BULL. BOT. SURV. INDIA
Vol.50, Nos.1-4 : pp.173-174, 2008

TUPISTRA CLARKEI HOOK. F. (CONVALLARIACEAE) — A LITTLE KNOWN SPECIES FROM EASTERN INDIA

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Hooker (1892) described *Tupistra clarkei* on the basis of specimens collected at the base of Sikkim. The species seems allied to *Tupistra nutans* Wall. but plants and flowers are larger, pale greenish yellow or purplish in colour, mouth not closed by the stigma, style long. The protologue of *Tupistra clarkei* Hook. f. provides distinguishable characters sufficient to recognise the species in live condition. Noltie (1994) commented that due to poor and inadequate collections in herbaria, it is difficult to recognise *Tupistra clarkei* and included it under *Tupistra nutans* in Flora of Bhutan. Herbarium collections are scanty because plants are poorly represented in field, inflorescences are hidden within fallen leaves and large vegetative structures probably discourage plant collectors.

During field work in June 2007 in Sumer region of East Khasi hills of Meghalaya, authors came across some plants of *Tupistra* Ker Gawl. growing on hill slopes in sub tropical forest in association with *Rubus ellipticus* Smith, *Senecio scandens* Buch.-Ham ex D. Don, *Litsea* sp., *Lepidagathis incurva* D. Don and *Pinus khesya* Royle. Although it was vegetative but it is certain that same plants growing in experimental garden of Botanical Survey of India, Eastern Circle, Shillong. The garden plants flowered in November and flowering period is quite long. The plant is identified as *Tupistra clarkei* Hook. f., with the help of protologue and compared with other available species in this region from literature and herbarium.

A complete description and photographs are provided to distinguish the species in live condition as well as from herbarium material.

Tupistra clarkei Hook. f., Fl. Brit. India 6: 325. 1892.

Perennial, rhizomatous, stemless herbs up to 1.5 m tall. Leaves radical oblanceolate, 70 – 154 × 5.8 – 11.2 cm, acuminate, 4- 6-nerved, midrib raised, glossy green. Spikes radical, between leaves, pedunculate. Peduncle curved, semiterete, angled, 7 – 12 cm long, pale green; peduncular bracts solitary, broadly ovate, c. 1.6 × 1.2 cm, rounded, glabrous, yellow. Flowers densely packed, upto 26, campanulate, sessile, yellow, purplish on margins and joints, 1.8 – 2 cm across; rachis angular, yellow with brown flakes. Floral bracts convex, broadly ovate, 6 – 7 ×6 – 8 mm, acute, 3-nerved, glabrous, yellow. Perianth tubular at base, tube 8 – 10 mm long, lobes 6, imbricate, broadly ovate, 8 – 10 mm long, 6 - 8 mm broad at base, acute, reflexed at apex, yellow, margins and joints purple, mouth widely open. Stamens 6, inserted at middle of the perianth, filament reduced, c. 0.7 mm long, terete, hyaline, anthers dorsifixed, oblong, c. 1.5 x 0.5 mm, 2-lobed, split by longitudinal slits. Ovary oblong, 1.5 – 2 × 1.8 – 2.2 mm, greenish, style 6 – 8 mm long, terete, widen at apex, stigma capitate, c. 4 mm across, obscurely 3-lobed, dark purplish brown.

Fl.: November – December.

Distribution : India: Sikkim, Meghalaya.

Specimens examined : Hill south of Lebang, Abor hills, Arunachal Pradesh, 2800', 08.11.1912, *Burkill* 37741(CAL); Sureil, Sikkim 5000', 10.02.1910, *Ribu & Rhomoo* 3514(CAL); Sureil, Sikkim Himalaya, 15.11.1901, *Prain's collector* 442(CAL).

Date of Publication : 15 September, 2009

A comparison between *Tupistra nutans* and *Tupistra clarkei* based on study of 30 – 50 live plants of each species growing in experimental Garden, BSI, Shillong.

Tupistra nutans Wall.	**Tupistra clarkei** Hook. f.
Plants upto 85 cm tall	Plants upto 154 cm tall
Leaves 4 – 6.2 cm wide	Leaves 5.8 – 11.2 cm wide
Spikes lax flowered. Flower 6 – 11	Spike dense flowered. Flower 15 – 26
Flowers dark purple, perianth lobes reflexed entirely	Flowers yellow with purple lines on joints, perianth lobes reflexed only at tip.
Filament absent, anther appressed on perianth, broader than length	Filament present, c. 0.7 mm long, anther raised from perianth surface, not broader than length
Stigma peltate, 6.5 – 8.5 mm wide, obscurely rounded; style 5 – 6 mm long	Stigma capitate, 4 – 6 mm wide, obscurely 3-lobed; style 6 – 8 mm long

From herbarium material *Tupistra clarkei* Hook. f., can be distinguished from *Tupistra nutans* by broader leaves (usually more than 6 cm wide), densely flowered spikes (flowers more than 15), perianth lobes reflexed only at tip, anther lobes raised from perianth surface, longer than broad.

ACKNOWLEDGEMENTS

Authors are grateful to Dr. M. Sanjappa, Director, Botanical Survey of India, Kolkata and Dr. T. M. Hynniewta, Joint Director, Botanical Survey of India, Eastern Circle, Shillong for providing necessary facilities and encouragement.

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