

South African Labiatae

by

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THORNCROFTIA

The genus *Thorncroftia* was described by N. E. Brown in Kew Bull. 1912:281 and was based on *T. longiflora* N.E.Br., which he described at the same time. Only one specimen was cited, namely: "Transvaal, among rocks near Barberton, 1220 m, *Thorncroft 795*". Two specimens in the Transvaal Museum Herbarium (now incorporated in the National Herbarium, Pretoria), collected by George Thorncroft, supply additional information. On No. 795 the label states: "Herb. 2 ft., flowers pink, found among sandstone rocks, Joe's Luck near Barberton, alt. 4,000 ft., April 1911"; and on a second gathering without number: "Joe's Luck footpath near Barberton, on sandstone rocks, alt. 4,000 ft., May 1913".

The only other material of the species known until recently is a plant cultivated by the Cambridge Botanic Garden from seed sent by Thorncroft, and figured for the Botanical Magazine, t. 8824 (1919). In order to evaluate the plant as to generic status, it was felt that more material was required and the assistance was enlisted of Barberton residents, including George Thorncroft's son, Mr. J. N. Thorncroft, and grandson, Mr. N. G. Thorncroft.

In George Thorncroft's time a flourishing settlement existed in the mountains some miles to the north-east of Barberton, called Eureka City, which boasted of amenities attractive to inhabitants of the neighbourhood. Joe's Luck is the name of a mine nearby and a railway siding in the low country at the foot of the mountains, and it is reported that a well-used footpath connected the latter with Eureka City some 2,000 feet higher in altitude. At present, however, very little is left of Eureka City and the footpath cannot be traced with certainty. Thus more than a year passed before Mr. and Mrs. P. F. Clarke and Mr. N. G. Thorncroft found the species in the mountains above Joe's Luck Siding, probably not far from the type locality.

During their searches in the environs of Barberton, Mr. and Mrs. Clarke collected two species which were clearly closely allied to *Thorncroftia longiflora*, and one of these was again collected near Barberton by the late Prof. Werdermann of Berlin, during his recent visit to South Africa. Further study revealed that these two species had been described in the genus *Plectranthus*, as *P. thorncroftii* S.Moore and *P. succulentus* Dyer and Bruce. The opportunity is now taken to transfer them to *Thorncroftia*.

Although the three species now in *Thorncroftia* superficially resemble *Plectranthus* or *Orthosiphon*, they possess characters which clearly place them in a distinct genus. These characters are: (a) the flowers are borne singly in the axils of the bracts, not in several-flowered verticils; (b) the bracts are not clearly differentiated from the leaves, but grade into the upper leaves on the flowering shoot; and (c) the corolla, although obscurely bilabiate is, in fact, 4 lobed, comprising a lower, entire, boat-shaped lip, an erect upper emarginate lobe and two lateral, narrowly oblong lobes which are deflexed in the open flower and spread on each side of the lower lip. This may represent a more primitive state than in *Plectranthus* and *Orthosiphon*, where the lateral lobes are apparently fused with the upper, producing a more or less obscurely 4-lobed upper lip, while the lower boat-shaped lip remains much the same.

In some minor respects the generic description of *Thorncroftia* must be modified to accommodate the two additional species. For instance, the upper calyx lobe may or may not be decurrent on the tube, and the corolla tube may be short or long.

The basic chromosome number in *Thorncroftia* appears to be $n = 7$, as in *Plectranthus* and *Orthosiphon*, judging by the number $2n = 28$ recorded for *T. succulentus* by de Wet in S.A. Journ. Sci. 54:153 (1958). Another point of general interest is that the three species of *Thorncroftia* are almost invariably parasitised by a weevil, *Apion* sp., which causes thickened swellings in the succulent stems. It is not known how specific this weevil is, but very rarely are *Plectranthus* specimens seen with these swellings and *Orthosiphon* not at all.

Plants up to 25 cm tall; corolla tube less than 1 cm long..... 1. *T. thorncroftii*.

Plants 30–120 cm tall; corolla tube 1.5–3.8 cm long:

Inflorescence relatively lax; corolla tube 3.4–3.8 cm long; pubescence consisting of simple or multicellular, not dendroid hairs..... 2. *T. longiflora*.

Inflorescence compact; corolla tube 1.5–2 cm long; dendroid hairs present, mixed with simple and multicellular straight hairs..... 3. *T. succulentus*.

1. ***T. thorncroftii*** (*S. Moore*) *L. E. Codd*, comb. nov.

Plectranthus thorncroftii *S. Moore* in Journ. Bot. 56:39 (1918). Type: Barberton. *Thorncroft* in Rogers 16987 (BM, holo., PRE, iso.). On the PRE specimen the number has been altered to 14987.

Succulent herb 10–25 cm high; stem erect, sparingly branched, about 8 mm in diameter at the base, tapering to 4 mm in diameter above, pubescent with glandular, simple and scattered multicellular hairs. *Leaves* opposite, shortly petioled, obovate to oblong-obovate, 1.5–2 cm long and 6–8 mm broad, fleshy, drying subcoriaceous, thinly pubescent and glandular on both surfaces, cuneate at the base, apex rounded; margin sparingly crenate-dentate in the upper third; pubescence mainly of multicellular, unbranched hairs. *Inflorescence* a raceme or sparingly branched panicle 5–8 cm long; bracts opposite, leaflike, up to 6 mm long below, becoming progressively smaller and narrower above to about 3 mm long; flowers solitary in the axil of each bract, pedicels 3–6 mm long, glandular puberulous. *Calyx* 5-toothed, glandular puberulous, obscurely 2-lipped, 3–3.5 mm long in flowering stage increasing to 7 mm long in fruit, tube campanulate; the upper tooth the largest, ovate-deltoid, decurrent on the tube, the lower 4 subequal, lanceolate- to linear-triangular. *Corolla* whitish with purplish spots on the upper lobe, obscurely bilabiate, sparingly pubescent without; tube campanulate, expanding abruptly from the calyx, 4.5–5 mm long and 2.5–3 mm broad; upper lip erect, sub-orbicular, emarginate, 6 mm long and equally broad; two lateral lobes oblong, 3–4 mm long, deflexed; lower lip boat-shaped horizontal, 6–7 mm long. *Stamens* 4 exerted; filaments free, up to 6 mm long. *Ovary* 4-lobed, glabrous; style slender, exerted; stigma shortly bifid.

Found among rocks in mountain grassland. Known so far only from the mountain massif between Barberton and Havelock Mine.

TRANSVAAL.—Barberton: *Thorncroft* in Hb. Rogers 16987 (or 14987); Havelock road, growing among rocks and grass on koppie near Angle Station, alt. 5,000 ft., 24th March, 1956, *Clarke* 41; between Barberton and Piggs Peak, *Werdermann* 2197.

This species has a short corolla tube and the corolla bears a superficial resemblance to certain species of *Plectranthus*, e.g. *P. thunbergii*, as remarked by Spencer Moore. However, it has the essential features of *Thorncroftia*, namely the four-lobed corolla, solitary flowers in the axils of the bracts and the rather leaflike bracts. The upper calyx tooth is decurrent on the tube as in *Orthosiphon*.

2. ***T. longiflora*** *N.E.Br.* in Kew Bull. 281 (1912); *Prain* in Bot. Mag. t.8824 (1919).

Type: Transvaal, Barberton, *Thorncroft* 795 (K, holo., PRE, iso.).

Succulent herb or soft shrublet 30–60 cm high; stems several, arising from a thickened rootstock about 4 cm in diameter, 1 cm in diameter at the base, tapering to 4–5 mm in diameter above, sparingly branched, densely and shortly grey tomentose;

pubescence of simple and multicellular unbranched hairs. *Leaves* opposite, shortly petiolate, elliptic to obovate, 1–2 cm long and 4–10 mm broad, cuneate at the base, apex rounded, entire or faintly crenate-dentate in the upper third, densely short tomentose and pitted with sessile glands on both surfaces. *Inflorescence* a panicle; racemes 3–9 cm long, densely glandular puberulous; bracts opposite, leaflike, up to 1.2 cm long below, becoming progressively smaller and narrower above to about 2.5 mm long; flowers solitary in the axil of each bract; pedicels 2.5–4 mm long, glandular puberulous. *Calyx* 5-toothed, glandular puberulous, obscurely 2-lipped, the upper tooth the largest, ovate-deltoid, acute, decurrent on the tube, the lower 4 subequal, lanceolate-triangular, acuminate. *Corolla* pink to mauve pink with deeper flecks on the lateral lobes, obscurely bilabiate, glandular and sparingly pubescent without; tube narrowly cylindrical, straight, 3.4–3.8 cm long and 1–1.5 mm broad; upper lip erect, oblong, emarginate, 7–8 mm long and 4–5 mm broad; two lateral lobes narrowly oblong 5–6 mm long and 1.5 mm broad, deflexed; lower lip narrowly boat-shaped, horizontal, 6–7 mm long. *Stamens* 4, exserted; filaments free, 6–7 mm long. *Ovary* 4-lobed, glabrous, style slender, exserted; stigma shortly bifid.

Found in crevices on relatively bare rock outcrops. Evidently rare and localised in mountains north-east of Barberton.

TRANSVAAL.—Barberton: Joe's Luck footpath. April, 1911, *Thorncroft* 795; May, 1913, *Thorncroft* in TM 12775; March, 1957, *Thorncroft and Clarke* s.n.

3. ***T. succulentus*** (*Dyer and Bruce*) *L. E. Codd*, comb. nov.

Plectranthus succulentus Dyer and Bruce in Flow. Pl. Afr. 27:t.1073 (1949). Type: Soutpansberg, Entabeni, *Loock* in PRE 27461 (PRE, holo.).

Succulent herb or shrub 60–120 cm high; stems several arising from a thickened rootstock 3–6 cm in diameter, 0.7–1.5 cm in diameter at the base and tapering to 4–5 mm in diameter above, sparingly branched, densely and shortly grey tomentose. *Leaves* opposite, shortly petiolate, ovate-elliptic or obovate 1.6–3 cm long and 1.5–2 cm broad, cuneate or obtuse at the base, apex rounded, crenate in the upper two-thirds, thinly to densely tomentose and glandular on both surfaces; pubescence consisting of branched and unbranched multicellular or simple white hairs. *Inflorescence* a congested racemose panicle 8–14 cm long, glandular and hispid with dendroid hairs; racemes 2.5–4 cm long; bracts opposite, somewhat leaflike, ovate and 1.2 cm long below, becoming progressively smaller and narrower above to about 5 mm long and 2–3 mm broad; flowers solitary in the axil of each bract; pedicels 0.5–2 mm long, pubescent. *Calyx* 5-toothed, with scattered glands and dendroid hairs, obscurely 2-lipped, the upper tooth somewhat larger than the rest, ovate-deltoid, acuminate, not obviously decurrent on the tube, the lower 4 subequal, lanceolate-triangular, acuminate. *Corolla* pale lilac with darker spots on the upper and lateral lobes, obscurely bilabiate, glandular and sparingly pubescent without; tube narrowly cylindrical, straight, 1.5–2 cm long and 1.5–2 mm in diameter; upper lip erect, obovate-oblong; emarginate, 6–8 mm long and 5–7 mm broad; two lateral lobes narrowly oblong, 5–6 mm long and 1 mm broad, deflexed; lower lip narrowly boat-shaped, 5–6 mm long, at first horizontal and later reflexed. *Stamens* 4, exserted; filaments free, 3–4 mm long. *Ovary* 4-lobed, glabrous; style slender, exserted; stigma shortly bifid.

Occurs among rocks or in crevices of bare rock outcrops in mountains of eastern and northern Transvaal.

TRANSVAAL.—Soutpansberg: Soutpansberg Mountains, Entabeni, *Loock* in PRE 27461; *Bruce and Kies* 7; *Codd* 4194; Summit of Franzhoek Peak, *Galpin* 14881; Hangklip, *Gerstner* 5903; *McKay* s.n.; *Meeuse* 10163; 20 miles W. of Mountain Inn, *Meeuse* 9787; Wylliespoort, *Breyer* in TM 19451. Pilgrimsrest: Drakensberg excarpment opposite Mariespok, *Codd* 7904. Barberton: Hyslop's Creek, *Clarke* 213.

THE COLEUS CANINUS COMPLEX

Coleus neochilus (Schltr.) L. E. Codd, comb. nov.

Plectranthus neochilus Schltr. in J. Bot. Lond. 34: 394 (1896); Cooke in Fl. Cap. 5, 1: 285 (1910). Type: Transvaal, near Barberton, *Galpin* 968 (GRA, NH, iso.).

Coleus schinzii Guerke in Bull. Herb. Boiss. 6: 555 (1898); Bak. in Fl. Trop. Afr. 5: 430 (1900). Type: S.W. Africa, Ovamboland, Tsumeb, *Schinz* 56 (Z, holo., PRE, photo.). *C. penteri* Guerke in Ann. Naturhist. Hofmus. Wien, 20: 48 (1905); Cooke in Fl. Cap. 5, 1: 289 (1910); Bruce in Hook. Ic. Pl. 34: t.3375 (1938). Type: Cape Province, Peddie District, Breakfast Vlei, *Krook* in Hb. Penther 1716 (W, holo., PRE, iso.). *C. carnosus* Dinter, ined.; Eliovson, S.A. Flow. for the Garden, 165 (1955) nom. nud.; non Hassk. nec A. Chev.

Found in relatively dry bushveld, or occasionally among rocks in moister grassland, in the eastern Cape Province, Natal, Transvaal, S.W. Africa and Rhodesia.

CAPE.—Peddie: Breakfast Vlei, *Krook* in Hb. Penther 1716. East London: Kintza River Mouth, *Galpin* 6554. Stutterheim: Kabaku Hills, *Acocks* 9547. Komgha: *Flanagan* 557.

NATAL.—Pietermaritzburg: Thornville Junction, *Chapman* 1368. Weenen: 1 mile W. of Muden, *Codd* 8602.

TRANSVAAL.—Carolina: Waterval Boven, *Rogers* 14485. Barberton: near Barberton, *Galpin* 968 (GRA, NH); *Codd* 9531; on Lebombo Range, near Kobinja, *Codd* 7798. Pilgrim's Rest: near Graskop, *Galpin* 14433; near Vaalhoek, *Meeuse* 10013. Lydenburg: Sekukuniland, *Barnard and Mogg* 704. Pietersburg: *Munro* in TM 15282. Potgietersrus: *Rogers* 4817; *Comins* 917. Waterberg: Towoomba Research Station, *Sidey* 1401. Pretoria: Rietvlei Research Station, *Acocks* 11262; 13 miles S.E. of Pretoria, *Codd* 2570; Quagga-poort, *Verdoorn* s.n.; near Saltpan, *Pole Evans* 4775; 10½ miles N. of Hammanskraal, *Codd* 9385. Rustenburg: 19 miles S. of Northam, *Codd* 8632. Marico: near Zeerust, *Jenkins* in TM 13219; *Leistner* 349. Lichtenburg: *Jenkins* in TM 13220; *Sutton* 365.

S.W. AFRICA.—Ovamboland: Tsumeb, *Schinz* 56 (Z). Grootfontein: *Schoenfelder* S643; near Otavi, *Dinter* 5634; *de Winter* 2853.

S. RHODESIA.—Intabazinduna Reserve, *Davies* 19. Inyanga Village, *Wild* 3853. Matobo: Bulawayo, *Rogers* 5933; 13657; Bima Kobila, *Miller* 2054; Matopos Research Station, *Plowes* 1388. Mrewa: near Shawanoe, *Leach* 8084.

I am indebted to the Director of the Natural History Museum, Vienna, for presenting the National Herbarium, Pretoria, with a portion of the type of *C. penteri* Guerke, and to the Director of the Zurich University Herbarium for sending us the type of *C. schinzii* Guerke on loan. These were compared with material of the type gathering of *Plectranthus neochilus* Schltr. (*Galpin* 968 in NH and GRA) and are considered to be conspecific. The differences between the three types are mainly in habit and pubescence, characters which vary a good deal in this group. In the eastern Cape Province, the stems are semi-prostrate to decumbent, about 10–20 cm long, with numerous glands and short, dense, adpressed pubescence on leaves and stems and scattered long, multicellular hairs on the stems. In the Transvaal, S.W. Africa and Rhodesia, the stems are more ascending, 30–45 cm high, and usually more conspicuously villous, though sometimes possessing only the glandular and adpressed pubescence. There is some indication that the plants may behave as annuals in South West Africa, though this requires investigation. Elsewhere the plants are perennial, often with somewhat tuberous roots in the young stage. The leaves are usually obovate to elliptic-ovate, faintly crenate at the rounded or obtuse apex and narrowly cuneate at the base. The inflorescence characters are relatively constant. In the bud stage, the inflorescence is a 4-angled spike 3–4 cm long, composed of 4 rows of densely imbricate, ovate, acuminate bracts.

The bracts are shed as each verticil of flowers starts to open. As flowering proceeds, the rhachis elongates, with the result that the verticils become separated by intervals of 5–15 mm, producing an interrupted spike of up to 15 cm long. Depending on the length of the inflorescence, 5–12 spaced verticils may be seen below the coma of bracts, the uppermost 3 or 4 still flowering and the lower ones in fruit, with the rhachis easily visible between the verticils. The corolla is usually about 1.5 cm long, varying from 1.2–1.8 cm. The lower lip is large and boat-shaped, purple to violet, while the upper lip is erect, small, whitish, mottled with bluish-purple.

Two closely related species, both of which bear epithets older than *C. neochilus*, must be taken into consideration, namely, *C. caninus* (Roth) Vatke (syn. *C. spicatus* Benth.) and *C. comosus* Hochst. ex Guerke. There seem to be adequate reasons at present for maintaining the three as distinct, though the tropical material seen is admittedly scanty. It is possible that when more good material becomes available from tropical territories the position should be reviewed again. In any case, the following notes will act as a guide to the characters to which collectors should give attention.

Both *C. caninus* and *C. comosus* can usually be separated from *C. neochilus* by their shorter, denser inflorescences. As the inflorescences start to flower they elongate slightly, but not to the extent of *C. neochilus*, so that the verticils do not become separate, except perhaps the lowest one or two. Even when flowering is well advanced, the spike is usually 3–5 cm long, rarely up to 9 cm long. The corolla in *C. caninus* is shorter than in *C. neochilus*, rarely exceeding 1 cm long, while in *C. comosus* it is usually longer than in *C. neochilus*, being 2–2.5 cm long. Usually in drying specimens the corolla becomes shrivelled or distorted, making measurements difficult.

C. caninus was described from India, and herbarium specimens were kindly sent on loan to us by the Forest Research Station, Dehra Dun, Pakhistan. Specimens matching the Indian material have been seen from Kenya, Tanganyika, Rhodesia and South West Africa. Seed was extracted from one specimen received from the latter territory (*Sachs* 2) and the resulting plants in cultivation behaved as annuals. It is also fairly definite that *Wild* 4544 from Rhodesia and *Greenway* 9190 from Tanganyika are annuals. Whether all material referable to *C. caninus* is of annual habit is not known; if this proves to be the case, it would be an additional useful character for separating it from the predominantly perennial species, *C. comosus* and *C. neochilus*. Although no material has been seen of the type gathering of *C. omahekensis* Dinter, it seems clear from the somewhat scanty description that it is conspecific with the *Sachs* specimen, and so *C. omahekensis* is included in synonymy under *C. caninus*. The leaves of *C. caninus* are relatively long in relation to their width, being ovate-lanceolate to long-elliptic or oblanceolate, sparingly crenate-dentate in the upper half, acute to obtuse at the apex and long-cuneate at the base. As may be expected, there is considerable variation in stature and leaf size according to growing conditions.

C. comosus is essentially a plant of north-east Africa, chiefly Kenya and Abyssinia, and specimens have not been seen from territories south of Kenya. The possibility exists that it extends to Arabia. It is a perennial and, like *C. neochilus* and *C. caninus*, the leaves are aromatic and fleshy. In general the leaves are broadly obovate, faintly to distinctly crenate at the rounded apex and cuneate at the base. The flower spike is short, rarely becoming lax at the base and is borne usually on a long, slender, leafless rhachis.

The more important citations for *C. caninus* and *C. comosus* are set out for convenience below.

***C. caninus* (Roth) Vatke** in *Linnaea* 37: 318 (1871), partly, excl. specimen cited; Guerke in *Bot. Jahrb.* 19: 212 (1895). Type: India, *Heyne* s.n.
Plectranthus caninus Roth, *Nov. Pl. Sp.* 279 (1821).

Coleus spicatus Benth. in Wall. Pl. As. Rar. 2: 15 (1831); Wall. Cat. 2729 (1831); Benth. in DC. Prodr. 12: 71 (1848); Wight, Ic. t. 1431 (1849). Type: India. *Wight* s.n. in Hb. Benth. *C. omahekensis* Dinter in Fedde Rep. Beih. 53: 123 (1928), ex descr. Syntypes: S.W. Africa, Grootfontein, Etemba, *Dinter* 3265; Otjikuara, *Dinter* 3265.

Found in India, east tropical Africa to Rhodesia and South West Africa.

S.W. AFRICA.—Grootfontein: Farm Kakuse, east of Etosha Pan, and plants cultivated in Pretoria from seed obtained from this gathering, *Sachs* 2.

S. RHODESIA.—Hartley: Poole Farm, *Wild* 4544.

TANGANYIKA.—Kilimanjaro, *Greenway* 6897.

KENYA.—Nairobi, *Verdcourt and Greenway* 399.

C. comosus Hochst. ex *Guerke* in Bot. Jahrb. 19: 212 (1894); Bak. in Fl. Trop. Afr. 5: 426 (1900); Bruce in Hook. Ic. Pl. 34: t.3374 (1938). *C. comosus* Hochst. in A. Rich., Tent. Fl. Abyss. 2: 183 (1851), in synonymy. *C. spicatus* [non Benth.], A. Rich., l.c. *C. caninus* [non (Roth) Vatke], Vatke in Linnaea 37: 318 (1872). Type: Abyssinia, *Schimper* 1328.

Specimens seen include the following: a plant cultivated in Pretoria, collected by Dr. P. J. Greenway near Nairobi; *Codd* 8238, a plant of unknown origin, cultivated in gardens in South Africa; *Gillett* 14080 and 14312 collected with the Kenya–Ethiopia Boundary Commission; and probably *Williams* 637 from Nairobi, though the flowers of this specimen appear smaller than usual.

The main characters which may be used in separating the three species are summarised below:—

C. neochilus. Plants perennial; leaves obovate to elliptic-ovate, faintly crenate at the rounded or obtuse apex; flower spike 7–15 cm long, lax below with 5–12 spaced verticils below the coma of bracts; corolla 1·2–1·8 cm long.

C. comosus. Plants perennial; leaves usually broadly obovate, faintly to distinctly crenate at the rounded apex; flower spike 3–5, rarely up to 9 cm long with one or two, rarely more, spaced verticils at the base; corolla 2–2·5 cm long.

C. caninus. Plants annual or, possibly, perennial; leaves ovate-lanceolate, long elliptic or oblanceolate, sparingly crenate-dentate in the upper half, apex acute to obtuse; flower spike 2–5, rarely up to 9 cm long, dense at the base; corolla 0·8–1 cm long.