



Liparis sanamalabarica (Orchidaceae): a new species from South Western Ghats, India

Pichan M. SALIM*

MS Swaminathan Research Foundation, Puthurvayal, Kalpetta, Wayanad, Kerala, India.

* Corresponding author's email: salimpichan@yahoo.com

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ABSTRACT: A new species of *Liparis*, *L. sanamalabarica* (Orchidaceae) is described based on specimens collected in the Wayanad Forests of southern Western Ghats, India. A line drawing, photographs of the new taxon, information about the habitat and its conservation status are also provided.

KEY WORDS: India, *Liparis sanamalabarica*, Orchidaceae, New species.

INTRODUCTION

Liparis Richard (1817: 21, 30, 38) is a large cosmopolitan genus of about 480 species, reported in tropical and extra-tropical Asia, eastern Australia, the Pacific Islands (including Hawaii and Tahiti), Madagascar, Africa, subtropical and tropical America, North America, and temperate Europe (Damian and Ormerod, 2016). In India, it comprises 51 species (Misra, 2007) and in Kerala 11 species (Sasidharan, 2013). Distinguishing characteristics of the genus are racemose inflorescence, a small bract subtending each flower, and similar shaped sepals and lateral petals, and also, usually regarded as having naked pollinia, a relatively long column and resupinate flowers (Lee *et al.*, 2010).

Botanical exploration in the forests of Wayanad District in Kerala, part of south Western Ghats, during 2011–2014, yielded some interesting specimens of the genus *Liparis*. Critical analysis of the literature as well as of herbarium specimens revealed that some of the collected specimens do not match any of the described species. These specimens are considered to be sufficiently distinct to warrant taxonomic recognition as a new species and are here described and illustrated as *Liparis sanamalabarica*.

TAXONOMIC TREATMENT

Liparis sanamalabarica P.M. Salim, *sp. nov.*

Figs. 1 & 2

Diagnosis: This new taxon is morphologically similar to *L. barbata* Lindl. (*L. wrayi* Hook.f.) but differs in having large pseudobulbs, equal-sided leaf bases, green-coloured leafy bracts, linear-lanceolate sepals and a labellum with slightly serrate and wavy margins in its distal part.

Type: India, Western Ghats, Kerala, Wayanad District, Kattimattom Hills, N 11°29'30.2" E 76° 06'

11.7", altitude 1392 m, Sept 2011, P.M. Salim 0416 (holo: MSSRF!; iso: MSSRF!).

Since the herbarium of the M.S. Swaminathan Research Foundation (Kalpetta, Wayanad, Kerala, India) has not been formally registered with Index Herbariorum (Thiers [continuously updated]), it is here referred to as "MSSRF".

Epiphytic or occasionally lithophytic herb, up to 18 cm tall, stem purple. Pseudobulb ovoid, with ridges, 10 – 15 mm long × 0.8 – 12 mm broad, covered by membranous sheathing leaves at base. Roots slender, to 2 cm long. Leaves usually 1, rarely 2, blade ovate-elliptic, equal at base, 6 to 12 cm long, 3 to 5 cm wide, plicate, acute, glossy, glabrous, green, margin entire, wavy, number of veins 9; petiole to 1 cm long. Inflorescence terminal, racemose, 6 to 9 cm long, bearing ten to fifteen creamy yellow flowers, axis glabrous, ridged. Floral bracts linear-lanceolate, leafy, 9–14 mm long, 2–4 mm wide, apex acute, green, glabrous. Sepals glabrous, Dorsal sepal linear-lanceolate, strongly reflexed, 9 to 11 mm long, 2 mm wide at middle, acute, yellowish, 3-veined. Lateral sepals lanceolate, spreading forwards below the apex of the labellum, 7 to 8 mm long, 3 mm wide, acute, 3–5-veined, yellowish. Petals linear, strongly revolute, spreading and deflexed, 8 mm long, 1 mm wide, yellow, 1-veined, acute. Labellum rhomboid, sides not recurved, 12 mm long, 8 to 10 mm wide, margins serrate and wavy at apex, creamy yellow; disc with 2 calli at base. Column strongly incurved, 7 to 8 mm long, winged at apex. Pollinia four in two pairs. Ovary pedicellate, 8 mm long, clavate, twisted at base, fruit a capsule.

Phenology: Flowering and fruiting of the new species were recorded in August– October.

Etymology: The specific epithet (*viz. sanamalabarica*) refers to the beautiful Malabar regions of Kerala, India (*sana* in arabic means beautiful), where the type specimen was collected.

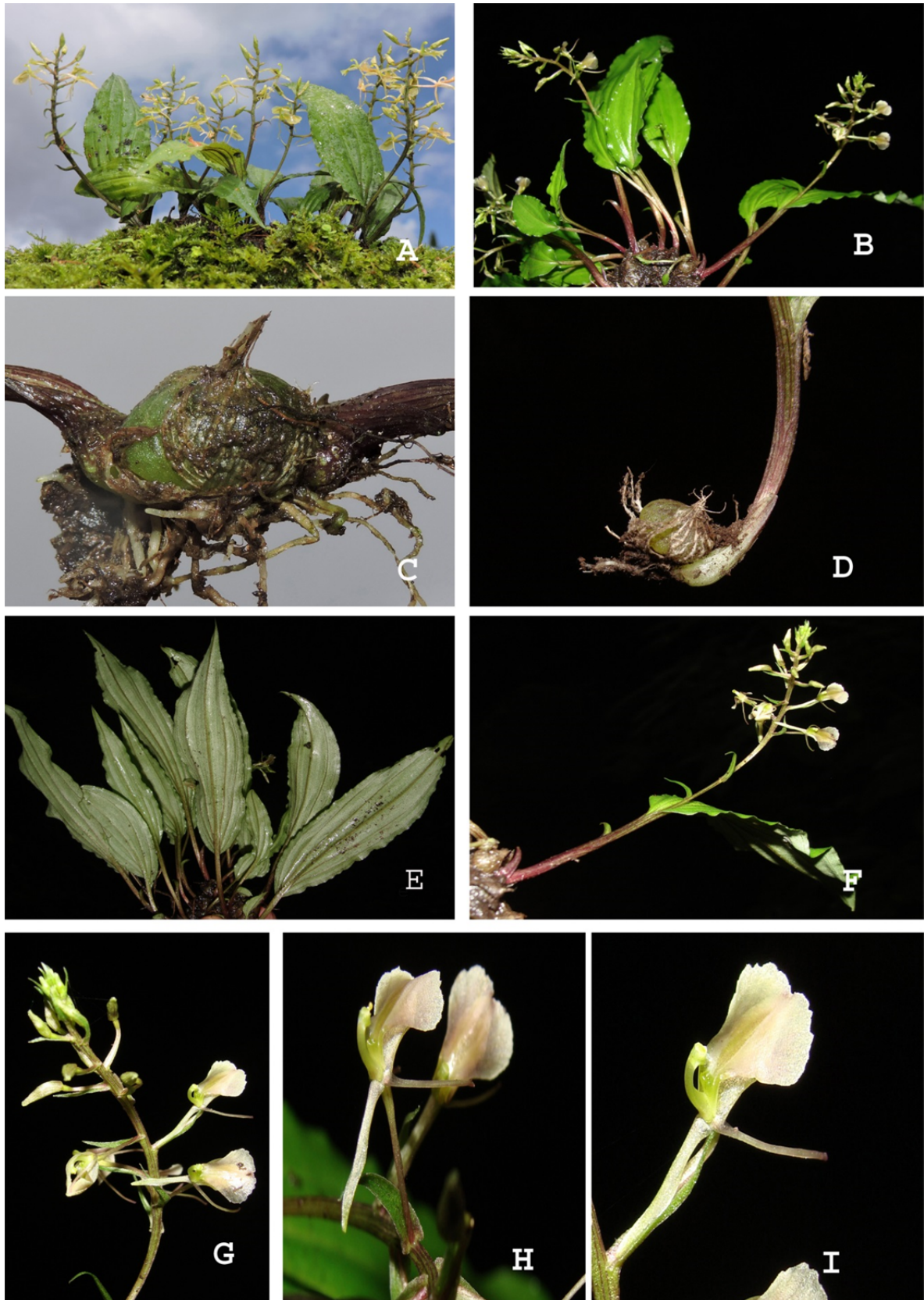


Fig 1. *Liparis sanamalabarica*. A-B: Habit. C: Pseudobulb. D: Basal portion of the plant. E: Abaxial surface of the leaves F: Flowering plant. G: Inflorescence. H-I: Flowers. From: *P.M. Salim 0416-0419*. Photos by *P.M. Salim*

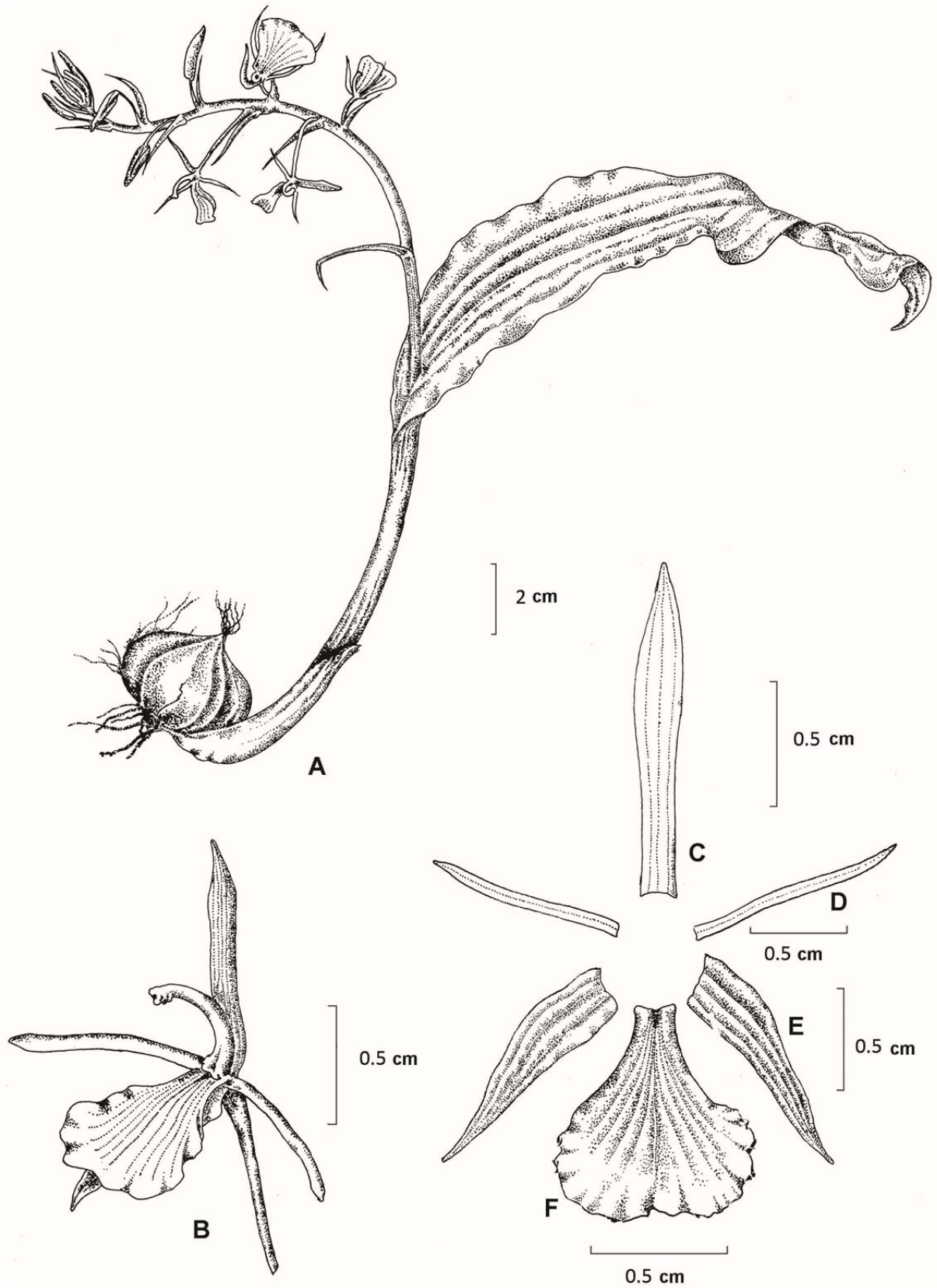


Fig 2. *Liparis sanamalabarica*. **A:** Flowering plant. **B:** flower (for the detailed illustration, median sepal drawn as artificially erect). **C:** Dorsal sepal. **D:** Petal. **E:** Lateral sepal. **F:** Labellum. Drawn from the material [spirit- P.M. Salim 0419] by Jayesh P.

**Table 1.** Comparison of *Liparis sanamalabarica* with the allied *L. barbata*

Characters	<i>L. sanamalabarica</i>	<i>L. barbata</i>
Life form	epiphytic; rarely lithophytic	terrestrial
Pseudobulb	present	absent
Leaves	1; rarely 2	2–3
Floral bracts	leafy, 9–14 mm long, green	small, 3–3.8 mm long, white
Dorsal sepal	linear-lanceolate, 9 – 11 × 2 mm	oblong, 7–8 × 1.8 mm
Lateral sepals	linear-lanceolate, 7 to 8 × 3 mm	ovate, 6 × 2.5 mm
Distal labellum margin	serrate and wavy	crenate

Additional specimen examined: INDIA: Kerala, Wayanad District, Kattimattom, N 11°29'30.2" E 76° 06'11.7", altitude 1392 m, Sept 2011, *P.M. Salim 0417–0419* (MSSRF!).

Distribution, habitat and ecology: Found in evergreen forest (altitude ± 1400 m) of the 900 Forest regions, Kattimattom hill ranges, Wayanad, Western Ghats, Kerala, India. *Liparis sanamalabarica* occasionally grows on trees and rarely on rocks. Here, common associates for *L. sanamalabarica* include *Turpinia malabarica* Gamble, *Syzygium lanceolatum* (Lam.) Wight & Arn., *Ilex malabarica* Bedd., *Mesua ferrea* L., *Dillenia bracteata* Wight and *Vernonia arborea* Buch.-Ham.

Comparison with morphologically similar species: *Liparis sanamalabarica* is morphologically similar to *L. barbata* Lindl. (*L. wrayi* Hook.f.), especially in inflorescence structure. However, these species can be readily distinguished from each other (morphological differences are listed in Table 1). *Liparis sanamalabarica* shares some morphological similarities with *L. atropurpurea* Lindl., but it differs in its comparatively small, epiphytic and lithophytic habit (vs. large, erect terrestrial habit for *L. atropurpurea*), 1–2 leaves with ovate-elliptic in shape (vs. 3–few leaves with ovate-orbicular in shape in *L. atropurpurea*), inflorescence with ten to fifteen creamy yellow flowers (vs. 30–45 purple colour flowers in *L. atropurpurea*) and rhomboid, non recurved lip with serrate and wavy margins (orbicular-obovoid, recurved lip with slightly crenate margins in *L. atropurpurea*).

Liparis sanamalabarica is also similar to *L. alata* A. Rich., but differ in its large pseudobulb (vs. pseudobulb absent in *L. alata*), elliptic leaves with equally sided bases (vs. ovate leaves with rounded leaf bases in *L. alata*) and wavy-serrate lip apex (vs. entire lip in *L. alata*).

Conservation status: *Liparis sanamalabarica* is currently known from 2 localities within the 900 Forests regions covering an area of 2 km². Forty mature individuals were found in the area. The data gained from the field studies were evaluated according to the

IUCN (2014) categorization and at least “vulnerable” status has been proposed for the species. Based on the above observations, adequate measures should be adopted to ensure the protection of this species in its natural habitat. Moreover, further surveys for this species are suggested. Apart from habitat destruction caused by anthropogenic intervention no other specific threats were determined during the field studies.

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