

Three new additions for the state flora of Mizoram, India

Samiran Panday, B. K. Sinha¹ and Prakash Karmakar²

Botanical Survey of India, Central National Herbarium, Howrah 711103, West Bengal, India

¹Botanical Survey of India, Industrial Section, Indian Museum, Kolkata 700016, West Bengal, India

²Department of Botany and Forestry, Vidyasagar University, Midnapore 721102, West Bengal, India

Corresponding author e-mail: samicnh@gmail.com

[Received revised 30.05.2013; Accepted 31.05.2013]

Abstract

Species like *Lysimachia deltoidea* Wight (Primulaceae), *Sauropus macrophyllus* Hooker f. (Euphorbiaceae) and *Utricularia furcellata* Oliver (Lentibulariaceae) are collected from Phawngpui National Park (Blue Mountain), Lawngtlai District of Mizoram and are reported first time for the State. The same have been described along with photographs.

Key words: Three new additions, Phawngpui National Park, Mizoram.

INTRODUCTION

Mizoram is a highly mountainous region and a part of most significant globally recognised Indo - Myanmar biodiversity hotspot, situated between Myanmar in the south-east and Bangladesh in the west. The states of Manipur and Assam borders are on the north, while Tripura lies in the north-west. Mizoram have an area of 21,081 sq km and the average height of the hills is about 1000 meters. The highest peak in the state is Blue Mountain peak (situated in Phawngpui National Park) with a height of 2200 m amsl (Malsawmsanga & Lalramnghinglova 2011).

Phawngpui National Park is one of the richest hotspot area of Mizoram in respect of plant diversity, situated in South Eastern part of the state comes under Lawngtlai district, having an area of 50 sq km, lies between 22°36'37" to 22°41'33" N latitude and 92°00'41" to 93°04'57" E longitude and altitudes varies between 1400 to 2300 m amsl (Malsawmsanga & Lalramnghinglova 2011).

During the Survey and exploration of the Phawngpui National Park the authors collected three interesting species. After a critical study and comparison with other specimens housed at ASSAM herbarium at Shillong, the species were identified as *Lysimachia deltoidea* Wight (Primulaceae), *Sauropus macrophyllus* Hooker f. (Euphorbiaceae) and *Utricularia furcellata* Oliver (Lentibulariaceae).

A perusal of literature related to the flora of Mizoram (Deb & Dutta 1987; Fischer 1938; Gage 1901; Singh *et al* 2002) revealed that these species have not been reported earlier

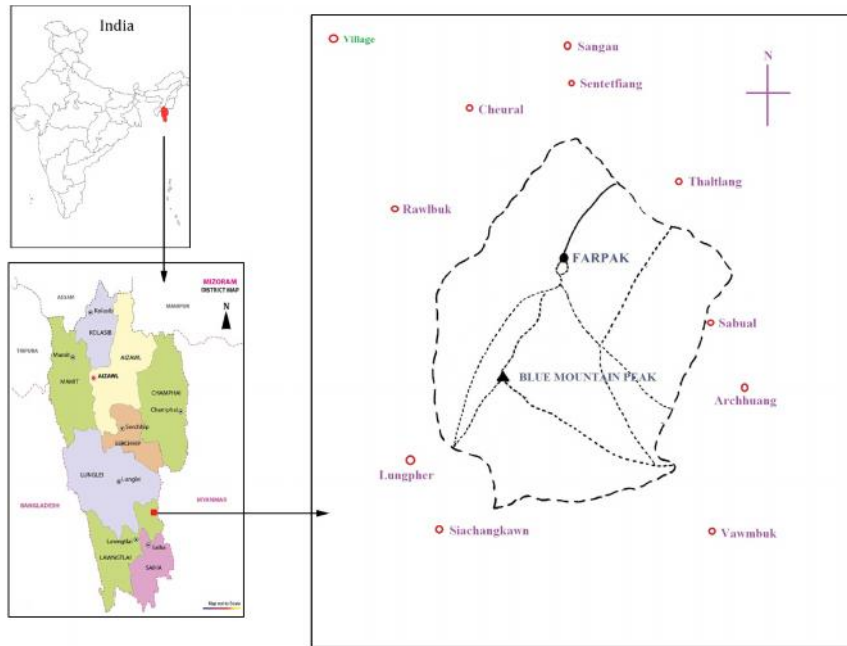


Fig.1. Map showing the location of the study area 'Phawngpui National Park' in Mizoram.

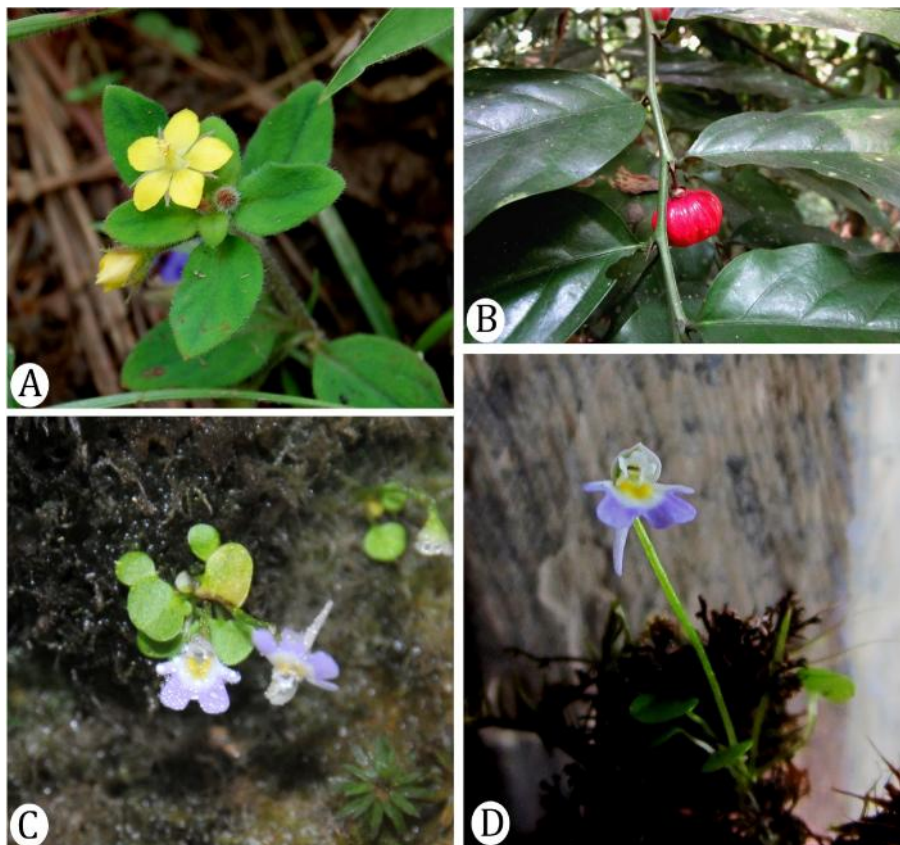


Fig. 2. A. *Lysimachia deltoidea* Wight (Primulaceae); B. *Sauropus macrophyllus* Hooker f. (Euphorbiaceae); C. & D. *Utricularia furcellata* Oliver (Lentibulariaceae).

from Mizoram. The present communication deals with original citation along with brief descriptions and photographs for its easy identification. The specimens are deposited in the ASSAM herbarium for future references.

ENUMERATION

Lysimachia deltoidea Wight, Ill. Ind. Bot. 2: 137, pl. 144, 1850; Hooker *f.*, Fl. Brit. India 3: 505. 1882. [Primulaceae]

Herbs, perennial, semi-prostrate, 5 – 20 cm high; stems weak, ascending-erect, simple or branched from base, pubescent. Lower leaves 1 or 2 pairs, sub-alternate, upper leaves opposite, elliptic ovate, 1 – 2.1 × 0.8 – 1.4 cm, with multicellular hairs, subrounded at apex, cuneate to subrounded at base; petiole 2 – 3 mm long or subsessile. Flowers solitary, in axils of upper leaves; pedicel ascending-erect, 1 – 1.5 cm long. Calyx lobes green, lanceolate, 4 – 5 mm, abaxially pubescent, acuminate. Corolla yellow, deeply parted, 5 – 7.5 mm; tube *ca.* 1 mm long; lobes obovate - elliptic, 3 – 4 mm wide, transparent, glandular, apex rounded. Staminal filaments connate basally into ring, free parts *ca.* 2 mm long; anthers ovate, dorsifixed, opening by lateral slits. Ovary glabrous; style *ca.* 3.5 mm long. Capsules sub-globose, *ca.* 4 mm in diam.

Flowering & Fruiting: March – September.

Habitat: Occasionally grows on open grassy hill slopes with *Potentilla fulgens*.

Distribution: INDIA: Assam, Meghalaya, Arunachal Pradesh, Mizoram; CHINA, BHUTAN, LAOS, MYANMAR, SRILANKA, VIETNAM.

Specimen examined: Mizoram, Phawngpui National Park, Peak area, 2250 m, 04.04.2011, Samiran Panday 119689 (ASSAM).

Sauropus macrophyllus Hooker *f.* Fl. Brit. India 5: 333 – 334, 1887; Kanjilal *et al.*, Fl. Assam 4: 173. 1940. [Euphorbiaceae]

A shrub, branches thin, spreading, about 3.0 m. high. Leaves alternate, distichous, ovate - lanceolate, 12 – 16 × 7 – 9 cm, acuminate, entire, thinly coriaceous, glabrous, base cuneate; petiole 0.5 – 1 cm long. Flowers monoecious, small, axillary, solitary or fascicled, in short peduncles, brick red. *Male flowers:* sepals connate in disc like, urceolate, 6-lobed calyx; stamens 3, filaments connate in a short truncate, 3-gonous column; anthers sessile on the angles. *Female flowers:* sepal connate, 6-cleft; ovary 3 celled with concave apex; ovules 2 in each cell; styles 3, very short, spreading, 2-fid. Fruits depressed globose, flesh-coloured, fleshy or coriaceous, shortly pedicelled, epicarp thinly crustaceous, 6 - valved or breaking up irregularly, containing 6 indehiscent trigonous cocci; seeds with fleshy albumen.

Flowering & Fruiting: July – November.

Habitat: Rare in dense evergreen forest, in shady places.

Distribution: INDIA: Assam, Meghalaya, Mizoram; BORNEO, JAVA, MYANMAR, VIETNUM.

Specimen examined: Mizoram, Phawngpui National Park, Farpak, 1920 m., 24.10.2011, Samiran Panday 121958 (ASSAM).

Utricularia furcellata Oliver, J. Linn. Soc., Bot. 3: 189, 1859; Hooker *f.*, Fl. Brit. India 4: 334, 1884. [Lentibulariaceae]

Annual rosette herbs. Leaves in rosette, reniform, 3 – 5 mm, obovate, entire, rounded at apex, cuneate at the base, thinly fleshy, veins dichotomous; petiole ca. 2 mm. Inflorescences erect, 2 – 4 flowered; pedicels 1.5 – 2.5 cm. Calyx 2 – lobed; lower lobe oblong-elliptic, much smaller than upper lobe, rounded at apex; upper lobe broadly obcordate, 1.5 – 2.5 mm, rounded at apex. Corolla whitish violet, with a yellow spot at base of lower lip, 3 – 6 mm; lower lip transversely elliptic to sub-orbicular, apex 4-lobed; spur subulate, slightly longer than lower lip, curved, apex acute; palate fringed with hairs; upper lip subovate, shorter than calyx, apex shortly 2-cleft. Filaments ca. 0.6 mm, straight; anther thecae distinct. Ovary ovoid to depressed globose; style very short; stigma semicircular. Capsules globose, ca. 2.5 mm in diam., dorsiventrally compressed, dehiscing by a single longitudinal ventral slit; seeds obovoid, glochidiate, 0.2 – 0.4 mm.

Flowering & Fruiting: July – December.

Habitat: Rare on moss covered damp rocks associated with *Sonerila khasiana*.

Distribution: INDIA: Assam, Darjeeling (WB), Meghalaya, Mizoram; BHUTAN, MALAYSIA, MYANMAR, NEPAL, THAILAND, VIETNAM.

Specimen examined: Mizoram, Phawngpui National Park, Farpak, 1900 m., 31.10.2011, *Samiran Panday 123696* (ASSAM).

Acknowledgements

The authors are thankful to the Director, Botanical Survey of India, Kolkata for facilities and encouragements and Forest Department, Mizoram for their support during field survey.

LITERATURE CITED

- Deb, D. B. & Dutta, R. M. 1987. A contribution to the flora of Mizoram. *J. Econ. Taxon. Bot.* 10 (1): 21 – 61.
- Fischer, C.E.C. 1938. The flora of Lushai hills. *Rec. Bot. Surv. India* 12(2): 75 - 161.
- Gage, A. T. 1901. A Botanical tour in the South Lushai hills. *Rec. Bot. Surv. India* 1: 331 - 369.
- Malsawmsanga, Alfred & Lalramnghinglova, H. 2011. Assessment of plant species richness of Phawngpui National Park in Lawngtlai district of Mizoram, India. *Pleione* 5(2): 292 - 303.
- Singh, N.P.; Singh, K.P. & Singh, D.K. 2002. *Flora of Mizoram*, Vol. - 1 (Ranunculaceae - Asteraceae), Botanical Survey of India, Kolkata.