



Uncifera motuoensis (Orchidaceae), a new species from Xizang, China

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ABSTRACT: A new species, *Uncifera motuoensis* (Orchidaceae: Epidendroideae: Aeridinae) from Xizang Autonomous Region, China is described and illustrated with detailed photos and scientific illustration. Detailed morphological comparisons indicate that *U. motuoensis* is similar to *U. obtusifolia*, but differs in having entire mid-lobe of lip, narrower leaf blade and wider pollinarium stipe. For the identification, a key to the known seven species of *Uncifera* is presented.

KEY WORDS: Aeridinae, Chinese orchids, Epidendroideae, Motuo County, new species, taxonomy, *Uncifera*, *Uncifera obtusifolia*.

INTRODUCTION

Uncifera Lindl (1858; Aeridinae, Epidendroideae), with six accepted species, is distributed from tropical Himalayan regions to Thailand, Indochina, south and southwest China (Chen *et al.*, 2009; Pridgeon *et al.* 2014; POWO, 2023). Motuo County, situated in the southeast of Xizang Autonomous Region and within the middle and lower reaches of the Yarlung Zangbo River, is a significant region within the eastern Himalaya biodiversity hotspot. It boasts an exceptionally abundant in orchids, with recent discoveries including numerous new species and records (Ya *et al.*, 2019; Luo *et al.*, 2020; Hu *et al.*, 2021; Jin *et al.*, 2021; Ya *et al.*, 2021; Ma *et al.*, 2022; Tong *et al.*, 2022; Xi *et al.*, 2023; Li *et al.*, 2023a,b,c).

During our field investigation in Motuo County of the southeast Xizang Autonomous Region, China, an *Uncifera* species was collected on the tree trunks under broad leaf evergreen forest in May, 2022. It was flowered later in September after being transplanted to a greenhouse in Tropical Crops Genetic Resources Institute, Chinese Academy of Tropical Agricultural Sciences (TCGRI-CATAS). After undertaking a comprehensive literature and herbarium specimen review, we confirmed that it is a new species and described below.

MATERIALS AND METHODS

Investigations and collections of the orchids in Motuo County were conducted in May 2022. Type specimen was collected in Dexing Township, Motuo County, Xizang

Autonomous Region, China. Specimens were deposited in Herbarium of TCGRI-CATAS (ATCH). Flowers were fixed and stored in 70% ethanol before herbarium preparation. Flower characterization and other details were based on living material, flower dissection is performed under a dissecting microscope (Leica EZ4W). Place of the housing of cited specimens is indicated by accepted acronyms of respective Herbaria.

TAXONOMIC TREATMENT

Uncifera motuoensis M.Z.Huang, X.D.Chen & M.K.Li, *sp. nov.* 墨脱叉喙兰 Figs. 1 & 2

Type: CHINA. Xizang, Motuo County, Dexing Township, elev. 1126 m, epiphytes to tree trunks in subtropical evergreen broad-leaved forest, collected in May 2022 and flowering in cultivation, 12 August 2022, Huang 220812001 (holotype: ATCH!).

Diagnosis: *Uncifera motuoensis* is similar to *U. obtusifolia* Lindl. (1958), but differs in having an entire mid-lobe of lip (vs. trilobe), narrower leaves (linear-oblong vs. obliquely oblong) and wider pollinarium stipe wings (leglike vs. cuplike at closing) (Table 1).

Description: Epiphytic herbs. **Stem** ca. 7 cm, 3–4 mm in diam. **Leaves** linear-oblong with the apex unequally bilobed, pendulous, 15–21 × 1.5–2.2 cm, sheaths 3–4 cm long. **Inflorescence** raceme, pendulous, 5–8 cm, densely many flowered. **Floral bracts** ovate, 3–3.5 mm. **Flowers** not opening widely, yellowish green with brown patch, slightly fleshy. **Pedicel** and **ovary** 5–6 mm. **Sepals** cymbiform, broadly ovate, 5.5–6.5 × 4.5 mm, obtuse.

**Table 1.** Morphological comparison of *Uncifera motuoensis* and *U. obtusifolia*

Characters	<i>U. motuoensis</i>	<i>U. obtusifolia</i>
Leaves	Broadly strip, 15–21 × 1.5–2.2 cm	Oblong, 15–25 × 2.5–4 cm
Lip	Perpendicular to the column, mid-lobe entire	An acute angle with the column, mid-lobe trilobed
Pollinarium	Middle part of stipe leglike in side view	Middle part of stipe cuplike in side view

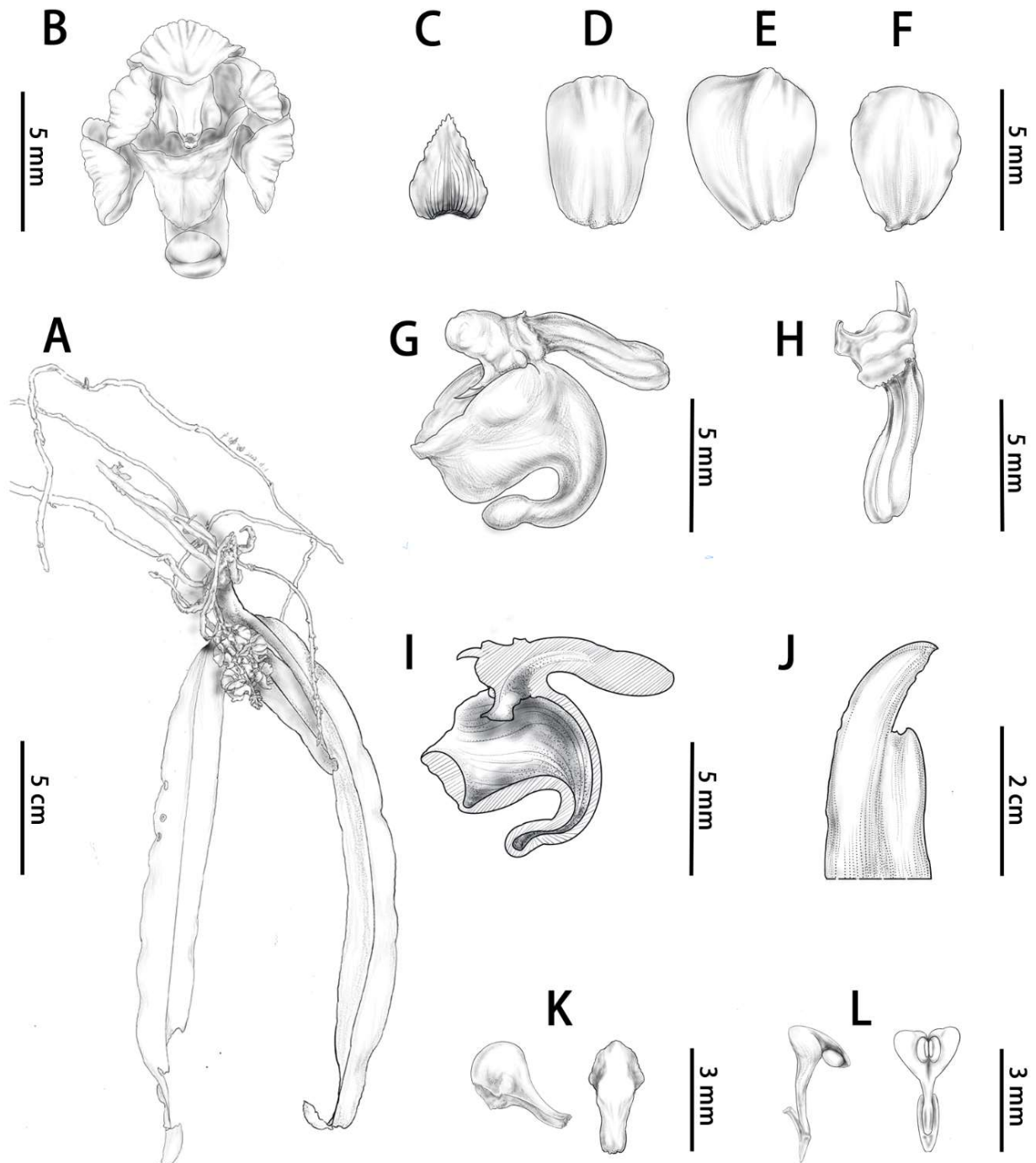


Fig. 1. *Uncifera motuoensis*. **A.** Plant and inflorescence; **B.** Flower (front view); **C.** Bract; **D.** Dorsal sepal; **E.** Lateral sepal; **F.** Petal; **G.** Flower with sepals and petals removed (side view); **H.** Column and ovary; **I.** Longitudinal section of flower without sepals and petals; **J.** Leaf apex; **K.** Anthers cap (side and front side view); **L.** Pollinarium (side view, front view with strip fattened). Drawn by Kunyang Lu from the type.

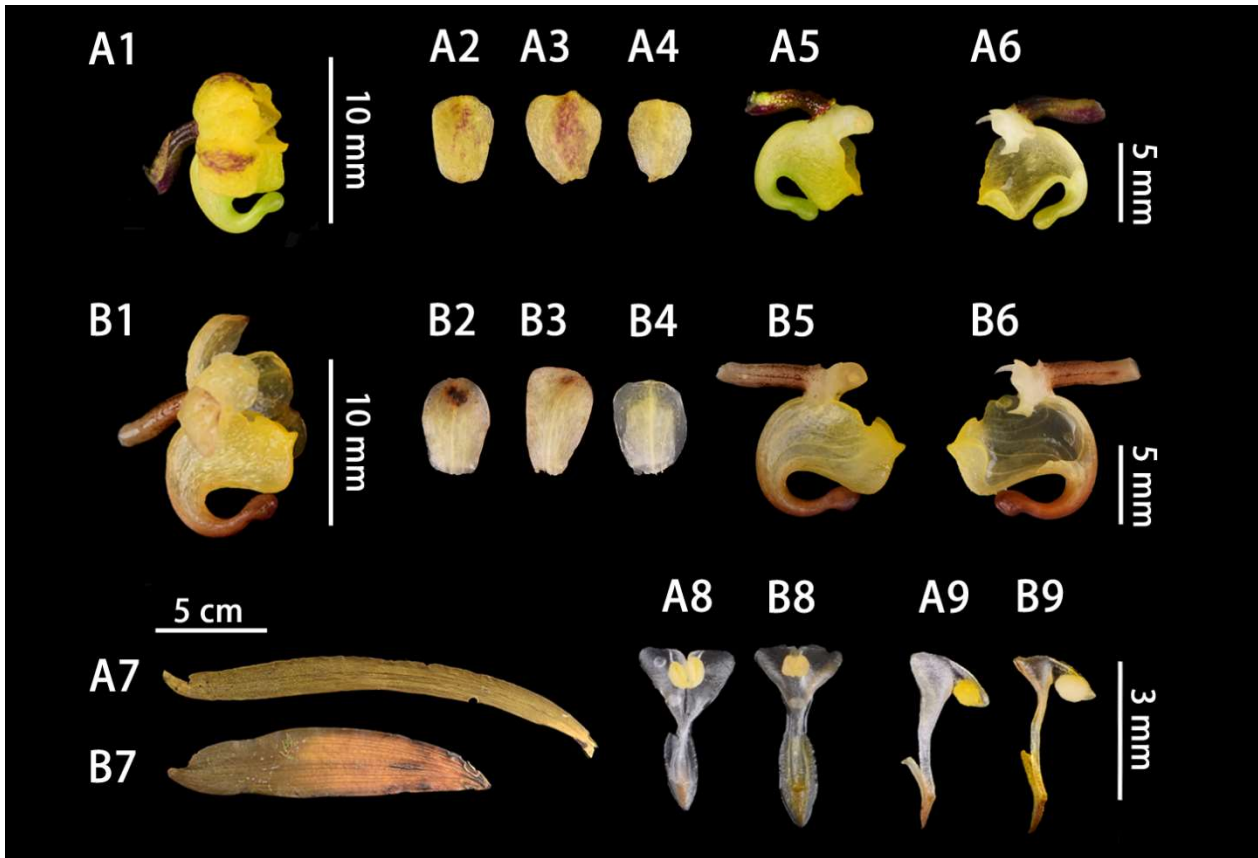


Fig. 2. Morphological comparison of *Uncifera motuoensis* (A) and *U. obtusifolia* (B). 1. Flowers (side view); 2. Dorsal sepals; 3. Lateral sepals; 4. Petals; 5. Flowers without sepals and petals (side view); 6. Column and lips longitudinal section; 7. Leaf; 8. Pollinarium with strip flattened; 9. Pollinarium (side view).

Petals ovate, 4.5–5 × 4 mm, obtuse. **Lip** with a long spur at base, 3-lobed; lateral lobes suberect, 3.5–4 × 0.8 mm; mid-lobe entire, ovate-triangular, very small, fleshy, adaxially shallowly concave, apex obtuse; spur funnel-shaped, strongly curved forward and hooked, 5 × 1.8 mm, near apex slightly swollen. **Column** 2 mm long; rostellum large, fleshy; anther cap subconic, apex elongate and narrowed; pollinia waxy, 2, elliptic, deeply cleft, eparated by a hyaline flange, attached by a broad stipe to viscidium; stipe wings borne on a ridge formed by basal part of rostellum. stipe wings leglike at closing, 5 mm; viscidium oblong, 2 mm.

Distribution and habitat: *Uncifera motuoensis* is only known from Dexing Township of Motuo County, in Southeast Xizang, China. It is typically found on tree trunks in subtropical evergreen broad-leaved forest at elevations of 1100–1327 m.

Phenology: Flowering in August, fruiting not seen.

Etymology: The species epithet is named after the type locality, Motuo County.

Preliminary conservation status: According to the survey, this species was only distributed along the Xigong River in Dexing Township. Due to the intricate topography of Motuo County, accurately assessing the

population of this species becomes challenging; therefore, in accordance with IUCN guidelines (IUCN, 2022), we propose classifying this species as Data Deficient (DD).

Notes: Flower characteristics provide relatively low recognition in the genus of *Uncifera*, such as *U. verrucosa* Summerh. (1956: 57), *U. acuminata* Lindl. (1958: 40) vs. *U. lancifolia* (King & Pantl.) Schltr. (1914: 583), *U. thailandica* Seidenf. & Smitinand (1965: 828) vs. *U. dalatensis* (Guillaumin) Seidenf. & Smitinand (1965: 830). Now, *U. motuoensis* vs. *U. obtusifolia* joined their lineup. Either the appearance of inflorescence or that of the flower is easily confused in these species, resulting in another five species of *Uncifera* being recorded at the International Plant Name Index website (IPNI, 2023), which were reduced by POWO (2023) as synonyms. Leaf characteristics seem to be more useful for identifying of this genus. We have established a key dominated by leaf characteristics to facilitate the discrimination of species within this genus.

Key to the species of *Uncifera* Lindl.

- 1 Leaf apex acute or with slightly praemorse 2
 - Leaf apex with distinct unequally bilobed 3
- 2 Leaf blade linear-lanceolate *Uncifera lancifolia*
 - Leaf blade elliptic-lanceolate or obliquely oblong *U. acuminata*



- 3 Leaf with purple spots beneath *U. verrucosa*
 Leaf without spot beneath 4
 4 Laves usually not more than 13 cm, ligulate, spur extends
 backwards *U. thailandica*
 Leaves usually more than 13 cm, spur not extends backwards 5
 5 Spur pendulous *U. dalatensis*
 Spur forward, pointing to the base of the mid-lobe 6
 6 Mid-lobe tri-lobed *U. obtusifolia*
 Mid-lobe entire *U. motuoensis*

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