



NOTE

Saxicolous species of the lichenized fungal genus *Porina* (Ascomycota; Porinaceae) new records and a key to species in Thailand

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ABSTRACT: Species of the genus *Porina* can grow on various substrates, including siliceous rocks. This study focus on saxicolous species, including two new records for Thailand; *P. leptalea* and *P. nucula*. Ten species of *Porina* were found in Thailand and a key to the identification of the species is provided.

KEY WORDS: Asia, *Porina bellendenica*, *Porina guentheri*, *Porina leptalea*, *Porina mastoidea*, *Porina nucula*, Saxicolous.

INTRODUCTION

The genus *Porina* belongs to the family Porinaceae occurring worldwide, but with a center of diversity in tropical rainforest regions. Species of the genus can grow on different substrates such as rock, bark and leaves (Lücking, 1996; 2004; 2008; Lücking and Malcolm, 1997; Lücking and Vezda, 1998; McCarthy, 1993, 1994, 1999, 2003, 2013; McCarthy and Kantavilas, 1993; McCarthy and Malcolm, 1997; Vongshewarat *et al.*, 1999; Santesson, 1952). Saxicolous species of *Porina* are known from numerous localities in both hemispheres (McCarthy, 1993, 1999; Vongshewarat *et al.*, 1999). In Thailand eight saxicolous *Porina* species were reported (Aptroot *et al.*, 2007; Buaruang *et al.*, 2017; Boonpragob *et al.*, 1998; McCarthy 1999; Wolseley *et al.*, 2002). In our study we found two additional species not previously recorded from Thailand and a key to the identification of saxicolous species occurring in Thailand is provided.

MATERIALS AND METHODS

This study is mainly based on new collections made by the first author deposited in MSUT and F. Sections of thalli and perithecia were cut using a razor blade and examined in water, a solution of KOH, and Lugol's solution using a ZEISS AxioScope 2 plus compound microscope. Measurements of algae, thalli hyphae, paraphyses, involucrellum, exciple and ascospores were made at by 400 and by 1000 magnifications. Chromatography (HPTLC) was performed with the standard solvent systems A and C (Culberson 1972; Arup *et al.*, 1993).

RESULTS AND DISCUSSION

Two species of *Porina* are new records for Thailand; *P. leptalea* and *P. nucula*. *Porina leptalea* is

distinguished by having 3-septate ascospores and dull orange-brown to red brown perithecia. *Porina nucula* is rarely found on rocks and can be recognized by its 9-septate, 65–70 µm long ascospores. Saxicolous species occurring in Thailand can be identified using the following key.

Key to the species of genus *Porina* in Thailand

- 1a. Ascospores muriform, narrowly ellipsoid to fusiform, 45 by 80 µm long 2. *P. eminentior*
- 1b. Ascospores transversely septate 2
- 2a. Ascospores 3-septate 3
- 2b. Ascospores 5–15-septate 4
- 3a. Perithecia hemispherical to subglobose, 0.15–0.25 mm diam., dull orange-brown to red brown 5. *P. leptalea*
- 3b. Perithecia 0.25–0.35 mm diam., greenish black 8. *P. siamensis*
- 4a. Ascospores 5–9-septate 5
- 4b. Ascospores 15-septate, 32–56 µm long, perithecia in verrucae 1. *P. bellendenica*
- 5a. Ascospores 5–7-septate, 22–70 µm long 6
- 5b. Ascospores 9-septate, 32–83 by 10–18 µm, perithecia immersed in hemispherical to subglobose 7. *P. nucula*
- 6a. Ascospores 6.5–20 µm wide 7
- 6b. Ascospores 3.5–7.5 µm wide 8
- 7a. Ascospores 50–70 µm long with thick gelatinous sheath 6. *P. mastoidea*
- 7b. Ascospores 28–56 µm long without gelatinous sheath 10. *P. wolseleyae*
- 8a. Perithecia 0.4–0.8 mm diam, verrucae convex to hemispherical, thallus rimose to areolate with isidoid structures 9. *P. tetracerae*
- 8b. Perithecia 0.2–0.4 mm diam., hemispherical to subglobose, thallus without isidia 9
- 9a. Perithecia semi-immersed, concolorous with or paler than the perithecial apex 4. *P. kansriiae*
- 9b. Perithecia superficial, black, apex round, exposed perithecia 3. *P. guentheri*

TAXONOMIC TREATMENT

1. *Porina bellendenica* Müll.Arg., Hedwigia 30: 56 (1891) Figs. 1A–B

A description of this species is found in Wolseley *et al.*, (2002).