
Liparis cordifolia var. *gongshanensis* (Orchidaceae, Malaxideae), a New Variety from Yunnan, China

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ABSTRACT. *Liparis cordifolia* Hook. f. var. *gongshanensis* X. H. Jin (Orchidaceae, Malaxideae) is described from Yunnan, China. It differs from the typical variety by having larger flowers with the sepals and petals ca. 1.1 cm long (vs. 0.8–0.9 cm in variety *cordifolia*) and a circular, ciliate lip with a pair of small calli at the base (vs. lip obovate-deltoid, entire, and ecallose in variety *cordifolia*). The new variety appears to be restricted to evergreen humid forest in the Dulong River valley (upper portion of the Irrawaddy River), from Yunnan, China. A lectotype is designated for *L. cordifolia*.

Key words: China, IUCN Red List, *Liparis*, Malaxideae, Orchidaceae.

The genus *Liparis* Rich. s.l. (Orchidaceae, Malaxideae) consists of 150 to 320 species distributed in the tropics worldwide as well as in temperate regions (Seidenfaden, 1976, 1992; Chen, 1999; Comber, 2001; Pearce & Cribb, 2002; Pridgeon et al., 2005). *Liparis* s.l. is readily separated from other members in Malaxideae by the resupinate flowers with a curved column. The last worldwide taxonomic treatment of *Liparis* was by Ridley (1886), in which 110 species were recognized, and many new species have been published since that time. Recently, more small genera have been segregated from *Liparis* s.l., e.g., *Alatiliparis* Marg. & Szlach., *Disticholiparis* Marg. & Szlach., and *Ypsilorchis* Z. J. Liu, S. C. Chen & L. J. Chen. The taxonomy of this genus is very confused and inconsistent across its distributional range (e.g., Margonska & Szlachetko, 2001, 2004; Pridgeon et al., 2005; Liu et al., 2008). *Liparis* s.l. is followed here because most of the previous generic treatments of *Liparis* either lack sound phylogenetic analysis or are based on insufficient data (e.g., Cameron, 2005).

There are about 50 to 60 species of *Liparis* in China (Chen, 1999; Chen et al., 2009), including many recently described species from China or neighboring regions (Averyanov & Averyanova, 2003; Ormerod, 2007; Yang et al., 2009). During fieldwork in the Gaoligong Mountains, northwestern Yunnan, China, in 2008, a new variety of *L. cordifolia* was discovered and is described here.

1. *Liparis cordifolia* Hook. f., Icon. Pl. ser. 3(19): tab. 1811. 1889. TYPE: India. Kashia, *Hooker & Thomson 8* (lectotype, designated here, K).

Pearce and Cribb (2002) listed three syntypes of *Liparis cordifolia*, one of which is designated here as lectotype for this widespread and somewhat polymorphic species.

1a. *Liparis cordifolia* var. *cordifolia*.

1b. *Liparis cordifolia* var. *gongshanensis* X. H. Jin, var. nov. TYPE: China. Yunnan: Gongshan Co., Dulong Distr., in forest, 2400 m, 24 June 2008 (fl.), X. H. Jin 9589 (holotype, PE). Figure 1.

Haec varietas a *Liparide cordifolia* Hook. f. var. *cordifolia* bracteis lanceolatis longioribus, floribus majoribus sepalis petalis et labello ca. 1.1 cm longis atque labello circulari ciliato ad basem pari callorum parvorum munito perfacile distinguitur.

Epiphyte; pseudobulb ovoid, ca. 0.5 cm diam., enclosed by a membranous sheath. Leaf 1, blade elliptic, ca. 5.5 × 2.8 cm, acuminate, basally narrowed into the petiole; petiole ca. 2 cm. Inflorescence 5–6 cm, 3- to 5-flowered, rachis and peduncle purple; bracts lanceolate, ca. 0.6 cm, ciliate. Flowers green, pedicel and ovary pale brownish purple, center of lip disc pale brownish green. Pedicel and ovary 1.5–1.7 cm; dorsal sepal linear, ca. 1.1 × 0.15 cm, 3-veined; lateral sepals parallel under the lip, linear-lanceolate, 3-veined, acuminate, obtuse, ca. 1 × 0.3 cm; petals linear, ca. 1.1 × 0.1 cm; lip circular, ca. 1.1 × 1.2 cm, base with a pair of small calli, middle vein fleshy to disc; lip margin ciliate; calli 2, slightly lanceolate; column curved, base swollen, ca. 0.5 cm long, a pair of triangular column wings beside the stigmatic region; anther cap elliptic, truncate in front. Fruit not observed.

Distribution and habitat. This new variety of *Liparis cordifolia* with a circular and ciliate lip (vs. a deltoid lip in variety *cordifolia*) was discovered in the Dulong River valley, which is the upper extent of the Irrawaddy River in Yunnan, China. The new variety is epiphytic on tree trunks in humid evergreen



Figure 1. *Liparis cordifolia* var. *gongshanensis* X. H. Jin. Front view of flower at the type locality. Photo by X. H. Jin.

broadleaf forest at an elevation of 2400 m, and is rare within this area. During our two-day stay in this area in 2008, we discovered only 20 plants with flowers.

IUCN Red List category. As may happen with newly discovered taxa, *Liparis cordifolia* var. *gongshanensis* is known only from its type locality, which makes it difficult to estimate its conservation status. However, the Dulong River valley has recently been greatly affected by road construction and increasing tourism. We therefore consider the new variety to be Endangered (EN Blab[iii]) according to IUCN Red List criteria (IUCN, 2001), based on its known area of occupancy and continuing decline of habitat extent and quality.

Relationships. The new variety is readily distinguished from *Liparis cordifolia* var. *cordifolia* by its lanceolate bracts ca. 0.6 cm long (vs. bracts elliptic to triangular and ca. 0.1 cm long in the typical variety); larger flowers with the sepals, petals, and lip ca. 1.1 cm long (vs. sepals, petals, and lip 0.8–0.9 cm long); and a circular, ciliate lip with a pair of small calli (vs. lip deltoid).

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Literature Cited

- Averyanov, L. V. & A. L. Averyanova. 2003. Updated Checklist of the Orchids of Vietnam. Vietnam National University Publishing House, Hanoi.
- Cameron, K. M. 2005. Leave it to the leaves: A molecular phylogenetic study of Malaxideae (Epidendroideae, Orchidaceae). *Amer. J. Bot.* 92(6): 1025–1032.
- Chen, S. C. 1999. *Liparis* L. C. Rich. Pp. 54–106 in S. C. Chen (editor), *Flora Reipublicae Popularis Sinicae*, Vol. 18. Science Press, Beijing.
- , P. Omerod & J. J. Wood. 2009. *Liparis* L. C. Rich. Pp. 211–228 in Z. Y. Wu, P. H. Raven & D. Y. Hong (editors), *Flora of China*, Vol. 25: Orchidaceae. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.
- Comber, J. B. 2001. *Liparis* L. C. Rich. Pp. 136–169 in *Orchids of Sumatra*. Natural History Publications (Borneo), Kota Kinabalu, in association with the Royal Botanic Gardens, Kew, Richmond, and the National Parks Board, Singapore Botanic Gardens, Singapore.
- IUCN. 2001. IUCN Red List Categories and Criteria, Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland, and Cambridge, United Kingdom.
- Liu, Z. J., S. C. Chen & L. J. Chen. 2008. *Ypsilorchis* and *Ypsilorchidinae*, a new genus and a new subtribe of Orchidaceae. *J. Syst. Evol.* 46(4): 622–627.

- Margonska, H. B. & D. L. Szlachetko. 2001. *Alatliparis* (Orchidaceae: Malaxidinae), a new orchid genus with two species from Sumatra. *Ann. Bot. Fenn.* 38: 77–81.
- & ———. 2004. *Disticholiparis*, a new genus of subtribe Malaxidinae. *Orchidee* (Hamburg). 55: 175–179.
- Ormerod, P. 2007. Orchidaceous additions to the flora of China and Vietnam (II). *Taiwania* 52(4): 307–314.
- Pearce, N. R. & P. J. Cribb. 2002. *Liparis* L. C. Rich. Pp. 195–212 in N. R. Pearce & P. J. Cribb (editors), *The Orchids of Bhutan*. Charlesworth Group, Huddersfield, United Kingdom.
- Pridgeon, A. M., P. J. Cribb, M. W. Chase & F. N. Rasmussen. 2005. *Genera Orchidacearum*, Vol. 4: Epidendroideae (Part One). Oxford University Press, New York.
- Ridley, H. N. 1886. A monograph of the genus *Liparis*. *J. Linn. Soc., Bot.* 22: 244–297.
- Seidenfaden, G. 1976. Orchid Genera in Thailand IV. *Liparis* L. C. Rich. *Dansk Bot. Ark.* 31(1): 5–105.
- . 1992. The orchids of Indochina. *Opera Bot.* 114: 128–145.
- Yang, P. H., X. H. Jin & Z. H. Wu. 2009. *Liparis angustiblonda* sp. nov. (Malaxideae: Orchidaceae) from Shannxi, China. *Nordic J. Bot.* 27: 348–350.