

TYPIFICATION AND CONSERVATION OF GENERIC NAMES IN MUSCI

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The type method, incorporated in the International Code of Botanical Nomenclature (abbreviated ICBN) in 1930, has not yet been applied to a number of genera in the group *Musci*. In some cases the application published is not in accordance with the present Code. Of course the older authors did not use the type method explicitly. However, from their treatments typifications of older generic names can be derived in many cases. During the preparations for the Index Muscorum the history of many names had to be traced. The results, when needing comment, are discussed below.

Conservation, according to the ICBN, may be proposed "in order to avoid disadvantageous changes in the nomenclature" and should "preferably concern such names as have come into general use in the fifty years following their publication, or which have been used in monographs and important floristic works up to the year 1890" (art. 14). Conservation can be a necessary correction on changes in the Code. When the starting point for the nomenclature of *Musci* was changed from Linnaeus 1753 to Hedwig 1801 the priority of a number of names was altered. Necessary conservations have been proposed by Little, *Bryologist* 46: 105-125. 1940, accepted in due course with some exceptions. A clear example is *Barbula* Hedw., originally published by Hedwig in 1782, invalidated by the change of the starting point and in 1801 a later homonym of *Barbula* Loureiro 1790 in Phanerogamae. This has been corrected by conservation. The case of *Pottia* falls in this group.

Other names used in modern bryology without exception are nevertheless illegitimate because an older, neglected name has priority. Conservation may be considered in these cases. Perhaps there are more such names than traced up to now in the preparations for the Index Muscorum.

Typification can make a conservation necessary or highly desirable. The choice of the original author is decisive. If one element is present this is automatically the type. This is simple enough; nevertheless a peculiar problem arises when a single species mentioned in the publication of a new genus with a description afterwards appears to be based on a type specimen not fulfilling this description. The article accepted in the Amsterdam Congress (with the example of *Pseudotsuga mertensiana*) definitely fixes the meaning of the species concerned: it follows its type-specimen of the original publication.

As the genus follows the type-species, the meaning of the generic name is altered notwithstanding a clear description. It is irrelevant that probably the proposers of the article concerned did not foresee this consequence, nor that they possibly would not have had it included. Conservation of the name in a sense excluding the original type and selecting another type solves the problem. Perhaps some other wording of the ICBN would cover the problem. This, however, might have still other unforeseen consequences and conservation in special cases is to be preferred.

The case of *Conocephalum* Wiggers, on which I shook hands with Dr. Proskauer in the Paris Congress was partially related to this problem. Later Dr. Proskauer brought more facts to light and I can approve his new proposal. The case of *Macrohymenium* C. Muell. discussed below is a clear example.

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Acanthocladium. Established bryological custom treats this name in the sense used by BROTHERUS (1908 p. 1075). This excludes the two species from which the type ought to have been selected. The original publication of the name in *Musci* by MITTEN, Trans. Proc. R. Soc. Victoria **19**: 86. 1882 was valid by a reference to the illegitimate homonym *Acanthodium* Mitten, Journ. Linn. Soc. Bot. London **110**: 182. 1868 non Delile 1812. Therefore, the type-species ought to have been selected from *Acanthodium papillatum* Mitt. or *A. rigidum* Mitt. Brotherus included the last species in *Trismegistia* C. Muell. and the first species was afterwards made the type species of the new genus *Acanthorrhynchium* Fleisch. (FLEISCHER 1923, p. 1206). For the bryological established custom conversation in the sense of Brotherus is indicated, with *Acanthocladium extenuatum* (Brid.) Broth. as the lectotype, taking into account the publication of the section *Eu-Acanthocladium* Fleisch. (Fleischer, 1923, p. 1331). Conservation will affect *Acanthocladium* F. v. Mueller, Fragm. Phytogr. Austr. 2: 155. 1860-61, based on *A. dockeri* F. v. Mueller and given as a synonym of *Helichrysum* Vaill. in the Index Kewensis. The evaluation of a rejection of this name in the family *Compositae* can only be judged by phanerogamists and is not discussed here.

Acrocryphaea. This name was firstly published in BRUCH, SCHIMPER and GÜMBEL, 1850, Bryologia Europaea **5**: 35. (fasc. 44-45 Monogr. "Cryphaea" 2) as an invalid undescribed name. Three species were listed, including a new combination based on the Brazilian *Grimmia julacea* Hornschuch 1840 and an undescribed species *Acrocryphaea javanica* from Java. The next publication traced concerns Bryologia Javanica 2: 106. 1867, where VAN DEN BOSCH and LACOSTE definitely accepted *Acrocryphaea* "Hook., Bruch et Schimp." as a separate genus.

A generic description was not provided; nevertheless it is advocated that they validated the name by an indirect reference to the description of *Schoenobryum* Doz. et Molk., Musci Frondosi Inediti Archipelagi Indici 1848. 183. The Code does not define the indirectness of a reference, but the examples state it should be perfectly unambiguous. This criterion is certainly fulfilled here by listing *Schoenobryum* as a synonym of the species *Acrocryphaea concavifolia* (Griff.) Bosch et Lac. If his view be unacceptable, the validation will date from Brotherus (1905, p. 178). The name nevertheless is illegitimate at the same time for the same reason, the reference to an earlier valid synonym. The type of *Schoenobryum* Doz. et Molk. was certainly included in *Acrocryphaea* by v. d. Bosch and Lacoste, whether this be the Brazilian basionym of *Schoenobryum julaceum* (Hornsch.) Doz. et Molk., or the Javan specimens figured and certainly used by Dozy et Molkenboer in describing *Schoenobryum*. V. d. Bosch and Lacoste had no purpose of making a generic distinction between the Brazilian and Asiatic specimens and only used the genus in the same sense as had been done in the Bryologia Europaea. The treatment of v.d. Bosch and Lacoste has been followed by all authors treating *Acrocryphaea* as a genus separate from *Cryphaea* Mohr. Conservation is indicated in this case, as no single acceptance of *Schoenobryum* has been found during the preparations for the Index Muscorum. It will avoid the creation of about 30 new combinations.

Aerobryidium Fleisch. in Brotherus (1906, p. 820). The close cooperation of Fleischer and Brotherus permits the use of "in" here, for which definite proof is not known to the author. The formal choice of a lectotype has not been traced. Nevertheless it is clear from the original publication and Fleischer's treatment in 1923 that the species were grouped around the species with the oldest basionym: *Aerobryidium filamentosum* (Hook.) Fleisch.; therefore, this species is proposed here as the lectotype.

Aerobryopsis Fleisch. 1905, Hedwigia 44: 304. The formal choice of a lectotype has not been traced. From the original species included in this genus by Fleischer three only remain as independent species now: *A. capensis* (C. Muell.) Fleisch., *A. longissima* (Doz. et Molk.) Fleisch. and *A. vitiana* (Sull.) Fleisch. From these ones *A. longissima* (Doz. et Molk.) Fleisch. was extensively studied by Fleischer and the only one figured. Therefore this species is formally proposed here as the lectotype.

Amblystegiella Loesk. 1903, Moosfl. Harz. 295. *A. sprucei* (Bruch) Loesk. was chosen as the lectotype by GROUT, 1932, Moss Fl. N. America 3: 142. The same species was named *Platydictya sprucei* (Bruch) Berkeley, 1863, Handb. Brit. Moss. 145 validly. The generic name *Amblystegiella*, therefore, is illegitimate. With a few exceptions all later authors treating the group as a separate genus used *Amblystegiella*. The exceptions did not concern *Platydictya* Berkeley, but the earlier subgenus *Serpo-Leskea*, raised to generic rank by LOESKE, 1905, Verh. Bot. Ver. Brandenburg 46: 190. ('1904') erroneously counting priority from publication in another rank. No adoption of *Platydictya* Berkeley

had been traced. Since the name *Amblystegiella* has been in use from 1903, compared with *Platydictya* Berkeley, conservation is proposed with kind permission of Prof. Dr. P. W. Richards (Bangor, Great Britain) who originally suggested the proposal.

Anacalypta Roehling ex Leman, 1816, Dict. Sc. Nat. 2, Suppl. 38. This name, revalidated earlier than *Pottia*, is based on a different type species. The present established custom is definitely uniting *Anacalypta* and *Pottia* taxonomically. Conservation of *Pottia* is necessary to correct this undesirable result of reversed priority by the change of the starting-point. See the discussion under *Pottia*.

Apodanthus La Pyl., Journ. de Bot. (Desvaux) 4(2):0.73.1814. This genus contained one species, *Apodanthus aphyllus* La Pyl., l.c. t. 33 f. 1, found among *Splachnum*. The figure given suggests some fungus; the dimensions are too small for any *Splachnum* or *Buxbaumia* species; *Ephemerum* species are out of question too for the absence of leaves. Perhaps an Ascomycete resembling *Cyathicula coronata* (Bull.) De Not. was concerned, but it is certainly not a moss in my opinion. If indeed belonging to fungi, the name will be invalid in this group, being published before the starting-point. The genus should be excluded from the *Bryophyta*.

Astomum Hamp. 1837, Flora 20: 285. To fix the historical usage of this generic name *Astomum crispum* (Hedw.) Hamp. is proposed as the lectotype. However, Hampe's circumscription must be discussed. He included *A. alternifolium* (Hedw.) Hamp. in the genus, based on *Phascum alternifolium* Hedw. 1801. As pointed out under *Pleuridium*, this was the main element of Bridel's genus at the original publication and afterwards appeared to be based on specimens belonging to *Archidium* Brid. *Pleuridium* is proposed for conservation from a later date (1848). Acceptance of this proposal will remove any doubt on the legitimacy of the name *Astomum* Hamp.

Calyptrochaeta Desvaux, 1825, Mem. Soc. Linn. Paris 3: 226. This name is valid by the reference to the illegitimate name *Chaetophora* Brid., 1819 Mant. Musc. 148. (spelled *Chaetophora* on pag. XVII), non Schrank, 1789, Baierische Fl. 1: 197. (Algae). Therefore, the type is automatically *Calyptrochaeta cristata* (Hedw.) Desvaux. This results in the genus being homotypic with *Eriopus* Brid., Bryol. Univ. 2: 788. 1827. In this page of the index of Bridel's last work the name is treated as an independent genus, with a reference to a subdivision *Eriopus* of *Chaetophora* Brid. on p. 339. This subdivision, however, is illegitimate as the type species of the genus is included. *Eriopus* is universally accepted and *Calyptrochaeta* is completely neglected. Conservation of *Eriopus* Brid. is proposed to legalise this custom for a characteristic genus of tropical mosses and to avoid more than 30 possible new combinations.

Dolichotheca Lindb., 1874, Notis. Sällsk. Faun. Fl. Fenn. 13: 417. is a genus of *Plagiotheciaceae* based on *D. repens* Lindb. with the basionym *Hypnum repens* Poll. 1777, now invalid as pre-Hedwigian and validated by Lam. et De Cand., 1805, Fl. Franç. 2: 537. From the useful Index Nominum Genericorum I learned an earlier homonym published by

D. CASSINI, Dict. Sc. Nat. **51**: 476. 1827 (*Compositae*). The group of mosses concerned is rather small; taxonomically a number of bryologists do not recognise a separate genus, treating the species either as belonging to *Plagiothecium* or to *Isopterygium* Brid. Therefore, strong argument for conservation is lacking. Agreeing with Dr. J. J. Barkman (Wijster, Dr., Netherlands) in placing the European species in *Isopterygium*, I am obliged to use the combination *Isopterygium seligeri* (Brid.) Dix. in C. Jens., based on *Leskea seligeri* Brid. 1801, Musc. Rec. 2 (2):47, necessitated by the new opinion on the arbitrarily fixed date of HEDWIG, Species Muscorum 1801, altered from 31 Dec. 1801 to an earlier date.

Eriopus. Brid. The proposed conservation is discussed under *Calyptrochaeta* Desvaux.

Lamprophyllum. This name has been published for two different genera of Musci, both illegitimate because an earlier homonym exists: *Lamprophyllum* Miers, 1854, Proc. Linn. Soc. **2**: 338. (Guttiferae). *Lamprophyllum* Lindb., 1871, Act. Soc. Sc. Fenn. **10**: 75 falls within the modern concept of *Pohlia* Hedw. 1801 and can be discarded. *Lamprophyllum* Schimp. 1856, Coroll. was published for *Hookeria splendidissima* Mont. 1835, Ann. Sc. Nat. Bot. ser. 2, 4: 97 without valid description. The name was validated by BROTHERUS (1907, p. 964). **Schimperobryum** Marg. **nom. nov.** is proposed here for this genus in *Hookeriaceae*. The typonym is *Lamprophyllum* Schimp. ex Broth., in Engl. et Prantl, Nat. Pflanzenfam. **1** (3): 964. 1907. The type species is *Schimperobryum splendidissimum* (Mont.) Marg. **nom. nov.**, based on *Hookeria splendidissima* Mont., Ann. Sc. Nat. Bot. ser. **2, 4**: 97. 1835.

Macrohymenium C. Muell. This name is proposed for conservation as an unfortunate consequence of the "Pseudotsuga mertensiana rule". The name was published validly by C. MUELL., 1847, Bot. Zeit. **5**: 325. 1847 with only one species recognized, *Macrohymenium rufum* (Reinw. et Hornsch.) C. Muell. This species, therefore, automatically is the type species. It is immaterial in this respect that *Leskea acidodon* Mont. 1845 was included as a synonym.

Fleischer transferred the basionym of this type species to another genus of the same family *Sematophyllaceae* after studying "Originale" in the Berlin Herbarium. This transfer, *Acroporium rufum* (Reinw. et Hornsch.) Fleisch. (1923, p. 1672), though not treated by Fleischer as affecting *Acroporium* Mitt., 1868, Journ. Linn. Soc. Bot. London **10**: 182, does threaten the nomenclatural standing of this name. Nevertheless, this is not in line with the descriptions of C. Mueller and Fleischer of *Macrohymenium*, nor with established custom. This undesirable possibility should be discarded by the conservation of *Macrohymenium* C. Muell. in Doz. et Molk., 1848, Musci Frond. Inediti Archip. Indici **6**: 165. where the combination *Macrohymenium acidodon* (Mont.) Doz. et Molk. is published, which can be proposed as the lectotype of the name proposed for conservation.

Plauridium. The name of this genus has been published by BRIDEL, 1819, Mant. Musc. **10**. Two species were included: *P. alternifolium* (Hedw.) Brid., based on *Phascum alternifolium* Hedw. 1801, and

P. globiferum Brid. The type of the first species, the specimens found described and figured by DICKSON, Crypt. Brit. fasc. 1: 1 (t. 1 f 2) 1785 have been considered an *Archidium* species or equivalent to it by all British authors as far as I am aware and explicitly by MITTEN, publishing the combination *Archidium alternifolium* (Hedw.) Mitt. 1851, Ann. Mag. Nat. Hist. ser. 2, 3: 30. followed by SCHIMPER in 1860. It has been suggested by BRUCH, 1825, Flora 8: 281 that the second species from Réunion is an *Archidium* too, but proof of this is unknown to me as is another identification. From Bridel's habitat notes it may be concluded that specimens were scarce. The type material most probably is destroyed. The genus has been emended by RABENHORST by including *Pleuridium subulatum* (Hedw.) Rabenh., Deutschl. Krypt. Fl. 2 (3): 79. 1848, based on *Phascum subulatum* Hedw. 1801, since continuously treated as a species of *Pleuridium*. The name from this author is proposed for conservation, choosing the *Pleuridium subulatum* as a lectotype for this purpose. This proposal has the advantage of unambiguously fixing the established custom of three generic names in Musci: *Astomum* Hamp., *Archidium* Brid. and *Pleuridium* Brid.

Pottia Ehrh. is invalidated by the change of the starting point for Musci from 1753 to 1801. The name was accepted afterwards by FUERNROHR, 1829, Flora 12 (2) Ergänzungsbl. p. 10. *Pottia truncata* (Hedw.) Nees et Hornsch. was selected as the type-species by WAREHAM in Grout, 1939, Moss Fl. N. America 1: 197. The genus is universally accepted in this sense. Nevertheless the earlier validation of *Anacalypta* Roehl. ex Leman 1816 has priority since the change of the starting point when the two species are united as is the established custom now. Therefore *Pottia* Fuernr. is proposed for conservation.

SUMMARY

The argumentation is given for the conservation of the generic names in Musci: *Acanthocladium* Broth., *Acrocryphaea* B.S.G., *Amblystegiella* Loesk., *Eriopus* Brid., *Macrohymenium* C. Muell., *Pleuridium* Rabenh., *Pottia* Fuernr. The new generic name in *Hookeriaceae*: *Schimperobryum* Marg. is proposed, based on *Lamprophyllum* Schimp. ex Broth. A new specific combination is proposed: *Schimperobryum splendidissimum* (Mont.) Marg., based on *Hookeria splendidissima* Mont. 1835.

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