



Three new additions to Indian Flora from north eastern states

Balachandran N. and K. Ravikumar*

Foundation for Revitalisation of Local Health and Traditions (FRLHT), Bangalore - 560 064, Karnataka, India.

*E-mail: k.ravikumar@frlht.org

Abstract

Botanical survey conducted to the north eastern states of India has resulted in the collection of *Achyranthes diandra* Roxb. (Amaranthaceae), *Disporum longistylum* (H. Léveillé & Vaniot) H.Hara (Uvulariaceae) and *Smilax davidiana* A.DC. (Smilacaceae) which form new distributional record to India. The information is presented here with brief botanical description, types, distribution, habitats and photographs.

Keywords: *Achyranthes diandra*, *Disporum longistylum*, Manipur, Meghalaya, *Smilax davidiana*

Introduction

During November, 2011 an inventory of medicinal plants was conducted at various places in Manipur and Meghalaya; the north eastern states of India for strengthening the medicinal plants repository of Foundation for Revitalization of Local Health Traditions (FRLHT), located in Bangalore, India. All the collected voucher specimens were identified by referring to various Floras such as Hooker (1885, 1892), Kurz (1877), Chauhan (1996), Chowdhery *et al.* (2008), Deb (1983), Haridasan & Rao (1987), Kanjilal & Bor (1997) and Srivastava (1996). Among the collected specimens, three species which could not be identified were further examined with the descriptions and illustrations in the Flora of China (Wu *et al.*, 2000) and Flora of Ceylon (Dassanayake & Fosberg, 1981). These were identified as *Achyranthes diandra* Roxb. of Amaranthaceae, *Disporum longistylum* (H. Léveillé & Vaniot) H. Hara of Uvulariaceae and *Smilax davidiana* A.DC. of Smilacaceae. Interestingly all these three species have so far not been recorded from India. No specimens could be located in CAL, ASSAM, ARUN and BSHC. Therefore the present collections form new distributional record for India. These are presented here with brief description, geographical distribution and ecology. All the voucher specimens are deposited at FRLH.

Achyranthes diandra Roxb., Fl. Ind. (ed. Carey & Wall.) 2: 504. 1824; Hook. f., Fl. Brit. Ind. 4: 731. 1885; Trimen, Handb. Fl. Ceylon 3: 405. 1895; C.C. Townsend in Dassanayake & Fosberg, Rev. Handb.

Fl. Ceylon 1: 41. 1980; *Centrostachys diandra* (Roxb.) Wall. ex Wight, Ic. Pl. Ind. Or. 2: 7, pl.722.1840-1843; Moq. in DC., Prod. 13 (2):322.1849; Thw., Enum. Pl. Zeyl. 249.1861. (**Fig. 1**) (Family: Amaranthaceae)

Slender herbs, up to 120 cm high, diffusely branching. Stems 4-angular, weak, wiry, striate, hairs appressed throughout, dense on young parts. Leaves opposite, linear-lanceolate, 11.5–16.5 × 0.5–2.4 cm, gradually narrowed at both ends, apex long acuminate, thinly pilose, pubescent on both surfaces, more densely along the lower surface of the midrib; petioles up to 10 mm long, upper leaves more or less sessile (rarely). Inflorescences terminal, spike, sometimes forked, pedunculate, slender, ribbed, appressed hairy along the ribs, lax and elongating, 9–22 cm long in fruiting. Bracts triangular-lanceolate, glabrous, turn back and persistent along the fruiting rachis. Bracteoles 2, equal to the inner perianth segments, basal wings thin outwardly curving spine. Seed fills the capsule, cylindrical, smooth.

Distribution: So far considered as endemic to Sri Lanka, now reported from India.

Habitat: Found growing as undergrowth along the slopes of dense evergreen forests.

Specimen examined: INDIA, **Manipur**, Chandal, Meilon Hill range, 13.11.2011, N.Balachandran & P.Patchaimal 111815 (FRLH).



Fig. 1. *Achyranthes diandra* Roxb.

Note: This plant was listed under IUCN Red list of Threatened Plants during 1997. The occurrence of this species was described by Thwaites (*l.c.*) as “very common”, and by Trimen (*l.c.*) as “common in the dry region”. Only four herbarium sheets have been seen recorded from the type country among which only one sheet bearing the information about the frequency (Cooray 69011903 R) as “rare”. In the present area it is seen as rare.

Disporum longistylum (H.Léveillé & Vaniot) H.Hara in J. Jap. Bot. 59. 40.1984; Flora of China @ efloras.org. Vol. 24: 156. *Tovaria longistyla* H. Léveillé & Vaniot, Mem. Pontif. Accad. Romana Nuovi Lincei 23: 361. 1905. *Disporum cavaleriei* H. Léveillé, in Fedde, Repert. 6: 264. 1909. (**Fig. 2**) (Family: Uvulariaceae)

Type: CHINA, **Kouy Tcheou**, 14.10.1902, *Cavalerie Pierre Julien* 648 (E digital image. E00318440!).

Erect, slender herbs, up to 1 m high. Rhizomes decumbent, slender, without creeping stolon. Stems usually branched in the upper part, ribbed, glabrous and green. Petioles 3–5 mm long. Leaf blades elliptic-lanceolate, sometimes ovate, 8–12 × 2.5–3.5 cm, base obtuse, sub-oblique, apex long

acuminate (usually caudate), dark green above, pale below with usually 3–5 distinct nerves from the base and 3–4 slender nerves in between the main nerves. Petioles 3–5 mm long. Inflorescences terminal, umbellate; pedicels 12–15 mm long, angular, ribbed, rugose along the ridges. Berries 3–5, black, sub-globose, 6–9 mm diameter.

Distribution: So far considered as endemic to China (Gansu, Guizhou, Hubei, Shaanxi, Sichuan, Xizang, Yunnan), now reported from India.

Habitat: Seen as undergrowths in partially shaded forest areas, in the wet mixed alluvial soil on pale yellowish brown rocks.

Specimen examined: INDIA, **Meghalaya**, East Khasi Hills, Maw Phlang, 18.11.2011, *N.Balachandran & P.Patchaimal*, 111986 (FRLH).

Note: The genus *Disporum* Salisb. ex DC. is represented by about 30 species distributed in Western USA, Canada, Japan, China, India, Sri Lanka, Thailand, to Western Malaysia. Among them, 14 are located in China, of which 8 are endemic. In India, Srivastava (1996) has reported 3 species of *Disporum* from Sikkim, while Dasgupta (2006) mentioned only one species in the Fascicles of Flora of India. The present collection from Khasi hills of Meghalaya forms first report of this taxon in India.



Fig. 2. *Disporum longistylum* (H.Léveillé & Vaniot) H.Hara

Smilax davidiana A.DC. in A.DC. & C.DC. Monogr. 1: 104.1878; Flora of China@ efloras.org. Vol. 24:101. *Smilax china* L. var. *brachypoda* Rehder. J. Arnold Arbor. 8: 92 1927. (Fig. 3) (Family: Smilacaceae)

Typus: CHINA, **Jiangxi**, Siu feng Sze 12.08.1922 A.N. Steward 2649 (N).

Armed stragglers, climb up to 2.5 m high. Stems branched, angled, prickles sparse, alternate, hooked. Petioles c. 12 mm long, winged parts only c. 7 × 4 mm wide, abscission zone just at or above the winged portion; tendrils short. Leaves elliptic-oblong, sometimes orbicular, 3–7.5 × 2.5–4.5 cm, base acute-cuneate, apex shortly acuminate and twisted. 3-nerved, lateral ones looping below the margin, impressed above, raised below, prominent on both sides. Inflorescences borne in the axils of young leaf of new branchlets, with one umbel, basally not prophyllate; peduncles 14–20 mm long, base thickened, sometimes slightly elongate; bracteoles persistent. Berries globose, bright red, 5–7 mm across. Pyrenes 2–4, brown, pitted and shiny.



Fig. 3. *Smilax davidiana* A. DC.

Distribution: So far reported from China (Fujian, Guizhou, Hunan & Jiangxi) and Japan (Zhejiang), now recorded from India.

Habitat: Found in forest openings on wet alluvial soil.

Specimen examined: INDIA, **Meghalaya**, East Khasi, Maw Phlang, 18.11.2011, N.Balachandran & P.Patchaimal 111979 (FRLH).

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