NOTES ON PLEUROWEISIEAE (POTTIACEAE, BRYOPHYTA) IN NORTH AMERICA

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INTRODUCTION

The publication of Cano and Jiménez’s (2013) study of the tribe Pleuroweisieae (Pottiaceae, Bryophyta) of South America initiated a review of certain collections on loan from NY. Three new discoveries are reported here. Pleuroweisieae is a taxon of convenience that contains certain morphologically similar trichostomaceous, hygrophilic genera lacking peristomes, and is now commonly recognized as polyphyletic by technical characters (Zander 1993). It is, however, a useful vehicle for discussion of these species.

RESULTS AND DISCUSSION

Ardeuma aurantiacum (Mitt.) R.H. Zander & Hedd. — New to North America

Hymenostylium recurvirostrum (Hedw.) Dixon is the most well-known species in its genus. The generitype of Hymenostylium Brid., H. xanthocarpum (Hook.) Brid., however, has been found to represent quite a different genus (Zander and Hedderson 2016). Thus, a new name was proposed for all other species in Hymenostylium, namely Ardeuma R.H. Zander & Hedd., and new combinations were made. The correct name for H. recurvirostrum is now Ardeuma recurvirostrum (Hedw.) R.H. Zander & Hedd.

A Latin American species of this genus, Ardeuma aurantiacum (Mitt.) R.H. Zander & Hedd. was reported by Cano and Jiménez (2013) to occur in South America in Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela, and also Eastern Asia, Central Asia, Southeastern Asia, Central America, the Caribbean and Oceania. Allen (2002) did not report it for Central America. Zander (1994) did not include it for Mexico, nor did Eckel (2007) recognize it for North America north of Mexico and Greenland. A collection found among NY herbarium specimens labeled “Hymenostylium recurvirostrum” was clearly this species and closely matched the illustration of Cano and Jiménez (2013) as well as specimens from South America and Asia at MO.

Ardeuma aurantiacum differs from A. recurvirostrum by possessing leaves that are usually long-elliptic, with a strong apiculus or short mucro, not much broadened basally, and medial laminal cells often collenchymatous, or at least lumens angular because of thickened cell wall corners. Ardeuma recurvirostrum has lanceolate leaves, with costa percurrent or ending in a small apiculus, leaf base usually distinctly broader than at midleaf, and medial leaf cells not collenchymatous though evenly thick-walled, with lumens often elliptical, and longitudinally elongate.

Anoctangium stracheyanum Mitt. — New to Canada

Anoctangium stracheyanum Mitt. is, in the U.S.A., a rare species of deep ravines and protected places. In the United States it is reported from New York, North Carolina, Ohio, and Tennessee (Zander & Eckel 2007). Cano and Jiménez (2013) listed its geographic range to also include Mexico; Central America (Costa Rica); South America (Bolivia, Colombia, Ecuador; Peru, Venezuela); and Asia (China, India, Japan, Thailand, Vietnam). A specimen from Canada in the NY herbarium originally identified as Anoctangium aestivum (Hedw.) Mitt. proved to be this
species. It differs from *A. aestivum* by the larger, long-ligulate leaves with a weak constriction above the broader base, ending in a strong mucro. It is new to Canada.


A widely distributed specimen previously identified as the synonym *Anoectangium peckii* (Sull.) Sull. ex Austin, New York, Haines Falls, wall of main gorge, 1700 ft., *Smith 24689* (MO) is actually a green variant of *Bryoerythrophyllum recurviostrum* (Hedw.) P. C. Chen.

The possible presence of *Anoectangium euchloron* (Schwägr.) Spruce in North America

The treatment of *Anoectangium* in the Flora of North America (Zander and Eckel 2007) did not recognize *A. euchloron* (Schwägr.) Spruce for North America north of Mexico, in fact relegating it to synonymy of *A. aestivum* (Hedw.) Mitt. They described the former species as a “morphologically somewhat intergrading, wide-ranging tropical variant.”

In the recent study (Cano and Jiménez 2013) of *Anoectangium* in South America, *A. euchloron* was recognized as distinct, and almost completely sympatric with the wide-ranging *A. aestivum*. *Anoectangium euchloron*, according to Cano and Jiménez (2013), differs from *A. aestivum* in the following important traits: leaves contorted when dry; linear to lingulate, apex rounded to obtuse and abruptly apiculate (costa percurrent); medial laminal cells strongly convex. *Anoectangium aestivum*, on the other hand, is distinguished according to these authors by the plants with leaves appressed and incurved when dry, lanceolate to ovate-lanceolate, apex acute to narrowly acute and only sometimes apiculate (costa percurrent or rarely excurrent), medial laminal cells usually flat.

We are presently revising material at MO and from NY. In North America north of Mexico, we have observed all combinations of the traits attributed to *Anoectangium euchloron* by Cano and Jiménez (2013). There are some specimens that are easily ascribed to *A. euchloron*. Yet many specimens, including those in northern areas may have leaves often contorted, with dry and medial laminal cells bulging, but with narrowly acute leaf apices. Forms matching the description of *A. aestivum* by Cano and Jiménez (2013) are found among collections from extreme northwestern North America. That purely *aestivum* morphotype also occurs in Greenland and elsewhere in the far North.

Curiously, the costa is usually distinctly excurrent in North American species of *Anoectangium* as a sharp mucro of 4–5 cells. Cano and Jiménez (2013) described *A. aestivum* as usually only percurrent in South America. In North America, although the apiculus is wider than the costa at the leaf apex, it is often bistratose basally and is best interpreted as a mucro. This difference from the South American representative may not be any more taxonomically significant than the rounded leaf apex of *A. euchloron*, because a single simple trait cannot properly distinguish a species by implying genetic isolation and, in at least some cases, adaptation to a distinctive environmental niche.

If anything, the North American populations are weak segregates from both *A. aestivum* and *A. euchloron* on the basis of this one trait. We therefore advise against the application of the name *A. euchloron* to North American material. This raises the question of whether to lump species that intergrade in one part of the world but do not in another. Because mosses range widely at the species level, this is of particular concern to bryologists who are doing large-scale revisions. The wisdom of the past is to lump but we think this should be reconsidered. Species
distinct only in some parts of the world should not be second-class taxa but instead they should be considered to throw light on quite real evolutionary processes. Thus, we here lump *A. aestivum* and *A. euchloron*, but only for North America where they apparently intergrade. Perhaps a final solution will be acceptance of a third taxon for the North American intermediate.

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**LITERATURE CITED**


