

Supplements to the Monilophyte in Taiwan (IV): A Newly Recorded Species *Arachniodes chinensis* (Rosenst.) Ching (Dryopteridaceae)

臺灣蕨類植物補遺(四):新紀錄種中華複葉耳蕨(鱗毛蕨科)

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ABSTRACT

This paper describes *Arachniodes chinensis* (Rosenst.) Ching as a newly recorded fern to the flora of Taiwan. It was collected from two locations: Neishuanghsi, near Mt. Wuchihshan in Taipei City and Lienhuachih in Nantou County. Its illustration and distribution are provided for information and identification.

摘要

本文新紀錄一種產於臺灣蕨類植物—中華複葉耳蕨(*Arachniodes chinensis* (Rosenst.) Ching)。此物種目前僅在臺灣發現二處生育地。本文提供其分類描述、圖片與分布資訊。

Keywords : *Arachniodes*, *Arachniodes chinensis*, Dryopteridaceae, monilophyte, new record, Taiwan

關鍵詞 : 複葉耳蕨屬、中華複葉耳蕨、鱗毛蕨科、蕨類、新紀錄、臺灣

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INTRODUCTION

The genus *Arachniodes* Blume of the family Dryopteridaceae is consisted of 50-70 species distributed in tropical, subtropical and southern temperate regions of the world (Kramer *et al.* 1990). Hsieh (2000) recorded more than 100 species of *Arachniodes* from China, but only 58 species has been accepted as the legitimate species by He (2004).

In Taiwan there are seven taxa that are reported for the genus in the second edition of Flora of Taiwan (Shieh *et al.* 1994). Based on the phylogenetic analysis of DNA sequences, *Arachniodes* is closely related to the genera *Leptorumohra* and *Lithostegia*; they form a monophyletic group (Li and Lu 2006). During our botanical exploration in 2001, 2008 and 2009, we found *Arachniodes chinensis* (Rosenst.) Ching as a newly recorded fern to Taiwan. It was collected at two localities: Neishuanghsi, near Mt.

Wuchihshan in Taipei City and Lienhuachih in Nantou County. This paper provides its taxonomic description, distribution information, line drawing, and habit photographs for the identification.

TAXONOMIC TREATMENT

Arachniodes chinensis (Rosenst.) Ching, Acta Bot. Sin 10(3): 257. 1962; K.Iwats., Fl. Jap. (Iwatsuki *et al.*, eds.) I: 143. 1995; Y.T.Hsieh, Fl. Reipubl. Popularis Sin. 5(1): 57, pl. 8, f. 1-3. 2000; Wicky Lee *et al.*, Fl. Hong Kong. Pteridophyta 313. 2003; H.He, Amer. Fern J. 94: 172. 2004. **Type:** China, Kuy-tcheu (Guizhou), Gan-chuen. *J. Cavalerie s.n.* 1912. (Isotype: BM*)

中華複葉耳蕨 (Fig. 1)

Polystichum amabile (Blume) J.Sm. var.
chinense Rosenst., Repert. Spec. Nov.
Regni Veg. 13: 130. 1914, as “*chinensis*”
in protologue.

Polystichopsis chinensis (Rosenst.) Holttum,
Revised Fl. Malaya 2: 486. 1954.
Rumohra chinensis Ching, Sinensia 5(1-2):
46, pl. 3. 1934.

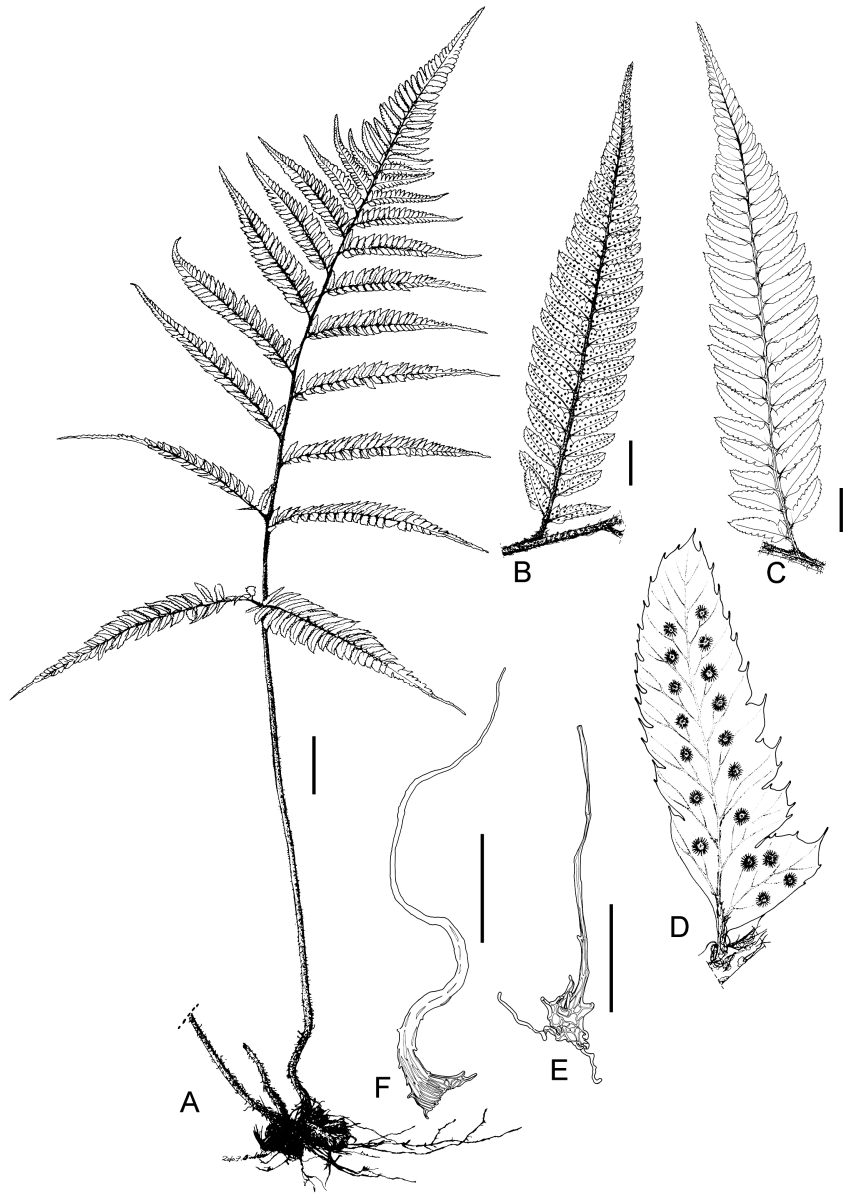


Fig. 1. *Arachniodes chinensis* (Rosenst.) Ching: A, habit; B, adaxial views of fertile pinnae; C, adaxial views of fertile pinnae; D, fertile pinnule; E, scale on abaxial surface of rachis; F, scale on stipe base (scale bars in A= 5 cm, B=2 cm, C= 2 cm, D= 1 cm, E= 0.5 mm & F= 1 mm).

Evergreen fern with short, creeping rhizome. Fronds 1-3 cm distant from each other, each 35-85 cm long. Stipes 12-55 cm long, green in color, almost covered with brownish to dark brownish scales, most of the scales appressed or bend toward adaxial side, linear to hair-like, entire but spinose at plate-like base, dark brown, 2-7 mm long and less than 0.1 to ca. 0.1 mm broad at base of stipe, decreasing in size upwards. Lamina ovate or narrowly deltate, usually bipinnate but basal pinna reaching to tripinnatifid, 20-55 cm long, 15-35 cm broad; the 6th or 7th pinnae distinctly shorter than the basal ones, apex pinnatifid; 1-3 pairs of basal pinna subopposite; scales on rachis dense, similar to those on stipes but smaller. Pinna linear; apex pointing outward, the biggest one 10-20 cm long, 2.5-6 cm broad; costa blackish purple, grooved on the adaxial side but prominent on the abaxial side, covered with linear to hair-like scales on the abaxial surface, groove connected with that of rachis. Pinnule sessile except the basal ones, ovate to elliptic, the biggest one 10-32 mm long, 6-12 mm broad; margin sinuate with spines but entire at the abaxially basal part; apex rounded or broadly acute; base asymmetrical, glabrous on the adaxial surface, very sporadically covered with multicellular hair on the abaxial surface; basal pinnules of the basal pinnae more or less equal in size to the next one but sometimes much longer and pinnatifid; costule groove-like sunken on the adaxial side. Sori rounded, medial between margin and costule, usually in one row on each side of costule; indusia peltate, erose or sub-entire to entire. Sixty four spores per

sporangium.

Distribution: Japan (Honshu, Shikoku and Kyushu), China (Fujian, Guangdong, Guangxi, Guizhou, Jiangxi, Sichuan, Yunnan and Zhejiang), Indochina, Thailand, Malay Peninsula and Indonesia. In Taiwan *A. chinensis* was found at two localities in the central and northern regions (Fig. 2).

Habitat: In Taiwan *A. chinensis* grows at the understories of secondary forests in a semi-shady habitat. It has shortly creeping rhizome forming spreading colonies.

Specimens examined: TAIPEI CITY: Shihlin District, Neishuanghsi near Mt. Wuchihsan at the floor of the secondary forest, Aug. 22, 2009, *Chang, H.-M. 7321* (TAIE). NANTOU COUNTY: Yuchih Township, Lienhuachih, 600-700 m in elevation at the floor of the natural forest, Apr. 15, 2001, *Chang, Y.-H. 3799* (TAIF); Aug. 11, 2008, *Chang, H.-M. 6246* (TAIE).

Remarks: *A. chinensis* is a common fern in the southern China and Vietnam whereas *Arachniodes* species are common as dominant herbs at the floor of broad-leave forests in Taiwan. It is not much surprising to find *A. chinensis* in Taiwan. Its specimens were first collected from the central Taiwan in 2001 by the first author but misidentified as *A. tripinnata* (Goldm.) Sledre. The specimens were collected from the same location again in the central Taiwan in 2008 and also from the northern

Taiwan in 2009. *A. chinensis* is fairly similar in external characters to *A. aristata* (Forst.) Tindle

and *A. pseudo-aristata* (Tagawa) Ohwi. A following key is provided for the distinction.

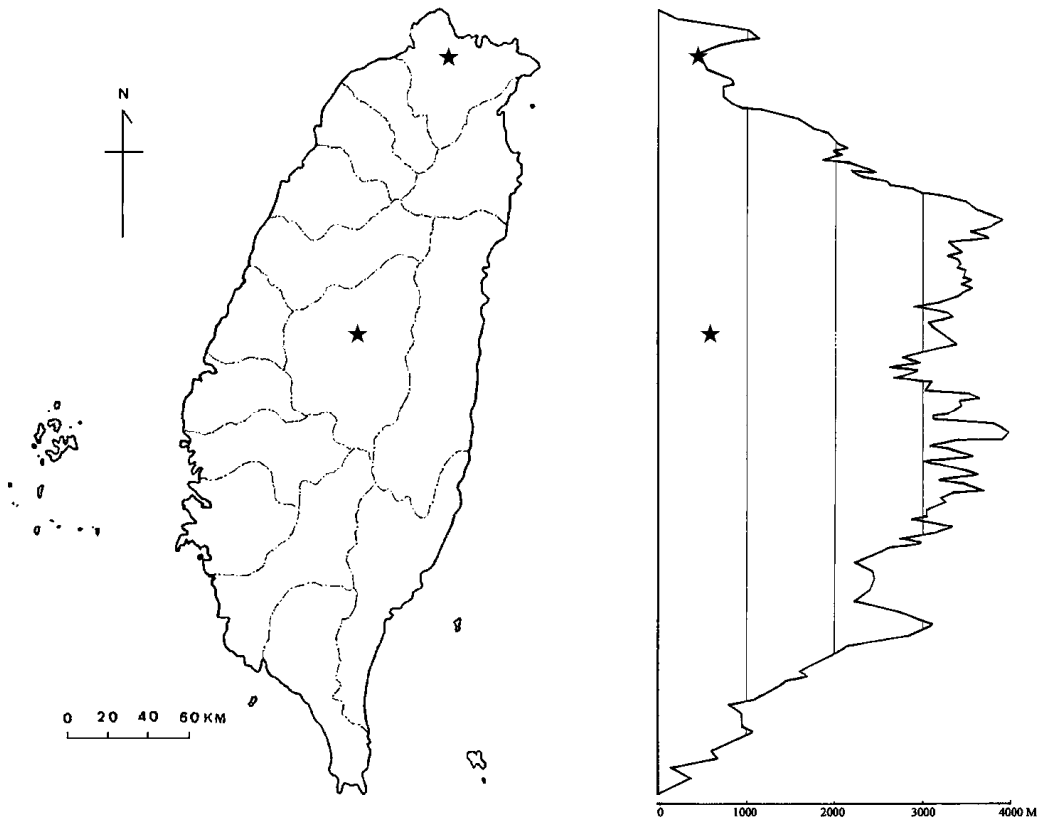


Fig. 2. Distribution of *Arachniodes chinensis* (Rosenst.) Ching in Taiwan.

A key to *A. chinensis*, *A. aristata* and *A. pseudo-aristata*

- 1. Pinnae gradually reduced towards the apex.....2
 - 2. Sori at medium site between costule and margin.....*A. chinensis*
 - 2. Sori near to costule..... *A. pseudo-aristata*
- 1. Pinnae suddenly reduced towards at the apex3
 - 3. Rhizome short.....*A. chinensis*
 - 3. Rhizome long.....*A. aristata*

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