NOTE / NOTE

Octoblepharum arthrocormoides (Calymperaceae) N. Salazar Allen & B.C. Tan, sp. nov., a new species from Tropical Asia[1]

N. Salazar Allen and B.C. Tan

Abstract: A new species, ***Octoblepharum arthrocormoides*** Salazar Allen & B.C. Tan, is described from tropical Asia. In its erect, stiff and fragile leaves, the new species resembles *Arthrocormus* in physical appearance but differs from all other Asiatic *Octoblepharum* species. The new species shares features with the neotropical species, *O. ampullaceum*, having similar fragile leaves, but the later species has slightly thinner leaves (3–4 layers of hyalocysts above and below the chlorocysts layer) and pores of laminar hyalocists are bigger (4.88–7.32 μm), unlike the new species.

Key words: moss, *Octoblepharum*, Calymperaceae, new species, Borneo.

Résumé : Les auteurs décrivent comme espèce nouvelle de l'Asie tropicale l'***Octoblepharum arthrocormoides*** (Calymperaceae) N. Salazar Allen & B.C. Tan, sp. nov. Par son apparence physique, aux feuilles érigées, raides et fragiles, cette nouvelle espèce ressemble aux *Arthrocormus*, mais diffère de toutes les autres espèces d'*Octoblepharum*. La nouvelle espèce partage des caractéristiques avec l'espèce néotropicale *O. ampullaceum*, ayant des feuilles également fragiles, mais cette dernière espèce possède des feuilles légèrement plus minces (3–4 couches d'hyalocystes au dessus et au dessous de la couche de chlorocystes) et les pores des hyalocystes laminaires sont plus gros (4.88–7.32 μm), contrairement à la nouvelle espèce.

Mots-clés : mousse, *Octoblepharum*, Calymperaceae , nouvelle espèce, Bornéo.

[Traduit par la Rédaction]

Introduction

Octoblepharum is a pantropical moss genus with 14 species and two varieties recognized (Wijk et al. 1964, 1969; Salazar Allen 1991, 1994). Four species are reported for Australia, Asia, and Oceania (*O. albidum* Hedw., *O. depressum* Müll. Hal., *O. exiguum* Müll. Hal. and *O. leptoneuron* Cardot) and nine species and one variety are known for the Neotropics. They are *O. albidum* Hedw., *O. albidum* Hedw. var. *violascens* Müll. Hal., *O. ampullaceum* Mitt., *O. cocuiense* Mitt., *O. cylindricum* Schimp. *ex* Mont., *O. erectifolium* Mitt., *O. pulvinatum* (Dozy & Molk.) Mitt., *O. rhaphidostegium* Müll. Hal., *O. stramineum* Mitt., *O. tatei* (Williams) E.B. Bartram. Three species are reported from Africa (*O. africanum* (Broth.) Cardot, *O. albidum* and *O. leptoneuron*) (O'Shea 2006). The most cosmopolitan of the species is *O. albidum*. The center of species diversity appears to be in the Neotropics.

Results and discussion

During a field trip to a Keranga forest in Borneo, the second author collected a sample of an epiphytic *Octoblepharum* species that did not resemble any of the Asiatic species known to us. The leafy gametophytes are brittle and the habit resembles very much that of *Arthrocormus*. The specimen was sent to the first author for identification and it has proven to be an undescribed species from tropical Asia.

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N. Salazar Allen. Departamento de Botánica, Universidad de Panamá & Instituto Smithsonian de Investigaciones Tropicales (STRI), Apartado 0843-03092, Balboa, Ancón, República de Panamá.
B. Tan.[2] The Herbarium, Singapore Botanic Gardens 259569, Singapore.

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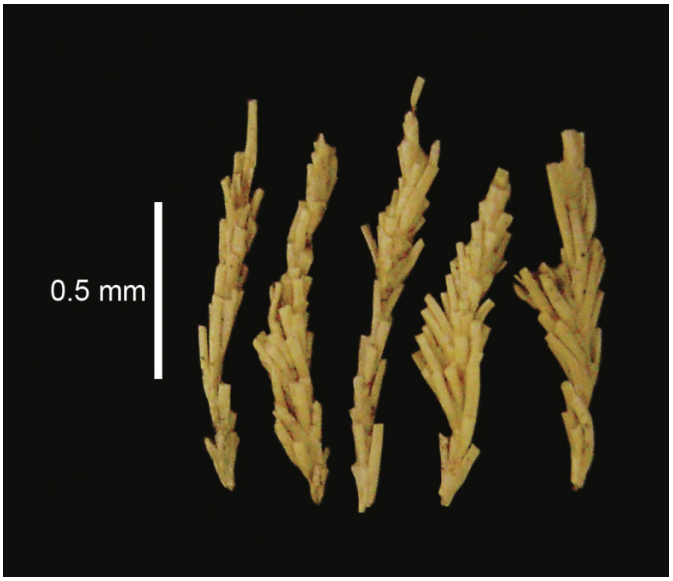
[2]Corresponding author (e-mail: Benito_TAN@nparks.gov.sg).

Fig. 1. *Octoblehaprum arthrocormoides*. Habit. Photo of isotype specimen.



Octoblepharum arthrocormoides N. Salazar Allen & B.C. Tan, sp. nov., Figs. 1–3.

Planta dense pulvinatae, foliis dense imbricates recto-patentibus, fragillimis, loriformibus, basi angustis erectis obovatis, cellulis chlorophyllaceis rhomboideis et ovatis, cellulis diaphanis circumcinctis, limbo cellularum hexagono-elongato, quadrato-rhombico formato. Sporangium non vidimus.

HOLOTYPUS: Borneo. Brunei, in Kerangas forest, low elevation. *BC Tan 95–1043* (Holotype, SING; Isotype, PMA).

Stems erect, little branched, in whitish green turfs, in cross section without a hyalodermis, with small thick-walled cells surrounding larger thin-walled cells, without a central strand. Axillary hairs (3–)6–8 cells long, basal cells reddish brown, upper cells hyaline. Leaves erect, ligulate, fragile, 2–5 mm long; in cross section at base without stereids, with a central net-like layer of oval to rhomboid shaped chlorocysts surrounded by 2–3 layers of porate hyalocysts on each surface, chlorocysts layer slightly closer to ventral side of the leaf; at middle cross section, the rhomboidal to triangular chlorocysts surrounded by 4–5(–6) layers of porate hyalocysts on each surface and arching down to middle of the leaf. Hyaline lamina in surface view with quadrate to rectangular hyalocysts, walls of hyalocysts strongly pitted, pits small, (1–)1.2–2(–2.4) μm in diameter. Laminar hyalocysts grading from quadrate to rectangular in the proximal central area of the leaf to narrowly elongate-hexagonal at the border. Monoecious(?). Gametangia rare. Archegonia, pedicelled, at apex of one stem. Male gametoecia in short branches towards base of stem. Antheridia with a short pedicel surrounded by uniseriate paraphyses and covered by (3–)5–8 perigonial leaves. Paraphyses longer than antheridia, to 8 cells long, basal cell brown. Sporophytes not seen.

In its erect, rigid and brittle habit the new species resembles *Athrocormus* in the field, and as a new species, it is morphologically different from the species of *Octoblepharum* (except *O. ampullaceum*) reported to date from Asia, Australia and Neotropica by its fragile leaf apices and very thick leaves.

Unlike the pantropical *O. albidum*, the new species, in addition to its many broken leaf apices, lacks the inflated and porate marginal hyalocysts of the leaf. The laminar hyalocysts of the new species are also shorter and the leaf is thicker than that of *O. albidum*. The new species has 4–5(–6) layers of hyalocysts on each surface of the chlorocysts at midleaf, while *O. albidum* has only 2(–3) layers.

With the neotropical *O. ampullaceum* the new species shares the quadrate to rectangular and highly pitted laminar hyalocysts. Nevertheless, the pits are larger in *O. ampullaceum* (4.88–7.32 μm) than in *O. arthrocormoides*. Cross sections of the leaf of new species at middle also resemble those of *O. ampullaceum*, but this species has 3–4 layers of hyalocysts on the upper and lower surfaces of the chlorocysts, while the new species has 4–5(–6) layers.

Although the plant specimen of *O. pulvinatum* from the Neotropics shares with *O. arthrocormoides* the same distinctive character of having fragile leaf apices, there are always entire leaves that could be examined in a population of the former. Also, the laminar hyalocysts of the proximal central area of the leaf in *O. pulvinatum* are quadrate to short rhomboid-oval and the cross section at midleaf shows 2–3 layers hyalocysts on each surface of the chlorocysts. Additionally there is usually a pink to purple coloration at base of leaves in *O. pulvinatum* that has not been observed in the new species.

The type of *O. exiguum*, endemic to Australia, has not been located for a study, neither are the types of *O. leptoneuron* and *O. depressum*. According to D. Catcheside (unpublished manuscript, 1993), *O. exiguum* is probably a smaller example of *O. albidum*. From the two little known species of *Octoblepharum* in Asia, *O. leptoneuron* and *O. depressum*, the new species differs in having fragile leaf apices. In both protologues of these two Asiatic taxa (Müller 1900; Cardot 1908), there was no mentioning of this noticeable feature in their species description. A collection from Burma, Tenasserim, Moulmia (*Stoliczka No. 4430* from Hampe's Herbarium, BM) identified as *O. depressum*, was revised recently by the first author. There is a Latin description of the plant found on the type specimen with a note at the end: "*Obj. Oct. longifolia proximum*". Plants of this collection have leaves to 11 mm long, and though few leaves are broken they are not brittle and they are thinner with 2–3 layers of hyalocysts on each surface of the chlorocysts layer at midleaf; moreover, hyalocysts of the proximal central area of the hyaline lamina are long hexagonal with minute pits like those of *O. albidum*.

Thus, the new species is morphologically different from the Asiatic, Australian and Neotropical species of *Octoblepharum* reported to date. The species epithet points to the resemblance of the plant habit to gametophytes of *Arthrocormus* whose broken leaf apices are the diagnostic character for both the genus *Arthrocormus* and the new species of *Octoblepharum*.

Fig. 2. *Octoblepharum arthrocormoides*. A. Apex of the leaf. B. Upper cells of hyaline lamina. C. Cross section of the leaf at base. D. Cross section at midleaf. Shaded cells = chlorocysts. All illustrations from isotype specimen.

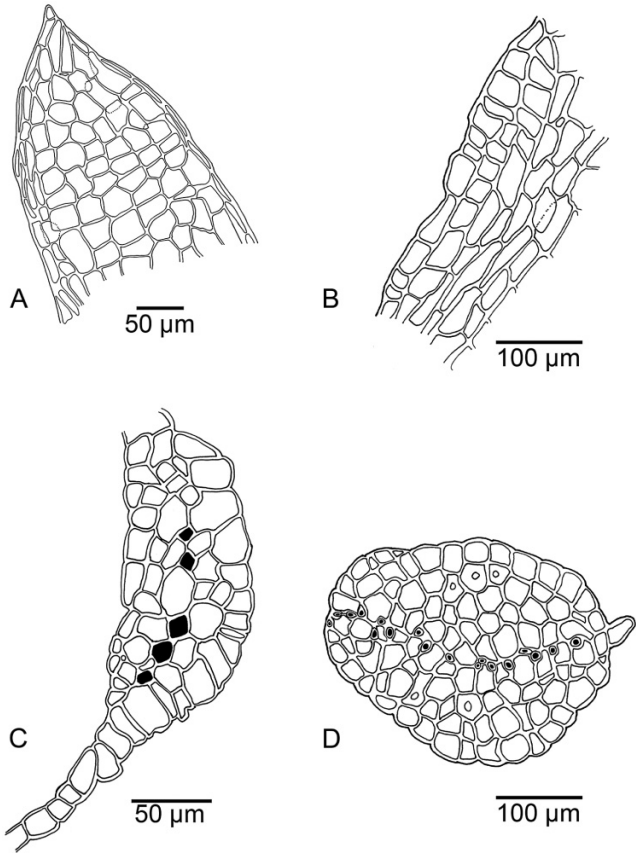
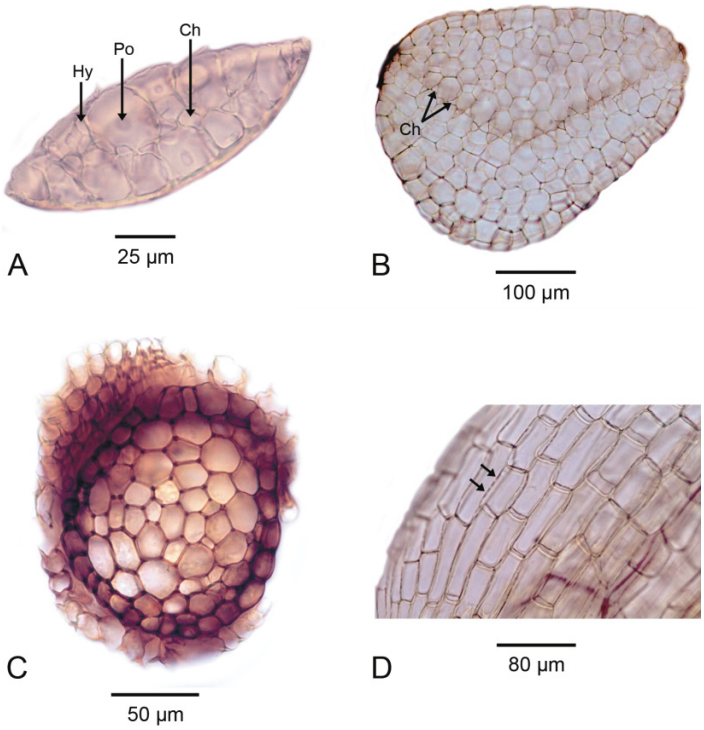


Fig. 3. *Octoblepharum arthrocormoides*. A. Cross section of the leaf at apex (Hy, hyalocysts; Ch, chlorocysts; Po, pore. B. Cross section at midleaf (Ch, chlorocysts). C. Cross section of stem. D. Basal cells of hyaline lamina (arrows indicate pits). All illustrations from isotype specimen.



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