

Seidenfia manikathila (Orchidaceae, Epidendroideae, Malaxideae), a new species from south Western Ghats, India

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Abstract. *Seidenfia manikathila* J.Mathew, P.M. Salim & Szlach. (Orchidaceae), a new species from the southern Western Ghats, Kerala, India, is described and illustrated based on morphological data. We demonstrate that the new species differs from other *Seidenfia* species both in vegetative and floral characters. The diagnostic morphological characters, distribution and images of the new species are presented in this paper. Images and key to the known species of *Seidenfia* coming under the section *Seidenfia* from India (*S. densiflora*, *S. intermedia*, *S. malabarica*, *S. rheedi*, *S. versicolor*) is also provided.

Key words: *Crepidium*, Malaxideae, *Seidenfia*, India, Kerala, southern Western Ghats, floristic studies, new species

1. Introduction

The genus *Seidenfia* Szlach., an Afro-Asian element (Orchidaceae, Epidendroideae, Malaxideae) comprising 9 species, was previously reported from India, Sri Lanka and Seychelles. Morphology and the gynostemium structure of *Seidenfia* is similar to that of *Crepidium* Blume, but these genera are easily differentiated based on the flower structure, particularly lip morphology. Margońska & Szlachetko (2001) pointed that “*The lip of Seidenfia is not auriculate; its basal part is channeled, forming a kind of claw with thickened margins; the lamina is widely and abruptly expanded above the channel, and the lamina margins are more or less denticulate*”. They categorized 9 species coming under the genus *Seidenfia* into two sections, viz. *Crenulatae* Szlach. & Marg. with 1 species *S. crenulata* (Ridl.) Szlach. and *Seidenfia* (Sw.) Szlach. with 8 species:

S. densiflora (A. Rich.) Szlach., *S. discolor* (Lindl.) Szlach., *S. intermedia* (A. Rich.) Szlach., *S. lancifolia* (Thwait.) Szlach., *S. malabarica* Marg. & Szlach., *S. rheedii* (Sw.) Szlach., *S. seychellarum* (Kraenzl.) Szlach. and *S. versicolor* (Lindl.) Marg. & Szlach.

So far 5 species of *Seidenfia* from the section *Seidenfia* (*S. densiflora* (Fig. 1A-B), *S. intermedia* (Fig. 1C), *S. malabarica* (Fig. 1G), *S. rheedii* (Fig. 1F), and *S. versicolor* (Fig. 1D-E), were reported from India. In a recent botanical exploration to the Idukki District (Fig. 2) of southern Western Ghats (2019-2021), some interesting specimens from the section *Seidenfia* were collected. Critical analysis of the literature as well as herbarium specimens revealed that the collected specimens do not match the previously described species. This has resulted in the recognition of a novel species that is described here as *S. manikathila*.

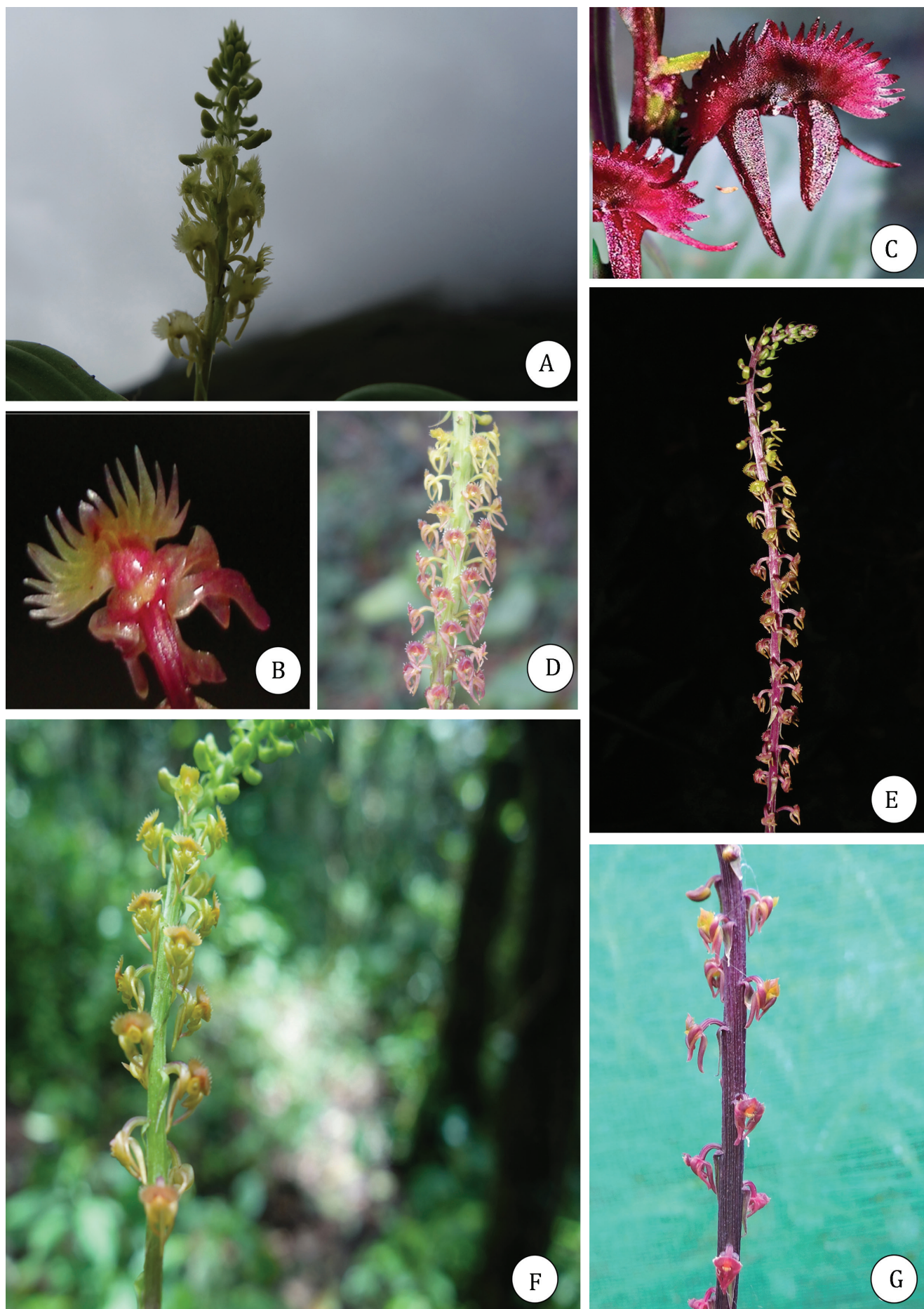


Fig. 1. *Seidenfia* species of India coming under section *Seidenfia*

Explanations: A-B – *S. densiflora*, C – *S. intermedia*, D-E – *S. versicolor*, F – *S. rheedii*, G – *S. malabarica* (photograph by J. Mathew)

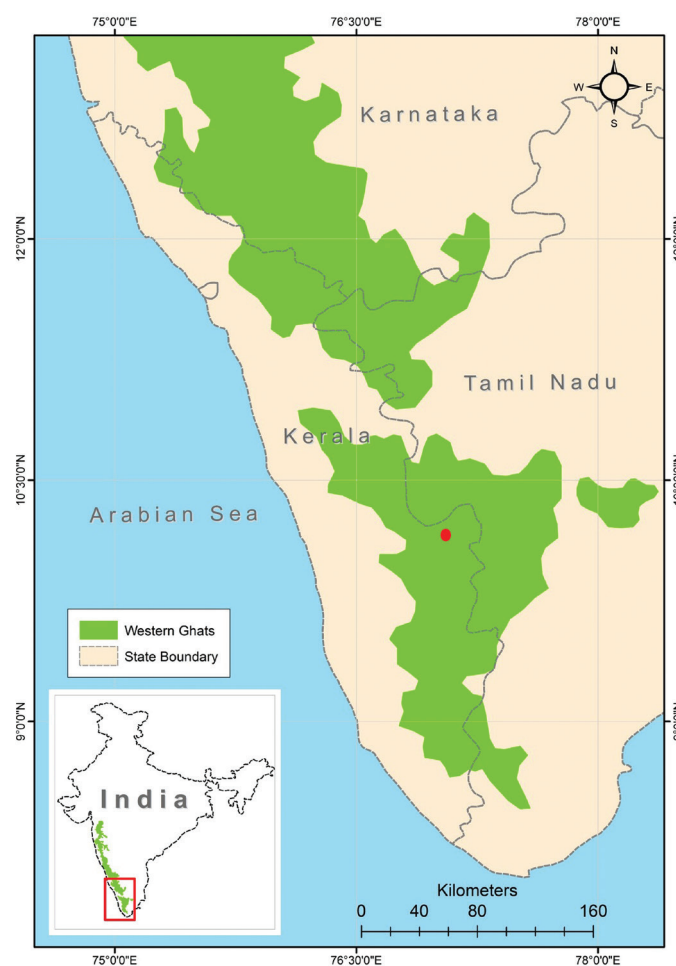


Fig. 2. Distribution map of *Seidenfia manikathila* J.Mathew, P.M. Salim & Szlach. in peninsular India. Red dot indicate the type locality

2. Material and Methods

Critical analysis of the literature (Szlachetko 1995; Margońska & Szlachetko 2001; Margońska 2005, 2007; Margońska *et al.* 2012, 2015; Sasidharan 2013; Kumar *et al.* 2021), as well as the scrutiny of vouchers deposited in K, NY, PE, MH, CAL, TBGT and CUBH were done. The data presented were obtained through the study of live specimens in the wild, available herbarium materials, and an in-depth literature survey. Photographs are provided for better understanding of the morphological diversity. Voucher material is stored in the MH (Madras Herbarium, India) and KUBH (Kerala University Botany Herbarium, Thiruvananthapuram).

3. Taxonomic treatment

Seidenfia manikathila J.Mathew, P.M. Salim & Szlach., sp. nov. (Figs. 3 and 4).

Diagnosis: *Seidenfia manikathila* is morphologically distinct from all other species of *Seidenfia* mainly by

the lip proportion that is longer than wide, whereas in all other taxa the lip is wider than long. This new taxon shows similarity to *S. densiflora* (A. Rich.) Szlach. but differs from this species in having: lip subrectangular in outline with 5-6 teeth on each side of mid-tooth (vs. lip reniform in outline with 9-11 teeth on each side of mid-tooth in *S. densiflora*), oblong triangular middle tooth with apical indentation (vs. obtuse middle tooth without indentation in *S. densiflora*), deeply torn very long tooth is adjoined to the middle tooth (vs. long tooth is away from middle tooth in *S. densiflora*).

Type: India: southern Western Ghats, Kerala, Idukki district, Rajamala Hills, 1400 m, 15 July 2018, *Jose Mathew* 4011 (holo, KUBH; iso, MH).

Description: Small herbs. Pseudobulbs 6-12 cm long, 1.3 cm in diameter, oblong ovoid at base. Leaves 2(3), alternate, only apparently nearly opposite, 2.5-7.5 cm long, 0.8-1.8 cm wide, sessile or shortly petiolate; leaf blade brittle in nature, ovate to ovate-lanceolate, plicate, acuminate or acute, with distinctly wavy margins, 5-nerved, adaxial side green in colour, abaxial side green to purple. Inflorescence is dense or very dense,

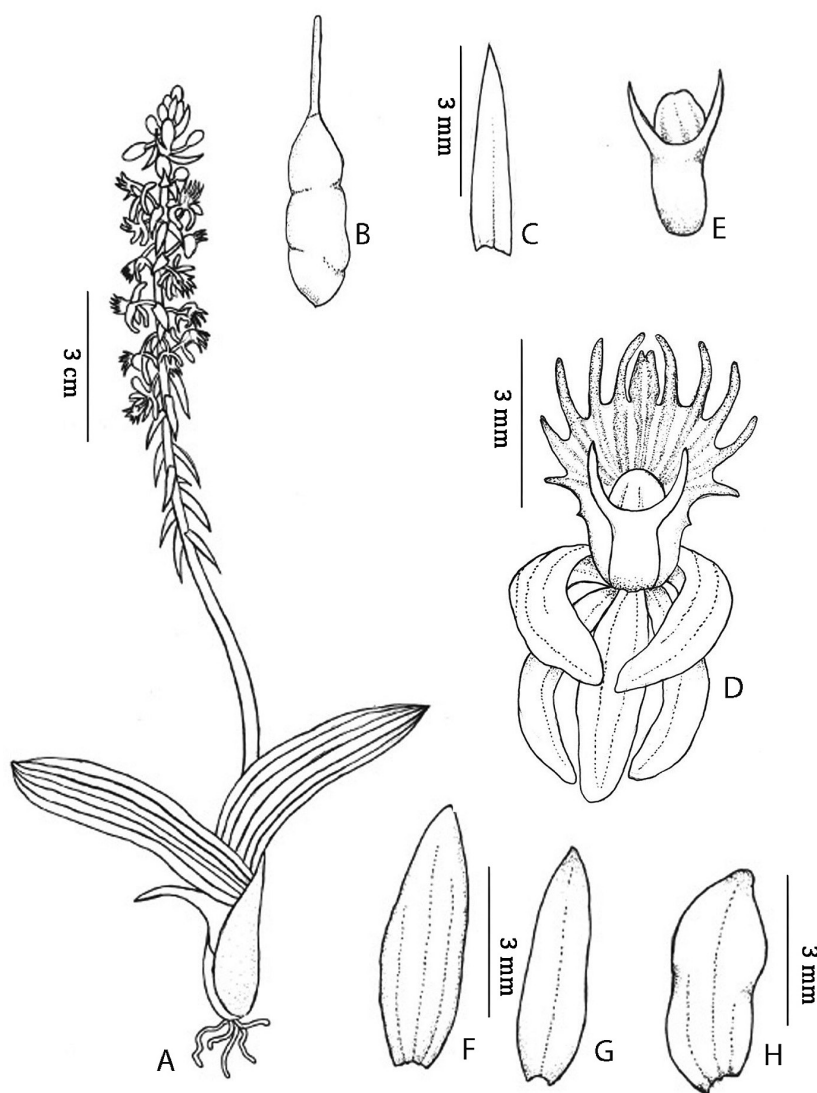


Fig. 3. *Seidenfia manikathila* J.Mathew, P.M. Salim & Szlach.

Explanations: A – habit, B – perennating bulb, C – bract, D – flower, E – gynostemium, F – lateral petal, G – lateral sepal, H – dorsal sepal (Illustration by Bichu Sebastian)

5-12 cm long, 40-70-flowered, flowers form a very dense and purple raceme. Peduncle 2.5-6.5 cm long, with a few deflexed, sterile bracts. Floral bracts 4-5 mm long, lanceolate, acute, deflexed. Ovary with pedicel ca 4 mm long. Flowers purple to violet, small, commonly slightly spreading. Sepals ca 5-6 mm long, ca 0.9-1.3 cm wide, linear-oblong, falcate; the dorsal one 4-5 mm × 1.5-1.7 mm, lateral ones deflexed. Petals ca 5.2-6.2 mm long, 0.9-1.4 mm wide, linear, falcate. Lip is pale with purple stripes along the innervation, ca 4-4.5 mm long, 2.3-2.6 mm wide, subrectangular, pectinately toothed; middle tooth oblong triangular middle tooth with apical indentation, 5-6 teeth on each side of mid-tooth, deeply torn very long tooth is adjoined to the middle tooth, attenuate. Gynostemium 1.0-1.2 mm long. Anther ca 0.5 mm long, ca 0.6 mm wide. Pollinia ca 0.5 mm long, 0.4 mm wide. Fruit not seen.

Phenology: The flowering observed in July.

Etymology: The epithet ('*manikathila*') is used to indicate resemblance of the lip of this species to the traditional ear ornament, 'Manikathila' of Kerala.

Additional materials examined: *India*, Kerala, Idukki district, Rajamala, 21 July 2020, *Jose Mathew* 4314, 4315 (KUBH).

Habit and Distribution: Found in sandy soils (alt. ± 1300 m) of the Rajamala hills of Idukki district in Kerala part of southern Western Ghats in association with *Brachycorythis iantha* (Wight) Summerh. and *Pecteilis gigantea* (Smith) Rafinesque, with few pteridophytes. These associated members are endemics to India. Morphologically similar species, *Seidenfia densiflora* is located from 5 km away (Pettimudy Hills) from the type locality. The distribution of this new species is limited to a few plants in the two known locations

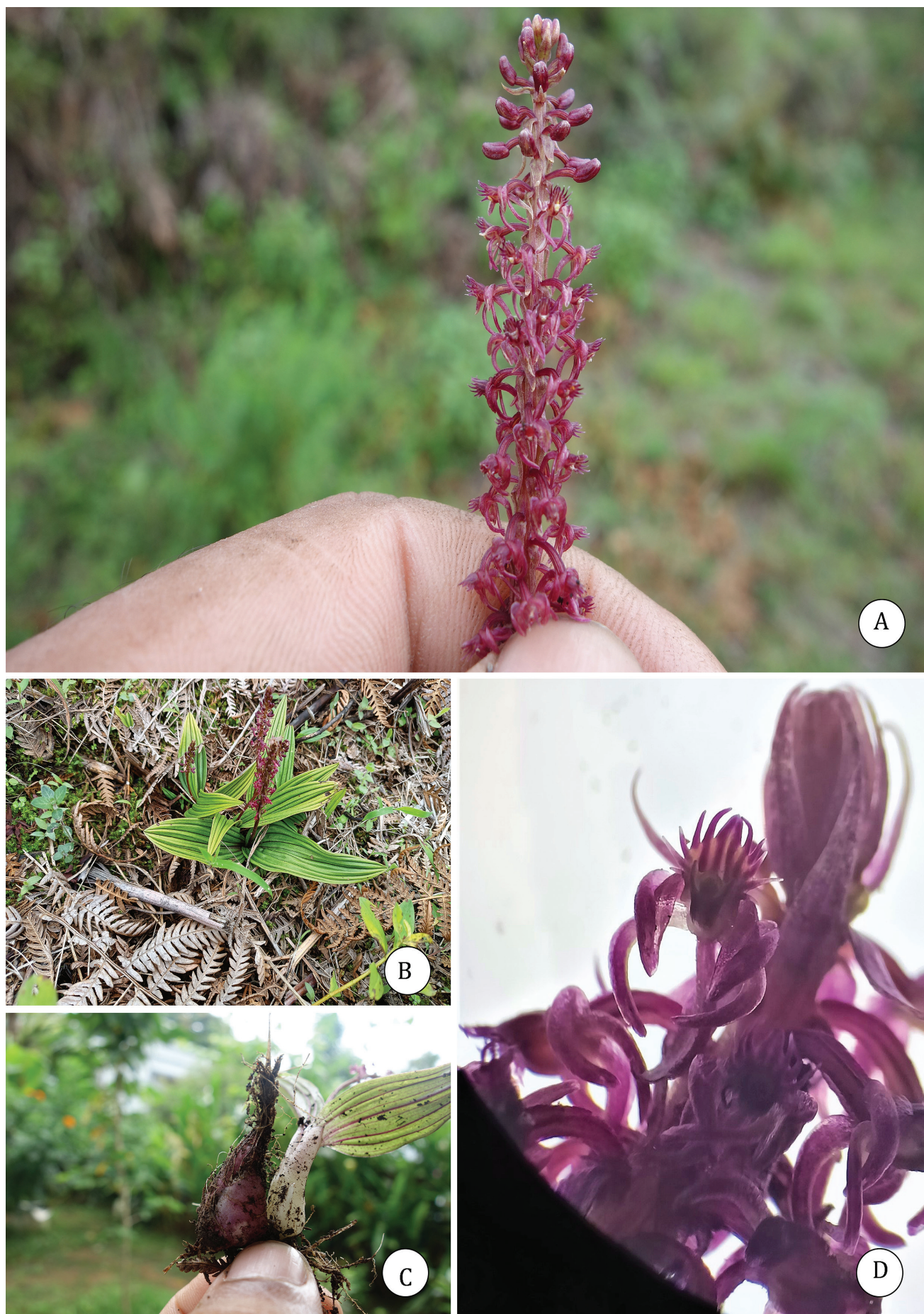


Fig. 4. *Seidenfia manikathila* J.Mathew, P.M. Salim & Szlach.

Explanations: A – inflorescence, B – habit, C – pseudobulb, D – opened flower (photograph by J. Mathew)

(each with *c.* 4-6 plants). Only 4 stalks with flowers were collected for the study purposes during two seasons. Further survey for this species is suggested, which would need to be conducted in June-July months when northeast Monsoon starts.

Key to section *Seidenfia* of genus *Seidenfia* in India

- 1a. Teeth short and broad, triangular *S. malabarica*
- 1b. Teeth long and narrow, attenuate 2
- 2a. Lip with 5-13 teeth on each side of mid-tooth 3
- 2b. Lip with more than 19 (even to 30) teeth on each side of mid-tooth *S. intermedia*
- 3a. Lip proportion longer than wide *S. manikathila*
- 3b. Lip proportion wider than long 4
- 4a. Mid-tooth shorter than the nearest lateral teeth 5
- 4b. Mid-tooth similar in length to the nearest longest lateral teeth *S. rheedi*
- 5a. Lip teeth short attenuate *S. versicolor*
- 5b. Lip teeth long attenuate *S. densiflora*

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 Critical revision: D. L. Szlachetko
 Final approval: J. Mathew, D. L. Szlachetko

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