

## *Buddleja microstachya* (Buddlejaceae), a new species from SW Yunnan, China

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*Buddleja microstachya* E.D. Liu & H. Peng, a new species of the Buddlejaceae from SW Yunnan, China, is described and illustrated. The morphology, geographical distribution and habitat ecology of *B. microstachya* are compared with the morphologically close *B. yunnanensis*.

Key words: *Buddleja*, Buddlejaceae, new species, taxonomy

The Yongde Snow Mountains Nature Reserve is located in northeast Yongde County, Yunnan Province, China, 24°00'10''–24°12'27''N, 99°32'56''–99°43'47''E. It is one of the reserves at the provincial level founded in 1986 by Yunnan Province Government, and now a candidate for becoming one at national level. The main purpose of the reserve is to protect the evergreen broadleaved forests and other forests in the lower-latitude region. Because of its geographical location and complex physiognomy, many original vegetation forms and ecosystem types are preserved in the reserve. Therefore, the biodiversity and plant resources are very abundant.

In the past four years, we have carried out a lot of floristic research in the region and have found many species endemic to it. During the expedition to the reserve in April 2005, we found a taxon of *Buddleja* which differs clearly from the other *Buddleja* species in China and in the neighbouring countries and regions. After a morphological study, literature searches

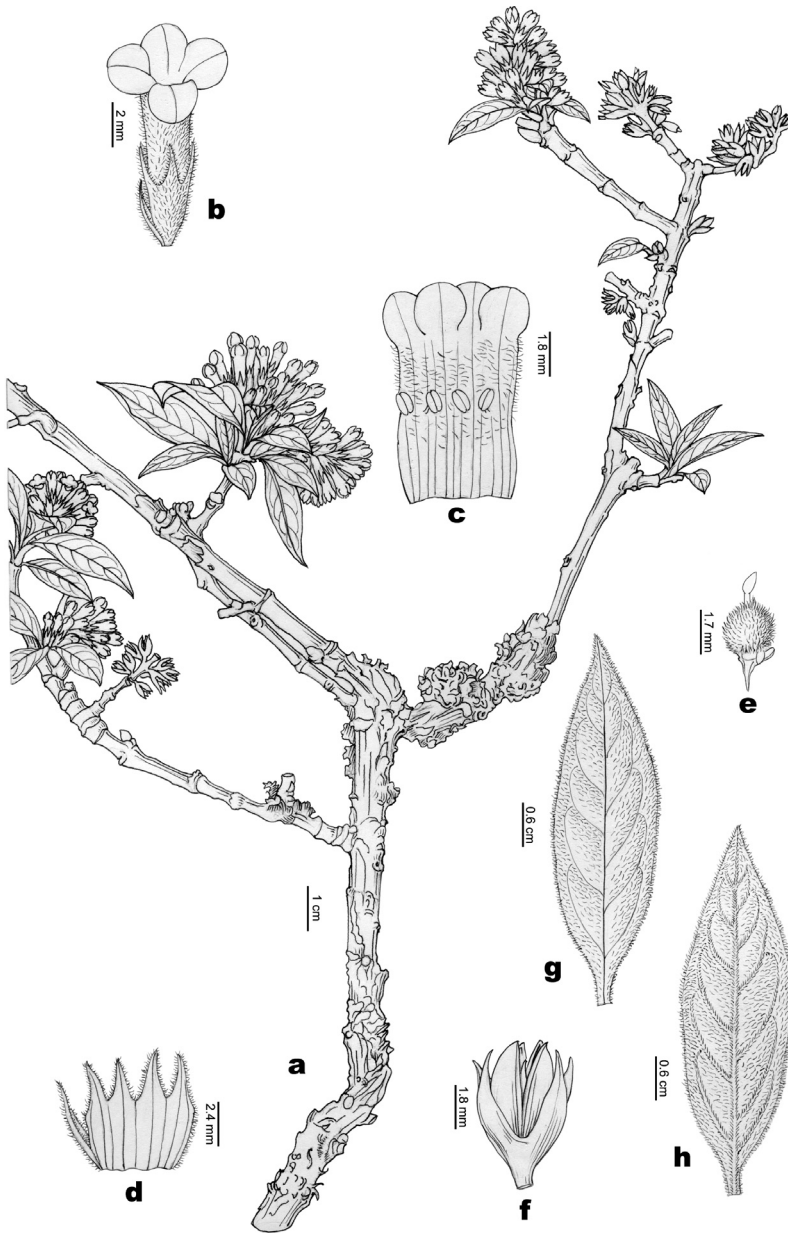
(Hooker 1890, Marquand 1930, Hara 1971, Li 1982, 1992, Bao 1983, Li & Leeuwenberg 1996, Norman 2000, Liu & Peng 2004) and examination of many specimens, it became clear that it represents a new species.

***Buddleja microstachya*** E.D. Liu & H. Peng, *sp. nova* (Fig. 1)

*Affinis B. yunnanensi*, sed *cyma floribus duobus vel tribus, lamina foliorum integro, staminibus prope medium tubum corollarum insertis differt.*

TYPE: China. Yunnan Province, Yongde County, Snow Mountains, Bodao Mount, alt. 3200 m, on rocky mountain top, 26 IV. 2005 Liu Ende 925 (holotype KUN; isotypes H, PE).

Shrubs 1–2 m tall. Branchlets subquadrangular, opposite, densely tomentose; bark of old branches coming off in stripes, glabrescent. Leaves opposite, subsessile; stipules un conspicuous; leaf blade lanceolate, 1.5–5.0 cm long,



**Fig. 1.** *Buddleja microstachya* (from holotype, drawn by Xi-Lin Wu). — **a**: Part of a flowering branch (with fruits of previous year). — **b**: Flower. — **c**: Flower opened, showing stamens. — **d**: Calyx and bractlet. — **e**: Ovary and style. — **f**: Capsule and persistent calyx. — **g**: Leaf, adaxial view. — **h**: Leaf, abaxial view.

0.5–1.3 cm wide, very crisp when dry; adaxially tomentose, dark-green; abaxially densely tomentose, gray or yellowish; base cuneate or decurrent into a very short petiole, apex acuminate to slightly obtuse; margin entire; lateral veins three to six per side, slightly depressed on upper surface, conspicuous on lower surface. Inflorescences terminal, two or three flowers forming a cyme, and several cymes forming a very compact panicle; panicles 0.9–2.5 cm in

length, 1.2–2.0 cm in width, flowers numerous. Pedicel very short, tomentose. Bractlet linear, densely tomentose, usually as long as calyx. Calyx campanulate, outside densely tomentose, inside glabrous; calyx tube 2.0–4.0 mm long, 2.0–2.5 mm in diameter; lobes four, triangular, 1.0–2.5 mm long, ca. 0.5 mm wide. Corolla lavender to white, yellow at throat; corolla tube cylindrical, 4.0–6.0 mm long, 1.5–2.0 mm in diameter, outside tomentose, inner wall with

long hairs especially at throat and glabrous near base; lobes four, suborbicular or obovate, adaxially white and glabrous or with scattered hairs, abaxially lavender and tomentose, margin usually erose, 2.0–3.0 mm long, 2.0–3.1 mm wide. Stamens four, inserted near the middle of corolla tube; anthers four, oblong to obtusely sagittate, 0.2–0.4 mm long, 0.1–0.3 mm wide; filaments extremely short. Ovary ovate, 1.5–2.0 mm long, 1.0–1.5 mm in diameter, tomentose. Style ca. 0.3 mm long, tomentose at base; stigma clavate. Capsule elliptic to ovoid, 4.0–4.1 mm long, 3.0–3.1 mm in diameter, glabrous. Seeds ovate, numerous, 0.3–0.5 mm long, 0.2–0.3 mm in diameter, wingless. Flowering March–May, fruiting April–June.

*Buddleja microstachya* morphologically resembles *B. yunnanensis* by having triangular calyx lobes, straight corolla tube and wingless seeds. However, there are also many differences between the species. *Buddleja microstachya* has cymes consisting of two or three flowers, entire leaves, and stamens inserted near the middle of corolla tube. Besides these morphological differences, the two species also have different distributions, altitudinal ranges and habitats. *Buddleja microstachya* is restricted to the top of a mountain whose altitude is 3200 m in Yongde Snow Mountains, SW Yunnan. On the top of the mountain there is shrub vegetation, consisting mainly of *Juniperus formosana*, *Osmanthus suavis* and *Ribes glaciale*. Below the top these are replaced mainly by *Yushania levigata* and *Rhododendron basilicum* from altitude 3000 m to 3200 m, and below those there are evergreen broad-leaved forests from 2300 m to 3000 m. Therefore the location where *B. microstachya* occurs is rather

isolated ecologically. *Buddleja yunnanensis* on the other hand is distributed in many places in central and southern Yunnan, and the altitudinal range is 1000–2500 m. It thrives mainly in thickets along mountain slopes and valleys.

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