

NOTES RELATING TO THE FLORA OF BHUTAN: XVIII

New taxa and a new combination in the Labiatae

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Three new species and one new subspecies of Labiatae are described from the eastern Himalayan mountains: *Isodon atroruber* R. A. Clement, *Anisochilus mitis* R. A. Clement, *Teucrium grandifolium* R. A. Clement and *Phlomis rotata* Hook.f. subsp. *bhutanica* R. A. Clement. The new combination *Marmoritis pharica* (Prain) R. A. Clement is made.

The preparation of the account of the Labiatae for the *Flora of Bhutan* has resulted in the recognition of four new taxa, two of which are endemic to Bhutan. All the specimens cited have been seen unless otherwise stated.

Isodon atroruber R. A. Clement, sp. nov. Fig. 1A–E.

Ab *I. lophanthoide* (Buch.-Ham. ex D. Don) Hara et *I. phulchokiensi* (Murata) Li caulibus glanduloso-pubescentibus pilis longis multicellularibus immixtis, inflorescentia angustiore, corollis brevioribus et atrorubris differt.

Perennial herb with woody rootstock. *Stems* 30–50cm, little-branched, quadrangular, glandular-pubescent with long multicellular hairs. *Leaves* ovate, 5.7–10.8 x 4.1–6.8cm, apex acuminate, base essentially rounded-truncate with lamina slightly extended (for c. 5mm) on petiole, margin serrate-dentate; glandular-pubescent with longer multicellular hairs and sparse sessile glands above; paler with multicellular villous hairs on venation and numerous orange-brown sessile glands below. *Petiole* 1.2–4.5cm, indumentum similar to stem, uppermost leaves sometimes subsessile. *Inflorescences* terminal and axillary, of paired cymes arranged to form a narrow panicle, 4.5–13 x c.2cm. Cymes with peduncle 4–5mm, 10–12-flowered. *Bracts* ovate, c.1.5–3mm, caducous. *Calyx* campanulate, 1.8–2mm, puberulent with numerous sessile glands mostly near base; upper lip 3-lobed, lobes oblong-obtuse, 0.5mm; lower lip 2-lobed, lobes slightly longer, obtuse; in fruit calyx tubular, curved, 3–3.5mm, deflexed. *Corolla* deep wine red to deep reddish purple, 4.5–5.5mm; tube 2–2.5mm, dilated towards throat; upper lip erect, 4-lobed, c.2.5mm, lobes obtuse; lower lip concave, ± equal to upper lip. *Stamens* exerted beyond lower lip by 2–3mm; filaments hairy at base; anthers black. *Nutlets* ellipsoid, 1.2 x 0.8mm, smooth.

Endemic to Bhutan. Growing in moist conditions in *Quercus* forest or deciduous woodland, 2100–2743m. August–November.

Type: Bhutan; Thimphu District, Dotena, Thimphu Chu, 27°35'N 89°38'E, mossy bank in *Quercus semecarpifolia* forest, erect herb, 30–40cm, leaves unpleasantly scented, flowers dark crimson, 2550m, 5 ix 1984, Sinclair & Long 4843 (holo. E).

BHUTAN. Rocha Chu valley, Trashiyangsi, 2438m, 27 ix 1934, Ludlow & Sherriff 986 (E, BM); Hing Lai La, 2743m, 24 viii 1949, Ludlow, Sherriff & Hicks 19638 (E, BM); Thimphu district, Dotena, 2500m, 1 x 1989, J. R. I. Wood 7185 (E); Thimphu district, Dotena, 2500m, 25 viii 1990, J. R. I. Wood 7320 (E); Tashigang district, between Tashiyangtse and Bumdeling, 2100m, 8 xi 1991, J. R. I. Wood 7501 (E).

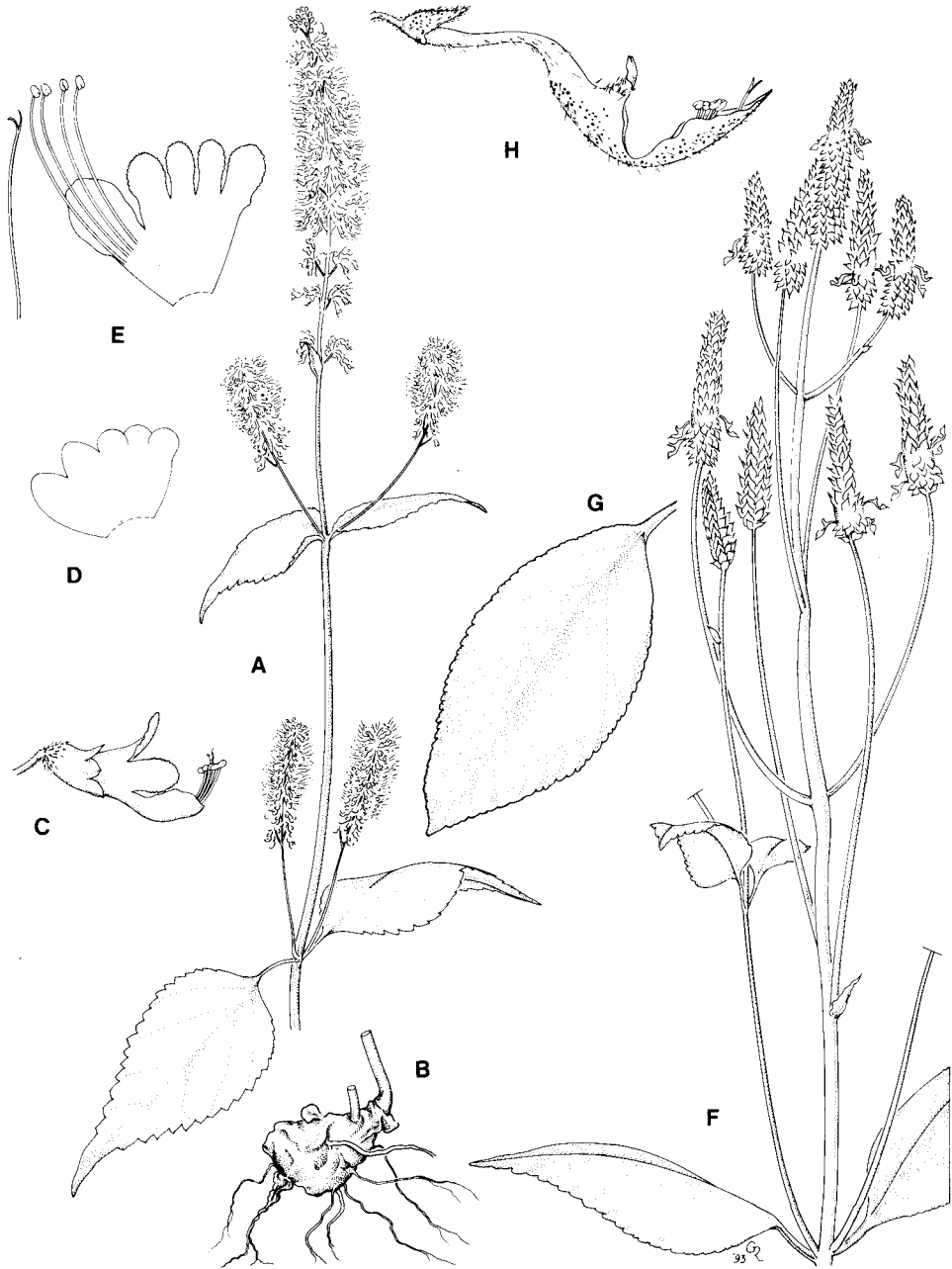


FIG. 1. A-E, *Isodon atroruber*. A, partial habit x0.5; B, rootstock x0.5; C, flower x5; D, dissected calyx x6; E, dissected corolla x6. F-H, *Anisochilus mitis*. F, partial habit; G, leaf x0.5; H, flower x5.

I. atroruber belongs to sect. *Isodon*, ser. Gerardiani (Briq.) Li. Li (1988) divides *Isodon* into four sections based, essentially, on the form of the inflorescence and posture and form of the fruiting calyx. Sect. *Isodon* is by far the largest section and is subdivided into ten series. Ser. Gerardiani is characterised by the sub-bilabiate calyx with relatively short teeth in fruit and the fairly small flowers: it is not geographically restricted, occurring over much of the distribution of the genus with the exception of SW Asia and Africa.

I. atroruber is most closely related to *I. phulchokiensis* (Murata) Li described from Nepal and *I. lophanthoides* (Buch.-Ham. ex D. Don) Hara, a widespread species from the Himalayas, northern India, southern China and SE Asia. The table below summarises the main differences between these three species:

	atroruber	phulchokiensis	lophanthoides
Stem indumentum	glandular-pubescent with long multicellular hairs	recurved short hairs	puberulous or pilose
Inflorescence diameter	c.2cm	3–6cm	3–6cm
Number of flowers in cyme	10–12	5–9	11–13
Calyx teeth	oblong-obtuse	triangular, obtuse or sub-acute	ovate-triangular
Corolla length	4.5–5.5mm	5.5–7mm	6–7mm
Corolla colour	deep wine red to deep reddish purple	dark brown-purple	white or pink with purple spots

This distinctive new species of *Isodon* has so far only been found in two widely separated valleys in Bhutan. J. R. I. Wood has collected *I. atroruber* in both localities but has not seen it elsewhere despite travelling widely in the country. The specific epithet refers to the distinctive dark red colouring of the flowers.

Anisochilus mitis R. A. Clement, sp. nov. Fig. 1F–H.

Affinis *A. carnosus* (L.f.) Wall. sed planta semper dense pubescenti, foliis ovato-ellipticis vel ellipticis, petiolis brevioribus, inflorescentia robustiore differt.

Robust herb, forming clumps. *Stems* erect, 60–120cm, sub-quadrangular, branched above, densely pubescent-tomentose with numerous sessile glands. *Leaves* ovate-elliptic to elliptic, 6–11.2 x 3.1–7.1cm, apex acute, base rounded to cuneate, lamina sometimes asymmetric on petiole, margin crenulate-serrate, upper and lower surface densely pubescent-tomentose with sessile glands, velvety to touch; petiole 0.5–2.5cm, indumentum similar to stem. *Inflorescence* with 2–4 pairs of branches; spikes ± oblong, 2–7 x c.1.5cm. Bracts ovate-acuminate, densely pubescent, caducous. *Calyx* 2.2–2.5mm, densely pubescent with numerous sessile glands; upper lip entire, ovate, 0.6–0.7mm; lower lip entire, truncate, much shorter than upper lip; in fruit calyx enlarging, tube 3mm; upper lip 2.8mm, strongly deflexed closing mouth of calyx, glabrescent. *Corolla* pale blue-violet, mauve or purple, 12–14.5mm, somewhat pubescent externally with sessile glands on lower lip; tube 5.5–6.5mm, dilated and oblique at throat, initially strongly decurved but becoming less so with age; upper lip short, truncate, obscurely 2-lobed, lobes obtuse, flanked by 2 small lateral lobes; lower lip 5–5.5mm, concave, porrect. *Stamens* not exceeding lower lip. *Nutlets* ellipsoid, laterally compressed, 1 x 0.7mm, ± smooth.

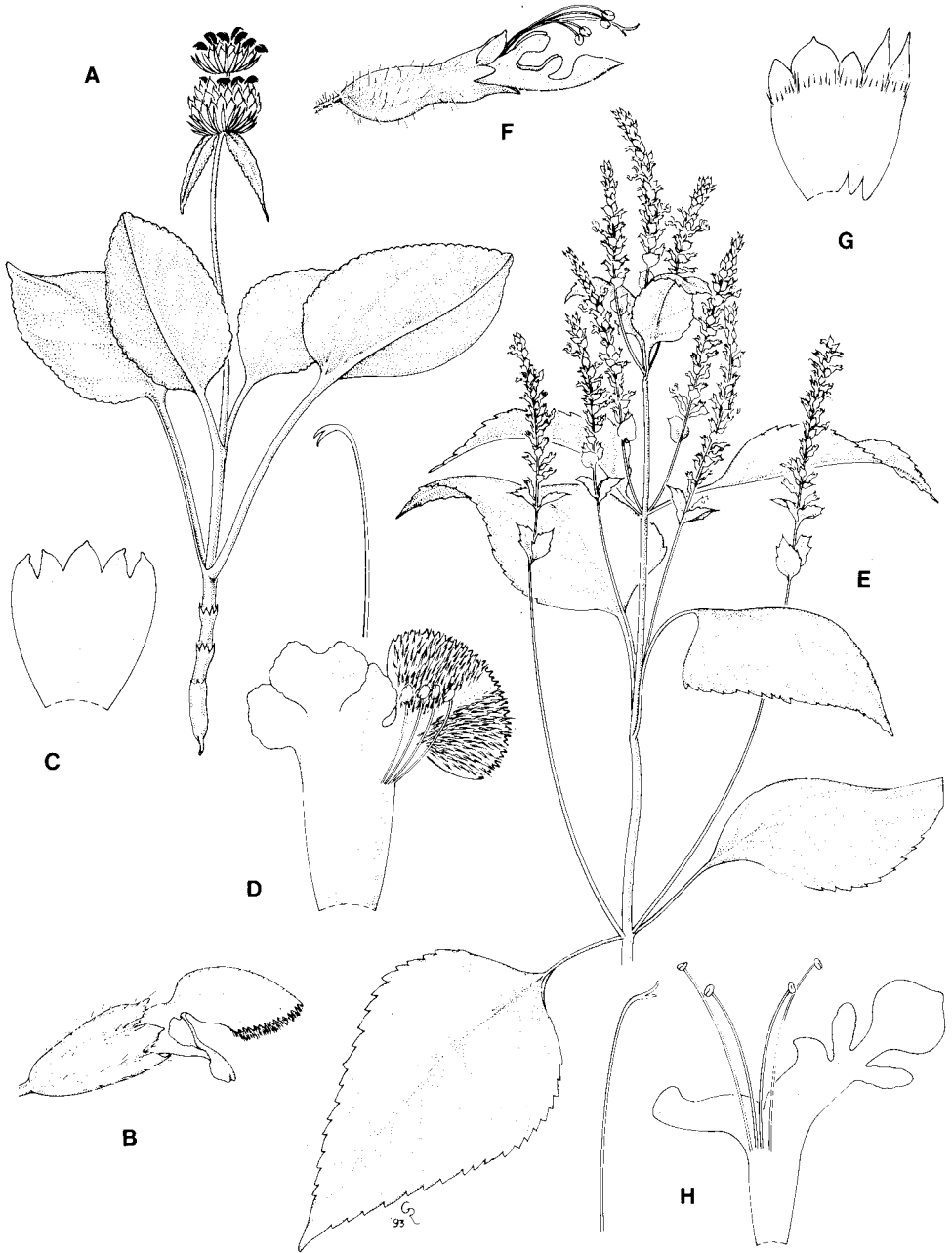


FIG. 2. A–D, *Phlomis rotata* subsp. *bhutanica*. A, habit x0.5; B, flower x2.5; C, dissected calyx x2.5; D, dissected corolla x2.5. E–H, *Teucrium grandifolium*. E, partial habit x0.5; F, flower x3; G, dissected calyx x3; H, dissected corolla x3.

Bhutan and northern India (Assam). Growing in open, sunny conditions on dry hillsides, 1067–1676(–2850)m. July–September, November.

Type: Bhutan, Khoma, 27°39'N 91°12'E, open spaces, flowers mauve, 4000ft(1219m), 21 vii 1949, *Ludlow, Sherriff & Hicks* 20927 (holo. BM).

BHUTAN. Angduphorang, 1524m, 7 ix 1914, *Cooper* 2017 (BM, E); Lingsi, 1371m, 5 viii 1915, *Cooper* 4363 (BM, E); Lingsi, 1676m, 24 vii 1933, *Ludlow & Sherriff* 320 (BM); Ghunkarah, 27°23'N 91°35'E, 1067m; 6 xi 1938, *Ludlow, Sherriff & Taylor* 6280 (BM); Wangdipotrang, 1524m, 25 viii 1949, *Ludlow, Sherriff & Hicks* 19645 (BM); Kuru Chu, N of Lhuntse, 2745'N 9108'E, 2850m, 20 viii 1983, *Sargent* 237 (E); Shamgong to Mangde Chu, ix 1985, *Broad s.n.* (E); Tongsa district, between Shemgang and Dakpai, 1700m, xi 1989, *J. R. I. Wood* 7225 (E).

INDIA. Assam, Dirang Dzong, 1524–1829m, 14 x 1935, *Kingdon Ward* 12432 (BM); Assam, Dirang Dzong, 1524–1829m, 29 vii 1938, *Kingdon Ward* 14019 (BM).

Anisochilus mitis is related to *A. carnosus* (L.f.) Wall. but differs in the more robust habit and inflorescence, consistently dense, soft indumentum in all parts, ovate-elliptic to elliptic leaves with a shorter petiole (1.5–4.5cm long in *A. carnosus*) and a more even crenulate-serrate margin and longer spikes (1–2.7cm long in *A. carnosus*). The epithet refers to the indumentum which is very soft to the touch.

***Teucrium grandifolium* R. A. Clement, sp. nov. Fig. 2E–H.**

A. T. quadrifarium Buch.-Ham. ex D. Don caulibus quadrangulo-sulcatis, foliis multo grandioribus, indumento sparso differt.

Tall perennial. *Stems* 30–200cm, branched above, quadrangular-sulcate, retrorsely pubescent, hairs multicellular. *Leaves* ovate, 7.5–14 x 6–9.5cm, acute or shortly acuminate, base rounded-truncate with lamina slightly extended (by 0.5–0.8cm) on petiole, margin grossly serrate; upper surface sparsely hairy with short, fine, multicellular hairs; lower surface puberulent with similar hairs on veins; petiole 2.5–5.5cm, indumentum similar to stem. *Inflorescences* terminal and axillary, rather weak spikes, 3–9 x c. 1.8cm. Verticillasters 2-flowered, 6–7mm apart in lower part of spike, subtended by a pair of bracts. Bracts ovate, ciliate, persistent, whitish at base, green above. Pedicel up to 1.4mm. *Calyx* tubular-campanulate, 6–7.6mm, hirsute on main veins; tube sometimes apparently whitish and somewhat inflated above base, 4.5mm, throat with hirsute annulus; upper lip 3mm, 3-toothed, green, median tooth largest, broad ovate, c. 2.7mm wide; lower lip 3mm, 2-toothed, green, teeth narrowly triangular. *Corolla* dull red or purple, 10–11mm, pubescent externally; tube 5–5.4mm; lateral lobes ovate-triangular, c. 0.8mm; lower lip 3-lobed, 3.5–4mm, lateral lobes oblong; median lobe entire, suborbicular, concave, c. 2 x 3mm. *Staminal filaments* sparsely retrorse-hairy. *Nutlets* not known.

Bhutan and Tibet. Growing among scrub by streams in dry, open, *Quercus* woodland, 1700m. August. Not particularly aromatic.

Type: Bhutan: Daga District, above Daga Dzong towards Daga La, 1700–2438m, 7 viii 1989, *J R I Wood* 7044 (holo. E, iso. K).

TIBET. Yigrong valley, 2438m, 4 viii 1935, *Kingdon Ward* 12137 (BM).

Teucrium grandifolium has some similarity to *T. quadrifarium* Buch.-Ham. ex D Don in the 2-flowered verticillasters, ovate bracts and calyx teeth – in common with other species placed in sect. *Scorodonia* – but is totally different in the tall habit, quadrangular-sulcate stems, large, sparsely hairy leaves and short stem indumentum. It is in fact quite distinct from all other species known from the surrounding areas.

***Phlomis rotata* Hook. f. subsp. *bhutanica* R. A. Clement, subsp. nov. Fig. 2A–D.**

A subspecies typica foliis ovatis vel late ovatis non reniformibus, dentibus calycis brevioribus non spinosis et corollae labio inferiore in facie superiore glabro (haud barbato) differt.

Differs from the type subspecies in the leaves ovate to broadly ovate, 3.6–8.2 x 3.1–6.8cm not reniform, upper surface hairs almost all simple (lacking stellate arms at base); inflorescence of not more than 2 verticillasters; calyx teeth shorter, 1.5mm, not spinose; corolla lower lip slightly shorter than upper lip and glabrous on upper surface. Endemic to Bhutan. Growing on open grassy hillside and among dwarf rhododendrons, 4268m. June.

Type: Bhutan: Dunshinggang (Black Mountain), 14000ft, 22 vi 1937, *Ludlow & Sherriff* 3298 (holo. BM, iso. E)

This new subspecies is known only from the type collections and its locality is an isolated mountain area in central Bhutan. While subsp. *bhutanica* is geographically separated, it has a similar habit, habitat and phenology to subsp. *rotata*. The differences between the two subspecies, when examined in the context of the variation exhibited by subsp. *rotata*, do not appear to justify recognition of the new taxon at a higher rank.

***Marmoritis pharica* (Prain) R. A. Clement, comb. nov.**

Syntypes: Eastern Tibet, Phari, *King's Collector*, n.v.; between Phari and Lhasa, *Lama Ujyen Gyatsko* 106, n.v.

Syn.: *Nepeta pharica* Prain in J. As. Soc. Beng. 59: 306 (1890).

Phyllophyton pharicum (Prain) Kudo in Mem. Fac. Sci. Taihoku Univ. [Labiata. Sino-Japon. Prodr.] 2, 2: 225 (1929).

A new combination has been necessary following the resuscitation of the generic name *Marmoritis* (Hedge, 1990) which languished in synonymy under *Phyllophyton* for almost 150 years.

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