



Malaxis malipoensis (Malaxideae: Orchidaceae), a new species from Yunnan, China

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Introduction

Malaxis Solander ex Swartz (1788), the main genus of the tribe Malaxideae (Orchidaceae), consists of about 300 species that are widespread in the tropics and subtropics of the old and new worlds. Only one species of this genus, namely *Malaxis monophyllos* (Linneaus, 1753: 947) Swartz (1800: 234), has previously been recorded from China (Chen *et al.* 2009). The taxonomy of the genus is still obscure, even though many researchers have attempted clarification in the past 200 years. (Ridley 1888, Smith 1930, Schlechter 1911, Seidenfaden 1978, Dressler 1993). Undoubtedly, *Malaxis* is polyphyletic (Cameron 2005, Pridgeon *et al.* 2006). Most authors have followed treatments of Schlechter (1911) and Seidenfaden (1978) in accepting a broadly defined *Malaxis* (Smith 1930, Dressler 1993, Chen, 1999).

Recently Szlachetko and Margońska (2012) recognized some separate genera under the tribe Malaxideae, including *Malaxis*, *Tamayorkis*, *Microstylis*, *Seidenfia*, *Saurolophorkis*, *Pseudoliparis*, *Glossochilopsis*, *Dienia*, *Seidenforchis*, *Crepidium*, *Oberonioides*. They raised sect. *Microstylis* to generic rank by recognising differences in the gynostemium and pollinium structure, and placed *Malaxis monophyllos* in it. However, on the basis of morphological and preliminary molecular data, Pridgeon *et al.* (2006) accepted some of these separate genera: *Malaxis*, *Crepidium*, *Oberonioides*, *Dienia*, whereas they did not agree with the treatment of sect. *Microstylis*; therefore, they reinstated *Malaxis monophyllos* in *Malaxis*. Furthermore, they mentioned that *M. monophyllos* is sister to the clades including *Malaxis s.s.*, *Liparis s.s.*, *Crossoglossa* and some other species of *Malaxis*. Chen *et al.* (2009) followed Pridgen *et al.* and retained *M. monophyllos* in *Malaxis* when they dealt with *Malaxis* and allies in the *Flora of China*.

During a field survey in Malipo, southeastern Yunnan, China, a unique *Malaxis* was discovered. By applying multiple comparisons with its close species, *M. monophyllos*, we confirmed it as an undescribed distinctive species and described it in the genus *Malaxis*.

Materials and methods

Pollen morphology:—Pollinium morphological observation of the new species was conducted by using scanning electron microscopy (SEM). Pollinia were taken from mature flowers that were fixed in FAA in the field. Pollinia were coated with gold, and images were taken with a JEOL JSM-6360LV scanning electron microscope at 20 kV in South China Botanical Garden, University of Chinese Academy of Sciences, Guangzhou, China. Pollen terminology is presented according to Punt *et al.* (2007; abbreviations: P/E ratio= polar/equatorial ratio).

Taxonomic treatment

Malaxis malipoensis Y.F. Meng, A.Q. Hu & F.W. Xing, *sp. nov.* (Figs. 1–3)

Type:—CHINA. Yunnan: Malipo, 1,900 m, under forest, 20 July 2012, Meng 20120130 (holotype: IBSC!, isotype: IBSC!).

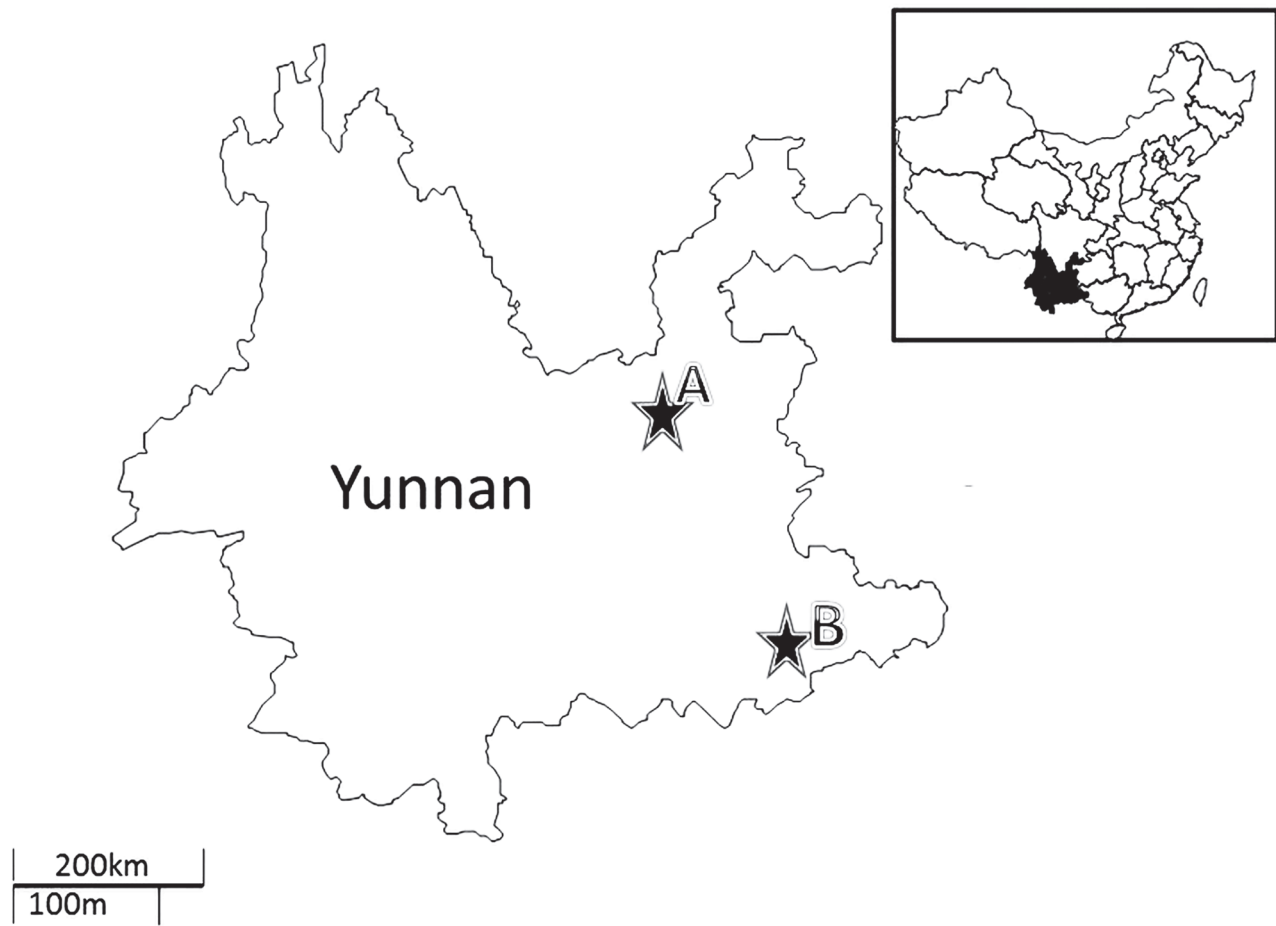


FIGURE 5. Distribution of *Malaxis malipoensis* in Yunnan, China. A. Malipo, Yunnan. B. Liangwang Mountain, Yunnan.

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