

## NOTES RELATING TO THE FLORA OF BHUTAN: XIV

### *Daphne ludlowii*, a new species from Bhutan

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**ABSTRACT.** *Daphne ludlowii* Long & Rae, sp. nov. (Thymelaeaceae) is described from Bumthang district, central Bhutan. Differences with allied Asiatic species are summarized.

***Daphne ludlowii* Long & Rae, sp. nov.** Plate 1.

*D. retusae* Hemsley et *D. tanguticae* Maxim. similis sed fruticulo humili multicaule 20-30cm, surculari; rami graciles; folia tenuiter coriacea, oblanceolata, breviter acuminata ad apicem angustum retusum; petioli 3-7mm longi; flores non-fragrantes; perianthium luteum, extus hirsutum.

Low multi-stemmed suckering evergreen shrub 20-30cm, branchlets slender, flexible with soft greyish-brown bark, pubescent becoming glabrous in second year. Leaves alternate,  $\pm$  scattered or loosely clustered towards branch ends, leathery and flexible, oblanceolate, (2-)3-6.5  $\times$  1-2cm, shortly acuminate to a narrow retuse point, base attenuate, glabrous except for a few hairs at apex (but when young margins and apex ciliate), dark green, glossy above becoming rugose when dry, midrib impressed above, prominent beneath, lateral veins obscure, margins weakly revolute; petioles 3-7mm. Flowers 10-25 in terminal sessile clusters, not fragrant, subtended when young by ovate-elliptic caducous scales 5-8mm, with ciliate margins. Perianth pale to bright yellow, tube 7-9mm, appressed whitish hairy outside; lobes 4, spreading but not reflexed, ovate, unequal, 4-5  $\times$  1-3mm, rounded, overlapping at base, pubescent outside and especially at apex. Stamens 8 in 2 series; lower 4 inserted at mid-tube, upper 4 inserted below mouth but not exerted; anthers linear 0.8-1.0mm; filaments very short, 0.4-0.5mm. Ovary ellipsoid, c.2mm, glabrous; stigma capitate on very short style; disc scale c.0.4mm. Drupes not seen.

BHUTAN: Bumthang district, Peipe (Phephe) La, 27°41'N, 90°48'E, 3353m, 21 v 1949, 'Shrub 1-1½ feet. Flowers pale yellow. No scent. Little seen, in *Tsuga* & *Rhododendron* forest', Ludlow, Sherriff & Hicks 18919 (holo. BM, iso. E); Phaph (Phephe) La, 3353m, v 1987, Boscawen 205 (E); from Damphe up the Samdi Chu to the Phaph (Phephe) La, 3500m, v 1987, Rushforth 1177 (E); west flanks of Phephe La, 3580m, v 1988, Schilling s.n. (E).

*Daphne ludlowii* is an interesting new species endemic to a single mountain ridge in the Bumthang district of central Bhutan. It was first discovered in 1949 by Ludlow & Sherriff, but remained undescribed until recently when additional specimens became available. However, Ludlow clearly recognized that it might be a new species, as is shown by his annotation on the holotype: 'Note: (a) small size of plant, (b) small blunt retuse leaves and grey bark, (c) yellow flowers. May well be a new species and not merely a colour form of 'bholua'. The shape of the perianthium lobes shows 'bholua' to be closely related however. F.L.'.

Although as stated by Ludlow the perianth is similar to that of *D. bholua* Don in form and indumentum, *D. bholua* is a larger shrub 1-3.5m with proportionally longer and narrower acute leaves, flowers strongly fragrant and usually pink or purplish with white lobes, never yellow.

*D. ludlowii* resembles the smaller *D. retusa* Hemsley and *D. tangutica*



PLATE 1. *Daphne ludlowii* growing at the type locality in Bhutan.  
Photo. A. D. Schilling.

Maximowicz, but differs as stated in the diagnosis above, particularly in growth form, height, petiolate leaves, and its yellow, scentless, hairy flowers.

It is distinct from all other E Himalayan members of the genus in its yellow flowers, a colour relatively rare throughout the genus: the predominant colours being white, creamy, pinkish or lilac. Rehder (1916) and Brickell & Mathew (1976) treat several yellow-flowered Asiatic species, but none appears to be especially close to *D. ludlowii*: *D. angustiloba* Rehder, *D. leuconeura* Rehder, *D. modesta* Rehder, *D. penicellata* Rehder and *D. rosmarinifolia* Rehder, all from Szechwan, China, differ in their 5-merous flowers. *D. giralddii* Nitsche, from Kansu and Shensi, is a larger glabrous shrub with sessile, narrowly oblanceolate, deciduous leaves. *D. mucronata* Royle, from E Turkey to NW Himalaya, is a larger shrub with narrowly oblanceolate sessile leaves and in addition differs in its smaller whitish-woolly flowers. *D. aurantiaca* Diels, from Yunnan, differs in being glabrous throughout, in having much smaller, subopposite leaves, and flowers borne only in pairs. *D. jezoensis* Regel, from Japan, is a glabrous single-stemmed shrub, with membranous, deciduous, obovate, obtuse (often mucronulate) not retuse sessile leaves.

A single collection from Assam (Manda La, above Dirang Dzong, 27°15'N 92°15'E, 2740–3050m, 7 v 1938, *Kingdon Ward* 13629, BM) is closely allied to *D. ludlowii* in stature, foliage and flower colour, and probably represents a discrete taxon. It differs in its scented flowers 'smelling of lemon grass', slightly larger perianth with more concave acute lobes narrowed basally, and upper 4 anthers shortly exserted from mouth of perianth tube. Further collections are required to confirm its status as a new species.

Little is known of the detailed ecology of *D. ludlowii*, except that it grows in dense, mossy, cool temperate forests dominated by *Tsuga dumosa* and *Picea spinulosa* with *Rhododendron* species, *Betula utilis*, *Viburnum grandiflorum* and bamboo. The plant has recently been introduced into cultivation by K. Rushforth and A. Boscawen from the type locality, and because of its sucker-producing habit it should be relatively easy to propagate.

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