**Tropidia namasiae** (Orchidaceae): a new distributional record for India from Manipur

Vikas Kumar\(^a\), A.N. Rao\(^1\) & D.K. Agrawala\(^2\)

Keywords/Mots-clés: new record/premier enregistrement, orchid flora/flore d'orchidées, taxonomy/taxinomie.

**Abstract**

*Tropidia namasiae* C.K.Liao, T.P.Lin & M.S.Tang is reported as a new distributional record to the orchid flora of India from Manipur. Color illustration of the taxon is provided in support of the taxonomic treatment. An artificial key is given for identification of all species of *Tropidia* hitherto reported from India.

**Résumé**


**Introduction**

The genus *Tropidia* Lindley (Orchidaceae), comprises of 32 species (Liao et al., 2013; Govaerts et al., 2015) distributed from northeastern Australia through the South Pacific Islands to India and southeastern Asia, including
Southern China and Malaysia, and from the Japanese Ryukyu Islands south to Taiwan. It has hitherto been reported in India by five species (De & Hajra, 2001; Misra, 2007; 2012). During a recent field exploration in the Sadar hills of the Senapati district of Manipur, a small population of *Tropidia* has been located in the Hengbung area. After a critical and comparative study of the live specimens based on available literature (Hooker, 1890; Holttum 1964; Rao, 1989; Lakra et al., 2000; De & Hajra, 2001; Pearce & Cribb, 2002; Kumar & Kumar, 2005; Lucksom, 2007; Yeh et al., 2009; Misra, 2012; Liao et al., 2013; Karthigeyan et al., 2014) and the consultation of local herbaria viz. ASSAM, CAL, BSHC, COGCEHR herbarium, Hengbung, and Orchid herbarium Tipi (OHT), Arunachal Pradesh, the specimens were identified as *Tropidia namasiae* Liao et al. a species hitherto known to be endemic to Taiwan and critically endangered. Hence the present report of occurrence of *T. namasiae* from Manipur forms a new addition to the orchid flora of India indicating its extended distribution further westwards from Taiwan to NE India and brings the total number of *Tropidia* species known from India to six. The detailed description and colour illustration of the species are given below along with an artificial identification key for all species of *Tropidia* known to occur in India.

**Taxonomic description**


Types: Taiwan (Republic of China), Kaohsiung city, Namasia district, on Mountain ridge, 23°14′16.2″N; 120°43′41.5″E, 1380 m, *C.K.Liao 3594* (Holotype, TAI); *T.P. Lin s.n.* (Paratype: MO).

Perennial, terrestrial herb ca. 42 cm tall; rhizome short, ascending, with adventitious brown roots ca. 8 cm long and 1-2 mm in diameter; stem woody, cylindrical, 3-4 mm in diameter, branched, green, covered with persistent fibrous sheath at each node; sheaths 1.5-2 cm long, cymbiform, entire, acute; internodes 4.5-6.5 cm long; leaves 2 at the apex, subopposite, plicate, ca. 16 × 4 cm, lanceolate, undulate at base, margin undulate, obtuse-acute, glabrous, 5-7 veined, dark green; petiole sheathing at base, ca. 2.5 cm long; inflorescence a condensed raceme, unbranched, axillary, up to 9 flowered, peduncle 3-5 cm long, glabrous, 3-4 bracteate; floral bracts 3-6 mm long, oblong-lanceolate, acuminate, glabrous, green, persistant;
pedicel with ovary ca. 3 mm long, ridged, green; flowers ca. 6 mm long, crowded, non resupinate, white, partly opening, mealy pubescent and sparsely papillose externally on sepals, petals and ovary; dorsal sepal 3.2 × 2 mm, elliptic, acute, concave, 3-veined, white; lateral sepals connate all along inner margins to form a synsepal with two short obtuse or sub-acute tips, 3.5 × 2 mm, cymbiform, broadly oblong, 5-veined; petals ovate-oblong, ca. 3 × 2 mm, concave, prominently 3-veined, white; lip fleshy, 2.5 × 2 mm, cymbiform, ovate, obtuse, ridged along its midvein, slightly recurved at apex, weakly undulate, with two sub-marginal horizontal sub triangular lamellae converging at tip; column very short, ca. 1 × 1 mm, straight; anther cap cordate, ca. 1 × 0.8 mm, 2-chambered, brown; rostellum minute, bifid; stigma transversally elliptic, shallow; pollinia 2, ca. 1 mm long, obovate, sectile, granular, united to a narrow stipe and elliptic viscidium (Fig.1).

Etymology: the specific epithet refers to Namasia (Kaohsiung, Taiwan), the type locality.

Flowering: May-June.

Habitat: found in shady places of subtropical mixed broad-leaved forest floors at elevation of about 1350 m in association with Begonia sp., Piper sp. etc.

Distribution: India (Manipur), Taiwan.

Specimen examined: India; Manipur, Senapati district, Hengbung Hills, ca. 1350 m, 06-06-2015, V. Kumar 1653 (COGCEHR).

Note: it may be mentioned that our specimens including two plants in the wild from India show only few numbers of flowers i.e. 7-9 per inflorescence whereas the plants from Taiwan have 20-35 flowers per spike. We are of the opinion that the species delineating characters between Tropidia namasiae, T. angustifolia C.L.Yeh & C.S.Leou and T. hegderaoi Misra are overlapping and a critical molecular study based on fresh material may be required to better clarify the taxonomic status of these entities.

**Key to species of Tropidia known to occur in India**

1a. Leaves usually 2 per stem .................................................................2
1b. Leaves more than 2 per stem ............................................................4

2a. Flowers large (12-20 mm long); lip with a spur ......................... T. angulosa
2b. Flower small (3-6 mm long); lip without spur ..............................3
Fig. 1: *Tropidia namasiae* C.K.Liao, T.P.Lin & M.S.Tang

A. Habit; B. Inflorescence; C. Floral bract; D. Flower (front view); E. Dorsal sepal; F. Synsepal; G. Petal; H & I. Lip: lateral and ventral views; J & K. Column: ventral and lateral views (rs: rostellum; st: stigma; cl: clinandrium); L & M. Anther cap: outside and inside views; N. Pollinarium. [V. Kumar 1653 (COGCEHR)]
3a. Inflorescence always lateral..............................................................T. namasiae
3b. Inflorescence always terminal........................................................T. hegderaoi
4a. Leaves plicate; inflorescence axillary...........................................T. curculigoides
4b. Leaves conduplicate; inflorescence terminal.................................5
5a. Plants up to 30 cm tall; inflorescence less than 2.5 cm long............
............................................................................................................T. bambusifolia
5b. Plants more than 30 cm tall; inflorescence more than 2.5 cm long... 
............................................................................................................T. pedunculata

Acknowledgements
The authors are grateful to Mr H. Kipgen, President, FEEDS, Hengbung for facilities and encouragement; SERB division, Department of Science and Technology, Government of India, New Delhi for financial assistance; Dr. P. Ormerod, Australia for valuable suggestion; Shri Singdal and Shri Tek Bahadur for their help in the field survey and anonymous reviewers for providing comments and advice on the manuscript.

References


_______________________________

1 : Centre for Orchid Gene Conservation for Eastern Himalayan Region (COGCEHR), Hengbung, KVK-Sylvan Campus, P. O. Kangpokpi 795129, Senapati, Manipur, India.

*Corresponding author e-mail: vmadhukar7@gmail.com*

2 : Botanical Survey of India, Sikkim Himalayan Regional Centre, Gangtok, India-737 103