



***Gastrochilus changjiangensis* Q. Liu & M.Z. Huang (Orchidaceae: Epidendroideae: Vandaeae: Aeridinae) - a new record for India**

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Abstract

A monopodial orchid *viz.* *Gastrochilus changjiangensis* Q. Liu & M.Z. Huang has been added to the orchid flora of India from the Ziro Valley of Arunachal Pradesh. A detailed description and a plate of colour illustrations of plant habit and floral parts has been provided.

Key words: Orchidaceae, *Gastrochilus changjiangensis*, Arunachal Pradesh, New record, India

INTRODUCTION

During a field trip under Orchid translocation project, to the forested areas of Ziro Valley of lower Subansiri district, Arunachal Pradesh, in October, 2019, the senior author collected an epiphytic orchid in its vegetative condition with flower buds. The sample collections were planted at the orchid trail located in the Tale Wildlife Sanctuary, Ziro Valley of Arunachal Pradesh where they flowered in February, 2020. With the fresh material of flowers, the taxon is critically studied and analytical drawings and photographs are made. On the basis of available literature (King & Pantling 1898; Pradhan 1979; Chowdhery 1998; Pearce & Cribb 2002; Lucksom 2007; Chen *et al.* 2009; Rao 2009, 2010; Jian-wu, L. *et al.* 2015; Hegde 2017; Swami 2017; Liu *et al.* 2019; Gogoi 2019; Misra 2019) it was identified as *Gastrochilus changjiangensis* Q. Liu & M.Z. Huang which is known so far only from China (S.Yunnan), Myanmar and Thailand. Hence, the present report of its occurrence from Arunachal Pradesh forms a new distributional record for India. A detailed description, illustration, information on habitat and distribution of the taxon are provided in the present manuscript that will facilitate the field botanists to locate it in other parts of North-east Indian region. The voucher specimen has been deposited at the Orchid Herbarium, Tipi (OHT) of the Orchid Research Centre Tippi, in West Kameng district of Arunachal Pradesh and Herbarium of The Orchid Society of Eastern Himalaya (TOSEHIM), Regional Orchid Germplasm Conservation and Propagation Centre (Assam Circle), Assam.

Gastrochilus D. Don is a monopodial orchid genus comprising of ca. 65 species widely distributed around E, SE and S Asia with its high species richness in East Asia and the Himalayas (Tsi 1996; Pridgeon *et al.* 2014; Govaerts *et al.* 2018; Liu & Gao 2018). So far, 20 species have been reported from India of which 13 species (including 1 variety) *viz.* *Gastrochilus acutifolius* (Lindl.) Kuntze, *G. affinis* (King & Pantl.) Schltr., *G. arunachalensis* Nageswara Rao, *G. bigibbus* (Rchb.f. ex Hook. f.) Kuntze, *G. calceolaris* (Sm.) D. Don, *Gastrochilus dasyypogon* (Buch.-Ham. ex Sm.) Kuntze, *G. distichus* (Lindl.) Kuntze, *G. intermedius* (Griff. ex Lindl.) Kuntze, *G. obliquus*



PLATE I. *Gastrochilus changjiangensis* Q. Liu & M.Z. Huang: **A.** Plant in natural habitat; **B.** Inflorescences, – closer view

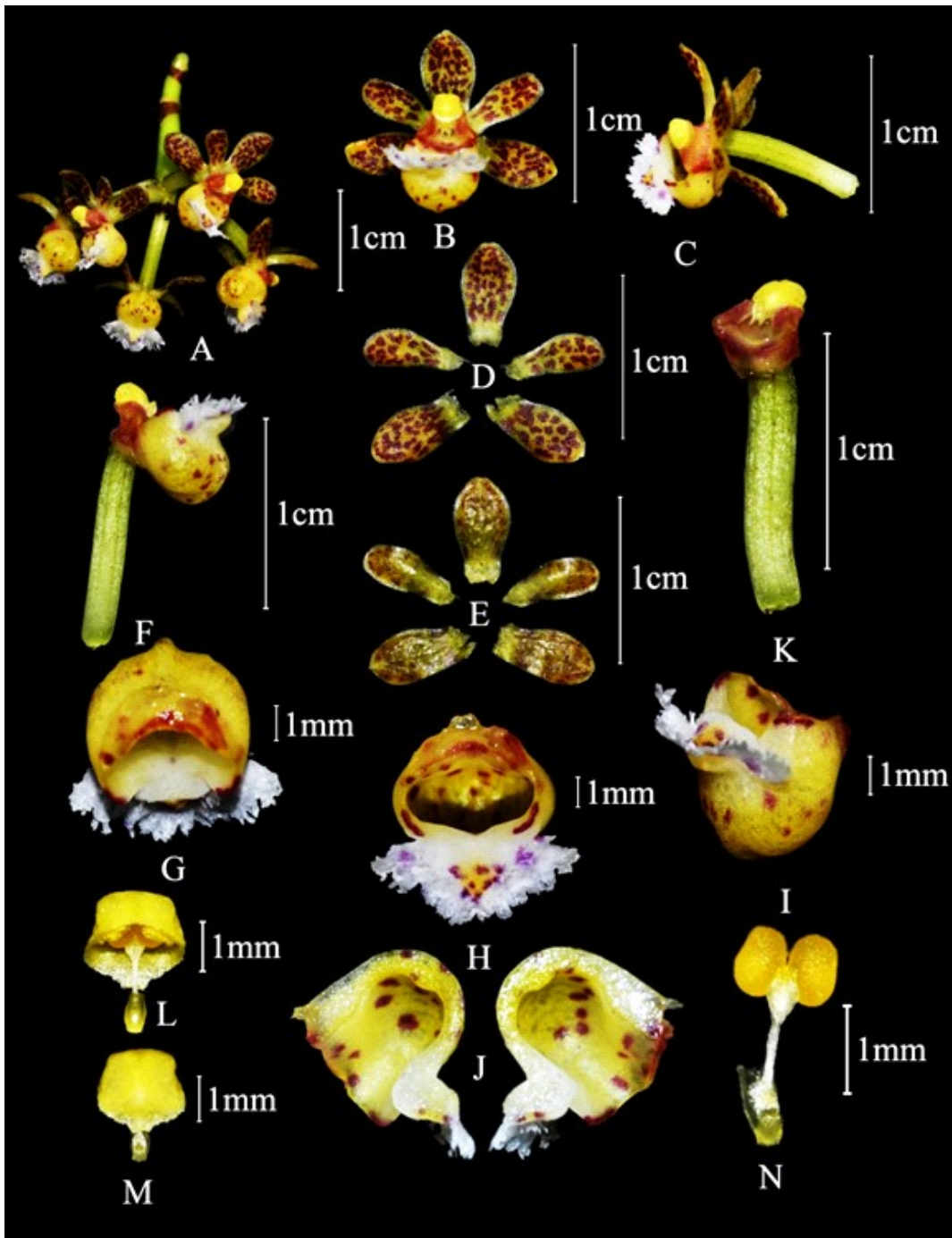


PLATE II. *Gastrochilus changjiangensis* Q. Liu & M.Z. Huang: **A.** inflorescence; **B.** flower-front view; **C.** flower-side view; **D.** perianth-ventral view; **E.** perianth-dorsal view; **F.** lip with ovary & column; **G, H, I.** different views of lip; **J.** longitudinal section of lip; **K.** pedicel, ovary & column; **L, M.** anther cap; **N.** pollinarium

(Lindl.) Kuntze, *G. obliquus* var. *suavis* (Seidenf.) Z.H.Tsi, *G. rutilans* Seidenf., *G. sessanicus* Nageswara Rao and *Gastrochilus platycalcaratus* (Rolfe) Schlechter are found in Arunachal Pradesh (Gogoi *et al.* 2019). With the present report of *Gastrochilus changjiangensis* Q. Liu & M.Z. Huang from Ziro valley in Arunachal Pradesh, the total number of species of the genus in India and Arunachal Pradesh increases up to 21 and 14 respectively.

Gastrochilus changjiangensis Q. Liu & M.Z. Huang, Bot. J. Linn. Soc. 189: 240 (2019). [Plates I, II]

Epiphyte; stem often arching, 15 – 20 cm, 0.4 – 0.5 cm thick, covered by leaf sheaths. Leaves distichous, falcate, narrowly oblong, 18 – 20 × 1.5 – 2.4 cm, slightly fleshy, obtuse and unequally bilobed at apex. Inflorescences many, from upper part of stem, opposite to leaves, sub-umbellate, six- to nine-flowered. Pedicel and ovary slightly compressed, 1.5 – 2.3 cm long. Flowers widely opening; sepals and petals yellowish green, with purplish brown markings; lip with white epichile and yellow hypochile, with purple-red spots. Sepals similar, obovate-oblong, obtuse, 0.6 – 0.7 × 0.3 – 0.4 cm. Petals similar to sepals, slightly narrower, oblanceolate, obtuse, 0.6 – 0.7 × 0.2 – 0.3 cm; lip with an epichile and a saccate hypochile; epichile spreading forward, suborbicular-triangular, 0.4 – 0.5 × 0.7 – 0.8 cm, adaxially with long white hairs except on yellow and purple-spotted central cushion and without cavity at base of cushion, margin irregularly fimbriate or erose; hypochile yellow with purplish-red spots outside and inside and stripes on margin, ‘U’-shaped in cross section, 0.5 – 0.6 cm deep, 0.5 – 0.6 cm across, Column tinged with purple, short; anther cap yellow.

Specimen Examined: India, Arunachal Pradesh, Lower Subansiri district, Ziro valley, 16 October 2019, *Gogoi-00807*, (Orchid Herbarium, Tipi, OHT), Orchid Research Centre, Arunachal Pradesh.

Flowering and Fruiting: January-February.

Habitat: On tree trunks in sub-tropical evergreen forest at 1200 – 1400 m elevation in Ziro, Arunachal Pradesh.

General distribution: India (Ziro, Arunachal Pradesh) and Hainan Province of China.

LITERATURE CITED

- Chen, S.C.; Tsi, Z.H. & Wood, J.J. 2009. *Gastrochilus* D.Don. In: Wu, Z.Y.; Raven, P.H.; Hong, D.Y. (eds.), *Flora of China*, Vo. 25. Science Press, Beijing; Missouri Botanical Garden Press, St. Louis, USA. Pp. 491 – 498.
- Chowdhery, H.J. 1998. *Orchid Flora of Arunachal Pradesh*. Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
- Don, D. 1825. *Prodromus florum Nepalensis*. J. Gale, London.
- Gogoi, K. 2019. *Orchids of Assam - A Pictorial Guide*. Dibrugarh University, Dibrugarh, Assam.
- Gogoi, K.; Rinya, K. & Reddy, S.K. 2019. *Gastrochilus platycalcaratus* (Rolfe) Schlechter (Orchidaceae: Epidendroideae: Vandaeae: Aeridinae), a new record for India. *Pleione* 13(2): 407 – 710.
- Govaerts, R.; Bernet, P.; Kratochvil, K.; Gerlach, G.; Carr, G.; Alrich, P.; Pridgeon, A.M.; Pfahl, J.; Campacci, M.A.; Holland-Baptista, D.; Tigges, H.; Shaw, J.; Cribb, P.J.; George, A.; Kreuz, K. & Wood, J.J. 2020. *World checklist of Orchidaceae*. Kew: The Board of Trustees of the Royal Botanic Gardens. Available at: <http://apps.kew.org/wcsp/monocots/>. Accessed 08 March 2020.

- Hegde, S.N. (*revised by*) Tam, N.; Tsering, J. & Apang, O. 2017. *Orchids of Arunachal Pradesh*. Department of Environment and Forest, Govt. of Arunachal Pradesh, Itanagar, India.
- Jian-wu, L.; De-ping, Y.E.; Liu Jing-xing, TAN Yun-hong & YIN Jian-tao, 2015. Orchids Newly Recorded to China. *Plant Diversity and Resources*. 37 (3): 246 – 252.
- King, G. & Pantling, R. 1898. *The orchids of the Sikkim Himalayas*. Annals of the Royal Botanical Garden Calcutta 8: 1 – 342.
- Liu, Q & Gao, J.Y. 2018. *Gastrochilus dulongjiangensis* (Aeridinae, Vandeeae, Epidendroideae, Orchidaceae), a new species from Yunnan Province, China. *Phytotaxa*. 340(3): 293 – 296.
- Liu, Q.; Song, Y.; Jin, X.H. & Gao, J.Y. 2019. Phylogenetic relationships of *Gastrochilus* (Orchidaceae) based on nuclear and plastid DNA data. *Botanical Journal of the Linnean Society*. 189: 240
- Lucksom, S.Z., 2007. *The Orchids of Sikkim and North East Himalaya: Development Area*, Jiwan Thing Marg, Gangtok, East Sikkim, India.
- Misra, S., 2019. *Orchids of India – A hand book*. Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
- Pearce, N.R. & Cribb, P.J. 2002. *Orchids of Bhutan: Flora of Bhutan*. Vol. 3, No. 3. Royal Botanical Garden, Edinburg.