

A NEW SPECIES OF *TROPIDIA* (ORCHIDACEAE) FROM TAMIL NADU, INDIA

SARAT MISRA

*Orchid Study Centre, C-89, HIG, Baramunda Housing Board Colony
Bhubaneswar - 751003, Odisha, India
E-mail: esmisra@yahoo.com*

ABSTRACT

Tropidia hegderaoi S. Misra is described from Kolli hills of Tamil Nadu. Detailed morphological characters and illustrations have been provided here for the species.

Keywords: *Tropidia*, Orchidaceae, New species, India.

INTRODUCTION

The Kolli hills of Tamil Nadu has moist deciduous forests with stretches of primary moist evergreen forests within it. This forest has a rich and diverse flora, including orchids (Ansari & Dwarakan, 2002). During a cursory survey for orchids in this hill in July 2006, I came across a small terrestrial orchid that looked like *Tropidia angulosa* (Lindl.) Blume. The white flowers in this were much smaller (c. 4mm long) and the lip did not have a spur; the plant was smaller, the stem was branched and the leaves were elliptic.

Critical examination of the flower showed many interesting features, like the suborbicular boat-shaped lip had a pair of conspicuous lamellae, larger for the size of the lip; broader rostellum and anther; the stipe and viscidium were much smaller. I realized that I was looking at some other species of *Tropidia*, not known to me. The plant (*S. Misra* 2449) was put under cultivation in the orchidarium of the Regional Plant Resource Centre (RPRC), Bhubaneswar; but it did not survive. The dried plant could neither be recovered for making a herbarium specimen (so was the case with the specimens *S. Misra* 2446, 2452).

I visited Kolli hills again in December 2008; and then in July 2011, when I could locate these plants in flower. On examination, my earlier finding was confirmed. This plant has a slender stem on top of which is a pair of broad elliptic acuminate plicate leaves; the lateral sepals are connate for almost their entire length, characteristic for *Tropidia angulosa*. Apart from these, the floral morphology of the species is distinctly different from that of *T. angulosa* and did not match with any other species of *Tropidia* known so far from India or the adjoining countries. Therefore, it is described here as a new species.

***Tropidia hegderaoi* S. Misra sp. nov.**

(Fig.1)

Tropidia hegderaoi S. Misra sp. nov. *Tropidiae angulosae* (Lindl.) Blume in habitum similis, sed floribus multo parvioribus; labis late obovato ad suborbiculari, concavi, cymbiformi, ecalcarati; lamellis hypochili geminatis, conspicue grandibus, oblique trapezoideis, incurvatis; epichilo late triangulari, recurvati; rostello latiori quam longi; polliniis clavatis, curtioribus; stipite et viscidio polliniis multo curtioribus differet.

Type : INDIA, Tamil Nadu, Namakkal district : Kollimalais, Ariyur shola, Mathikettan, c. 1300m, on forest floor, 14 July 2011, *S. Misra* 2525 (Holotype: CAL; Isotypes: CAL, MH).

Terrestrial, perennial, scattered herbs, 15 - 24cm high, bearing fibrous fasciculate rigid nodular roots of 5 - 10cm long and 1 - 1.5mm thick. Stem erect, slender, terete, woody; internodes 15 - 40mm long, c. 2mm thick, swollen at nodes to c. 3 mm, clothed with close-fitting obtuse sheaths. Leaves 2, subopposite on top of the stem, convolute, elliptic, 70 - 130 × 24 - 43mm, narrowed evenly to base and apex; base sessile, sheathing, non-articulate; apex slightly extended; lamina coarse, membranous, plicate, usually with 7 prominent veins and several finer veins among them. Inflorescence terminal on the developing leafy-floriferous shoot, short, simple, unbranched; peduncle 12 - 18mm long, c. 0.5mm thick; rachis 13 - 18mm long with numerous spreading linear-

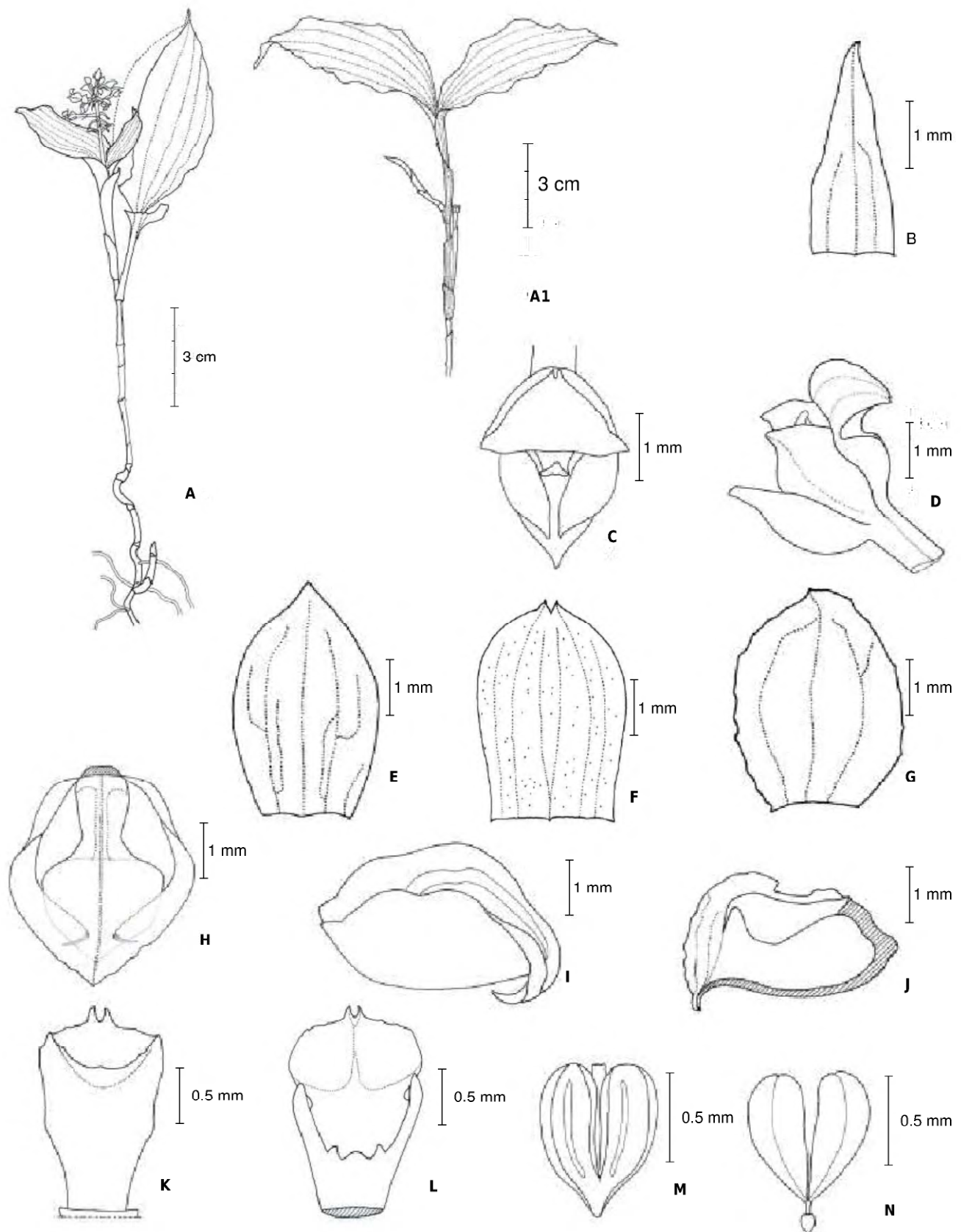


Fig. 1. *Tropidia hegderaoi* S. Misra : **A.** flowering plant, **A1.** leafy plant, **B.** bract, **C.** & **D.** flower, **E.** dorsal sepal, **F.** synsepal, **G.** petal, **H.** **I.** & **J.** lip, front, side and in longitudinal section, **K.** & **L.** column, rear and front view, **M.** anther, pollinarium removed, **N.** pollinarium. (a-g; j, l, m & n after S. Misra 2525 (holotype); a1 after S. Misra 2525 (isotype); h, i & k after S. Misra 2528; drawing and inking S. Misra)

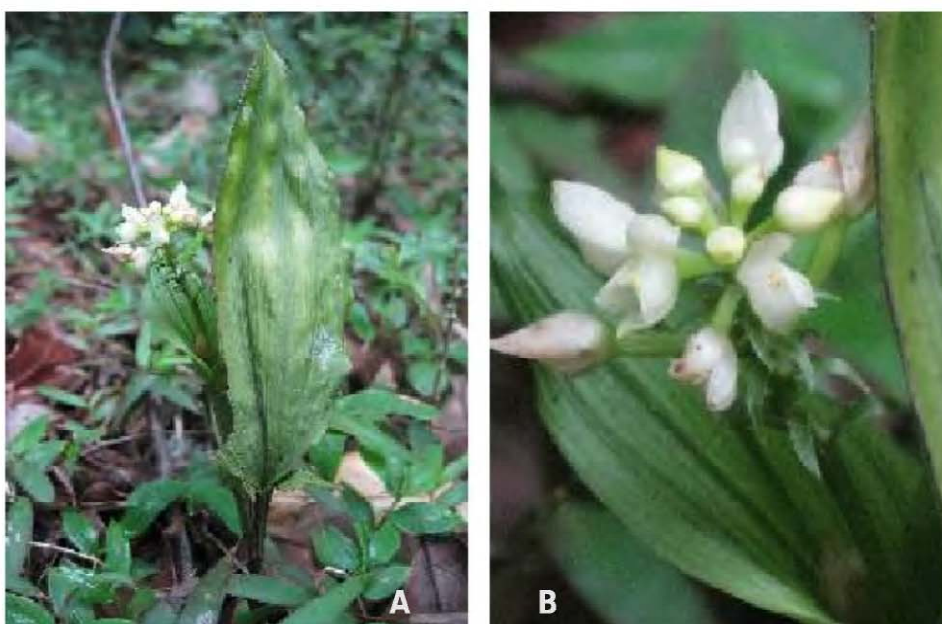


Plate 1. *Tropidia hegderaoi* S.Misra : **A.** Flowering plant, **B.** Inflorescence.

subulate persistent bracts, densely 8 - 10 - flowered in a spiral, opening 1 - 2 at a time. Floral bracts green, c. 3.25×1.25 mm. Pedicel and ovary greenish white, c. 8 mm long, 1 mm thick. Flowers non-resupinate, uniformly white, odourless, 3 - 5 mm long. Sepals subequal, 3 - veined; dorsal sepal erect, concave, elliptic-lanceolate, $3.8 - 4.2 \times 1.8 - 2.5$ mm; lateral sepals together form a broad sac, connate along their inner edges nearly to the shortly bifid apex; the apices acuminate; blade (synsepal) oblong, rounded, sparingly gland-dotted, $4 - 4.5 \times 2.5 - 3.5$ mm. Petals erect, coherent and included in the dorsal sepal, elliptic-ovate, acute to obovate-lanceolate, acuminate, margins feebly dentate, $3.4 - 4 \times 1.8 - 2.8$ mm, 3-veined. Lip sessile on base of and parallel to the column, cymbiform, saccate, simple, broadly obovate to suborbicular, obtuse, $2.5 - 3 \times 2.5 - 3$ mm, 5-veined; the inner veins extend from base to about the middle; the outer veins longer, bent in, branching; hypochile with a pair of erect, large, broad-based, obliquely trapezoid, incurved lamellae; lamellae extend from base to beyond the middle, sometimes (Kollegal biotype) right up to the tip of the lip, gradually narrowing towards the apex; epichile broader than long, tip recurved. Column narrowed to base, $2.4 - 2.7 \times 1.5 - 1.75$ mm. Stigma entire, broader than long; rostellum transversally elliptic, mucronately bifid at apex. Anther dorsal, attached by a short filament, movable, subequal to the rostellum, narrowly cordate, acute, two-chambered, c. 1.5×1 mm. Pollinia 2, cream-coloured, sectile, deeply two-cleft (appearing 4 in number), united at the bottom, clavate, $0.8 - 1.4 \times 0.4 - 0.6$ mm, pendulous from the tip of the rostellum by a very short and slender stipe arising from a small oblong-ovate peltate viscidium. Capsules oblong-ellipsoid, c. 10 mm long, 4 mm thick, grooved.

Habitat: Evergreen to moist deciduous forests, between 1100 and 1433 m, in moist localities, under shade, with humus-rich soil.

Flowering & Fruiting: July.

Notes: A new shoot appears from an upper node of the stem in late June - early July. Soon this grows into a pair of young leaves while the axis develops to an inflorescence. The flowers bloom within second to fourth week of July; fruits set in towards end of July. By early December this shoot grows into a complete plant and assumes as a branch of the older plant. The old leaves persist for more than one year before disintegrating.

The species was also collected from the Medicinal Plant Garden, Solakkadu; Ariyur shola, west of Mathikettan; and Karavalli Combai R.F., close to river Aruvitorai and introduced in the orchidarium of RPRC.

Distribution: India (Tamil Nadu).

Specimens examined: INDIA. Tamil Nadu. Namakkal district: Kollimalais, Ariyur shola, Mathikettan, 15

July 2011, *S. Misra* 2526 : MH; *S. Misra* 2527, 2528: K; Kollimalais, above 1100m, shola floor *K.M. Matthew* 24122, 26684 RHT; Coimbatore district: Bellaje shola, Kollegal, 1433m, 09 July 1930, *V.N. Swami* 3785: MH.

Etymology: This species is named after two distinguished orchidologists Dr. Sadananda Hegde and Dr. A. Nageswar Rao, who have contributed immensely to Indian Orchidology, particularly on orchids of Arunachal Pradesh.

Taxonomic note

In its habitat, *Tropidia hegderaoi* resembles *Tropidia angulosa*, an Indo-Malesian species distributed in the north and south India, including Tamil Nadu. *T. angulosa* however, has a different flower structure. Its flowers are much larger (12-20mm long) than the former; the tepals are 3-4 times longer, narrower; the lip is oblanceolate-oblong to elliptic-oblong with a pair of low-rising lamellae which are constricted towards the base; base of the lip extends to a cylindric compressed blunt spur lying parallel to the column; the rostellum and the anther are about 3 times as long, slender; the pollinarium larger; the stipe (c. 4mm) and viscidium (1.6mm) much longer. It is a slightly larger plant and the stem is less branched; the leaves are broader, almost ovate in shape.

Seidenfaden (1983) has included *Tropidia angulosa* in his treatment. Matthew (1981, 1982) collected this species from Tamil Nadu in the Kollimalais above 1110m (RHT 21706, 24122, 26684). He has provided illustrations for this entity (1982, plate no. 691) based on the above collections. But that is not *Tropidia angulosa* as can be seen from the small flowers, (c. 2.75 mm long), ovate, ecalcarate lip and the small (c. 1mm long) ovate anther. There seems an error in the figures of the sepals; the lateral sepals (presumably fig. 3), should have been connate almost their entire length with a bidentate apex. This species is certainly unlike Wight's *Govindovia nervosa*, which Seidenfaden (*op. cit.*: 1556) has cited as a synonym of *Tropidia angulosa*. Matthew's plants are indeed *Tropidia hegderaoi*. It may be noted that our plants have also come from the same locality in Kollimalais only.

ACKNOWLEDGEMENTS

I am grateful to Sri R.C. Pati and Sri A.K. Shrivastava of the Indian Forest Service from Tamil Nadu; Sri Deena Dayal, field staff of Kolli hills Range, for help and assistance. I am also grateful to the Joint Director, BSI, Southern Regional Centre, Coimbatore, for kindly permitting me to study the herbarium; to the Ministry of Environment & Forests, for support under AICOPIAX programme. I am thankful to Dr. V. J. Nair, BSI, Southern Regional Centre, Coimbatore, for providing the Latin diagnosis in this paper. Thanks are due to the Chief Executive, RPRC for institutional support; to Dr. S.P. Panda and P.K. Nayak, Research Fellows, for help in cultivation of the plant.

REFERENCES

- ANSARI, A.A. & P. DWARAKAN 2002. Studies on the Orchids of Shevoroy and Kolli Hills of South India. *Bull. Bot. Surv. India* 44: 1-16.
- MATTHEW, K.M. 1981. *Materials for a Flora of the Tamilnadu Carnatic*. pp. 349-355. Tiruchirapalli.
- MATTHEW, K.M. 1982. *Illustrations on the Flora of the Tamilnadu Carnatic*. pp. 691-724. Tiruchirapalli.
- SEIDENFADEN, G. 1983. In: Matthew, K.M. (ed.), *The Flora of the Tamilnadu Carnatic*. pp. 1550-1611. Tiruchirapalli.

r fe y u k M q H k j r l s V R S i f M v k f y M y (v k f d M b h) d h , d u ; h t k f r
' k j r f e j k
l k j k a k

r fe y u k M q d h d k y h i g k M + k a l s V R S i f M v k g x j k o b Z , l f e j k d k o . k z f d ; k x ; k g a b l d h v k d k f d h d h
fo ' k s k r k , o a f p k d . k i z r q d h x b Z g a