

77. MALAXIS Solander ex Swartz, Prodr. 8, 119. 1788.

原沼兰属 yuan zhao lan shu

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Achroanthes Rafinesque; *Cheiropterocephalus* Barbosa Rodrigues; *Malaxis* [unranked] *Microstylis* Nuttall; *Microstylis* (Nuttall) Eaton; *Tamayorkis* Szlachetko.

Herbs, terrestrial or rarely epiphytic, occasionally holomycotrophic. Roots hairy. Stem cylindric to pseudobulbous, fleshy, often creeping and rooting in basal part. Leaves, if present, thinly textured to fleshy, usually plicate, petiole sheathing at base. Inflorescences erect, racemose, unbranched; floral bracts persistent, lanceolate or setose. Flowers not resupinate or resupinate, green, brown, yellow, pink, or purple. Dorsal sepal spreading, free; lateral sepals free or fused, spreading. Petals often narrower than sepals, free, spreading; lip erect, flat but sometimes concave at base, entire to lobed, auriculate at base or lacking auricles, apical margin entire or toothed, lacking a spur, callus absent or present and cushionlike or obscurely transversely ridged. Column lacking a foot; anther cap dorsal, attached by a slender filament, locules opening ventrally; pollinia 4, waxy, lacking appendages or rarely with 1 or 2 tiny viscidia; stigma semicircular or ovate; rostellum often obtuse or emarginate at apex.

About 300 species: cosmopolitan, mainly in tropics and subtropics of Old and New World, with a few species in temperate regions of Europe, Asia, and the Americas; one species in China.

Recently, Szlachetko (Fragm. Florist. Geobot., Suppl. 3: 1–152. 1995) and Szlachetko and Margońska (Acta Bot. Fenn. 173: 1–275. 2002) recognized a number of new genera in subtribe Malaxideae: e.g., *Crepidium* (most Chinese taxa formerly referred to *Malaxis*), *Dienia*, *Oberonioides*, etc. Most of these were included in *Malaxis* by previous authors. Data from DNA sequence analysis shows that *Malaxis* s.l. is polyphyletic (Cameron, Amer. J. Bot. 92: 1025–1032. 2005) but not along the lines defined by Szlachetko and his co-workers. However, some of the segregate genera have been accepted by Pridgeon et al. (Gen. Orchid. 4(1): 453–486. 2005), based on morphological and preliminary molecular data:

Malaxis s.s.: a large clade of predominantly American species, including *M. spicata* Swartz, the type species. It includes two species with a small, ovoid pseudobulb, one or two leaves, and a racemose or subumbellate inflorescence.

Malaxis monophyllos: the temperate Eurasian and North American *M. monophyllos* is sister to a larger clade that includes *Malaxis* s.s., *Crossoglossa* (New World only), and some other species of *Malaxis*.

Asiatic *Crepidium* and *Dienia*: sister clades readily recognized by their elongate, several-noded pseudobulbs, plicate leaves, and flowers with a broad, often lobed lip. They form part of a larger clade including tropical and subtropical Asiatic *Liparis* species with a similar habit. Both are recognized in this treatment but might be united in the future.

1. *Malaxis monophyllos* (Linnaeus) Swartz, Kongl. Vetensk. Acad. Nya Handl. 21: 234. 1800.

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Ophrys monophyllos Linnaeus, Sp. Pl. 2: 947. 1753; *Achroanthes monophylla* (Linnaeus) Greene; *Epipactis monophylla* (Linnaeus) F. W. Schmidt; *Malaxis arisanensis* (Hayata) S. Y. Hu; *M. muscifera* (Lindley) Kuntze var. *stelostachya* Tang & F. T. Wang; *M. taiwaniana* S. S. Ying; *M. yunnanensis* (Schlechter) Tang & F. T. Wang; *M. yunnanensis* var. *nemato-phylla* Tang & F. T. Wang; *Microstylis arisanensis* Hayata; *M. monophyllos* (Linnaeus) Lindley; *M. yunnanensis* Schlechter.

Plants terrestrial. Pseudobulbs ovoid, relatively small, usually 6–8 × 4–5 mm, ± enclosed in white membranous sheaths. Leaf 1 or rarely 2, ovate, oblong, or subelliptic, 2.5–7.5(–12) × 1–3(–6.5) cm, base contracted into ± amplexicaul petiole 3–6.5(–8) cm, apex obtuse or subacute. Inflorescence erect,

(9–)15–40 cm, many flowered; rachis 4–12(–20) cm, narrowly winged; floral bracts 2–2.5 mm, lanceolate. Flowers pale yellowish green to pale green, small; pedicel and ovary 2.5–4(–6) mm. Dorsal sepal lanceolate or narrowly ovate-lanceolate, 2–4 × 0.8–1.4 mm, 1-veined, apex long acuminate; lateral sepals linear-lanceolate, 2–4 × 0.7–1.2 mm, 1-veined. Petals filiform or narrowly lanceolate, 1.5–3.5 × ca. 0.3 mm; lip ovate-triangular, 3–4 mm, caudate; disk broadly ovate or oblate, slightly concave, margin thickened and verrucose, base with a pair of short auricles on each side. Column ca. 0.5 mm, stout. Capsule obovoid or obovoid-ellipsoid, 6–7 × ca. 4 mm; fruiting pedicel 2.5–3 mm. Fl. and fr. Jul–Aug. $2n = 28, 30, 60$.

Forests, thickets, grassy slopes; 800–2400 m (2500–4100 m in NW Yunnan and Xizang). Gansu, Hebei, Heilongjiang, Henan, Hubei, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Taiwan, Xizang, W Yunnan [Japan, Korea, Russia; Europe, North America].

