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New combinations in Syntrichia and Warnstorfia (Musci)

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ABSTRACT: Ten species and five varieties traditionally placed in *Tortula* Hedw., *T. abranchesii* Luis., *T. ammonsiana* Crum & Anders., *T. andicola* Mont., *T. cavallii* Negri, *T. fragilis* Tayl., *T. pseudohandelii* Froehl., *T. rigescens* Broth. & Geh. *in* Engl. & Prantl, *T. sinensis* (C. Muell.) Broth., *T. submontana* Broth. and *T. virescens* (De Not.) De Not. as well as *T. ruralis* (Hedw.) Gaertn., Meyer & Scherb. var. *gypsophila* Amann *ex* G. Roth, *T. handelii* Schiffn. var. *ferganensis* (Lazar.) Kramer, *T. norvegica* (Web.) Lindb. var. *calva* (Amann) Kramer, *T. ruralis* (Hedw.) Gaertn., Meyer & Scherb. var. *subpapillosissima* Biz. & Pier. and *T. papillosissima* (Cop.) Broth. var. *minor* Biz., are transferred to the resurrected genus *Syntrichia* Brid. as *S. abranchesii* (Luis.) Ochyra, *S. ammonsiana* (Crum & Anders.) Ochyra, *S. andicola* (Mont.) Ochyra, *S. cavallii* (Negri) Ochyra, *S. fragilis* (Tayl.) Ochyra, *S. pseudohandelii* (Froehl.) Ochyra, *S. rigescens* (Broth. & Geh. *in* Engl. & Prantl) Ochyra, *S. sinensis* (C. Muell.) Ochyra, *S. submontana* (Broth.) Ochyra and *S. virescens* (De Not.) Ochyra as well as *S. caninervis* Mitt. var. *gypsophila* (Amann *ex* G. Roth) Ochyra, *S. handelii* (Schiffn.) Bach. var. *ferganensis* (Lazar.) Ochyra, *S. norvegica* Web. var. *calva* (Amann) Ochyra, *S. ruraliformis* (Besch.) Card. var. *subpapillosissima* (Biz. & Pier.) Ochyra and *S. virescens* (De Not.) Ochyra var. *minor* (Biz.) Ochyra, respectively. *Drepanocladus fluitans* (Hedw.) Warnst. var. *berggrenii* (C. Jens. *in* Lange & C. Jens. *in* Lange) C. Jens. *in* Weinm. is transferred to the genus *Warnstorfia* Loeske as *W. fluitans* (Hedw.) Loeske *ex* Nitardy var. *berggrenii* (C. Jens. *in* Lange & C. Jens.) Ochyra.

KEY WORDS: nomenclature, Bryophyta, Pottiaceae, Amblystegiaceae

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The genus *Syntrichia* was first separated by Bridel (1801) from the then all-encompassing genus *Barbula* Hedw. to accommodate three species, *Barbula ruralis* Hedw., *B. agraria* Hedw. and *B. ericetorum* With. The first two species have formally been transferred to *Syntrichia* two years later by Weber and Mohr (1803). Since its inception this genus has not been universally used by the bryologists and it has usually been considered to be congeneric with *Tortula* Hedw. The delimitation of *Syntrichia* has never been clearly defined and it has probably been the main reason of its free interpretation and various species composition. However, Zander (1989) provided a convincing evidence that supports resurrection of *Syntrichia* as a separate genus of the Pottiaceae, with *S. ruralis* (Hedw.) Web. & Mohr as the lectotype. As presently understood *Syntrichia* is diagnosed

by its internal structure of the costa which has the strong, usually crescent-shaped and dorsally exposed stereid band being not covered by an epidermis composed of parenchymatous or otherwise differentiated cells. I entirely share the view that numerous species centered around *S. ruralis* constitute a natural group that deserves recognition as a genus of its own. *Syntrichia* is accepted in the latest list of the Polish mosses (Ochyra *et al.* 1992) as well as in a new series of the exsiccati of African bryophytes. Unfortunately, it proved that some taxa were not given names under *Syntrichia* and the present note includes the formal transfer of ten species and five varieties to this genus. These are mostly taxa with which I am familiar but investigation of numerous exotic species that are currently placed in *Tortula* should results in much more transfers to *Syntrichia*.

Syntrichia abranchesii (Luis.) Ochyra, *comb. nov.*
Basionym: *Tortula abranchesii* Luis., Brotéria Ser. Bot. **14**: 115. 1916.

Syntrichia ammonsiana (Crum & Anders.) Ochyra, *comb. nov.*
Basionym: *Tortula ammonsiana* Crum & Anders., Bryologist **82**(3): 469. *1–5.* 1979.

Syntrichia andicola (Mont.) Ochyra, *comb. nov.*
Basionym: *Tortula andicola* Mont., Ann. Sc. Nat. Bot. Sér. 2, **9**: 53. 1838.

Syntrichia caninervis Mitt. var. ***gypsophila*** (Amann *ex* G. Roth) Ochyra, *comb. nov.*
Basionym: *Tortula ruralis* (Hedw.) Gaertn., Meyer & Scherb. var. *gypsophila* Amann *ex* G. Roth, Hedwigia **57**: 135. *4 f. 7.* 1915.

Syntrichia cavallii (Negri) Ochyra, *comb. nov.*
Basionym: *Tortula cavallii* Negri, Ann. Bot. (Roma) **7**: 164. 1908.

Syntrichia fragilis (Tayl.) Ochyra, *comb. nov.*
Basionym: *Tortula fragilis* Tayl., London J. Bot. **6**: 333. 1847.

Syntrichia handelii (Schiffn.) Bach. var. ***ferganensis*** (Lazar.) Ochyra, *comb. nov.*
Basionym: *Tortula ferganensis* Lazar., Ukr. Bot. Zhurn. **4**: 64. 1928.

Syntrichia norvegica Web. var. ***calva*** (Amann) Ochyra, *comb. nov.*
Basionym: *Syntrichia aciphylla* (Bruch & Schimp.) Jur. var. *calva* Amann, Bull. Soc. Vaudoise Sci. Nat. **53**: 91. 1920.

Syntrichia pseudohandelii (Froehl.) Ochyra, *comb. nov.*
Basionym: *Tortula pseudohandelii* Froehl., Ann. Naturh. Mus. Wien **67**: 155. 1964 [*"pseudo-handelii"*].

Syntrichia rigescens (Broth. & Geh. *in* Engl. & Prantl) Ochyra, *comb. nov.*
Basionym: *Tortula rigescens* Broth. & Geh. *in* Engl. & Prantl, Nat. Pflanzenfam. **1**(3): 1196. 1909.

Syntrichia ruraliformis (Besch.) Card. var. ***subpapillosissima*** (Biz. & Pier.) Ochyra, *comb. nov.*
Basionym: *Tortula ruralis* (Hedw.) Gaertn., Meyer & Scherb. var. *subpapillosissima* Biz. & Pier., Acta Bot. Acad. Sci. Hung. **18**: 10. 1973.

Syntrichia sinensis (C. Muell.) Ochyra, *comb. nov.*

Basionym: *Barbula sinensis* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. **3**: 100. 1896.

Syntrichia submontana (Broth.) Ochyra, *comb. nov.*

Basionym: *Tortula submontana* Broth., Acta Hort. Bot. Acad. Sci. URSS **42**(2): 168. 1931.

Syntrichia virescens (De Not.) Ochyra, *comb. nov.*

Basionym: *Tortula ruralis* (Hedw.) Gaertn., Meyer & Scherb. var. *virescens* De Not., Mem. R. Acc. Sci. Torino **40**: 290. 1838.

Syntrichia virescens (De Not.) Ochyra var. ***minor*** (Biz.) Ochyra, *comb. nov.*

Basionym: *Tortula papillosissima* (Cop.) Broth. var. *minor* Biz., Rev. Bryol. Lichénol. **23**: 268. 1954.

Warnstorfia Loeske is one of the segregates of the heterogeneous genus *Drepanocladus* (C. Muell.) G. Roth proposed by Loeske (1907a, b, 1910) for a group of species with distinctly serrulate leaf margins, well developed alars and nematogen cells at the leaf apices. Like other segregates, this genus has fallen into oblivion for about seventy years but recently it gained wide acceptance in North America (Anderson *et al.* 1990), Europe (Tuomikoski & Koponen 1979; Corley & Crundwell 1991; Ochyra *et al.* 1992) and Japan (Iwatsuki 1991). Although almost all important taxa are given names under *Warnstorfia*, I found that the following new combination is necessary for a distinct variety, *Drepanocladus fluitans* (Hedw.) G. Roth var. *berggrenii* (C. Jens. *in* Lange & C. Jens.) C. Jens. *in* Weim., which is widely distributed but scattered in the Arctic, Japan and New Zealand (Ochyra & Bartlett 1986).

Warnstorfia fluitans (Hedw.) Loeske *ex* Nitardy var. ***berggrenii*** (C. Jens. *in* Lange & C. Jens.) Ochyra, *comb. nov.*

Basionym: *Harpidium fluitans* (Hedw.) Spruce subsp. *berggrenii* C. Jens. *in* Lange & C. Jens., Medd. Grønland **3**: 322. 1887 ["-i"].

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STRESZCZENIE

Opisany przez Bridela (1801) rodzaj *Syntrichia* Brid. nie był powszechnie akceptowany przez briologów i najczęściej traktowano go kongenerycznie z rodzajem *Tortula* Hedw. Ostatnio Zander (1989) przedstawił przekonywujące dowody, że *Syntrichia* w pełni zasługuje na wyróżnienie jako osobny rodzaj w rodzinie Pottiaceae. Jego najwybitniejszą cechą jest struktura anatomiczna żebra, które na stronie grzbietowej posiada silną, wielowarstwową, półksiężycowato wypukłą sklerenchymę całkowicie pozbawioną epidermy. Ponieważ wiele taksonów nie było formalnie przeniesionych do tego rodzaju, autor proponuje 15 nowych kombinacji dla 10 gatunków i 5 odmian z Europy, Azji, Afryki i Ameryki Południowej.

Warnstorfia Loeske jest rodzajem z rodziny Amblystegiaceae już dawno oddzielonym od heterogenicznego rodzaju *Drepanocladus* (C. Muell.) G. Roth, ale dopiero w ostatnich latach uzyskał on pełną akceptację briologów. Większość taksonów została już formalne przeniesiona do rodzaju *Warnstorfia*, a w niniejszej notatce autor proponuje przeniesienie do tego rodzaju *Drepanocladus fluitans* (Hedw.) G. Roth var. *berggrenii* (C. Jens. *in* Lange & C. Jens.) C. Jens. *in* Weim., wybitnej odmiany znanej z Arktyki, Japonii i Nowej Zelandii.