Bull. Natn. Sci. Mus., Tokyo, Ser. B, **26**(4), pp. 135–138, December 22, 2000

A New Species of *Hypotrachyna* (Lichenized Ascomycetes, Parmeliaceae) from Thailand

Kwang Hee Moon[1], Syo Kurokawa[2] and Hiroyuki Kashiwadani[3]

[1] Natural Science Institute, Sookmyung Women's University,
Seoul 140–742, Korea
E-mail: moonkh@kahaku.go.jp
[2] Botanic Gardens of Toyama, Kamikutsuwada 42,
Fuchu-cho, Nei-gun, Toyama 939–2173, Japan
E-mail: kurok@bgtym.org
[3] Department of Botany, National Science Museum,
4–1–1 Amakubo, Tsukuba 305–0005, Japan
E-mail: hkashiwa@kahaku.go.jp

Abstract A new species, *Hypotrachyna granulans* K. H. Moon, Kurok. & Kashiw. is described from Province Chiang Mai, Thailand. It is distinct in having the marginal or submarginal soralia composed of granular soredia, a wide erhizinate zone on the lower surface, and in producing atranorin and norstictic acid.

Key words: *Hypotrachyna granulans*, new species, lichen, Thailand

Species of the genus *Hypotrachyna* in Thailand has been mostly reported in floristic and ecological reports (Wolseley & Aguirre-Hudson, 1995; Aguirre-Hudson & Wolseley, 1994; Moon *et al.*, 2000). Recently, Pooprang *et al.* (1999) added two new species in the genus from Thailand. Twenty-one species of *Hypotrachyna* are known from Thailand at present.

Among the large collection of the genus *Hypotrachyna* made through the field survey of lichens under the project of Collection Building and Natural History Studies in Asia and the Pacific Rim, we found a new species of the genus. In the present paper, a new species, *H. granulans*, is described.

Hypotrachyna granulans K. H. Moon, Kurok. & Kashiw., sp. nov. (Fig. 1)

Thallus ut in *Hypotrachyna stictifera*, sed soraliis marginalibus vel submarginalibus differt. Thallus corticola, laxe adnatus, lobis subirregularibus, 2–4 mm latis, superne nitidis, emaculatis, sorediatis, soraliis plerumque marginalibus, granularis, inferne modice rhizinosis, rhizinis modice dichotomeque divisis. Apothecia substipitata, usque 1–3 mm diametro, amphithecio laevis, sporis 14–16×10 μm. Thallus atranoricum et acidum norsticticum continens.

Type collection. Thailand. Prov. Chiang Mai. Chom Thong District: Doi Inthanon, on bark of *Pinus* sp., elevation about 2450 m, 4 March 1998, K. H. Moon

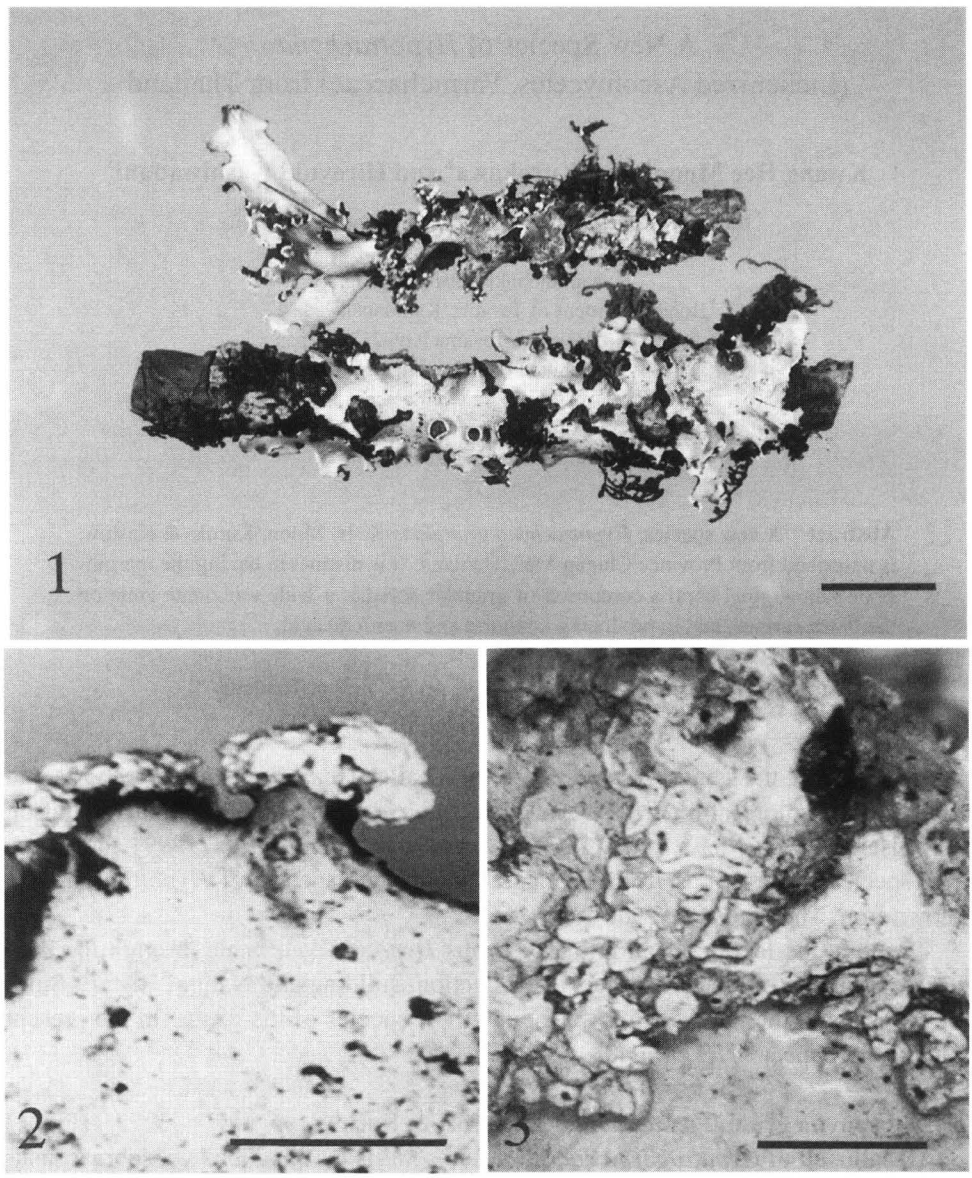

Fig. 1. Habit of *Hypotrachyna granulans* K. H. Moon, Kurok. & Kashiw. Scale bar=10 mm.
Fig. 2. Capitate soralia of *Hypotrachyna granulans*. Scale bar=1 mm.
Fig. 3. Pustules of *Hypotrachyna thryptica* (Hale) Hale. Scale bar=1 mm.

(2332) & H. Kashiwadani—holotype in **TNS**; isotype in Ramkhamhaeng University, Bangkok, Thailand (**RAMK**).

Thallus foliose, corticolous, loosely adnate, grayish green; lobes subirregular, tips rotund, 2–4 mm wide, eciliate; upper surface plane and smooth, shiny, emaculate, sorediate; soralia marginal to submarginal, often capitate, soredia granular; medulla white; lower surface black near the center, reddish brown at lobe margins, sparsely to moderately rhizinate, but erhizinate at a wide zone near the tip, the rhizines dichotomously branched, less than 1.0 mm long. Thallus 136–140 μm thick; upper cortex 8–10 μm thick, algal layer about 30 μm thick, medulla 120–130 μm thick, lower cortex 8–14 μm thick. Apothecia, substipitate, 1–3 mm diameter; disc concave, reddish brown; exciple smooth; epithecium 8–10 μm, hymenium about 60 μm high; asci 24×16 μm, 8 spored, spores colorless, simple, ellipsoide, 14–16×10 μm.

Chemistry. Atranorin and norstictic acid.

Hypotrachyna granulans (Fig. 2) is characterized by the shiny, smooth and emaculate upper surface of lobes, the marginal to submarginal soralia with granular soredia, the blackish lower surface with a wide erhizinate and brownish marginal zone and the presence of atranorin and norstictic acid as major substances.

The present new species closely resembles *Hypotrachyna stictifera* Kurok. & K. H. Moon described recently from Peru (Kurokawa & Moon, 2000). These two species have similar thalli with soredia and produce atranorin and norstictic acid in common. However, these two species can be distinguished by following differences. Soralia are usually formed at the tips of short laciniae and seem to be marginal or submarginal in *H. granulans*, while they are formed on upper surface even when they are formed near the lobe margin in *H. stictifera*. Soralia are composed of granular soredia in *H. granulans* but soredia are farinose in *H. stictifera*. In addition, so far as tested with HPLC, *H. granulans* lacks stictic acid, which is a main substance in *H. stictifera*. *H. granulans* is known from Thailand at present, while *H. stictifera* is known from Peru in South America.

The present new species may be confused with *Hypotrachyna thryptica* (Hale) Hale, an Indian species, and *Hypotrachyna kingii* (Hale) Hale, distributed in southeastern Asia and pacific regions, because they produce atranorin and norstictic acid. However, the latter two species are pustulate as shown in Fig. 3 and the upper cortex is fragile and is easily flaked off in part. In addition, *H. granulans* differs from the latter species by the absence of stictic or salazinic acids.

At present this new species is known only from Doi (Mt.) Inthanon in Thailand, where it grows on bark of *Pinus* sp. associated with *H. exsecta* (Taylor) Hale, *H. adducta* (Nyl.) Hale and *Myelochroa aurulenta* (Tuck.) Hale.

Additional specimen examined. Thailand. Prov. Chiang Mai. Chom Thong District: Doi Inthanon, on bark of *Pinus* sp., elevation about 2450 m, 4 March 1998, K. H. Moon (2331) & H. Kashiwadani.

Acknowledgements

We wish to express our sincere thanks to Dr. K. Boonpragob, Ramkhamhaeng University, Bangkok, Mr. S. Wattana who works at the Botanical garden at Chang-mai, Miss T. Pooprang, Mr. K. Wongcheewarat, Ms. R. Noycharoen, and Ms. W. Khamtim, Ramkhamhaeng University, Bangkok, for their generous help during our field study in Chiang Mai. We would like to thank Prof. Dr. Takahashi, the college of Pharmacy, Meiji University, Japan, who kindly made the chemical analysis. We are also grateful to Dr. P. De Priest, Smithsonian Institution, for the loan of type specimen of *Parmelia thryptica*.

Literature Cited

Aguirre-Hudson, B. and P. A. Wolseley. 1994. Bibliography of Southeast Asian lichenology, 1810–1992. *J. Hattori Bot. Lab.* **76**: 313–350.

Hale, M. E. 1972. Four new species of *Parmelia* (Lichens) from India and Philippines. *Bryologist* **75**: 97–101.

Kurokawa, S. and K. H. Moon. 2000. New species and new records in *Hypotrachyna* (Parmeliaceae). *Bull. Bot. Gard. Toyama* **5**: 9–24.

Moon, K. H., S. Kurokawa and H. Kashiwadani. 2000. A list of Thailand species of *Parmelia* (sens. lat.) preserved in the National Science Museum. *National Science Museum Monographs* **18**: 97–106.

Pooprang, T., K. Boonpragob and J. A. Elix. 1999. New species and new records in the lichen family Parmeliaceae (Ascomycetes) from Thailand. *Mycotaxon* **71**: 111–127.

Wolseley, P. A. and B. Aguirre-Hudson. 1995. Key to lichen genera in Thailand with special reference to epiphytic taxa, part 1: Macrolichens. *Nat. Hist. Bull. Siam Soc.* **43**: 303–335.