**Cryphaea Mohr** (Cryphaeaceae), a genus new to moss flora of Taiwan

Tzen-Yuh Chiang

*Institute of Botany, Academia Sinica, Nankang, Taipei, Taiwan 115, Republic of China*

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**Abstract.** *Cryphaea obovatocarpa* Okam., a species of *Cryphaeaceae*, is here reported as a new generic and species record of the moss flora of Taiwan. The *Cryphaeaceae* consists of twelve genera. Four genera including *Cryphaea* are distributed in Taiwan. This genus is distinguished from the related genus *Forststroemia* by having immersed capsules, well differentiated endostomes, and exostomes. *Cryphaea obovatocarpa*, which is distributed in Japan and Taiwan, also resembles *Schoenobryum concavifolia* (Griff.) Gangulée, a south-Asian taxon, in sharing a tree-like habit, immersed capsule, oblong-ovate leaves, and rectangular leaf cells. The differentiation of endostomes in *C. obovatocarpa* distinguishes it from *S. concavifolia*.

**Keywords:** *Cryphaea obovatocarpa*; Immersed capsules; New record; Taxonomy.

**Introduction**

*Cryphaeaceae* consists of twelve genera (Brotherus, 1925; Noguchi, 1941). Three of them, *Pilotrichopsis* (Cardot, 1905), *Forststroemia* (Noguchi, 1947), and *Sphaerothereciella* (Chiang and Kuo, 1989), were previously known in Taiwan. *Cryphaea*, another member of the *Cryphaeaceae*, is reported here as the fourth genus of this family in Taiwan. *Cryphaea* is generally distributed in the subtropical and tropical areas. Most species are restricted to the local regions (cf. Manuel, 1973; Noguchi, 1989; Enroth, 1990). This genus is distinguished from its related genus *Forststroemia* Lindb. by having immersed capsules and well-differentiated peristomes (Manuel, 1973). In my survey of bryoflora of Mt. Yushan (Chiang, 1989), the highest mountain of Taiwan, *Cryphaea*, a new generic record is found.

**Taxonomy and Relationship of Cryphaea**

**Key to Genera of Cryphaeaceae in Taiwan**

1. Plants pendulous ...................................................... 2
2. Leaf margin coarsely toothed above, endostomes poorly differentiated............................ *Pilotrichopsis*
   2. Leaf margin crenulate, endostomes differentiated....................................................... *Sphaerothereciella*
1. Plants non-pendulous, attaching to substrate with erect secondary stems .................................. 3
3. Laminal cells smooth dorsally, peristomes almost smooth ........................................... *Forststroemia*
   3. Laminal cells with a papilla at upper end, peristomes papillose .................................... *Cryphaea*


Plants tree-like, ca. 4 cm tall. Main stems filiform and creeping, secondary stems erect with four to eight branches at upper part, central strands not differentiated; branches ca. 1 cm long. Secondary stem-leaves broadly ovate, acuminate at apex, decurrent at basal corners, concave, 2–2.4 × 1–1.3 mm; margins entire; costa single, extending to 2/3 the length of leaf. Median leaf-cells rectangular, 9–18 × 7–11 μm, thick-walled, with one papilla at upper corner; alar cells weakly differentiated from basal cells. Branch leaves similar to the secondary stem leaves.

Autoicous. Capsules aggregated at upper part of secondary stems; inner perichaetial leaves oblong, acuminate at apex, ca. 3.2 mm long, concave, the margins incurred, crenulate above. Capsules immersed, ovoid; annulus present. Operculum conic, obtuse; exostome teeth linear, papillose; endostome segments linear, as long as the exostome, papillose. Spores ca. 40 μm. Perigonal axillary on the secondary stems, paraphyses absent.

*Specimen examined. TAIWAN. NANTOU HSIEN:* Yushan National Park, in broad-leaved forests, epiphytic on tree trunk, along Shalihisienhsi Stream, ca. 1,500–2,000 m alt., *T. Y. Chiang 26801* (HAST).

*Notes.* The evident characteristics of this genus are the tree-like habit, also found in *Forststroemia*, and immersed capsules, which are shared by *Pilotrichopsis*, *Sphaerothereciella* and a species of *Forststroemia*, *F. neckeroides* Broth. The well differentiated endostomes and
Cryphaea obovatocarpa can be distinguished from the Chinese species by broadly ovate stem-leaves. This species resembles Schoenobryum concavifolia (Griff.) Mitt., another genus of Cryphaeaceae distributed in tropical Asia (Enroth, 1990), in sharing a tree-like habit, immersed capsules, oblong-ovate leaves, and rectangular leaf cells. But the differentiation of endostomes in C. obovatocarpa can distinguish it from S. concavifolia.

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台灣產苔蘚類新紀錄－隱蒴蘚屬 (隱蒴蘚科)

蔣鎮宇
中央研究院植物研究所

圓蒴隱蒴蘚 (Cryphaea obovatoarpa Okam.) 為台灣產新紀錄屬及種，隱蒴蘚科 (Cryphyaceae) 植物
由十二個屬組成，其中四屬分布於台灣，本屬與其近緣屬殘蘚 (Forststroemia) 最大的差異在於具有樹
枝型生活型，隱蒴的孢蒴及分化的內外層層，此一分布於台灣及日本的圓蒴隱蒴蘚與另一南亞的種類拱
葉隱蒴蘚 (Schoenobryum concavifolia Griff.) 極其近似，皆具有樹狀生活型，隱蒴型孢蒴，長卵形葉身及
方形葉細胞，前者具有分化完全的內萌齒足以區分二者。

關鍵詞：圓蒴隱蒴蘚；隱蒴型孢蒴；苔蘚；新紀錄屬；台灣；分類學。