



## *Chiloschista confusa* M. J. Mathew, J. Mathew, P.M. Salim & Szlach. (Orchidaceae): A New Addition to Karnataka, India

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### Abstract

Orchidaceae is one of the diverse groups in monocots with advanced characters adapted to various habitats. *Chiloschista* Species was collected during our field study in Belgaum district Karnataka. The species was morphologically identified with *Chiloschista confusa* which is newly discovered epiphytic orchid in 2021, and is new addition to Karnataka State.

**Keywords:** Cream yellow, Epiphytic orchid, Flat viscidium, Pubescent, Stem less, Without dots.

### Introduction

Orchidaceae is most diversified group with around 26,000 species in the world related to 762 genera (Mabberley, 2017). In India there are around 1256 species of 156 genera; in that 307 species are endemic to India, it includes 5 species of *Chiloschista* L. (Jalal, *et al.*, 2019). The Genus *Chiloschista* Lindl. comprises 20 known species distributed in Indian sub-continent and Himalaya Eastward to China and Taiwan, southeastwards through Thailand to Indonesia, Australia, New Guinea, Fiji and Micronesia; Highest species diversity of the genus is observed so far from Indochinese peninsula with 9 species in Thailand, 3 species from Vietnam and 2 in Laos (Averyanov, *et al.*, 2018). The species was included in the genus was *Epidendrum usneoides* D. Don. It was described and published by David Don in *Prodromus Florae Nepalenses* (1825), a publication based primarily on Nathaniel Wallich's and others plant collections from Nepal. John Lindley transferred this species to new Genus called *Chiloschista* in *Edwards Botanical Register* (Lindley, 1832). Karnataka Biodiversity Board has recorded 197 species of wild orchids in that *Chiloschista lunifera* (Rchb.f.) J. J. Sm. and *Chiloschista glandulosa* Blatt. & McCann. (Sringshwara & Sanjappa, 2019). Flora of Karnataka Monocotyledons includes two species of *Chiloschista* that is *Chiloschista fasciata* (F. Muell.) Seidenf. &

Ormerod, and *Chiloschista glandulosa* Blatt & McCann. (Laxminarasimhan, *et al.*, 2019).

During our field survey in Western Ghats, Belgaum region specimen was collected which is similar to *Chiloschista glandulosa* but absence of glands and brown dots on petals, so after examining and concluding its morphological characters it turned to be *Chiloschista confusa* M. J. Mathew, J. Mathew, P.M. Salim & Szlach which was newly discovered in Kerala (Mathew, 2021). The above article tells about new record to Karnataka state and few confusions regarding *Chiloschista* species.

***Chiloschista confusa*** Mathew, M. J., Mathew, J., Salim, P. M., & Szlachetko, D. L. (2021, September). *Chiloschista confusa* (Orchidaceae), a new species from the southern Western Ghats, Kerala, India. In *Annales Botanici Fennici* (Vol. 58, No. 4-6, pp. 347-353). Finnish Zoological and Botanical Publishing Board.

Epiphytic small stemless herb up to 8 × 7 cm across. Photosynthetic roots numerous adhere to the tree, 0.1–0.2 mm thick. Stem absent. Leaves 2–3, coriaceous like, entire apex acute, 1.5 × 0.8 mm across. Inflorescence 2, unbranched, arise in between the roots, greenish with blackish dots, less glabrous, 2–8 cm long, 2–3 or 5–8 flowers. Bract 3–4 nerved,

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0.2 mm long, acute, transparent like, chocolate brown. Flower light yellow or cream yellow, slightly scented,  $0.8 \times 0.35$  mm across, with spreading sepals and petals. Dorsal sepal bent like cap, yellow with 1-nerved, apically obtuse,  $0.4 \times 0.3$  mm across. Lateral sepals yellow, 1-nerved, fused with column, obtuse with entire margin,  $0.4 \times 0.2$  mm across. Petals yellow, 1-nerved, entire and slightly acute like apex, curved tip,  $0.3-0.4 \times 0.2$  mm across. Sepals and petals dorsally marked with maroon marking on it. Labellum saccate, yellowish-brown,  $0.4 \times 0.3$  mm across. Outer side of labellum is yellow, outer side lobes has brownish markings. Inside labellum is marked with brown markings on side lobes, callus white with central orange marked covered with appendages, Side lobe of labellum is yellow with brown markings, 0.4 mm long. Column greenish with pollinia, anther cap and stigmatic cavity, 0.3 mm long. Anther cap  $0.1 \times 0.1$  mm across, transparent green with domb like appearance on it with 2 sacks in it. Pollinia 1 pair, golden yellow,

ovoid, flat 0.15 mm long, caudicle 0.07 mm across, viscidium flat structure. Ovary greyish-green, veined, slightly pubescent,  $0.2-0.3$  mm across. Fruit drooping, greyish-green with dots, ridged,  $1.2 \times 0.8$  cm across. Capsule turns brownish yellow after maturation. Seeds minute, cream yellow.

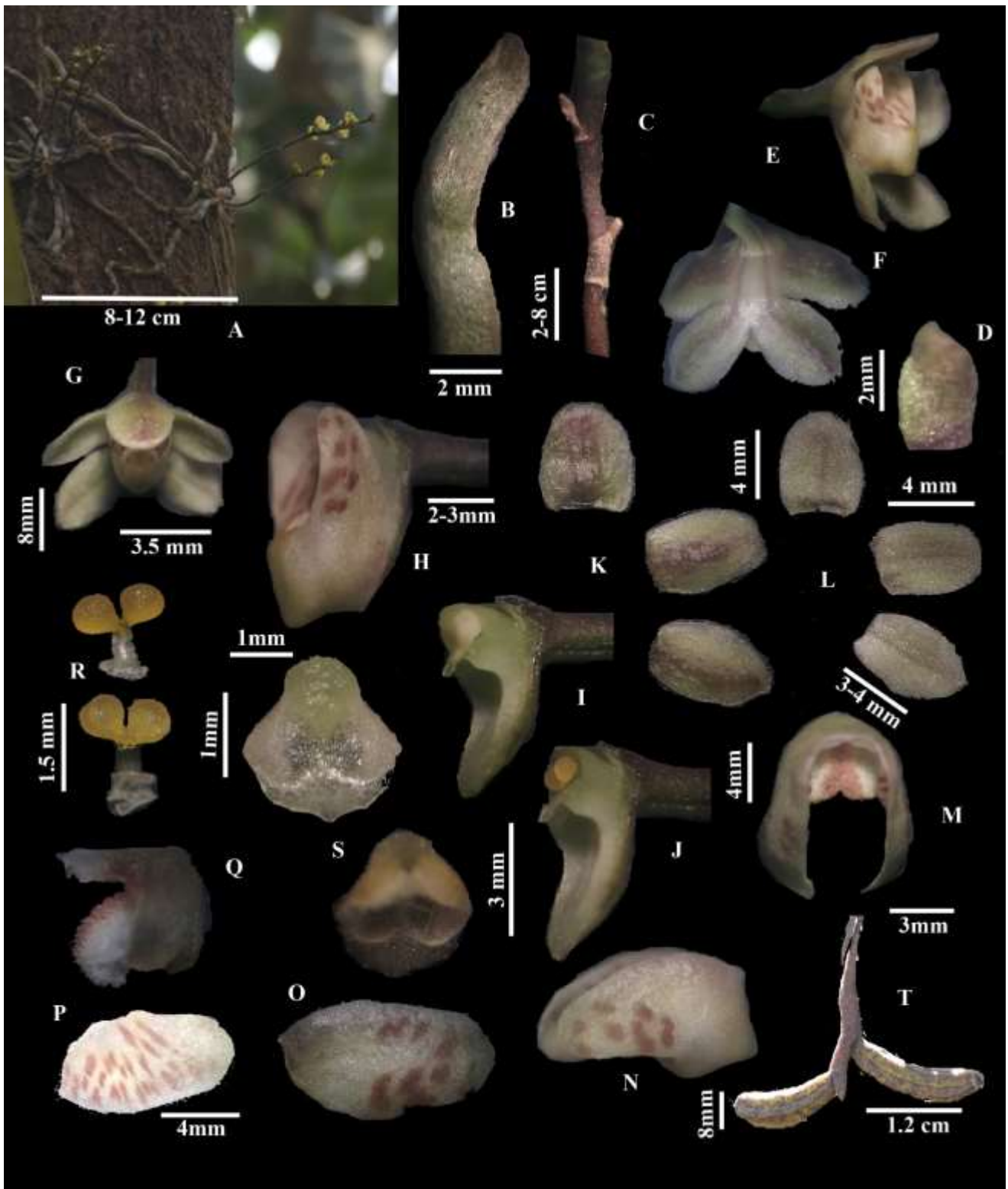
**Host:** *Syggium cumini* (L.) Skeels, *Phyllanthus emblica* L.

**Ecology:** Grown at higher altitude under shades with other epiphytic orchids like *Dendrobium ovatum* (L.) Kraenzl., *Propax reticulata* Lindl.

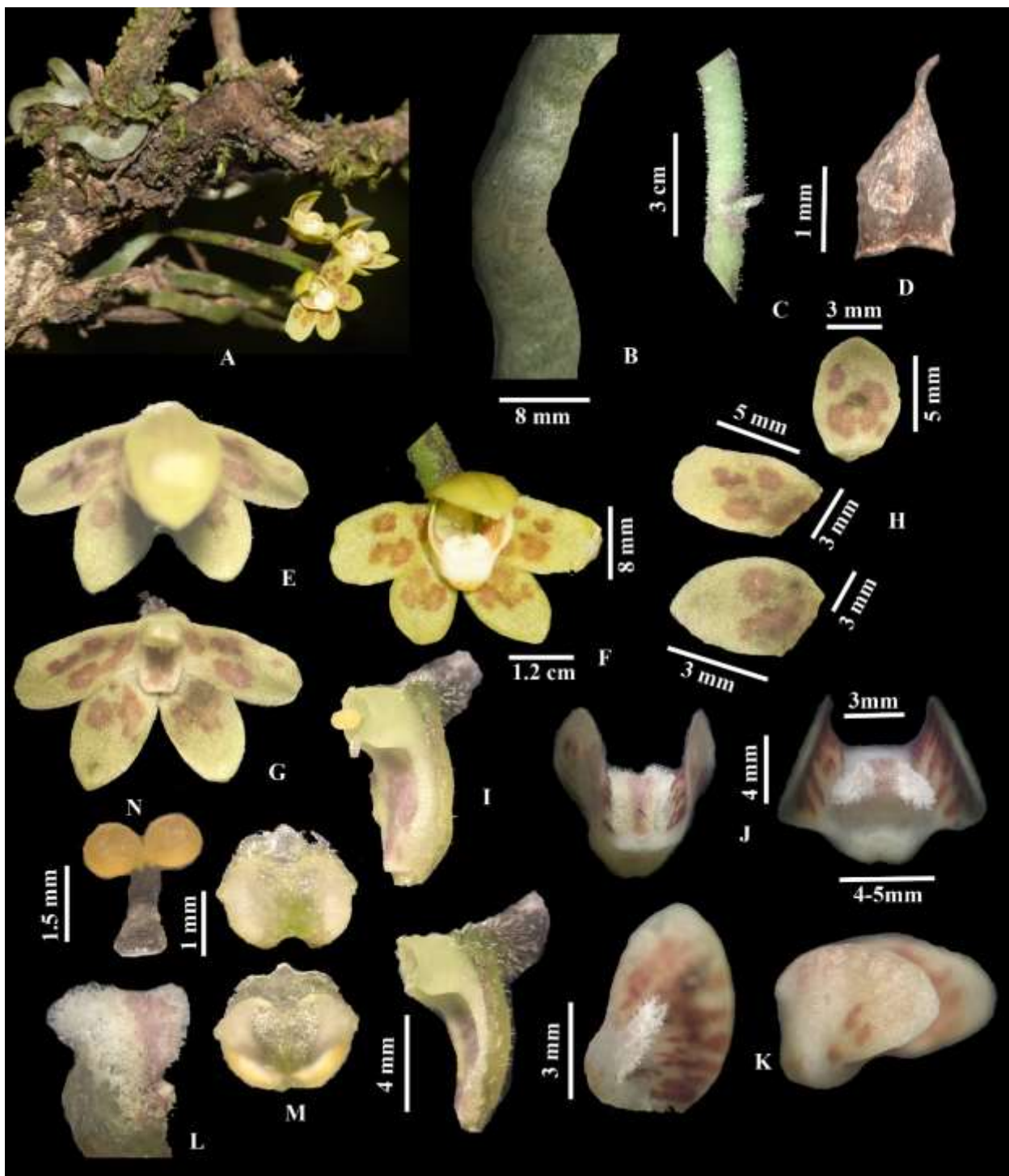
**Flowering:** April-May; **Fruiting:** May onwards.

**Distribution:** Karnataka (this report), Kerala.

**Specimen Examined:** Handibadgnath Forest Range, Kumbarda, Belgaum, Karnataka, India. 0069, 21-04-2022. Shreyas Betageri and K. Kotresha.  $15^{\circ}23'21.5''N$   $74^{\circ}34'53.1''E$  (DMS).



**Fig. 1:** *Chiloschista confusa* M.J. Mathew, J. Mathew, P.M. Salim & Szlach. **A.** Habit **B.** Root **C.** Inflorescence scape **D.** Bract **E. F & G.** Flower **H. I & J.** Column, Labellum **K. & L.** Dorsal, Ventral Petal & Sepals **M. & N.** Top and Side of Labellum **O. & P.** Side lobes Dorsal and Ventral **Q.** Callus with Appendages **R.** Dorsal and Ventral Pollinia **S.** Dorsal and Ventral Anthercap **T.** Pendulous fruits



**Fig. 2:** *Chiloschista glandulosa* Blatt. & Mc Cann. A. Habit B. Root enlarged C. Inflorescence scape D. Bract E. & F. Flower G. Flower removed Labellum H. Dorsal sepals and petals I. Column J. Dorsal Ventral and Side view of labellum K. Side lobe L. Callus with Glands M. Anther cap N. pollinia

**Discussion**

*Chiloschista* is one of the rare genera found in evergreen and semi-evergreen forest. *Chiloschista confusa* is confused with *Chiloschista glandulosa* as well as *Chiloschista fasciata*. *Chiloschista fasciata* has light pinkish or white colored flowers (Mathew, 2021).

*Chiloschista glandulosa* (Fig. 2) with 4-5 dots on each petal & sepal, addition to presence of glands on the inflorescence (Balakrishnan, S. et al., 2020). *Chiloschista confusa* has erect inflorescence, slightly glabrous, Petals and sepals yellow without dots. So to avoid these confusions it was named as *Chiloschista*

*confusa* with etymological species word '*confusa*'.

### Parallel Key to *Chiloschista* Species of Karnataka

Flowers 2-3, golden yellow, pendant inflorescence, glandular, Petals and sepals dotted..... *Chiloschista glandulosa*.

Flowers 4-5, light yellow, erect inflorescence, slightly glabrous, Petals and sepals yellow without dots.....*Chiloschista confusa*.

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