

Harumi OCHI\*, Kamezo SAITO\*\* and Timo KOPONEN\*\*\* :  
**The taxonomic status of *Tayloria coreana***  
**and *T. sinensis*, Musci**

越智春美\*・斉藤亀三\*\*・古保年知藻\*\*\*: セン類 *Tayloria*  
*coreana* および *T. sinensis* の分類学的位置

The investigation of the type specimens of *Tayloria coreana* Sak. and *T. sinensis* C. Muell. (Koponen & Koponen, 1974) revealed that they do not belong to the genus *Tayloria* but represent taxa of the families Pottiaceae and Bryaceae, respectively. The taxonomic status of these two species appears to be as follows:

*Tayloria* (Orthodon) *coreana* Sak. (Fig. 1)

Holotype: Korea, Keishonando, Mt. Chiisan, 1800 m, 7. VIII. 1938. *Kakuo Ono B. 1076* (MAK, Herb. K. Sakurai B12554).

Sakurai (1940) did not mention any characters diagnostic of the genus *Tayloria* when proposing *T. coreana* as a new species but regarded the faint papillae on the calyptra surface as characteristic of the subgenus *Orthodon* of *Tayloria*. Although the capsule and calyptra were described by him in detail, the holotype material available for study contains only some juvenile calyptras and a single badly broken capsule. However, it is apparent that the capsule has no hypophysis at the neck portion (Fig. 1, F), and that the juvenile calyptra is cucullate with no constriction at the base (Fig. 1, G). According to Nyholm (1956), the genus *Tayloria* is distinguished from the other genera of Splachnaceae by the presence of peristome teeth, a narrow hypophysis at the base of the capsule, and a calyptra that is constricted below and erose or lacerate at the base. All these features of *Tayloria* are lacking in the type material of *T. coreana*. In addition, the following

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gametophyte characters suggest that the species should be placed in the genus *Hyophila* of Pottiaceae: 1) leaves spatulate to ligulate with an acute apex (Fig. 1, A), 2) leaf margins strongly involute when dry, 3) small lamina cells ( $5-7\ \mu$  in diameter) mamilllose on the upper and faintly papillose on the lower surface wall and 4) perichaetial leaves broad-ovate with a broad, short-acuminate apex (Fig. 1, D).

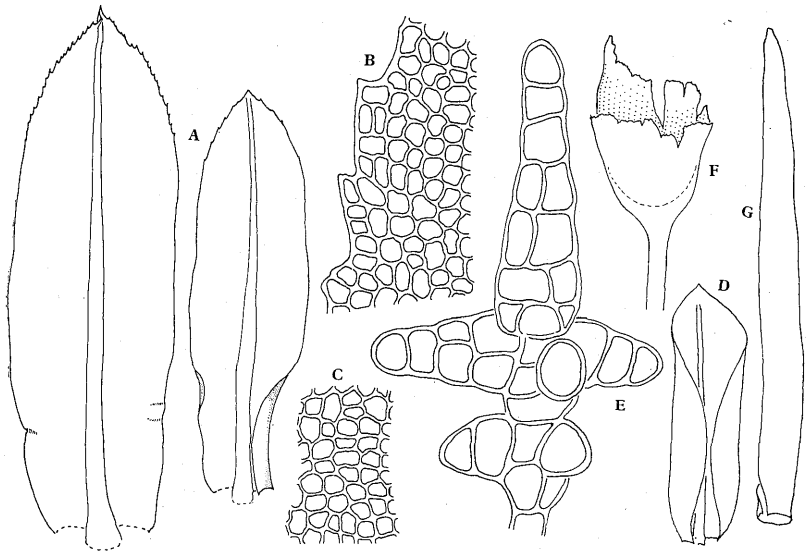


Fig. 1. *Hyophila involuta* (Hook.) Jaeg.: A. Stem leaves,  $\times 30$ . B. Upper marginal lamina cells,  $\times 470$ . C. Median lamina cells,  $\times 470$ . D. Perichaetial leaf,  $\times 30$ . E. Gemmae,  $\times 300$ . F. Capsule (broken),  $\times 30$ . G. Calyptra,  $\times 30$ . Drawn by K. Saito from the holotype of *Tayloria coreana* (MAK).

Sakurai also described and illustrated (*ibid.*, fig. 1) the leaf costa as shortly excurrent in *T. coreana*, and he considered that this was a character distinguishing it from the other species in the subgenus *Orthodon*. But his observation was apparently wrong: the leaf costa always ends at or just below the apex and is never excurrent in this species (Fig. 1, A). In the genus *Hyophila*, the plants are characterized by leaves with an irregular serration in the upper part (Fig. 1, B) and multi-horned gemmae in the leaf axils (Fig. 1, E). In view of the features discussed here and illustrated

in the figure, *T. coreana* should apparently be considered synonymous with *H. involuta* (Hook.) Jaeg.

***Hyophila involuta*** (Hook.) Jaeg., Ber. S. Gall. Naturw. Ges. 1871-1872: 354 (1873).

*Tayloria coreana* Sak., Bot. Mag. Tokyo 54: 31. f. 1 (1940).—Syn. nov.

*Tayloria sinensis* C. Muell. (Fig. 2)

Holotype: China interior (Prov. Schen-si) ad latera montis Tae-pei-san, inter *Mnium gracillimum*, VIII. 1896. *J. Giraldi* 77 (FH, Herb. Fleischer).

The poor condition of the type material available created some problems: Almost all the stem leaves were incomplete, the upper part being decayed and lost (Fig. 2, B & C), and they were fragile and easily broken when removed from the stem (Fig. 2, A-C); the single capsule was rather too juvenile (judging from the peristome, aggregated conic) and strongly curved, having probably been bent mechanically; the theca had been cut through obliquely and the smaller part was lost, as was also the operculum (Fig. 2, F).

The type material available agrees well with the original description in plant habit, stature and leaf shape, but the leaves are not always "*obtuse acuminata*," the upper ones being long-acuminate (Fig. 2, C). C. Mueller (1898) did not make any mention of a leaf border. But a border consisting of one or two cell rows can be clearly distinguished in well-presented leaves (Fig. 2, D), although it is often indistinct in the lower leaves.

Mueller also stated that the capsule is "*erect*." It does in fact appear erect when dry, but is nearly nutant when moist (Fig. 2, F). He also emphasized the "*grosissime reticulata*" of the leaf (Fig. 2, D & E). The leaf cells may be very broad in *Tayloria* species, but such broad cells are by no means rare in *Bryum* species.

These considerations and the features illustrated in the figure incline us to conclude that *T. sinensis* is merely a form of *B. capillare* Hedw. in which the rather too juvenile sporophytes are abnormal, judging from the very short, thick seta (ca. 7 mm long) available for study. Among the main characters of this species are the broad-oblong or ligulate leaves with a long-excurrent costa, more or less acuminate apex, revolute margins, narrow border, broad lamina cells, which are short-hexagonal or -rhomboidal,

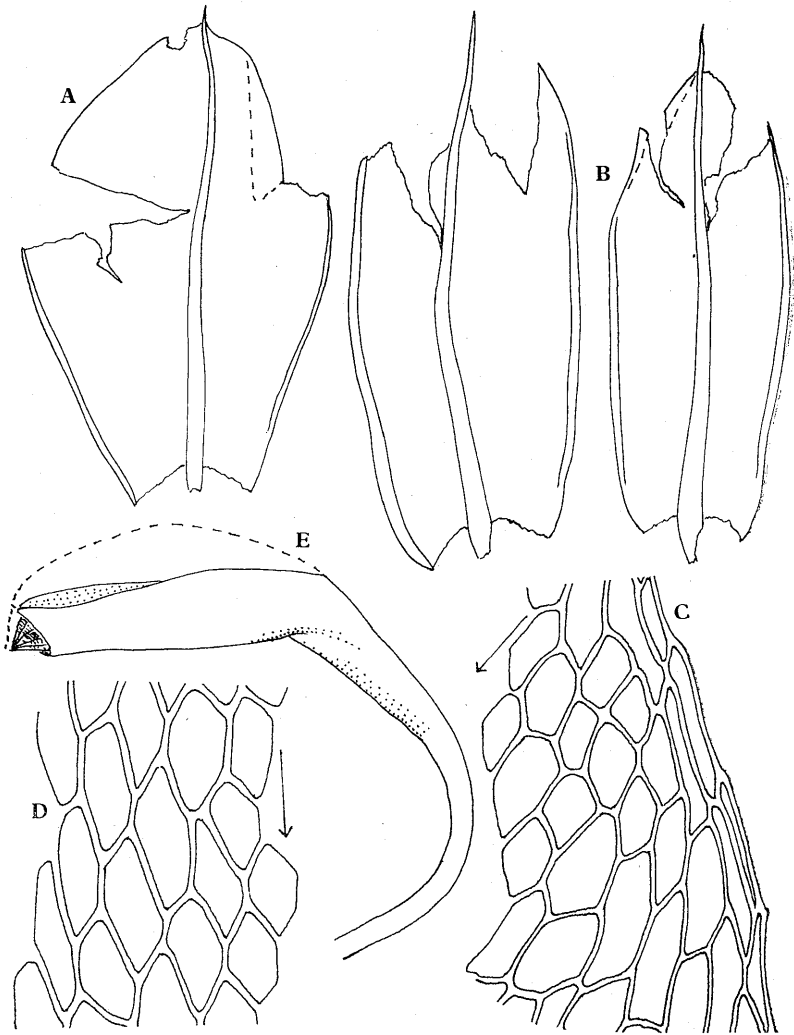


Fig. 2. *Bryum capillare* Hedw.: A & B. Stem leaves,  $\times 22$ . C. Upper marginal lamina cells,  $\times 200$ . D. Median lamina cells,  $\times 200$ . E. Capsule (abnormally curved and part of theca cut off),  $\times 11$ . Drawn by H. Ochi from the holotype of *Tayloria sinensis* (FH).

and the mutant to pendulous capsule with a short, slender neck. It is a very variable species, and examination of many specimens from various parts of the world suggests that forms like the type of *T. sinensis* are not very rare. For example, the type material of *Bryum tosanum* Card. (= *B. capillare*) is very similar to that of *T. sinensis* in such features as leaf shape, areolation and border (cf. Ochi, 1954). The type specimen of *T. sinensis* may have been collected from a dry, sunny, open site.

It thus appears necessary to record the following new specific synonymy:

***Bryum capillare*** Hedw., Spec. Musc. 182 (1801).

*Tayloria sinensis* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. 5: 159 (1898).

—Syn. nov.

#### Literature cited

Koponen, T. & Koponen, A. (1974) *Tayloria* subgen. *Orthodon* in East Asia. Ann. Bot. Fennici 11 (in press). Nyholm, E. (1956) Splachnaceae in Illust. Mossfl. Fennoscandia. II. Musci, fasc. 2: 177-189. Ochi, H. (1954) Contributions to the mosses of Bryaceae in Japan. Journ. Jap. Bot. 29(2): 263-270.

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筆者らの一人である古保年は最近東アジアのセン類ユリゴケ属 (*Tayloria*) の *Orthodon* 亜属を再検討したが (Koponen & Koponen, 1974), それらのうち *T. coreana* (韓国慶尚南道智異山産) と *T. sinensis* (中国 Shensi 省産) とはユリゴケ属のものではなくて、それぞれセンボンゴケ科およびカサゴケ科のものであることに気づき、さらに詳細な研究をそれぞれの科を専門としている斉藤および越智と共同して行った。基準標本をくわしく検討してみると、*T. coreana* はカタハマキゴケ (*Hyophila involuta* (Hook.) Jaeg.) に、*T. sinensis* はハリガネゴケ (*Bryum capillare* Hedw.) にほかならないことがわかった。これら 2 種はいずれも東アジアに普通に産する種類である。

□田村道夫：被子植物の系統 A5 版，344 頁，1974 年 2 月，三省堂発行，3,800 円。植物の進化生物学 4 巻のうちの第 1 巻で，第 2 巻，河野昭一：種の分化と適応，第 3 巻，堀田 満：植物の分布と分化がつづいて発行され，近く第 4 巻，浅間一男：被子植物の起源が出る予定である。従来の分類学の著書が，エングラールなどの体系を紹介した記述的なものが多かったのに対し，形質の系統進化の面での解析を中心としている点，外国の図書にも見られない意欲的なものである。系統進化の研究は，この十数年のあいだにようやく本格化したばかりで，研究の方向を示してくれる点でも類書のないものである。将来この内容はさらに豊富になり，精密となるだろう。(山崎 敬)