NOTE

Notes on Phalaenopsis (Orchidaceae) of Hsiaolanyu, Taiwan

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ABSTRACT: Taxonomic position of the Phalaenopsis species in Hsiaolanyu, Taiwan is reviewed along with the rediscovery of wild population. P. riteiwanensis Masam. is lectotypified and reconfirmed to be a synonym of P. equestris (Schauer) Rchb.f. Its habitat condition in and conservation status is also presented.

KEY WORDS: IUCN category, Lectotypification, Orchidaceae, Phalaenopsis equestris, Phalaenopsis riteiwanensis, Taxonomy, Taiwan.

INTRODUCTION

The Phalaenopsis species from Hsiaolanyu (a.k.a. Syokotosyo, Ritateian and Riteiwan) was first published by Masamune (1934) as a new species, P. riteiwanensis Masam. In later studies (Sweet, 1969; Lin, 1977; Su, 2000; Chen and Wood, 2009), P. riteiwanensis was treated as a synonym of P. equestris (Schauer) Rchb.f. However, the population from Hsiaolanyu was not been collected again since 1934 due to transportation inconvenience and low population size, and its habitat situation and morphological variation are thus nearly uncertain. During a botanical survey of Hsiaolanyu in May 2009, a wild population of Phalaenopsis species was rediscovered by our co-worker Sin-Jie Hong and Chuan-Rong Yeh. Later in July 2009, flowers were observed and then confirmed to be P. riteiwanensis. The rediscovery of wild population offered us a chance to review the taxonomy position of Phalaenopsis species from Hsiaolanyu. After a selection of lectotype and a comparative study on fresh flowering materials, we accept that P. riteiwanensis should be a synonym of P. equestris (Schauer) Rchb. f., as we present here with a report of habitat condition and conservation status.

TAXONOMIC TREATMENT


Distribution and ecology: Phalaenopsis equestris is widespread in the Philippines but recorded in Taiwan only from Hsiaolanyu, a small islet located south of Lanyu. Ying (1990) proclaimed that this species also occurred in Lanyu, but there are no specimens available for us to reconfirm this record. Wild population of P. equestris in Hsiaolanyu grows in a dwarf forest of ca. 3 m high along the costal cliff of Hsiaolanyu at ca. 100 m alt. The forest is dominated by Semecarpus gigantifolia Vidal, Ficus cumingii Miq. var. terminalifolia (Elm.) Sata, F. septica Burm. f. and Tabernaemontana subgloboosa Merr. Accompanied species include Planchonella obovata (R. Br.) Pierre, Antidesma pentandraum Merr. var. barbatum (Presl.) Merr., Diospyros ferrea (Willd.) Bakhuisen, Pisania aculeata L. and Podocarpus costalis Presl. All Phalaenopsis equestris individuals were found growing on the branches of Podocarpus costalis. Flowers were observed from July to August.

Conservation and IUCN category: According to our field investigation and IUCN Red List Categories and Criteria (IUCN, 2001; 2003), we agreed with Lu et al.
(2001) and Chung (2009) to consider Phalaenopsis equestris Critically Endangered (CR B2ab; D) in Taiwan based on an area of occupancy less than 10 km² and matured individuals less than 50. Conservation measures should be taken immediately to ensure the continued existence of P. equestris in Taiwan. Although Phalaenopsis equestris had been a common species in the Philippines (Lin, 1977), we maintain its regional protection level in Taiwan because the wild population in the Philippines continues deteriorating due to horticultural over-collection (Chung, pers. comm.), and the immigration probability is thus reduced.

Typification of Phalaneopsis riteiwanensis: After a herbaria reviewing, we found five sheets of Phalaenopsis specimens, three in TAIF and two in KPM, fit the type data described by Masamune (1934). Since none of these specimens were marked or defined as a holotype, lectotypification of Phalaenopsis riteiwanensis is necessary for stabilizing its taxonomy position. We select the TAIF no. 115006 specimen as a lectotype because the plant on this sheet is most complete among the possible syntypes (Table 1), and its measurements fit well to the original description of Phalaenopsis riteiwanensis (Masamune, 1934).

Taxonomic Note: Although Phalaenopsis equestris was reported highly variable both vegetatively and in flower colorization (Christenson, 2001), morphology of the population in Hsiaolanyu is quite uniform (Figs. 2 & 3). All individuals we observed bear linear-oblong leaves, strongly reflexed lateral sepals, petals tinged with reddish-purple along midribs, and yellowish-purple lips. The low morphological diversity suggests a single origin of P. equestris in Hsiaolanyu.
Table 1. Syntypes of *Phalaenopsis riteiwanensis* Masam.

<table>
<thead>
<tr>
<th>Herbarium/Museum</th>
<th>Accession No.</th>
<th>Leaves</th>
<th>Racemose panicle</th>
<th>Flowers</th>
<th>Capsule</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAIF</td>
<td>115006</td>
<td>4, 8-18 cm long</td>
<td>present</td>
<td>present</td>
<td></td>
</tr>
<tr>
<td></td>
<td>115007</td>
<td>absent</td>
<td>present</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td></td>
<td>115008</td>
<td>2, ca. 6 cm long</td>
<td>present</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td>KPM</td>
<td>T00076</td>
<td>absent</td>
<td>present</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td></td>
<td>T00077</td>
<td>absent</td>
<td>present</td>
<td>present</td>
<td>absent</td>
</tr>
</tbody>
</table>

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LITERATURE CITED


小蘭嶼蝴蝶蘭屬植物註記

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摘要：隨著蝴蝶蘭屬植物之野生族群於小蘭嶼再度發現，我們重新檢視其分類地位。本文指定了小蘭嶼蝴蝶蘭 (Phalaenopsis riteiwanensis Masam.) 之選模式，並再次確認小蘭嶼蝴蝶蘭為桃紅蝴蝶蘭 (P. equestris (Schauer) Rchb.f.) 同物異名。本文亦報導桃紅蝴蝶蘭在小蘭嶼的生育地狀態，評估其保育等級。

關鍵詞：選模式、蘭科、小蘭嶼蝴蝶蘭、桃紅蝴蝶蘭、分類學、臺灣。