

Kwang Hee MOON<sup>a</sup> and Hiroyuki KASHIWADANI<sup>b</sup>: ***Lobothallia alphoplaca* (Wahlenb.) Hafellner (*Megasporaceae*) Found in Korea**

ウロコクボミゴケは韓国にも産する (文 光喜<sup>a</sup>, 柏谷 博之<sup>b</sup>)

**Summary:** *Lobothallia alphoplaca* (Wahlenb.) Hafellner was first reported from Korea, where it grew on lava distributed in rather restricted coastal area at NE side of Cheju (Jeju) Island. It has been reported from China and Japan in Asia.

As part of study on the lichen flora of Korea, we collected lichens in Cheju (Jeju) Island in 2001 and 2008. Among lichens collected on lava, we collected two specimens of *Lobothallia*, which comprises only four species. Detailed studies of them revealed that the specimens should be identified with *L. alphoplaca* (Wahlenb.) Hafellner as they have thick and tightly adnate lobes, green photobiont of *Trebouxia*, apothecia of lecanorine type, colorless simple spores, and produce norstictic and stictic acids as major chemical substances. Although it is sporadically distributed in the Northern Hemisphere (Hafellner 1991), it has been reported from only one locality in Japan (Asahina 1958 as *Lecanora*) and from five provinces of China in Asia, Magnusson 1940, Wei 1991, Zahlbruckner 1930 as *Aspicilia*. This is a new record for the species in Korea.

The description of the species based on material from Korea is as follows. Thallus placodioid, pale grayish brown, tightly attached to the substratum, forming a rosette up to 4 cm broad; lobes thick, convex, radiating at periphery, more or less areolate towards the center, 0.3–1 mm wide; isidia or soredia absent; medulla white; lower surface pale, lacking rhizines. Thallus 120–150 µm thick; upper cortex paraplectenchymatous, composed of 3–5 layers of thin-walled hyphae (5–7 µm in diameter), 20–40 µm thick; gonidial layer

continuous, irregularly thickened, 20–100 µm thick, gonidia 10–15 µm in diameter; medulla composed of more or less elongated and coalescent hyphae, 100–140 µm thick; lower cortex composed of perpendicularly or irregularly arranged hyphae, some of which penetrating into the substratum for up to 600 µm (Fig. 1). Apothecia lecanorine, superficial, constricted at the base, to 1.3 mm in diam.; disc reddish brown, epruinose; margin entire; paraphyses simple or branched, moniliform above, 75–80 µm high, hypothecium colorless, thin, 10–13 µm thick; spores simple, colorless, 10–12 × 8–10 µm. Chemistry: norstictic and stictic acids as major chemical substances.

The diagnostic characters of this species are the thick placodioid thallus, the absence of soredia or isidia, the white medulla, the paraphyses ending with 4–5 moniliform cells, the colorless simple spores, and the presence of norstictic and stictic acids. As described above, the morphological and chemical characters of the Korean material coincide very well with those found in exsiccate specimens of *Lobothallia alphoplaca* kept in TNS. This species might be confused with other Korean species of *Aspicilia* in having similar paraphyses of moniliform cells and colorless simple spores. However, it is easily distinguished from other related species by the well developed placodioid thallus and superficial apothecia, and by the presence of norstictic and stictic acids.

In Korea, it has been known on lava along the coast at the very limited area on the NNE site of the island, where it grows with *Caloplaca flavocitrina*, *Dirinaria applanata*, *Endocarpon neopalidum*, *Lecanora muralis*,

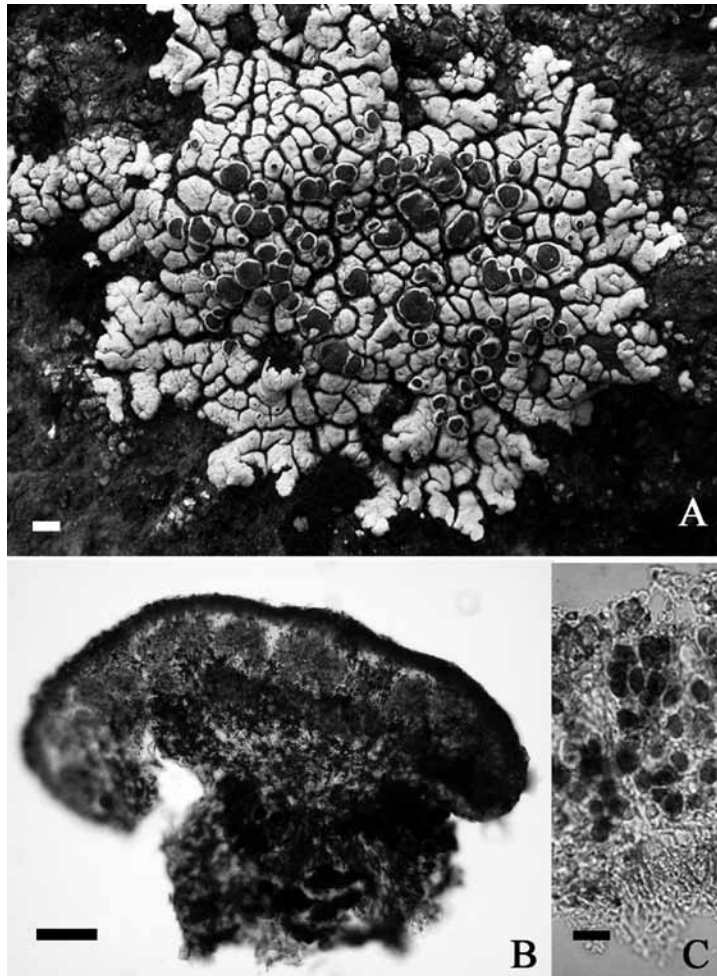


Fig. 1. *Lobothallia alphoplaca*. A. Habit. B. Cross section of a thallus, showing hyphae of a lower cortex spreading downward to form a thick attachment strands. C. Cross section of a thallus, showing hyphae of medulla and lower. Bars, A = 1 mm, B = 100  $\mu$ m, C = 10  $\mu$ m.

*Pyxine endochrysin*, *Ramalina yasudae*,  
*Xanthoparmelia coreana*, etc.

Exsiccata examined. Krypt. Exs. Mus. Palat. Vind. 2857 (TNS, as *Lecanora alphoplaca*). Y. Asahina, Lich. Jap. Exs. 268 (TNS, as *Lecanora alphoplaca*).

Specimens examined. Korea. Prov. Cheju (Jeju) : En route from Sehwa to Shihung-ri, Hado-ri, Pukchejugin, Cheju Island, on rocks (lava) along the coast, elevation 1–2 m, June 1, 2001, H. Kashiwadani & K.H. Moon (No. 6045 TNS) around Gimnyong seaside, Donggimnyong-ri, Gujwa-up, Jeju Island, on rocks (lava) along the coast, elevation 2 m, October 1, 2001, K.H. Moon 10604 (NIBR).

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## References

- Asahina Y., 1958. Lichenologische Notizen (137-139). J. Jpn. Bot. **33**: 65-69.
- Hafellner J., 1991. Die Gattung *Aspicilia*, ihre Ableitungen nebst Bemerkungen über cryptolecanorine Ascocarpororganisation bei anderen Genera der *Lecanorales* (Ascomycetes lichenisati). Acta Botánica Malacitana **16**: 133-140.
- Magnusson A. H. 1940. Lichens from central Asia I. In: Hedin, S. Reports Scientific Exped. North-west provinces of China (the Sino-Swedish expedition). Botany, 1. pp. 11-168. Aktiebolaget, Stockholm.
- Wei J.C. 1991. An enumeration of Lichens in China. 278pp. International Academic Publishers, Beijing.
- Zahlbruckner A. 1930. Lichenes (Übersicht über sämtliche bisher aus China bekannten Flechten). In: Handel-Mazetti H., Symbolae Sinicae. Botanische Ergebnisse der Expedition der Akademie der Wissenschaften in Wien nach Südwest-China 1914-1918. III. 254pp. J. Springer.

韓国濟州島の海岸溶岩上で採集したクボミゴケ属標本を調べたところ、地衣体は中央部で痂状、周辺部で裂片に別れ仮根、粉芽や裂芽を欠く。地衣体は淡灰褐色で厚く表面は中凸で厚さ120-150 μm、皮層は偽柔組織で厚さ20-40 μm、共生藻は緑藻、髓層は白色、下皮層はやや垂直に走る菌糸が密着した構造をなし、地衣体下部

中央部では下方の基物まで伸びて付着器官様となっている。子器はレカノラ型、盤は茶褐色、縁は厚く連続する。側糸は単一または分枝し上部では4-5個の数珠状の細胞がー列に並ぶ、胞子は無色、単室、10-12 × 8-10 μm。地衣成分としてノルスチクチン酸とスチクチン酸を含む。これらの特徴と国立科学博物館標本庫に保管されているエキシカータ標本と比較検討した結果、クボミゴケ *Lobothallia alphoplaca* と判明したので報告する。韓国新産種である。これまでの現地調査では濟州島の北東海岸の非常に狭い範囲に生育しているだけであり、これまでに行われた韓国の主要山岳における調査でも発見されていない。東アジアでは、中国の数力所から、また日本では朝比奈泰彦博士が1957年に本州中部の阿賀野川流域で発見された記録が唯一のものである。

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## Hiroyoshi OHASHI<sup>a</sup> and Kazuaki OHASHI<sup>b</sup>: New Combinations of *Selliguea* (*Polyodiaceae*) in Japan, Korea and Taiwan

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Summary: New combinations are made on the East Asian species of *Crypsinus* to *Selliguea* in accordance with a recent treatment of the *Selliguea* in Flora Malesiana. *Selliguea echinospora*, *S. engleri*, *S. falcato-pinnata*, *S. hastata* and its var. *longisquamata*, *S. quasidivariata*, *S. rhynchophylla*, *S. taiwanensis*, *S. veitchii*, *S. yakuinsularis* and *S. yakushimensis* are proposed.

*Crypsinus* has been accepted in East Asia as a distinct genus of *Polyodiaceae* for

which recent main references are Nakaike (1975), Shieh et al. (1994), Iwatsuki (1995), Nakaike and Yamamoto (1997), Boufford et al. (2003), Cheng (2005), Sun (2007) and Iwatsuki and Yonekura (2008). The genus was, however, pointed out by Airy Shaw (1966) as "possibly a composite genus, part to be transferred to *Selliguea* Bory". These two genera were united by Hovenkamp (1998) and adopted *Selliguea* Bory (*Dictionnaire classique*