

## Record of holomycotrophic *Aphyllorchis montana* H.G. Reichenbach (Orchidaceae) from Manipur, India

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### Abstract

*Aphyllorchis montana* H.G. Reichenbach (Orchidaceae) is reported as an addition to the orchid flora of Manipur. A detailed description, distribution and coloured illustrations and details are provided for its easy recognition.

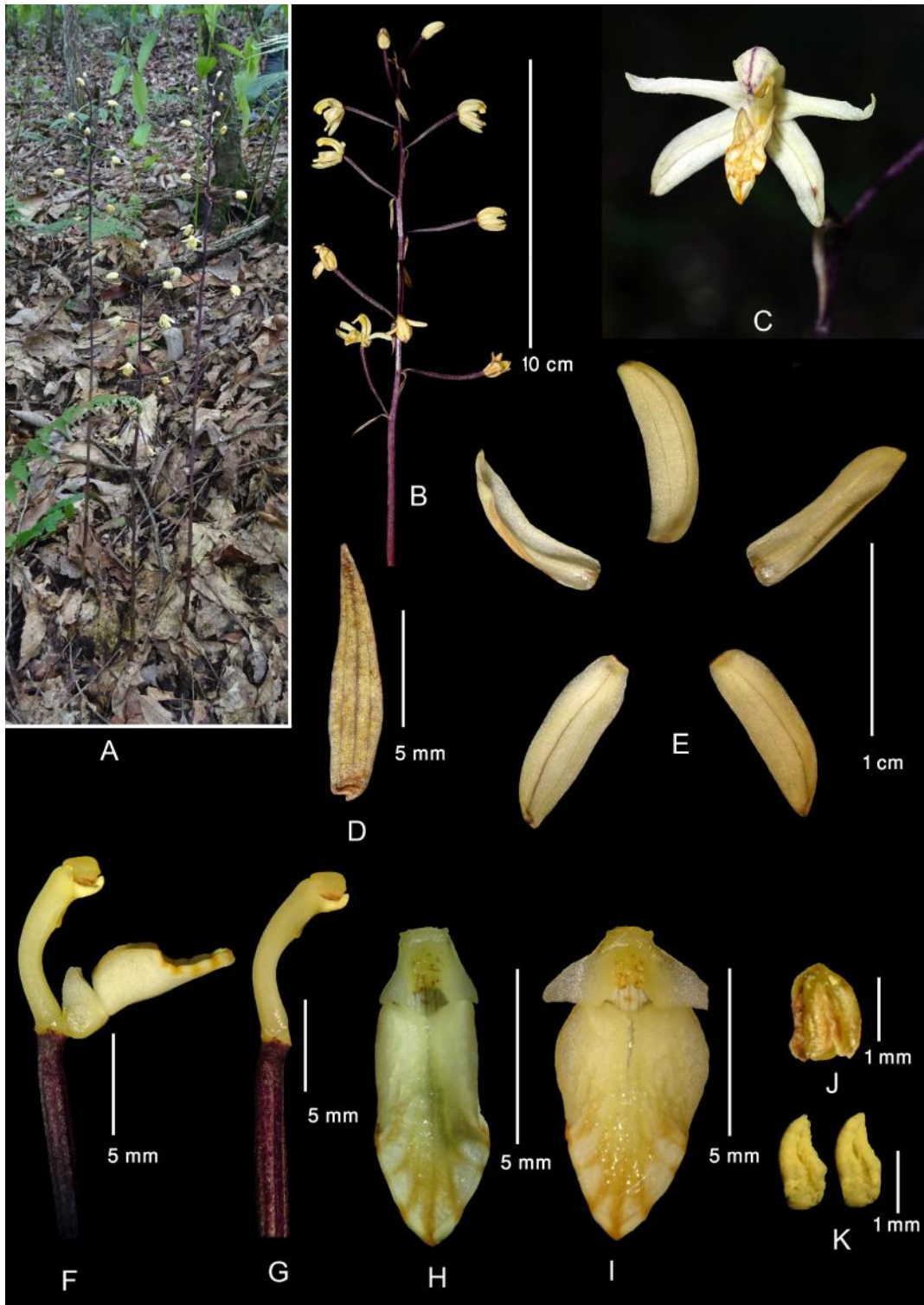
**Key words:** *Aphyllorchis montana*, Orchidaceae, New record, Manipur.

### INTRODUCTION

*Aphyllorchis* Blume (Orchidaceae) is a holomycotrophic genus, comprises of ca 30 species distributed in the tropics and the Himalayas extending as far north as Japan and south to Australia (Chen & Gale 2009). In India the genus is represented by three species namely, *A. alpina* King & Pantling, *A. gollanii* Duthie and *A. montana* H.G. Reichenbach (Misra 2007), of which two species viz. *A. alpina* and *A. montana* are distributed in Northeast India (Rao 2007).

During a visit to the state Orchid Preservation Centre (OPC), Manipur, in 2011, a group of 5 – 6 plants of a holomycotrophic orchid found growing wild on the leaf-litter in forest floor by the senior author. After a critical study of the fresh floral materials, based on the available literature (Hooker 1890; King & Pantling 1898; Pearce & Cribb 2002; Lucksom 2007), it was identified as *Aphyllorchis montana* H.G. Reichenbach. During a recent orchid survey in the hill forests of Hengbung village of Senapati district of Manipur (August 2015), another site of the same species has been located by the second author.

Further consultation of literature on orchid flora of Manipur (Ghatak & Devi 1986; Mao 1999; Chauhan 2001; Kumar & Kumar 2005; Rao 2007; Yumkham *et al.* 2013; Nanda *et al.* 2014) revealed that six species of mycotrophic orchids viz. *Cymbidium macrorhizon* Lindley, *Cyrtosia nana* (Rolfe *ex* Downie) Garay, *Eulophia zollingeri* (H.G. Reichenbach) J.J. Smith, *Galeola falconeri* J.D. Hooker, *Galeola lindleyana* H.G. Reichenbach and *Yuania japonica* C.J. Maximowicz, are reported from Manipur. The present taxon viz. *Aphyllorchis montana* is so far known only from Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Karnataka, Kerala, Sikkim, Tamil Nadu and West Bengal (Chowdhery 2009; Sinu *et al.* 2012; Aravindhan *et al.* 2013) and not from Manipur. Hence, the species is reported as a first time distributional record to the Manipur state. A detailed description along with colour illustrations of natural habitat and dissected floral parts is provided below to help field botanists to locate it in other places.



**PLATE - I.** *Aphyllorchis montana* H.G. Reichenbach: **A.** habit; **B.** inflorescence; **C.** flower (not to scale); **D.** floral bract; **E.** perigone; **F.** lip with column; **G.** column with ovary; **H.** lip natural view; **I.** Lip flattened view; **J.** anther cap; **K.** pollinia.

*Aphyllorchis montana* H.G. Reichenbach in Linnaea 41: 57. 1877. *Aphyllorchis prainii* J.D. Hooker, Fl. Brit. Ind. 6: 117. 1890. [PLATE - I]

Holomycotrophic rhizomatous herbs, 30–70 cm tall. Rhizome ca 3 mm thick, fleshy, sub-horizontal, sparsely covered with scales. Roots short, slender, ca 1.5 mm thick, arising from rhizome all along. Stem erect, reddish brown, covered with 5–8 small leafy sterile bracts at 2–6 cm intervals. Sterile bracts smaller (ca 1 cm) and infundibular towards basal nodes while the upper ones are longer (up to 2 cm), slender, glabrous. Inflorescence erect, raceme, 20–30 cm long, with 10–15 distantly arranged flowers. Floral bracts recurved, ca 1.0 × 0.3 cm long, shorter than the pedicel and ovary, 3-veined, yellowish-brown. Pedicel and ovary 1.5–2.0 cm, slender, glabrous, reddish-brown. Flowers resupinate, erect on the rachis initially and drooping gradually after anthesis, pale yellow with reddish brown line along the mid veins of sepals externally. Sepals and petals keeled abaxially along the midrib. Dorsal sepal ca 10 × 3 mm, oblong, cucullate over the column, acute, 3-veined. Lateral sepals ca 10 × 3 mm, oblong, weakly oblique, acute. Petals ca 10 × 2 mm, oblong, 3-veined. Lip 8–10 × 4–5 mm (when spread out), fleshy; 3-lobed; lateral lobes ca 2 mm long, triangular, obtuse; mid-lobe ovate, subacute, involute at margin, erose, with brownish yellow stripes and minute tubercles in 3 rows on disc. Column 7–9 mm long, curved, slightly broader toward apex, pale yellow. Anther cap ca 1.5 mm long, erect, 2-celled; pollinia 2, bipartite, soft, yellow.

**Flowering & Fruiting:** August – October

**Distribution:** India (West Bengal, Sikkim, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Karnataka, Kerala and Tamil Nadu), Cambodia, China, Indonesia, Japan, Malaysia, Philippines, Sri Lanka, Thailand, Vietnam.

**Exsiccate:** India: Manipur, Imphal dist., Khangampat, 24°66.5' N & 93°61.06' E, 796 m, on the forest floor of Orchid Preservation Centre campus, 30.10.2011, A.N.Rao 49450 (Orchid Herbarium Tipi, OHT); Senapati dist., Hengbung Hills, ca 1200 m, 27.08.2015, V. Kumar 1660 & 1661 (COGCEHR herbarium, Hengbung).

**Habit and habitat ecology:** Holomycotrophic geophytes, found growing on the humus in broad leaved forest floors, along with other plant species viz. *Polystichum lentum* (D. Don) T. Moore, *Ageratina adenophora* (Sprengel) R.M. King & H. Robinson, *Gomphostemma velutinum* Benthum, etc. at the elevation ranging between 750 – 1250 m.

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