s Rest to Kaapcie Hoop, in dense grass among quartzite rocks and in rock crevices, at altitudes of 1 400 to 2 200 m. Flowers from November to March.

**Transvaal.**—2430 (Pilgrim’s Rest); Pilgrim’s Rest (–DD), Rogers 14321; 14871; 18328; Galpin 14447; Graskop (–DD), Pole Evans 128; Houtbosch (–DD), between Klein Pass and Sabie (–DD?), Gillett 1017; Mac Mac Falls (–DD), Burnt Davy 2536; Codd 6446; 9480. 2530 (Lydenburg): farm Zwagershoek, S.W. of Lydenburg (–AB), Obermeyer 227; Mount Anderson (–BA), Smuts & Gillett 2403; Meeuse 10074; Long Tom Pass, Werdermann & Oberdieck 2103; Leister & Mauve 3224; Kemp’s Heights, 24 km S.W. of Lydenburg (–BA), Codd 8306; Sabie Valley (–BA), Smuts & Gillett 1380; Sabie Falls (–BA), Sabie TR 14869; Wager A118; Witkip (–BD), Kluge 301; 27 km S.E. of Machadodorp (–CB), Bruce 487; Ohrigstad Nature Reserve (–DC), Jacobsen 1492; Kaapcie Hoop (–DB), Pole Evans 985; Wager sub TR 15566; Codd 5751.

Closely related to *H. teucriifolia* (Hochst.) Briq, as will be seen from the tubular corolla which is slightly constricted at the mouth, and the very shortly exerted stamens. It differs from *H. teucriifolia* in a few minor respects, namely, the narrower, “ericoid" leaves (although occasional broader, ovate leaves may be present), the shorter internodes, the tendency for the tomentum to be yellower in colour and the usually pubescent corolla tube. The two meet in the Transvaal, but do not appear to overlap; *H. subvelutina* is restricted to the mountains from near Lydenburg and Pilgrim’s Rest to Kaapcie Hoop, while *H. teucriifolia* is distributed from the eastern Cape Province through Natal to the Barberton area, appearing again in the mountains of eastern Rhodesia.

There is some indication of introgression in the south-eastern Transvaal. Specimens from Kaapcie Hoop tend to have longer internodes and, occasionally, glabrous corolla tubes, while an occasional specimen from near Barberton may have pubescence on the corolla tube (apart from the lips which are always pubescent on the outer surface). Usually leaf shape and the colour of the pubescence can be used as a guide in such cases and it is felt that both species can justifiably be upheld. See also notes under *H. albiflora* (p. 10).


Bushy herb or soft shrublet 20–50 (–80) cm tall, branching from the base; branches few to many from a perennial woody rootstock, erect or ascending, sparingly branched, densely beset with leaves and short leafy shoots, densely stellate-pubescent, often with a yellowish tinge. *Leaves* sessile, usually ericoid, linear to linear-lanceolate, 5–10 (–15) mm long, 1–2 (–5) mm broad, coriaceous, stellate-scarbid above, usually yellowish stellate-tomentose below; margin revolute, entire. *Inflorescence* simple, 5–11 cm long; rhachis densely stellate-hispid with branched, usually yellowish hairs; bracts persistent, 4–7×2–3 mm, stellate-hispid, somewhat leaf-like; verticillasters 4–6-flowered, occasionally less, 5–10 mm apart. *Calyx* 5–6 mm long, stellate-hispid; upper lip ovate, acute, 2 mm long, decurrent; lower 4 teeth deltoid-subsulate, up to 2 mm long. *Corolla* white, often tinged with mauve, 12–16 mm long; tube 10–12 mm long, tubular, 2.5 mm wide, often slightly constricted at the throat, sparsely pubescent (densely so on the lips); upper lip 1.5 mm long; lower lip shallowly concave, 2–4 mm long. *Stamens* shortly exerted by 1.5–3 mm, not or scarcely exceeding the lower lip of the corolla; upper pair attached below the middle of the tube, filaments puberulous near the base; lower pair attached at the throat, filaments united only near the base or to about half their length. *Stigma* shortly bifid.

Occurs usually in shallow sandy soil among rocks in grassland, often near forest margins, from Woodbush to The Downs in north-eastern Transvaal, at altitudes of 1 500–2 000 m. Flowering is mainly from January to March.

**Transvaal.**—2329 (Pietersburg): Houtboschberg (–DD), Schlchter 4442; Iron Crown Mt. (–DD), Magg 16652; Wolkeberg (–DD), Meise 9866; near Houtboschdorp (–DD), Todd 9426; 2330 (Tzaneen): Westfalia Estate (–CA), Scheepers 909; Woodbush (–CC), Pole Evans 4746; Post sub TRV 13393; New Agatha (–BA), Meise 90074; Long Tom Pass, Werdermann & Oberdieck 2103; Leister & Mauve 3224; Kemps Heights, 24 km S.W. of Lydenburg (–BA), Codd 8306; Sabie Valley (–BA), Smuts & Gillett 1380; Sabie Falls (–BA), Sabie TR 14869; Wager A118; Witkip (–BD), Kluge 301; 27 km S.E. of Machadodorp (–CB), Bruce 487; Ohrigstad Nature Reserve (–DC), Jacobsen 1492; Kaapcie Hoop (–DB), Pole Evans 985; Wager sub TR 15566; Codd 5751.

**Hemizygia cinerea** (Hochst.) Briq., as will be seen from the tubular corolla which is slightly constricted at the mouth, and the very shortly exerted stamens. It differs from *H. teucriifolia* in a few minor respects, namely, the narrower, “ericoid” leaves (although occasional broader, ovate leaves may be present), the shorter internodes, the tendency for the tomentum to be yellower in colour and the usually pubescent corolla tube. The two meet in the Transvaal, but do not appear to overlap; *H. subvelutina* is restricted to the mountains from near Lydenburg and Pilgrim’s Rest to Kaapcie Hoop, while *H. teucriifolia* is distributed from the eastern Cape Province through Natal to the Barberton area, appearing again in the mountains of eastern Rhodesia.

There is some indication of introgression in the south-eastern Transvaal. Specimens from Kaapcie Hoop tend to have longer internodes and, occasionally, glabrous corolla tubes, while an occasional specimen from near Barberton may have pubescence on the corolla tube (apart from the lips which are always pubescent on the outer surface). Usually leaf shape and the colour of the pubescence can be used as a guide in such cases and it is felt that both species can justifiably be upheld. See also notes under *H. albiflora* (p. 10).

**Hemizygia** (LAMIACEAE)

The South African species of *Hemizygia* are described below.

1. **Hemizygia albiflora** (L.E. Br.) Ashby in J. Bot. Lond. 73: 348 (1935): Type: Transvaal, Mac Mac, Mudd s.n. (K., holo.).

   - **Description**: Woody shrublet 30-150 cm tall, branching freely from a perennial woody base; branches arising annually, several to many, simple, erect or ascending, hispid to villous, sometimes with branched hairs intermingled (subsp. heterotricha). Leaves subsessile to shortly petiolate; blade narrowly elliptic to ovate, 8-24 mm long, 2-15 mm broad, subglabrous and hairy to appressed villos below with long white haired hairs; apex and base tapering; margin strongly revolute, entire. Inflorescence simple or with a pair of branches near the base, 5-10 cm long; rhachis glandular-hispid; bracts deciduous, ovate, acute, 5-8×3-5 mm, sparingly pubescent; verticillasters mainly 6-flowered, 5-15 mm apart. Calyx 6-8 mm long, glandular-hispid; upper lip ovate, rounded, 2 mm long, decurrent; lower pair suborbicular, 3-5 mm long; lower lip concave, 2-3 mm long. Stamens exerted by 4-6 mm, exceeding the lower lip of the corolla; upper pair attached below the middle of the tube, filaments sparsely puberulous in the lower half; upper pair united at the throat, filaments united for almost their entire length. Stigma minutely bifid. Found among quartzite rocks, often with semi-alpine flora at altitudes of 1 800 to 2 400 m, in the mountains of the eastern Transvaal and extending to northern Swaziland. The main flowering season is from November to March.

2. **Ocimum teucriifolia** Hochst. in Flora 28: 66 (1845); Bentham in DC., Prodr. 12: 41 (1848).

   - **Description**: Woody shrublet 30-150 cm tall, branching freely from a perennial woody base; branches erect or ascending, usually simple, greyish, stellate-pubescent. Leaves linear to lanceolate or elliptic, 8-18 mm long, 3-6 mm broad, stiff, stellate-scaliolid and blackish above, greyish stellate-tomentose below; apex acute, base obtuse; margin revolute, entire. Inflorescence simple, 4-8 cm long, fairly lax or congested; rhachis stellate-ser. 2,3. Phytologia 254 (1910). Type: Transvaal, Barberton, Saddleback, S. Africa. Galpin 1217 (K, NH, PRE). O. teucriifolius (Hochst.) N.E. Br. in Fl. Cap. 5: 254 (1910).—var. galpinianus (Briq.) N.E. Br., l.c. 254 (1910).

   - **Description**: Woody shrublet 30-150 cm tall, branching freely from a perennial woody base; branches erect or ascending, usually simple, greyish, stellate-pubescent. Leaves linear to lanceolate or elliptic, 8-18 mm long, 3-6 mm broad, stiff, stellate-scaliolid and blackish above, greyish stellate-tomentose below; apex acute, base obtuse; margin revolute, entire. Inflorescence simple, 4-8 cm long, fairly lax or congested; rhachis stellate-ser. 2,3. Phytologia 254 (1910). Type: Transvaal, Barberton, Saddleback, S. Africa. Galpin 1217 (K, NH, PRE). O. teucriifolius (Hochst.) N.E. Br. in Fl. Cap. 5: 254 (1910).—var. galpinianus (Briq.) N.E. Br., l.c. 254 (1910).

   - **Description**: Woody shrublet 30-150 cm tall, branching freely from a perennial woody base; branches erect or ascending, usually simple, greyish, stellate-pubescent. Leaves linear to lanceolate or elliptic, 8-18 mm long, 3-6 mm broad, stiff, stellate-scaliolid and blackish above, greyish stellate-tomentose below; apex acute, base obtuse; margin revolute, entire. Inflorescence simple, 4-8 cm long, fairly lax or congested; rhachis stellate-ser. 2,3. Phytologia 254 (1910). Type: Transvaal, Barberton, Saddleback, S. Africa. Galpin 1217 (K, NH, PRE). O. teucriifolius (Hochst.) N.E. Br. in Fl. Cap. 5: 254 (1910).—var. galpinianus (Briq.) N.E. Br., l.c. 254 (1910).

   - **Description**: Woody shrublet 30-150 cm tall, branching freely from a perennial woody base; branches erect or ascending, usually simple, greyish, stellate-pubescent. Leaves linear to lanceolate or elliptic, 8-18 mm long, 3-6 mm broad, stiff, stellate-scaliolid and blackish above, greyish stellate-tomentose below; apex acute, base obtuse; margin revolute, entire. Inflorescence simple, 4-8 cm long, fairly lax or congested; rhachis stellate-ser. 2,3. Phytologia 254 (1910). Type: Transvaal, Barberton, Saddleback, S. Africa. Galpin 1217 (K, NH, PRE). O. teucriifolius (Hochst.) N.E. Br. in Fl. Cap. 5: 254 (1910).—var. galpinianus (Briq.) N.E. Br., l.c. 254 (1910).
4–8 cm long, medium-dense; rachis glandular-hispid to villous; bracts persistent, leaflike, ca. 10 x 4 mm, hispid to stellato-pubescent; verticillasters (2–) 4–6 flowered, 10–20 mm apart. Calyx 7–8 mm long at flowering, enlarging considerably in fruit, glandular-hispid; upper lip ovate-elliptic, rounded, 2.5 mm long, deciduous; lower 4 teeth deltoid-subulate, up to 2.5 mm long, the lower pair in particular becoming bristle-like. Corolla whitish to pale mauve, 14–16 mm long, puberulous; tube 10–12 mm long, narrowly tubular, scarcely widening to 2 mm wide at the throat; upper lip relatively long and narrow, 3 mm long; lower lip shallowly concave, 4 mm long. Stamens with only the lower pair shortly exserted by 2–3 mm (less than the lower lip); upper pair included, attached near or above the middle of the tube, filaments very slender, glabrous; lower stamens attached at the throat, united for more than half their length. Stigma minutely bilobed.

Distributed from central to eastern Transvaal-Swaziland and northern Natal, in dense grassland, often among rocks, mainly at altitudes of 1 000 to 1 900 m. The species is characterized by the narrowly tubular corolla, scarcely expanding towards the throat; the longish upper lip of the corolla which almost equals the lower lip; and the fact that the upper pair of stamens are never exserted. In certain other species the upper pair of stamens are very short but eventually they are slightly exserted, e.g. H. subvelutina, H. teurcifolia and H. persimilis.

Two subspecies are recognized which are separated mainly on the presence or absence of stellate (branched) hairs (see key to species, p. 2) and to some extent of leaf shape.

(a) subsp. pretoriae.


(b) subsp. heterotricha Codd, var. nov. a typical foliis stellato-pubescentibus differt.

Type: Swaziland, 2631 (Mbabane), near Hlatikulu (–CD), Compton 26320 (PRE, holo.).

Stellate (branched) hairs present on stems, leaves and bracts; leaves ovate to ovate-rotund; florally in no way different from the typical. Fig. 4.

Distribution and ecology as for the species, though absent from southern Swaziland; flowering is mainly from October to February.

Found in south-western Swaziland, the Piet Retief District of Transvaal and the Hluhluwe area of Natal; recorded in flower from October to January.

Swaziland.—2631 (Mbabane): near Mankaiana (–CA), Compton 30458; near Hlatikulu (–CD), Compton 26259; 2630; 2832; 2925.

Natal.—2832 (Mbutatuba): Hluhluwe Game Reserve (–AA), Ward 3960.

Normally, subsp. heterotricha does not differ in floral characters or growth habit from the typical and thus subspecific status is considered appropriate. It occurs slightly to the south-west of subsp. pretoriae and no overlapping in distribution has yet been found.

The specimen Ward 3960 has an unusual habit consisting of a slender branched stem about 30 cm tall, apparently not arising from a woody rootstock.
as in the normal behaviour of the species. Florally it
does not deviate from *H. pretoriae* and it possesses
the stellate pubescence of subsp. *heterotricha*. The
usual habit may be the result of the absence of
fire over a period of years or it may represent a distinct
ecological form adapted to the lower altitude.

16. *Hemizygia modesta* Codd, sp. nov., a *H.
thorncroftii* (N.E. Br.) Ashby foliis brevioribus,
bracteis parvioribus, inconspicuis, verticillastris 2-
floribus differt.

Fruticulus 12–25 cm altus; caules annui, graciles,
erecti, caudice lignoso exoriens, hispideri vel villosi.
*Folia* sessilia vel subsessilia, late ovata, ovata, elliptica
vel lanceolato-elliptica, 6–12 mm longa, 4–6 mm lata, 
parce vel dense hispida, glandulosu-punctata, nervis
obscursis, apice acute vel obtuso, basi obtusa, margine
integro. *Inflorescentia* simplex, 5–10 cm longa;
rhachis glandulosu-hispida; vel villosus; bracteae
ovatae, acuminatae, 4–5 mm longae, inconspicuae,
cuducae, hispidae vel villosae, glandulosu-punctatae:
verticillasti 2–flori; pedicelli 2 mm longi. *Calyx* per
anthesin 7–8 mm longus, hispides, copiose glandulosu-
punctatus; tubus 4–5 mm longus; lobi postici late
ovatus, suberectus, obtusus vel rotundatus, 2 mm
longus, margine decurrenti; dentes laterales deltoideo-
subulati; 2 mm longi; antici linear-subulati, 2,5–3 mm
longi. *Corolla* alba vel pallido-malvina, 15–16 mm
longa, glabra vel extus labiis puberulis; tubus 11–
12 mm longus, apicum versus sensim ampliatus, ore
4 mm: lato; labium posticum 1,5 mm longum; 
anticum concavum, 4–5 mm longum, horizontale vel
recurvum. * Stamina* 10 mm exserta; postica circa
medium tubi corollae inserta, filamentos libris basin
versus pubescentibus; antica fauce corollae inserta,
filamentos ad apicum connatis. *Stylus* 15 mm exsertus,
apice breviter bilido.

**TYPE.**—Swaziland, 2631 (Mbabane), Bomvu Ridge
(–AA), Compton 28368 (PRE, holo.).

Shrublet 12–25 cm tall; stems annual, slender,
erect, arising from a woody rootstock, hispid to
villosus. *Leaves* sessile or subsessile, broadly ovate to
elliptic or lanceolate-elliptic, 6–12 mm long, 4–6 mm
broad, sparingly to densely hispid, gland-dotted,
nerves indistinct, apex acute to obtuse, base obtuse,
margin entire. *Inflorescence* simple, 5–10 cm long;
rhachis glandular-hispid to villosus; bracts ovate,
acuminate, 4–5 mm long, inconspicuous, caducous,
hispid to villosus, gland-dotted; verticillasters 2-
flowered; pedicels 2 mm long. *Calyx* when flowering
7–8 mm long, hispid, freely gland-dotted; tube
4–5 mm long; posticous lobe broadly ovate, suberect,
oblanceolate, 2,5–3 mm long. *Corolla* white to
pale mauve, glabrous with outer surfaces of lips
puberulous; tube 11–12 mm long, widening gradually
towards the apex, mouth 4 mm wide; posticous lip
1,5 mm long; anticus lip concave, 4–5 mm long,
horizontal to recurved. *Stamens* exserted by 10 mm;
posticous stamens inserted about the middle of
the corolla tube, filaments free, pubescent towards
the base; anticus stamens inserted in the throat of
the corolla, filaments united to the apex. *Style* exserted
by 15 mm, apex shortly bifid. **Fig. 5.**

Found in mountain grassland subjected to periodic
burning, in the mountains behind Barberton, in
Swaziland and in the Piet Retief district; flowering
takes place in spring while the grass is still short,
though it can continue until later depending on local
conditions.

**Transvaal.**—2531 (Komatipoort): Cythna Letty Reserve
(–CC), Mauve 4807; 16 km S.E. of Barberton on road to Have-
lock (–CC), Acocks 12867; Codd 1623. 2730 (Vryheid): Piet
Retief (–BB), Leipoldt s.n.

**Swaziland.**—2531 (Komatipoort): Havelock (–CC), Com-
ton 29123, 2631 (Mbabane); Bomvu Ridge (–AA), Compton
28368; Forbes Reef (–AC), Compton 30975; 32443; Mankaiana,
near Gege (–CA), Compton 30013.

In habit and ecology *H. modesta* resembles *H.
pretoriae* (Guerke) Ashby and *H. thorncroftii* (N.E.
Br.) Ashby in being small, spring-flowering shrublets,
sending up annual shoots from a woody rootstock
often before the first rains occur, and is most
noticeable after the grass has been burnt.

From *H. pretoriae* it is readily distinguished on the
floral characters: in *H. pretoriae* the verticillasters
are 6-flowered, the corolla scarcely widens towards
the mouth and the upper pair of stamens remains
included in the corolla tube; in *H. modesta* the verticillasters
are 2-flowered, while the corolla widens towards
the mouth and all four stamens are well exerted.

The individual flowers of *H. thorncroftii* are similar
to those of *H. modesta* but again the verticillasters
are 6-flowered, the leaves are long and narrow
(1,5–3,5 cm long), and the bracts are longer (8–
20 mm) and more colourful, persisting as a con-
spicuous apical coma. An occasional specimen of
*H. thorncroftii* has leaves shorter and wider than
usual and such specimens appear to be somewhat
intermediate, but the 6-flowered verticillasters
and conspicuous bracts place them without doubt in
*H. thorncroftii*. 

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**Fig. 5.**—*Hemizygia modesta* (Compton 28368, PRE, holotype).
Another dwarf species of the eastern Transvaal highveld, S. foliosa S. Moore, has 2-flowered verticillasters, but the leaves are much larger (2-6 x 1-3 cm), the inflorescence is usually paniculate and the bracts are large and conspicuous.

There is a certain amount of variation included in the specimens of H. modesta cited above, which calls for further investigation. The specimens from Havelock, Acocks 12867, Liebenberg 2530, have shorter and broader leaves with more villous pubescence on stems and leaves than the typical form. However, Mauve 4807 from near Barberton is somewhat intermediate and so separate rank for the villous form does not seem to be justified. The specimen Leipoldt s.n. from Piet Retief is more robust than usual for the species. It was given the manuscript name H. nervosa by Ashby, who refrained from publishing it until further material became available.

17. Hemizygia punctata Codd, sp. nov. a H. transvaalensis (Schltr.) Ashby foliis, bracteis et floribus parvioribus, verticillastris 2-floribus differt.

Frutex ramosus, 60–120 cm altus; ramuli graciles, hispiduli. Folha subcoriacea, breviter petiolata; petiolus 1–2 mm longus; lamina elliptica vel elliptic-oblanceolata, 10–15 mm longa, 3–7 mm lata, utrinque hispidula, glanduloso-punctata, nervis obscure, acuto vel obtuso, basi cuneatae, margine integro vel supra medium minute crenato-dentata. Inflorescentia simplex vel basin versus parce ramosa, 8–15 cm longa; rhachis breviter hispidus; bracteae late ovatae, 4–6 mm longae, caducae, parce pubescentes; verticillasti 2-flori; pedicelli 3 mm longi, hispidi. Calyx per anthesin 6–8 mm longus, glanduloso-hispidus; tubus 4 mm longus; lobi postici late ovati, obtusi, suberecti, 2 mm longi, margine decurrenti; dentes laterales deltidoideo-subulati, 1,5 mm longi; antici subulati, 2,5 mm longi. Corolla pallide malvina, 9–12 mm longa, glabra; tubus 7–10 mm longus, rectus, apicem versus sensim ampliatus, orie 4 mm lato; labium posticum parvum; anticum concavum, 2 mm longum. Stamina 7–9 mm exserta; postica prope basin tubi corollae inserta, filamentis libris, basin versus pubescentibus; antica fauce corollae inserta, filamentis ad apicem connatis. Stylus 7–8 mm exsertus, apice breviter bilobato.

TYPE: Transvaal, 2530 (Lydenburg), 18 km S.W. of Lydenburg (AB), Codd 8038 (PRE, holotype).

Shrub, branching, 60–120 cm tall; branchlets slender, hispidulous. Leaves subcoriaceous, shortly petiolate; petiole 1–2 mm long; blade elliptic to elliptic-oblanceolate, 10–15 mm long, 3–7 mm broad, both surfaces hispidulous and gland-dotted with the nerves obscure, apex acute to obtuse, base cuneate, margin entire or minutely crenate dentate above the middle. Inflorescence simple or sparingly branched towards the base, 8–15 cm long; rhachis shortly hispid; bracts broadly ovate, 4–6 mm long, caducous, sparingly pubescent; verticillasters 2-flowered; pedicels 3 mm long, hispid. Calyx when flowering 6–8 mm long, glandular-hispid; tube 4 mm long; posticus lobe broadly ovate, obtuse, suberect, 2 mm long, margin decurrent; lateral teeth deltoid-subulate, 1,5 mm long; anticus teeth subulate, 2,5 mm long. Corolla pale mauve, 9–12 mm long, glabrous; tube 7–10 mm long, straight, Widening gradually towards the apex, mouth 4 mm wide; posticus lip small; anticus lip concave, 2 mm long. Stamen exserted by 7–9 mm; posticous stamens inserted near the base of the corolla tube, filaments free, pubescent towards the base; anticus stamens inserted in the throat of the corolla, filaments united to the apex. Style exserted by 7–8 mm, apex shortly bilobed.

Fig. 6.—Hemizygia punctata (Codd 8038, PRE, holotype).

Grows on stony slopes in grassland, often with scattered trees and shrubs, and has been recorded from the Lydenburg, Nelspruit and Barberton Districts.

Transvaal.—2530 (Lydenburg): 18 km S.W. of Lydenburg (AB), Codd 8038 (PRE, holotype). Although superficially resembling the small-leaved form of H. transvaalensis (Schltr.) Ashby (described as Ocimum wilmsii Guerke, but now included in H. transvaalensis), H. punctata differs in many details. It is a slender-stemmed shrub, branching above, in contrast to H. transvaalensis which branches mainly from the base; the leaves are smaller, subentire to minutely toothed in the upper half, the nerves are indistinct and minute gland-dots are impressed in both the upper and lower surfaces; the flowers are smaller; and the bracts are small and inconspicuous,

Ashby attached the manuscript name H. glandulifolia to the specimen Liebenberg 3323, which he saw in 1936, but refrained from describing due to inadequate material.

Orthosiphon bolusii N.E.Br. in Fl. Cap. 5,1: 258 (1910).

Stems several, erect, 25–30 cm tall arising annually from a woody perennial base, softly woody at the base, herbaceous above, sparingly branched, villous. Leaves petiolate; petiole 2–4 mm long; blade ovate, 2–2.5 cm long, 1.4–1.8 cm broad, brownish and base, herbaceous above, sparingly branched, villous.

Inflorescence simple, 10–14 cm long, lax; rhachis parce strigilosis; bracteae ovatae vel plerumque basin versus parce ramosa, 10–15 cm long; 6–11 mm lata, supra parce hispidula, glanduloso-punctata, apice rotundata, basi obtusa vel cuneata, margine praecipue obscure crenato-dentata.

Stems eight, erect, 24–30 cm tall arising from a woody perennial base, softly woody at the base, herbaceous above, sparingly branched, villous. Leaves petiolate; petiole 2–4 mm long; blade ovate, 2–2.5 cm long, 1.4–1.8 cm broad, brownish and base, herbaceous above, sparingly branched, villous.

Inflorescence simple, 10–14 cm long, lax; rhachis parce strigilosis; bracteae ovatae vel plerumque basin versus parce ramosa, 10–15 cm long; 6–11 mm lata, supra parce hispidula, glanduloso-punctata, apice rotundata, basi obtusa vel cuneata, margine praecipue obscure crenato-dentata.

The habit and corolla shape suggest a relationship to H. transvaalensis (Schltr.) Ashby, but the leaves of the latter are acute and markedly toothed while the apex of the inflorescence is adorned by a coma of colourful bracts.

N. E. Brown, I.e., quotes this species as affording an example of the lower pair of filaments being free or united on the same plant. There are two capsules mounted on the type specimen, one marked “A, flower with filaments free” and the other “B, flower with lower pair of stamens united nearly to the apex”.

It must be concluded that Flower A must have been abnormal or badly squashed in pressing. There are with lower pair of stamens united nearly to the apex without the need for dissecting them. More material of the species is desired for further study.

19. Hemizygia ramosa Codd, sp. nov. a H. transvaalensis (Schltr.) Ashby habitu ramosissimo, foliis obscure dentatis, verticillastis 2-floribus differt.

Frutex ramosissima, 1–1.2 m altus; ramuli breviter ramulosi. Folia breviter petiolata; petiolo 1–3 mm longus, ramulosus; lamina obovata vel oblan­ceolata, 15–25 mm longa, 6–11 mm lata, supra parce hispidula, subtus hispidula, glanduloso-punctata, apice rotundata, basi obtusa vel cuneata, margine praecipue obscure crenato-dentata. Inflorescentia plumque basin versus parce ramosa, 10–15 cm longa; rhachis parce strigilosis; bracteae ovatae vel late ellipticae, 14–16 mm longae, 6–8 mm latae, lilacinae, subglabraceae vel parce pubescentes; verticillastri 2-florii; pedicelli 2–3 mm longi. Calyx per anthesin 8 mm longus, parce glanduloso-hispidulus; tubus 6 mm longus; lobi postici late ovatus, rotundatus, 2 mm longi, margine decurrenti; dentes laterales deltoideo-subulati, 1 mm longi; antici subulati, 2 mm longi. Corolla malvina, 25–28 mm longa, puberula; tubus 20–22 mm longus apicem versus sensim amplatus, ore 4–5 mm lato; labium posticum 2 mm longum; anticum concavum, hori­zontale vel recurvum, 5 mm longum. Stamina 9–11 mm exserta; postica circa medium tubi corollae inserta, filamentis libris, basin versus pubescentibus; antica fauce corollae inserta, filamentis ad apicum connatis.

Stylus 15 mm exsertus, apice breviter bilobato.

Type: Natal, 2732 (Ubombo), near Mkuze (–CA), Moll 3158 (PRE, holo.).

Shrub, much branched, 1–2 m tall; branchlets shortly tomentose. Leaves shortly petiolate; petiole 1–3 mm long, tomentose; blade obovate to oblan­ceolata, 15–25 mm long, 6–11 mm broad, sparingly hispid above, hispid and gland-dotted below, apex rounded, base obtuse to cuneate, margin obscurely crenate-dentate mainly above the middle. Inflorescence usually 6–15 mm long, sparingly branched towards the base, 10–15 cm long; rhachis sparingly strigilose; bracts ovate to broadly elliptical, 14–16 mm broad, 6–8 mm long, mauve-pink subglabrous to sparingly pubescent; verticillasters 2-flowered; pedicels 2–3 mm long.

Calyx when flowering 8 mm long, sparingly glandular-hispidulous; tube 6 mm long; posticus lobe broadly ovate, rounded, 2 mm long, margin decurrent; lateral teeth deltoid-subulate, 1 mm long; anticus teeth subulate, 2 mm long, Corolla mave, 25–28 mm long, puberulous; tube 20–22 mm long, widening gradually towards the apex, mouth 4–5 mm wide; posticus lip 2 mm long; anticus lip concave, horizontal or recurved, 5 mm long. Staminex exerted by 9–11 mm; posticus stamens attached about the middle of the corolla tube, filaments free, pubescent towards the base; anticus stamens inserted in the throat of the corolla, filaments united to the apex.

Style exerted by 15 mm, apex shortly bilobed. Fig. 7.

Found in shallow soil among rocks in open woodland at the southern end of the Lebombo Range near Mkuze.


In the herbarium, H. ramosa is reminiscent of H. transvaalensis (Schltr.) Ashby but the two are not likely to be confused in the field because of differences in habit and ecology. H. ramosa is a much-branched bushy shrub growing on rocky, wooded hillsides and cliffs, while H. transvaalensis is adapted to grassland which is periodically burnt, with the result that it develops a woody rootstock from which several branches arise annually. There are also differences in shape, pubescence and nervation of leaves, with H. ramosa having leaves more obovate and less dentate than those of H. transvaalensis. An important difference, in addition, are the flowers produced in shape, pubescence and nervation of leaves, with H. ramosa having leaves more obovate and less dentate than those of H. transvaalensis. An important difference, in addition, are the flowers produced singly in the axils of the bracts in H. ramosa while, in H. transvaalensis each bract subtends usually three flowers.

In the field H. ramosa would probably remind one of Syncolostemon latidens (N.E. Br.) Codd, thus emphasizing the close affinity of the two genera. However, the calyx of H. ramosa is clearly of the Hemizygia type, having a broad upper lobe, decurrent on the remaining part of the tube, with the remaining four teeth ending in subulate, almost spine-like points.
Locally common at medium altitudes of 1000 to 1700 m in the eastern Transvaal mountains from the Marieskop and Lydenburg areas southwards to Barberton, on grassy slopes and flats, usually among rocks.

**Transvaal.**—2430 (Pilgrim's Rest): near Marieskop (DB), Fitzsimons & Van Dam sub TRV 26256; Van der Schijff 5888; Bourkes Luck Mine (DB), Galpin 14313; Ohrigstad Nature Reserve (DC), Jacobsen 1458; Lisbon Falls (DD), Jordaan 99; Pilgrim's Rest (DD), Rogers 14373; 18251; Galpin 14533; 18 km E. of Grasskop, Codd & de Winter 3123, 2531 Lydenburg; 16 km N. of Lydenburg (AB), Strey 4113; near Lydenburg (AB), Wilms 1107; Young 4452; Codd 339; farm Rietfontein 1240 (AB?); Burtt Davy 7256; farm Zwagershoek (AB), Obermeyer 328; Obermeyer & Verdoorn 1922; farm Kleinoog (AC), Burger 13; 26 km S.E. of Lydenburg (BA), Morris 21; 10 km W. of Sabie (BA), Balsingsh & Kersberg 2139; 11 km E. of Sabie (BB), Brent 170; Crocodile River (BC?), Schlechter 3916; Wonderkloof Nature Reserve (BC), Kluge 24; Elen-Puttick 47; Rosehaugh (BA), Mogg 17571; near Nelspruit (BD), Rogers sub TRV 4741; Buitendag 537; 18 km S.E. of Sewefontein (CD), Codd 8112; Godwan River (DA), Prasser 1264; Coetzeezooom Forestry Station (DA), Hardy 11; Kaapschehoop (DB), Thode 1634, 2531 (Komatipoort); Pretorius Kop (AB), Lang sub TRV 31557; White River (AC), Thorp sub NH 29672; near Barberton (CC), Galpin 468; Bolus 7604; Thorne croft sub TRV 3123; Williams sub TRV 7655; Rogers 21242; Mauve 4806.

*Hemizygia transvaalensis* is related to the next two species, *H. foliosa* S. Moore and *H. thorncroftii* (N.E. Br.) Ashby, but is a more robust species, up to 1 m tall, with usually broader bracts and longer flowers (corolla tube 14–17 mm long). Depauperate specimens may be only 20 cm tall with narrow bracts and these may be confused with *H. thorncroftii* which, however, usually has narrowly elliptical leaves while the corolla tube is 8–10 mm long. *H. foliosa* tends to be decumbent, usually with large, elliptical leaves rounded at the apex, the corolla is smaller (tube about 10–12 mm long), and the verticillasters are 2-flowered.

Occasional specimens of *H. transvaalensis* branch freely and produce numerous small leaves, giving specimens a broom-like appearance. Such a specimen was described as *Orthosiphon wilmssii* Guerke. However, there are many intermediates linking it with typical *H. transvaalensis* in which branching is sparing and leaves few and larger. There is also a good deal of variation in leaf shape, toothing of the margin and pubescence. It grows under warmer and drier “middleveld” conditions than the majority of eastern Transvaal species and the showy bracts and flowers have led to it being cultivated with some success in Pretoria.


*Orthosiphon foliosus* (S. Moore) N.E. Br. in Fl. Cap. 5,1: 245 (1910). *Orthosiphon humilis* (N.E. Br.) Ashby, i.e. 245 (1910). Syntypes: Transvaal, Drakensberg, Mudd s.n. (K; PRE, fragment); Spitzkop, Burtt Davy 1570 (K).

Soft shrublet 30–100 cm tall; stems arising annually from a perennial woody rootstock, becoming woody at the base, sparingly to freely branched and broom-like (in the latter case with many small leaves), sparingly to densely hispid. Leaves sessile or shortly petiolate; blade stiff, on main stems ovate to broadly ovate, 15–40 mm long, 8–22 mm broad, on branched form ovate-elliptic to ovate, 12–20 mm long, 4–8 mm broad, pale greenish-brown and veins impressed above, slightly paler and reticulate below, sparingly to densely pubescent and glandular on both surfaces, especially on the nerves below; apex acute to obtuse, base obtuse to rounded; margin fairly coarsely serrate-dentate for the upper two thirds, rarely teeth obscure. Inflorescence 7–20 cm long, fairly lax, simple or with 1 or 2 pairs of branches near the base; rachis glandular-hispid; bracts ovate to lanceolate, the terminal ones, persistent, pairs spaced 10–15 mm apart, pinkish-purple, 12–24 x 4–10 mm, subglabrous; verticillasters usually 6-flowered, 1–2 cm apart. Calyx 10–12 mm long at anthesis, densely glandular-hispidulous, purple; upper lip ovate, rounded, 2.5 mm long, decurrent; lower 4 teeth deltoid-subulate to tristylite-like, the lowest pair the longest, up to 3 mm long. Corolla whitish to mauve-purple or lilac-pink, 18–22 mm long, glabrous; tube 14–17 mm long widening to 5 mm wide at the mouth; upper lip a small appendage; lower lip concave, 4–6 mm long, often deflexed. Stamens exerted by 7–10 mm, exceeding the lower lip of the corolla; upper pair attached about the middle of the tube, filaments pubescent in the lower two thirds; lower pair attached at the throat, filaments united nearly or to the apex. Stigma bifid.


Bushy herb 15-30 cm tall from a perennial rootstock; stems simple or branched, glandular-hispid. Leaves subsessile; blade lanceolate-elliptic, 15-20 mm long, 7-9 mm broad, more or less concolorous, sparingly appressed-pubescent, the surface somewhat wrinkled and dotted with brownish gland-dots; apex obtuse, base cuneate; margin entire. Inflorescence simple, 3-12 cm long, fairly dense; rhachis densely glandular-villosus; bracts both the lower and upper persistent, the upper ovate-lanceolate to broadly ovate, 12-15x7-10 mm, whitish to rose-purple, thinly pubescent and dotted with reddish-brown gland-dots; verticillasters 2-6-flowered, 3-10 mm apart. Calyx 8 mm long at anthesis, glandular-hispid; upper tooth ovate, 3 mm long, deciduous; lower 4 teeth deltoid-subulate, the lowest pair the longest, up to 3 mm long. Corolla mauve 14-16 mm long, puberulous on the lips; tube 10-12 mm long, widening to 4 mm at the mouth; upper lip a small appendage; lower lip concave, 4 mm long, often deflexed. Stamens exerted by 10 mm, well exceeding the lower lip; upper pair attached about the middle of the tube or just below, filaments pubescent in the lower part; lower pair attached at the throat, filaments united for their entire length. Stigma minutely bifid.

Found on grassy slopes at altitudes of 1 000 to 1 800 m in the Barberton District of Transvaal and in western Swaziland.

Orthosiphon persimilis is such a specimen and the latter species has 2-flowered verticillasters and lacks the colourful apical bracts of H. thorncroftii.


Bushy herb 15-30 cm tall from a perennial rootstock; stems simple or branched, glandular-hispid. Leaves subsessile; blade lanceolate-elliptic, 15-20 mm long, 7-9 mm broad, more or less concolorous, sparingly appressed-pubescent, the surface somewhat wrinkled and dotted with brownish gland-dots; apex obtuse, base cuneate; margin entire. Inflorescence simple, 3-12 cm long, fairly dense; rhachis densely glandular-villosus; bracts both the lower and upper persistent, the upper ovate-lanceolate to broadly ovate, 12-15x7-10 mm, whitish to rose-purple, thinly pubescent and dotted with reddish-brown gland-dots; verticillasters 2-6-flowered, 3-10 mm apart. Calyx 8 mm long, glandular-villos and freely gland-dotted; upper tooth ovate, rounded, deciduous; lower 4 teeth deltoid-subulate, the lower pair the longer, up to 2 mm long. Corolla white, drying yellow-brown, 11-12 mm long, puberulous both on the outside and within the upper lip; tube 8 mm long, not expanding towards the throat, lips spreading; upper lip formed by the abruptly spreading throat, erect, 3.5 mm long; lower lip concave, 3-4 mm long. Stamens shortly exerted by 1-2 mm, the upper pair sometimes scarcely exerted; upper pair attached about the middle from the uppermost glands; lower pair attached at the throat, joined at their point of insertion or united only at the base for ca. 0.5 mm, filaments sparingly pubescent. Stigma clavate.

Known only from the Nelspruit–Barberton area of the eastern Transvaal where it grows in grassy places among rocks in lowveld woodland at altitudes of about 1 000 m.
H. persimilis shows a combination of unusual features in the genus, some of which are also found in *H. pretoriae*, a species of similar stature and ecology. For example, the narrow corolla tube expands abruptly at the mouth forming what appears for about 8-10 mm then expanding to 3-4 mm at the deltoid-subulate to bristle-like, up to 2 mm long. 

There are thus as many differences as there are similarities between the two species, both of which are aberrant members of the genus. The fact that the filaments of the lower pair of stamens are united only at the base may be put forward as an example which breaks down the distinction between *Hemizygia* and *Orthosiphon*. However, the structure is different. In *Orthosiphon* the filaments (free to the point of attachment) continue down as distinct and separate ridges on the corolla-tube; in *Hemizygia* the filaments are united at their point of attachment and continue as a single confluent ridge down the corolla-tube.


Soft shrub up to 1 m tall, branching usually from the base; stems few to many, ascending, glandular-pilose. *Leaves* petiolate; petiole 6-14 mm long; blade ovalate to ovate-lanceolate, 2-5,5 cm long, 0,6-3 cm broad, dark brown and shortly glandular pubescent above, paler and ciliate below, nerves distinct; apex acutish to obtuse, base cuneate to obtuse; margin finely to fairly coarsely serrate-dentate in the upper half to two thirds. *Inflorescence* paniculate or occasionally simple, lax, 10-30 cm long; rhachis glandular-tomentulose; bracts sometimes persisting as a purple coma, ovate, usually rather small, 5-10 x 3-5 mm, more often the apex of the inflorescence broken off, lower bracts early caducous; verticillasters (4-)6-flowered, 1,5-4 cm apart. *Calyx* 5-6 mm long at anthesis, enlarging in fruit, glandular-tomentulous; upper tooth ovate to subtruncated, 1,5-2 mm long, decurrent; lower 4 teeth deltoid-subulate to bristle-like, up to 2 mm long. *Corolla* pale mauve to lilac, 17-20 mm long, finely pubescent; tube 13-16 mm long, narrowly cylindrical for about 8-10 mm then expanding to 3-4 mm at the mouth; upper lip a small appendage; lower lip concave, 4 mm long. *Stamens* exserted by 7-10 mm, exceeding the lower lip; upper pair attached about 3 mm from the base of the tube, filaments puberulous below; lower pair attached at the throat, filaments united for more than half their length. *Stigma* swollen, marginate.

Restricted to north-eastern Transvaal from the Soutpansberg to near Duiwelskloof on rocky, wooded hillsides and at forest margins, at altitudes of 1 000 to 1 600 m.


Herb, probably perennial, woody and branched below, 30-60 cm tall; stems often branched; shortly greyish-tomentose, often crisped or, occasionally, sparse but not villous. *Leaves* subsessile or shortly petiolate; petiole up to 5 mm long; blade linear or linear-lanceolate to lanceolate or, rarely ovate-lanceolate, 2,5-5,5 cm long, 3-15 mm broad, concolorous, densely canescent on both surfaces to sparingly short crisped tomentulose and somewhat rugose, nerves prominent below; apex acute, base cuneate to attenuate; *Inflorescence* simple to free branched, 7-25 cm long, lax; rachis crisped-tomentulose to finely glandular-hispidulous; bracts early deciduous, small, ovate, ca. 2 x 1 mm; verticillasters 4-6-flowered, 1-3 cm apart. *Calyx* 5 mm long at anthesis, enlarging in fruit, glandular-tomentulose to hispidulous; upper lip ovate to subrotund, 2 mm long, decurrent; lower 4 teeth deltoid-subulate, becoming bristle-like, up to 2 mm long. *Corolla* white or pale mauve or purplish, 14-17 mm long, finely pubescent; tube 10-13 mm long, widening abruptly about 2,5 mm from the throat to 3-4 mm wide at the throat; upper lip a small appendage; lower lip concave, 3-4 mm long. *Stamens* exserted by 10 mm, well exceeding the lower lip; upper pair attached about 4 mm from the base of the tube, filaments puberulous below; lower pair attached at the throat, filaments united for most of their length. *Stigma* somewhat clavate.

Distributed in a broad band from the Mafeking District of the Cape Province, across south-western and central Transvaal to eastern Transvaal, avoiding the high mountains, extending to Swaziland and northern Zululand; among rocks in open arid to moist woodland and marginal grassland at altitudes of 300 to 1 700 m.
THE SOUTH AFRICAN SPECIES OF HEMIZYGIA (LAMIACEAE)

(–CA), Potts s.n.; Louw 699, 2628 (Johannesburg); near Heidelberg (–AD), Leendertz 1027; Repton 824; Story 1606; Suikerbosrand (–CA), Bredenkamp 762.

SWAZILAND.—2631 (Komatiport): Pigs Peak (–CC), Compton 27626; 27557; 2631 (Mbabane): Stegi, Blue Jay Range (–BD), Cotton 31458.

NATAL.—2732 (Umhomblo): Pongolo Poort (–AC), Ward 4083.

CAPE.—2525 (Mafeking): near Mosita (–DC?), Breeueker s.n.; 538.

A good deal of variation in leaf shape is included in H. canescens from linear (3–4 mm wide), in the dry western extremity of its range in the Mafeking District, to lanceolate and ovate-lanceolate (up to 15 mm wide) in more mesophytic areas. The species is diagnosed on the basis of the short canescent, often crisped tomentum of stems and leaves though, towards the north of the range, in the Waterberg, Potgietersrus and Tzaneen Districts, the pubescence is more scanty and somewhat rougher. This form was separated as Orthosiphon affinis N.E. Br., but Ashby reduced it to synonymy under H. canescens. Although the extremes can be separated with some scrutiny under magnification, there are numerous intermediates linking them.

Superfically H. canescens closely resembles H. petrensis but the latter may be recognized by the presence of long villous hairs on the stems, although the pubescence of the leaves is often similar. The latter is a more western species, entering the northern and eastern Transvaal lowveld, and is also very variable (see p. 19). H. canescens appears to be a fairly clear-cut entity with a distribution distinct from H. petrensis and thus it seems justified to uphold both as species. However, two specimens from the Waterberg in S.W. Africa, Boss sub TRV 35003 and De Winter 2799, have pubescence resembling H. canescens and this areas should be investigated further.


Orthosiphon linearis Benth. in Hook. J. Pl. t. 1274 (1878); Rolfe in Oates, Matabeleland ed. 2: 407 (1889); Bak, in Fl. Trop. Afr. 5: 374 (1900).

Herb, probably perennial, 30–50 cm tall, somewhat woody and branching below; stems subglabrous to sparingly villous, quadrangular and ribbed along the angles. Leaves sessile or subsessile; blade linear, 2–3 cm long, 2–4 (–5) mm broad, puberulous to sparingly hispid, often folded along the midrib or with margins involuted; apex acute, base attenuate; margin finely and distantly toothed. Inflorescence 12–20 cm long, simple or branched near the base, lax; rhachis sparingly hispidulous; bracts early caducous, very small, ovate, 2×1 mm, verticillasters 4–6-flowered, 1.5–5 mm apart. Calyx 5 mm long at anthesis, hispidulous; upper tooth broadly ovate, rounded, 2 mm long, purple, decurrent; lower 4 teeth deltoid-subulate, 1.5 mm long. Corolla pinkish to lilac or violet, finely pubescent, 13–15 mm long; tube 9–12 mm long, widening abruptly about 3 mm from the apex to 2,5–3 mm wide at the throat; upper lip 1,5 mm long; lower lip concave, 3 mm long. Stamens exerted by 6–8 mm, exceeding the lower lip; upper pair attached about 3 mm from the base of the tube, filaments puberulous below; lower pair attached at the throat, filaments united nearly to the apex. Stigma somewhat clavate.

Found in open places in dry woodland in South West Africa and northern Cape Province; also in Rhodesia and Angola.

S.W.A.—1821 (Andara): Andara Mission Station (–AB), De Winter & Marais 4789. 2217 (Windhoek); Auas Mts. (–CA), Strey 2571; farm Lichtenstein (–CC), Merxmüller & Giess 1247; farm Rietfontein (–CD), Strey 2564.

CAPE.—2723 (Kuruman): Takoon (–BB), Burt Davy 13961.

Diagnostic features are the linear, subglabrous leaves and the subglabrous to sparingly villous stems which have a somewhat varnished appearance. H. petrensis is closely related to it and, as may be expected, some specimens are difficult to allocate with certainty, but H. petrensis usually has a strong development of villous hairs on the stems and, to a lesser extent, on the leaves (see also below). Some specimens of H. canescens have linear leaves but the dense, short pubescence on stems and leaves can be used to exclude such specimens from H. linearis.


Hemizygia mossiana (Good) Ashby, l.c. 356 (1935).

Strongly aromatic herb, annual or perennial, 20–60 cm tall, branching near the base and woody below, with a woody taproot; stems villous to densely villous with long, spreading greyish-white hairs, quadrangular and often strongly ribbed along the angles. Leaves subsessile or shortly petiolate; blade variable from linear-lanceolate to oblong-lanceolate or ovate-lanceolate 2–5 cm long, 5–15 mm broad, sparingly to densely pilose or canescent, often with long and short hairs intermingled; apex acute, base attenuate to attenuate; margin obscurely to distinctly and somewhat distantly toothed. Inflorescence 8–20 cm long, lax, simple or with a pair of branches near the base; rhachis glandular-villous; bracts caducous, small, ovate to broadly oval, 3 mm×2 mm, pubescent; verticillasters 4–6-flowered, 1–3 cm apart. Calyx 4–5 mm long at anthesis, enlarging in fruit, glandular-hispid to villous; upper lip broadly ovate or subrotund, purple, 2 mm long, decurrent; lower 4 teeth deltoid-subulate, 1.5 mm long. Corolla pinkish to lilac or violet, finely pubescent, 13–15 mm long; tube 9–12 mm long, widening abruptly about 3 mm from the apex to 2.5–3 mm wide at the throat; upper lip a small appendage; lower lip concave, 3–4 mm long. Stamens exerted by 8 mm, exceeding the lower lip; upper pair attached 2–3 mm from the base of the tube, filaments puberulous below; lower pair attached at the throat, filaments united for more than two thirds their length. Stigma somewhat clavate.

Recorded from northern South West Africa and northern and eastern Transvaal, on rocks, in open places and watercourses in semi-arid woodland at altitudes of 200–700 m in the Transvaal and up to 2 000 m in the Windhoek area of South West Africa. Also in Angola and Rhodesia.

S.W.A.—1917 (Tsumeb): Otavifontein (–CB), Dinter 3505; Guchab (–DB), Schoenfelder 945, 2017 (Waterberg); Waterberg Plateau (–AC), Boss sub TRV 35003; De Winter 2799, 2217 (Windhoek); farm Regenstein (–CA), Giess 11675.
The three species H. canescens, H. linearis and H. petrensis form a closely related group with almost identical floral characters and small, inconspicuous bracts. H. canescens may be distinguished on the basis of the dense, short and often crisped pubescence on stems and leaves and is distributed mainly on the high plateau formed by the northern Cape, southwestern and central Transvaal, extending to eastern Transvaal, Swaziland and Natal. In H. linearis, which is the oldest name, the leaves are linear to filiform (occasionally some leaves up to 5 mm broad) and leaves and stems are subglabrous or with scattered long hairs. Its distribution is more tropical, from Rhodesia to northern South West Africa and northern Cape. It overlaps with H. petrensis but the combination of narrow leaves (less than 5 mm wide) and subglabrous, somewhat varnished stems, serves to separate H. linearis.

H. petrensis, with villous stems and with leaves rarely narrower than 5 mm, varies a good deal in leaf shape and the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly lanceolate to ovate-lanceolate, while the pubescence of the leaves may be villous to shortly narrowly 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THE SOUTH AFRICAN SPECIES OF HEMIZYGIA (LAMIACEAE)

TRAANSVAAL.—2231 (Pafuri): 8 km N.W. of Punda Milia (=CA), Bruce 171; Wambria area (=CB), Van der Scheff 2957; Schlieben 9311; Dzundwene Hill (=CC), Codd 4260, 2431 (Acocks): Acocks (=CA), Roberts sub TRV 26204; 8 km from Newington to Bushbuck Ridge (=CD), Buittdag 912; Kruger National Park, Sand River (=DC), Van der Scheff 2192, 2531 (Komatipoort): near Shabin Kop (=AA), Acocks 16668; 14 km N. of Pretorius Kop (=AA), Codd 5198; Pretorius Kop Camp (=AB), Van der Scheff 273; Faai River (=AB), Bilenfeldt 2361.

In habit, ecology and distribution within our area, H. bracteosa resembles the former species, H. petrensis, but may be distinguished by the conspicuous coma of large, whitish to rose-purple bracts, the usually whitish corolla which is usually shorter than the mauve to violet corolla of H. petrensis. The leaves are canescent as in H. canescens but the stems are weakly pilose, while the conspicuous bracts distinguish it from the latter species. H. bracteosa is remarkably uniform considering its wide distribution from Senegal to Tanzania to Southern Africa.

UITREKSEL

'in Oorsig oor die Suid-Afrikaanse species van Hemizygia word gegee en 28 species word herken, insluitende die volgende nuwe name; H. macrophylla (Guerke) Codd (=Syncolostemon macrophyllus Guerke), H. pretoriae Guerke var. heterotricha Codd, H. cinerea Codd, H. incana Codd, H. modesta Codd, H. parvifolia Codd, H. punctata Codd en H. ramosa Codd

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Codd,

Hemizygia (Benth.) Briq.,

The leaves are

H. cinerea

H. punctata Codd en H. ramosa Codd

Nautochilus Brem.