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Herpothallon weii, a new lichen from China

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Abstract — A new species, *Herpothallon weii*, is described from China. This species is characterized by a byssoid whitish green thallus tightly attached to the substratum, pinkish pseudisidia, and the presence of psoromic acid and unknown substances.

Key words — biodiversity, *Arthoniaceae, Cryptothecia*, taxonomy

Introduction

Herpothallon (*Arthoniaceae, Arthoniales, Arthoniomycetes, Ascomycota*) was established by Tobler in 1937 and reinstated by Aptroot et al. (2009). The lichen genus is characterized by a crustose thallus without upper cortex, a byssoid prothallus, and a trentepohlioid photobiont. *Herpothallon* species often have pseudisidia or pseudisidioid structures, calcium oxalate crystals, pigments, and various lichen substances, but usually lack ascocarps. *Cryptothecia* species, which are morphologically similar to *Herpothallon* species, have an I+ blue medulla. Of *Herpothallon*, only six species (*H. biacidum, H. flavominutum, H. granulosum, H. isidiatum, H. philippinum,* and *H. rubroechinatum*) have an I+ blue medulla (Aptroot et al. 2009, Frisch et al. 2010a,b, Jagadeesh & Sinha 2009, Jagadeesh et al. 2009).

Herpothallon includes 35 species worldwide (Aptroot et al. 2009, Frisch et al. 2010a,b, Jagadeesh & Sinha 2009, Jagadeesh et al. 2009). In China, three *Herpothallon* species, *H. echinatum, H. granulare,* and *H. philippinum* have been reported (Aptroot et al. 2009). During our study of the lichen flora of Mt. Leigong in Guizhou province, China, a species of *Herpothallon* new to science was found.

Materials & methods

The specimens studied were collected from Guizhou, China, and are preserved in SDNU (Lichen Section of Botanical Herbarium, Shandong Normal University).

The morphological and anatomical characters of the specimens were examined using a stereo microscope (COIC XTL7045B2) and a polarizing microscope (OLYMPUS CX41). Lichen substances in the specimen cited were identified using the standardized thin layer chromatography techniques (TLC) with C system (Orange et al. 2010). Photos of the thalli were taken using a Olympus SZX12 with DP72.

Taxonomic description

Herpothallon weii Y.L. Cheng & H.Y. Wang, **sp. nov.** Figs 1–2

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Differs from *Herpothallon albidum* by pinkish pseudisidia and lack of pigmentosin D.

Type: China. Guizhou province, Mt. Leigong, on bark, alt. 1000 m, 2 Nov. 2009, Q. Tian 20103366. (**Holotype** in SDNU).

Etymology: In honour of the 80th birthday (6 Nov. 2011) of our dear teacher, Prof. Jiang-Chun Wei, who as the 'father of lichenology in China' has made a preeminent contribution to the development of lichenology and the education of Chinese talent in this field.

Thallus corticolous, crustose, tightly attached, ≤ 1.5 cm in diam., without upper cortex, distinctly byssoid, whitish green, with irregular calcium oxalate crystals. Prothallus distinct, ≤ 0.5 mm wide, white, byssoid, composed of radiating hyphae. Pseudisidia (also called pseudisidioid structure) numerous, pinkish, irregularly cushion-shaped, fluffy-felty with erect hyphae, ≤ 1 × 0.5 mm. Photobiont cells single or a few cells aggregated. Apothecia and pycnidia not seen.

Chemistry — Thallus K+ yellow, C± yellow, KC+ yellow, P+ yellow, I–, UV–. Psoromic acid and unknown substances present.

Distribution and substrate — *Herpothallon weii* is known only from the type locality; on bark.

Additional specimen examined — **China. Guizhou province**, Mt. Leigong, on bark, alt. 1000 m, 2 Nov. 2009, Q. Tian, 20103174 (SDNU).

Comments — Other *Herpothallon* species with pseudisidia and psoromic acid include *H. australasicum, H. echinatum, H. flavominutum, H. globosum*, *H. rubroechinatum,* and *H. albidum*. In contrast to *H. weii, H. australasicum* has a red thallus with concolorous compact pseudisidia; *H. echinatum* has soredioid fragments and concolourous pseudisidia and thallus; *H. flavominutum* has a greyish yellow thallus, granular pseudisidia, and lichexanthone, norlichexanthone, and psoromic acid; *H. globosum* has a red thallus, globose pseudisidia, and chiodectonic acid (red pigment); and *H. rubroechinatum* has an orange to red thallus, pseudisidia with red hairs, and common pycnidia. The more closely related *H. albidum* possesses very similar pseudisidia (also called pseudisidioid structures) but has white, rather than pinkish, pseudisidia and possesses pigmentosin D.

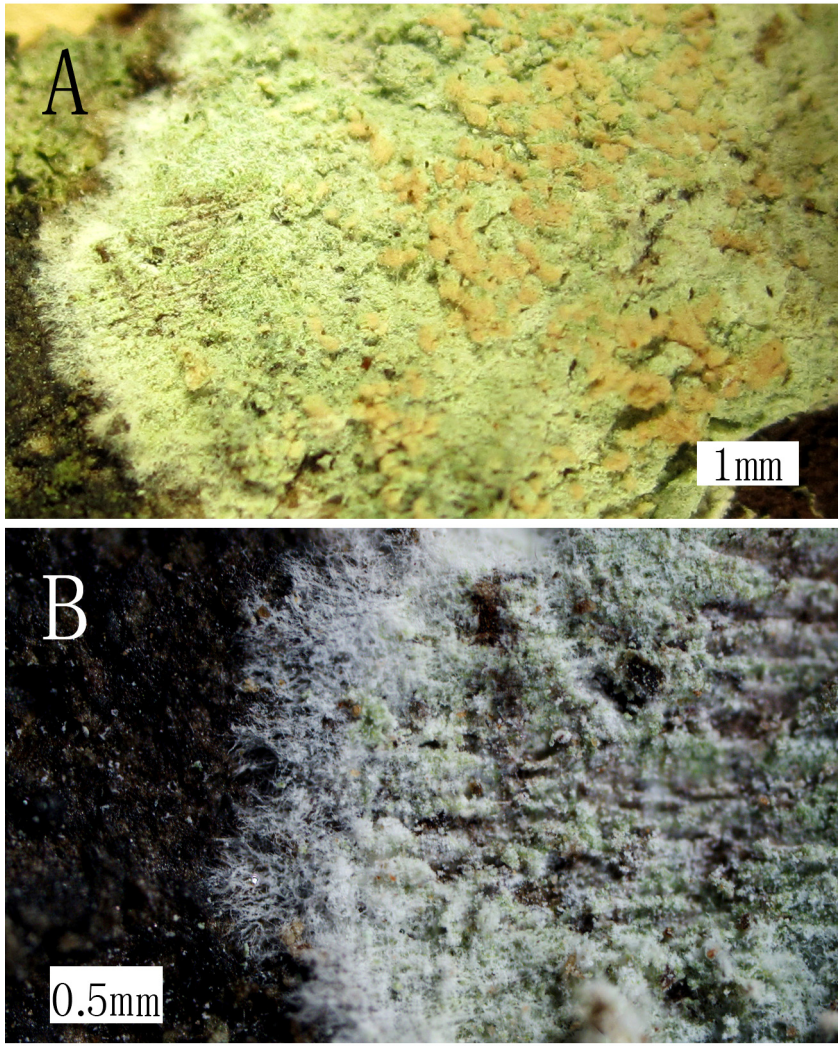

Fig. 1. *Herpothallon weii* (holotype). A. Thallus; B. Prothallus.

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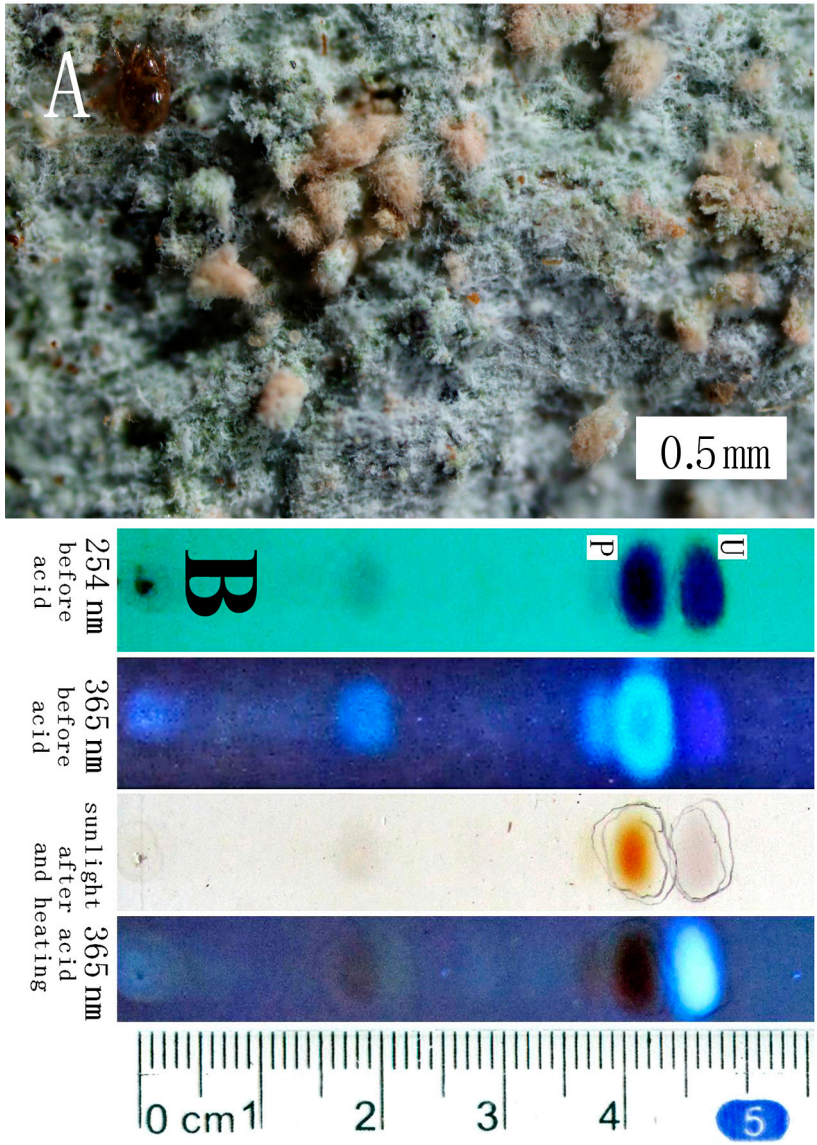

Fig. 2. *Herpothallon weii* (holotype).
A. Pseudisidia; B. TLC of *H. weii* (U: unknown substance; P: psoromic acid).

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