

FIG. 32. *CYNOGLOSSUM* spp.—a, calyx, $\times 8$; b, corolla, $\times 8$; c, ovary and style, $\times 20$; d, fruit, $\times 5$ of 1. *C. AEQUINOCTIALE*; 2, *C. HANANGENSE*; 3, *C. UKAGURUENSE*. 1a–c, from Ravell 219; 1d, from Lacer 24a; 2a–c, from Burt 2264; 2d, from Greenway 7675; 3, from Mabblerley 1341. Drawn by Mrs Maureen Church.

narrowly attenuate at the base, scabrid above with short adpressed white hairs from cystolith spots and similar hairs but no spots beneath; apparent petiole 0–1 cm. long. Cymes few-flowered, terminal and on upper axillary shoots, 4–15 cm. long, usually one flower well below the rest close to upper node; pedicels at first ± 5 mm. long, lengthening to 3.2 cm., longest in the lowermost flower. Sepals \pm oblong-lanceolate at first, ± 3 mm. long, becoming lanceolate, 4–5 mm. long, 0.9–1.7 mm. wide, \pm narrowly rounded or acute, hispid outside, the hairs at base longer and from cystolith spots. Corolla blue; tube 2 mm. long; lobes \pm round, 2.5 mm. long and wide; bosses ± 1 mm. wide; anthers 0.7 mm. long; style 1 mm. long lengthening to 2 mm. in fruit. Fruits ± 9 mm. wide, the nutlets rounded-ovate, contracted to the base, ± 4 mm. long and wide, densely glochidiate on base and sides but much sparser on the faces although not confined to a median line; scar of attachment \pm obtriangular, 1.5 mm. long, continuing at base into a portion of the split style. Fig. 32/3.

TANZANIA. Kilosa District: Ukaguru Mts., Mamiwa Forest Reserve, ridge to N. of Mandege Forest Station, 2 Aug. 1972, Mabblerley 1341!

DISTR. T6; not known elsewhere

HAB. Secondary forest with *Albizia*, *Myrianthus*, *Maesa*, *Dombeya*, etc.; 1500–1650 m.

8. *C. cheranganiense* Verdc., sp. nov., affinis *C. coerulescens* A.DC. var. *mannii* (Bak. & Wright) Verdc., sed habitu elatiore, foliis longioribus, inflorescentiis ramosioribus, glochidibus nuculae brevibus triangularibus, stylo 1.8–2 mm. vel ultra longo differt. Typus: Kenya, Elgeyo District, Cherangani Hills, Kamalagon [Kameligon], Mabblerley & McCall 207 (K. holo.).

Perennial (or possibly sometimes annual) herb to 1.8 m. tall from a thick tap-root; stems strict and sparsely branched, often streaked with purple above. Leaves narrow and elongate; radical leaves oblanceolate, up to ± 30 cm. long, 3.5 cm. wide, narrowly acute at the apex, strongly attenuated at the base so as to appear long-petiolate; cauline leaves lanceolate to oblong-lanceolate, 4–20 cm. long, 0.7–2 cm. wide, the uppermost sessile, the lower gradually more attenuate until similar to radicals; both surfaces sparsely to fairly densely covered with white hairs arising from cystolith spots. Flowers in long-pedunculate well-branched compound dichasia of scorpioid cymes which in the early stages are \pm capitate and distinctive; cymes ultimately ± 12 cm. long; peduncles up to 16 cm. long; pedicels 1.5–3 mm. long; all axes densely white pubescent. Calyx-lobes oblong-elliptic, 2–3 mm. long, ± 1 mm. wide, distinctly ciliolate, pubescent outside with hairs from tubercular cystolith bases, very distinct near base. Corolla deep blue, white at throat, rarely all white; tube 2.5–3.5 mm. long; lobes \pm round, 2–4 mm. long and wide; style (1.3–)1.8 mm. long to over 2 mm. long in fruit, slender. Nutlets greyish, ovate in plan, 2–2.2 mm. long, 1.8–2 mm. wide, with short triangular glochidia on the back and around the margin and 2 or 3 across the median ridge, also a few shorter ones between. Fig. 33/1–4, p. 116.

KENYA. Elgeyo District: Cherangani Hills, Kaisungor [Kaisungor], Feb. 1965, Tweedie 2984! and 1°5'N, 35°26'E, 21 Sept. 1949, Maas Geesteranus 6319! & without precise locality, Sept. 1934, Dale in F.D. 3270!

DISTR. K 2 (see note), 3, 6 (see note); not known elsewhere

HAB. *Erica arborea*, *Cliffortia*, *Protea* scrub; grassland with scattered bamboo, *Juniperus* and *Hagenia* clumps; 2850–3270 m.

NOTE. Agnew et al. 10508 (W. Suk District, Sekerr Mt., 4 Aug. 1968 at 2640 m.), Greenway & Kanuri 14529 (Masai District, Nasampolai [Enesambulai] valley, 25 July 1970 at 2400 m.) and Glover et al. 1469 (Masai District, about 11.2 km. from Cobb's Gate, Tobou, near edge of Mau Forest Reserve at 2850 m.) seem to be the same species but further study is needed.

9. *C. karamojense* Verdc., sp. nov., affinis *C. cheranganiensis* Verdc. sed caulibus foliisque pilis albidis \pm longis \pm dense obtectis, nuculis 1–4 sursum inclinatibus haud profunde crateriformibus ambitu rotundatis vel triangularibus margine \pm uniseriatis glochidiatis medio sparse glochidiatis inferne minute tuberculatis alibi laevibus, glochidibus marginatis anguste triangularibus differt. Typus: Uganda, Karamoja District, Mt. Morongole, Dawkins 807 (K. holo., ENT, EA, iso.)

Perennial herb to 60 cm., presumably from a woody rootstock; stems hirsute with dense \pm adpressed downwardly directed and some \pm spreading white hairs. Leaves elliptic-lanceolate to lanceolate; radical up to 14 cm. long, 2.5–5 cm. wide, narrowly acute at the apex, attenuate at base into a petiole ± 8 cm. long; cauline 2.5–12.5 cm. long, 0.3–2.5 cm.

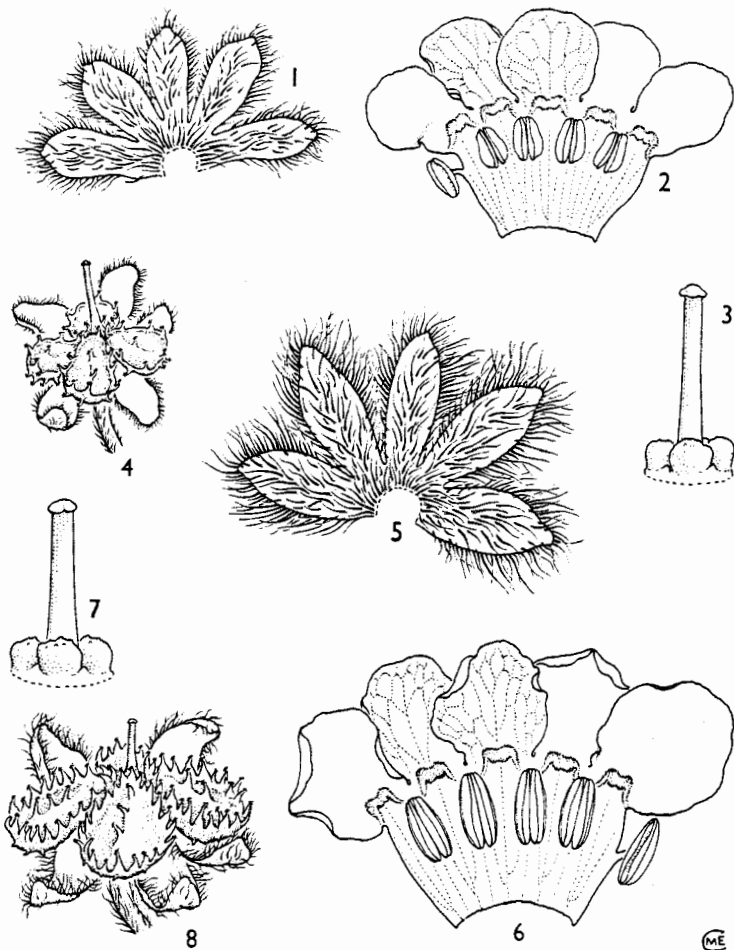


FIG. 33. *CYNOGLOSSUM CHERANGANIENSE*—1, calyx, $\times 8$; 2, corolla, $\times 8$; 3, ovary and style, $\times 20$; 4, fruit, $\times 5$. *C. KARAMOJENSE*—5, calyx, $\times 8$; 6, corolla, $\times 8$; 7, ovary and style, $\times 20$; 8, fruit, $\times 5$. 1–3, from Dale 3270; 4, from Tweedie 2984; 5–8, from Champion s.n. Drawn by Mrs Maureen Church.

wide, narrowly acute at apex, the upper quite sessile and \pm rounded at base, the lower attenuate at base into an apparent petiole which widens at base and is often \pm amplexicaul, all with \pm dense \pm long white hairs, similar to stem, particularly on the venation beneath. Flowers in well-branched inflorescences of terminal and axillary dichasial or trifid cymes, the individual branches up to 7 cm. long, all very condensed in young state; axes densely pubescent; pedicels 1–2 mm. long. Sepals narrowly-oblong or elliptic, 2.5–3 mm. long, 0.8–1.8 mm. wide, densely pubescent, tending to be connivent when corolla has dropped, pubescent outside and long-ciliate. Corolla bright blue; tube \pm

2.5 mm. long; lobes rounded, 2.5–3 mm. long, 2.5 mm. wide. Style 1–2 mm. long. Fruits \pm 8 mm. wide; nutlets 1–4, inclined upwards towards style, shallowly bowl-shaped, round to triangular in plan, 4–5 mm. long, 3–4 mm. wide, with a \pm uniseriate row of marginal flat narrowly-triangular glochidia and a few on a median line and with small tubercles on the under surface. Fig. 33/5–8.

UGANDA. Karamoja District: Mt. Moroto, Jan. 1959, J. Wilson 649; & Mt. Morongole, 11 Nov. 1939, A.S. Thomas 3293; & June 1946, Eggeling 5650; & 29 June 1953, Dawkins 807!

KENYA. Turkana District: Mt. Kachagalau [Kachonkulu], Feb. 1933, Champion!

DISTR. U 1; K 2; not known elsewhere

HAB. Upland grassland with *Protea*, etc., sometimes in rock crevices; 2400–2940 m.

16. AFROTYSONIA*

Rauschert in Taxon 31: 558 (1982); Mill in Notes Roy. Bot. Gard. Edin. 43: 467–75 (1986)

Tysonia H. Bolus in Hook., Ic. Pl. 20, t. 1942 (1890) non Fontaine (1889)

Perennial herbs with single unbranched stems clothed with petiole remnants; rootstocks horizontal or subvertical. Basal leaves broadly ovate to elliptic-lanceolate, long-petiolate; cauline leaves elliptic to narrowly lanceolate the lower long-petiolate, the upper sessile. Flowers in large \pm lax branched panicles with reduced bracts or lower leaf-like, the individual cymes 8–15-flowered, simple or branched, pedunculate; pedicels elongating considerably in fruit. Calyx divided nearly to the base into 5 equal lanceolate persistent but scarcely accrescent lobes. Corolla white, sometimes tinged mauve or yellowish, campanulate or subrotate; lobes ovate, obtuse. Throat-bosses exserted, trapeziform, oblong-triangular or semilunar, usually emarginate. Filaments inserted in middle of corolla-tube, \pm exserted; anthers almost medifixed, versatile. Nectary scales \pm 10 at base of corolla-tube, each with 2 divergent horns. Ovary indistinctly 4-lobed; style filiform, \pm equalling the stamens; stigma small, capitate. Nutlets 1–4, all equal or one much exceeding the others, either wingless and densely glochidiate or with a broad cartilaginous \pm undulate wing but lacking glochids.

Three species, two in South Africa, the other widely disjunct occurring in Tanzania. Recognised at Kew as a member of the genus nearly 30 years ago, it has only very recently been described.

A. pilosicaulis Mill in Notes Roy. Bot. Gard. Edin. 43: 472 (1986). Type: Tanzania, Ufipa District, Sumbawanga, Mbisi Forest, Richards 8679 (K, holo.!).

Herb at least 35 cm. tall, the stems densely leafy and densely shortly adpressed pilose with retrorse rather bristly hairs. Basal leaves elliptic-lanceolate to ovate-lanceolate, 9–12 cm. long, 3 cm. wide, eventually becoming 19 \times 5 cm., attenuated into a petiole about equalling the lamina, \pm densely adpressed hispid-setulose; cauline leaves sessile, elliptic or ovate-lanceolate, 12–13 cm. long, 4 cm. wide. Inflorescences densely leafy; bracts leaf-like, the lower 8–11 cm. long, 2.5–4 cm. wide; secondary bracts linear-lanceolate. Pedicels 6–9 mm. long, densely adpressed pilose. Calyx-lobes 3–5 mm. long, acute, grey-pilose. Corolla white, shortly campanulate; tube 5.5–6 mm. long, the bosses white, exserted, (0.6–)0.9–1.5 mm. long, 2–2.2(–2.5) mm. wide; lobes broadly ovate-oblong, 2.5–3.5 mm. long, \pm spreading, emarginate. Filaments 2.5–3 mm. long, scarcely exserted. Style (3–)4–6(–7) mm. long. Nutlets not known. Fig. 34, p. 118.

TANZANIA. Ufipa District: Sumbawanga, Mbisi Forest, 13 Mar. 1957, Richards 8679; & Malonje, 19 July 1962 (leaves only), Richards 16809!

DISTR. T 4; not known elsewhere

HAB. Rough grassland; 2100–2400 m.

NOTE. Further material including fruits is much needed.

* Based entirely on Mill's account