

Based on Spore morphology *Lygodium giganteum* — not a synonym of *Lygodium yunnanense* (Lygodiaceae)

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ABSTRACT

Lygodium giganteum (Lygodiaceae), a fern species originally described from Thailand, now accepted as synonym of *Lygodium yunnanense* in recent literature. Spore morphology is useful character in species delimitation in genus *Lygodium*. Spore morphology of *Lygodium giganteum* supported it as distinct species.

Keyword: - *Lygodium giganteum*, *Lygodium yunnanense*, ornamentation, spore, synonym, Thailand, typification.

1. INTRODUCTION

Lygodium Sw. (Lygodiaceae) is represented by about 26 species in the World (Zhang & Hanks 2013). *Lygodium giganteum* Tagawa & K.Iwats. was first described by Tagawa & Iwatsuki (1967) based on specimens from Thailand. But they did not mention features of spores of this species. Lu (2006) and Zhang & Hanks (2013) treated *Lygodium giganteum* as synonym of *Lygodium yunnanense* Ching; and it is accepted in recent literature (Fraser-Jenkins et al. 2016).

Singh & Panigrahi (1987) first reported occurrence of *Lygodium giganteum* in India (Assam, Manipur, Nagaland and Mizoram) with smooth sporoderm. Wang et al. (2001) studied spore morphology of *Lygodium* from China and also reported smooth spore surface in *Lygodium yunnanense*.

Spore morphology in genus *Lygodium* is useful taxonomic character and used by Holttum (1959). Thus plants in India and China characterized by smooth spores are undoubtedly *Lygodium yunnanense*.

During searching further information on spore morphology of *Lygodium giganteum*, I found SEM photographs of spores of a specimen of *Lygodium giganteum* from Thailand (Chiang Mai: Doi Luang National Park, 600 m, Maxwell 97-619, MO) that show verrucose spores (Fig. 1). Thus, spore ornamentation suggests that *Lygodium giganteum* is independent species and not a synonym of *Lygodium yunnanense*. Further study is needed to determine exact range of *Lygodium giganteum* outside Thailand.

Ching (1959) first published the name *Lygodium yunnanense* based on his collection from Yunnan. To fix the application of this name I select lectotype from three syntypes deposited in PE.

2. TYPIIFICATION

Lygodium yunnanense Ching in Chien & Chun, Fl. Reipubl. Popularis Sin. 2: 345. 1959. Lectotype (designated here): China. Yunnan occid., Shiwe-li, on the Burmese border, on exposed grassy hillside, 1000 m, Dec1952, R.C. Ching s.n. (PE00042621; Isolectotypes PE00042622, PE00042620 images!).

Additional specimens examined: India. Manipur: Shugnu, 12 Sep 1956, D.B. Deb 2666 (CAL), Naga Hills, S.K. Mukherjee 3372 (CAL); s. coll. 1699 (CAL); Central District, 17 Feb 1978, R.D. Dixit 58967 (CAL-7648, CAL-1649); Piphima, 4000 ft, Feb 1906, A. Meebold 10889 (CAL); Assam: Lushai Hills, Dolte, 26 Nov 1902, J.E. Leslie 165 (CAL). China. Yunnan: "Yunnan Expedition", 1875, D.J. Anderson s.n. (CAL).

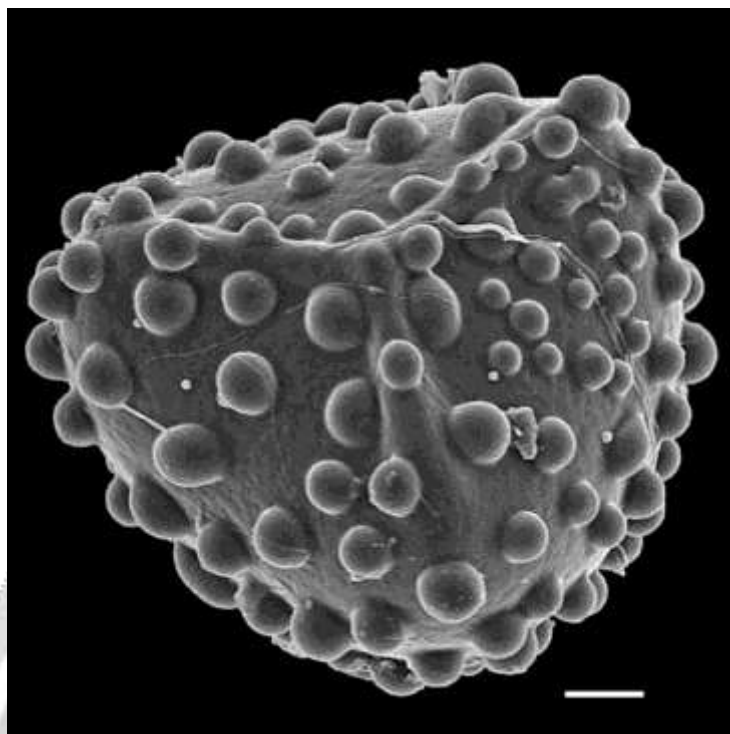


Fig -1: Scanning Electron micrograph of spores of *Lygodium giganteum* (Thailand: Chiang Mai: Doi Luang National Park, 600 m, Maxwell 97-619, MO). Scale bar = 10 μ . © 2016 by Robbin Moran, reproduced with permission.

3. ACKNOWLEDGEMENTS

I sincerely thank the Director, Botanical Survey of India, Howrah for providing opportunity to consult the CAL specimens; and Dr. Robbin C. Moran, Nathaniel Lord Britton Curator of Botany, The New York Botanical Garden for providing permission for publication of the image.

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