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韓国済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，髄層は白色，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一列に並ぶ，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済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，中国の数カ所から，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．

([a]Division of Non-Vascular Plants,
National Institute of Biological Resources,
Environmental Research Complex,
Gyoungser-dong, Ser-gu
Incheon, 404-170 KOREA;
[a]韓国国立生物資源館生物資源研究部
E-mail: hirohime@korea.kr
[b]Department of Botany,
National Museum of Nature and Science,
4-1-1, Amakubo, Tsukuba, 305-0005 JAPAN
[b]国立科学博物館植物研究部)

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Hiroyoshi OHASHI[a] and Kazuaki OHASHI[b]: **New Combinations of *Selliguea* (*Polypodiaceae*) in Japan, Korea and Taiwan**

日本•韓国•台湾のウラボシ科ミツデウラボシ属の新学名（大橋広好[a], 大橋一晶[b]）

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. falcatopinnata*, *S. hastata* and its var. *longisquamata*, *S. quasidivaricata*, *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 *Polypodiaceae* 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*

d'histoire naturelle: 17, pl. 41, 1825) including *Crypsinus* C. Presl (*Epimeliae botanicae*: 145, 1851). His concept of *Selliguea* in the broad circumscription is considered to be acceptable for East Asian species, but necessary new combinations made in *Selliguea* were only for the species found in Malesia and the Pacific.

In our studies on the genera of East Asian vascular plants, we accept *Selliguea* in the broad sense. *Crypsinus* species of Japan, Korea and Taiwan were treated by Tagawa (1952, 1954), while those of China have been known in *Phymatopteris* (Lu 2000) and more recently in *Crypsinus* (Cheng 2005). Treatment of these genera by Hovenkamp in Flora of China project is currently in progress (pers. com.). In this paper we recognize the following species of *Selliguea* in Japan, Korea and Taiwan, and new combinations are proposed with citation of the original name and synonyms exclusively *Crypsinus* and *Phymatopteris* for each species. Previous references for the names in *Polypodium*, *Phymatodes*, or *Phymatopsis* are fully prepared by Nakaike and Yamamoto (1997) in Japan and by Lu (2000) in China.

Selliguea echinospora (Tagawa) H. Ohashi & K. Ohashi, comb. nov.

Phymatodes echinospora Tagawa in Acta Phytotax. Geobot. **3**: 95 (1934) [**Type**. Taiwan. Mt. Tugitaka, alt. 2100 m. anno 1925. Takeo Itô s.n. (KYO–holo)].

Crypsinus echinosporus (Tagawa) Tagawa in Acta Phytotax. Geobot. **14**: 193 (1952); W. C. Shieh & al. in Fl. Taiwan ed. 2, **1**: 478 (1994); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003).

Phymatopteris echinospora (Tagawa) Pichi-Serm. in Webbia **28**: 462 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 188 (2000).

Distr.: Taiwan.

Selliguea engleri (Luerss.) H. Ohashi & K. Ohashi, comb. nov.

Polypodium engleri Luerss. in Bot. Jahrb. Syst. **4**: 361 (1833) [**Type**. Japan. Kiusiu, Kagoshima Pref.: Kawo-nabe. Döderlein (B): photo Nakaike 1992; fig. 642a].

Crypsinus engleri (Luerss.) Copel., Gen. Filic. 206 (1947); Nakaike, Enum. Pterid. Jap. Filicales: 326 (1975); Nakaike in Kurata & Nakaike, Illust. Pterid. Jap. **2**: 296 (1981); W. C. Shieh & al., Fl. Taiwan ed. 2, **1**: 478 (1994); Nakaike, New Fl. Jap. Pterid. Rev. Enlarg.: 642 (1992); K. Iwats., Fl. Jap. **1**: 249 (1995); W. T. Lee, Lineam. Fl. Kor. **1**: 101 (1996); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003); B. Y. Sun, Gen. Vasc. Pl. Korea: 106 (2007); K. Iwats. & Yonekura, New Makino Illust. Fl. Jap.: 1168 (2008).

Phymatopteris engleri (Luerss.) Pichi-Serm. in Webbia **28**: 462 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 172 (2000).

Distr.: China, Japan (Honshu: Izu isls and westwards, Shikoku, Kyushu), Korea (Cheju isl.), and Taiwan.

Selliguea falcatopinnata (Hayata) H. Ohashi & K. Ohashi, comb. nov.

Polypodium falcatopinnata Hayata, Icon. Pl. Formos. **4**: 247 (1914) [**Type**. Taiwan. Lanyu Isl. (as Kôtôsho). July 1912. T. Kawakami & S. Sasaki 5 (TI)].

Phymatopteris falcatopinnata (Hayata) S. G. Lu, Fl. Reip. Popul. Sin. **6**(2): 183 (2000).

Crypsinus taeniatus (Sw.) Copel. var. *palmatus* (Blume) auct. non C. Chr. (Ind. Fil. Suppl. **1**: 126. 1913): Tagawa in Acta Phytotax. Geobot. **15**: 143 (1954); W. C. Shieh & al. in Fl. Taiwan ed. 2, **1**: 480 (1994); Boufford & al. in Fl. Taiwan ed. 2, **6**: 34 (2003).

Distr.: Taiwan (Lanyu Isl.).

Tagawa (1954) considered *Polypodium falcatopinnata* Hayata as identical with *Polypodium palmatum* Blume and regarded the latter as a variety of *Crypsinus taeniatus*. Hovenkamp (1998) considered *Polypodium palmatum* as a smaller form of *Selliguea taeniata* (Sw.) Parris. Lu (2000) restored Hayata's species as distinct from *Polypodium palmatum* and accommodated it in *Phymatopteris*. We follow

Lu's species circumscription and transferred the name *Selliguea*.

Selliguea hastata (Thunb.) H. Ohashi & K. Ohashi, comb. nov.

Polypodium hastatum Thunb. in Murray, Syst. Veget. ed. 14, 935 (1784) & Fl. Jap.: 335 (1784) [**Type**. Japan. Kyushu. Nagasaki Pref.: In Nagasaki montibus. C. P. Thunberg (UPS): photo Nakaike 1992; fig. 643a].

Crypsinus hastatus (Thunb.) Copel., Gen. Filic.: 206 (1947); Nakaike, Enum. Pterid. Jap. Filicales: 327 (1975); Nakaike in Kurata & Nakaike, Illust. Pterid. Jap. **2**: 302 (1981); Nakaike, New Fl. Jap. Pterid. Rev. Enlarg.: 643 (1992); W. C. Shieh & al. in Fl. Taiwan ed. 2, **1**: 479 (1994); K. Iwats., Fl. Jap. **1**: 250 (1995); W. T. Lee, Lineam. Fl. Kor. **1**: 101 (1996); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003); X. Cheng, Fl. Yunnan. **21**: 379 (2005); B. Y. Sun, Gen. Vasc. Pl. Korea: 107 (2007); K. Iwats. & Yonekura, New Makino Illust. Fl. Jap.: 1168 (2008).

Phymatopteris hastata (Tagawa) Pichi-Serm. in Webbia **28**: 462 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 174 (2000).

Distr.: China, Japan (Hokkaido, Honshu, Shikoku, Kyushu and Ryukyus), Korea, Taiwan, Phillipines, Nepal, and India (Nakaike 1992).

var. **hastata**

Distr. var. in Japan: Hokkaido, Honshu, Shikoku, and Kyushu.

var. **longisquamata** (Tagawa) H. Ohashi & K. Ohashi, comb. nov.

Phymatodes longisquamata Tagawa in Acta Phytotax. Geobot. **3**: 96 (1934) [**Type**. Japan. Ryukyu. Okinawa Pref.: insl. Iriomote-zima. anno 1923. G. Koidzumi (KYO–holo): photo Nakaike 1992; fig. 647].

Crypsinus longisquamatus (Tagawa) Tagawa in Acta Phytotax. Geobot. **14**: 193 (1952); Nakaike, Enum. Pterid. Jap. Filicales: 329 (1975); Nakaike, New Fl. Jap. Pterid. Rev. Enlarg.: 647 (1992).

C. hastatus var. *longisquamatus* (Tagawa) Hatus. ex Serizawa in J. Phytogeogr. Tax. **29**: 24 (1981).

Distr. var. in Japan: Ryukyus.

Selliguea quasidivaricata (Hayata) H. Ohashi & K. Ohashi, comb. nov.

Polypodium divaricatum Hayata in Bot. Mag. (Tokyo) **23**: 78 (1909), non Fourn. (1872) [**Type**. Taiwan. in monte Morrison, ad 9000 ped. alt. Oct. 1906. T. Kawakami & N. Mori 1871 (TI)].

Polypodium quasidivaricatum Hayata in J. Coll. Sci., Imperial Univ. Tokyo **30**(Art. 1) (Materials Fl. Formosa): 446 (1911).

Crypsinus quasidivaricatus (Hayata) Copel., Gen. Fil.: 206 (1947); Tagawa in Acta Phytotax. Geobot. **15**: 143 (1954); W. C. Shieh & al., Fl. Taiwan ed. 2, **1**: 480 (1994); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003); X. Cheng, Fl. Yunnan. **21**: 384 (2005).

Phymatopteris quasidivaricata (Hayata) Pichi-Serm. in Webbia **28**: 464 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 188 (2000).

Crypsinus veitchii auct. non (Baker) Copel.: DeVol & C. M. Kuo in H. L. Li & al., Fl. Taiwan **1**: 177 (1975).

Distr.: China and Taiwan.

Selliguea rhynchophylla (Hook.) H. Ohashi & K. Ohashi, comb. nov.

Polypodium rhynchophyllum Hook., Icon. Pl. ser. 2, **6**(2): t. 954 (1854) [**Type**. Khasya. Hooker and Thomson, etc. (K–syntypes)].

Phymatodes okamotoi Tagawa in Acta Phytotax. Geobot. **7**: 189 (1938) [**Type**. Taiwan. Prov. Takao: Mt. Pinansyuzan, between Takimi and Hinode, ca. 2000 m. 24 Sept. 1937. S. Okamoto (KYO–holo)].

Crypsinus rhynchophyllus (Hook.) Copel., Gen. Fil. 206 (1947); Tagawa & K. Iwats., Fl. Thailand **3**(4): 556 (1989); X. Cheng, Fl. Yunnan. **21**: 376 (2005).

Crypsinus okamotoi (Tagawa) Tagawa in Acta Phytotax. Geobot. **14**: 194 (1952); W. C. Shieh & al., Fl. Taiwan ed. 2, **1**: 479 (1994);

Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003).

Phymatopteris rhynchophylla (Hook.) Pichi-Serm. in Webbia **28**: 464 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 166 (2000).

Distr.: SW. China, India, Laos, Myanmar, Taiwan, Thailand, and Vietnam.

This species as *Crypsinus rhynchophyllus* has been recorded from the Philippines (Tagawa and Iwatsuki 1989, Lu 2000, Cheng 2005), which was first erroneously recognized as *C. whitfordii* (Copel.) Copel.. Hovenkamp (1998) recognized, however, *C. whitfordii* as *Selliguea whitfordii* (Cipel.) Hovenkamp distinguishing from C. *rhynchophyllus.*

Selliguea taiwanensis (Tagawa) H. Ohashi & K. Ohashi, comb. nov.

Phymatodes taiwanensis Tagawa in Acta Phytotax. Geobot. **11**: 310 (1942) [**Type**. Taiwan. Prov. Taihoku: Mt. Nanko-taisan. J. Ohwi 2607 (KYO–holo)].

Crypsinus taiwanensis (Tagawa) Tagawa in Acta Phytotax. Geobot. **14**: 194 (1952); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003).

Phymatopteris taiwanensis (Tagawa) Pichi-Serm. in Webbia **28**: 465 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 174 (2000).

Distr.: Taiwan.

Selliguea veitchii (Baker) H. Ohashi & K. Ohashi, comb. nov.

Polypodium veitchii Baker in Gard. Chron. n. s. **14**: 494 (1880) [**Type**. Japan. Received from Mr. Bissett (K): photo Nakaike 1992; fig. 650].

Crypsinus veitchii (Baker) Copel., Gen. Filic.: 206 (1947); Nakaike, Enum. Pterid. Jap. Filicales: 329 (1975); Nakaike in Kurata & Nakaike, Illust. Pterid. Jap. **2**: 322 (1981); Nakaike, New Fl. Jap. Pterid. Rev. Enlarg.: 648 (1992); K. Iwats., Fl. Jap. **1**: 250 (1995); W. T. Lee, Lineam. Fl. Kor. **1**: 102 (1996); B. Y. Sun, Gen. Vasc. Pl. Korea: 107 (2007); K. Iwats. & Yonekura, New Makino Illust. Fl. Jap.: 1168 (2008).

Distr.: Japan (Hokkaido, Honshu, Shikoku), and Korea (Cheju Isl.).

Selliguea yakuinsularis (Masam.) H. Ohashi & K. Ohashi, comb. nov.

Polypodium yakuinsulare Masam. in J. Soc. Trop. Agr. Formos. **2**: 35 (1930) [**Type**. Japan. Kyushu. Kagoshima Pref. (Prov. Osumi), Insula Yakushima. 5 Sept. 1926. G. Masamune s.n. (TAI?)].

Crypsinus yakuinsularis (Masam.) Tagawa in Acta Phytotax. Geobot. **14**: 194 (1952); Nakaike, Enum. Pterid. Jap. Filicales: 330 (1975); Nakaike in Kurata & Nakaike, Illust. Pterid. Jap. **2**: 326 (1981); Nakaike, New Fl. Jap. Pterid. Rev. Enlarg.: 649 (1992); K. Iwats., Fl. Jap. **1**: 250 (1995); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003).

Distr.: Japan (Wakayama Pref., Tokushima Pref. and Kagoshima Pref.: Yakushima Isl.).

Selliguea yakushimensis (Makino) H. Ohashi & K. Ohashi, comb. nov.

Polypodium engleri Luerss. var. *yakushimense* Makino in Bot. Mag. (Tokyo) **23**: 248 (1909) [**Type**. Japan. Kagoshima Pref. (Prov. Osumi). Yaku-shima. Sept. 1909. T. Makino s.n. (TI): photo Nakaike 1992; fig. 650].

Crypsinus yakushimensis (Makino) Tagawa in Acta Phytotax. Geobot. **14**: 194 (1952); Nakaike, Enum. Pterid. Jap. Filicales: 330 (1975); Nakaike in Kurata & Nakaike, Illust. Pterid. Jap. **2**: 330 (1981); W. C. Shieh & al., Fl. Taiwan ed. 2, **1**: 482 (1994); Nakaike, New Fl. Jap. Pterid. Rev. Enlarg.: 650 (1992); K. Iwats., Fl. Jap. **1**: 249 (1995); Boufford & al., Fl. Taiwan ed. 2, **6**: 34 (2003).

Phymatopteris yakushimensis (Makino) Pichi-Serm. in Webbia **28**: 465 (1973); Lu, Fl. Reip. Popul. Sin. **6**(2): 171 (2000).

Distr.: China, Japan (Kyushu: Kagoshima Pref., Yakushima Isl. and Ryukyu (Okinawa Pref.: Okinawa Isl. and Iriomote Isl.), and Taiwan.

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ミツデウラボシ属の学名として *Crypsinus* が広く用いられている．しかし *Crypsinus* が異質の群であり，その一部は *Selliguea* と合一すべきことはすでに Airy Shaw (1966) が指摘していたところである．Hovenkamp (1998) は *Selliguea* を広く範囲づけて *Crypsinus* をこの属に含め，Flora Malesiana 地域の種を整理した．この説を受け入れて，日本・韓国・台湾のミツデウラボシ属の種についての学名を整理した．中国のミツデウラボシ属については Hovenkamp が Flora of China のために研究中であり，ここでは扱わない．

日本産種の学名は次のとおりである．タカノハウラボシ **Selliguea engleri** (Luerss.) H. Ohashi & K. Ohashi，ミツデウラボシ **Selliguea hastata** (Thunb.) H. Ohashi & K. Ohashi，リュウキュウミツデウラボシ **Selliguea hastata** var. **longisquamata** (Tagawa) H. Ohashi & K. Ohashi，ミヤマウラボシ **Selliguea veitchii** (Baker) H. Ohashi & K. Ohashi，ヤクシマウラボシ **Selliguea yakuinsularis** (Masam.) H. Ohashi & K. Ohashi，ヒメタカノハウラボシ **Selliguea yakushimensis** (Makino) H. Ohashi & K. Ohashi.

([a]Botanical Gardens, Tohoku University, Sendai, 980-0862 JAPAN;
E-mail: ohashi@mail.tains.tohoku.ac.jp
[a]東北大学植物園津田記念館
[b]School of Pharmacy, Iwate Medical University, Yahaba, Iwate, 028-3694 JAPAN
[b]岩手医科大学薬学部)