

On Conserved Types

by
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A contribution to the Nomenclature Column, edited by G. Zijlstra

In Appendix IIIA ("Nomina generica conservanda et rejicienda") of the *Berlin Code* the "(typ. cons.)" at the end of the paragraph was deleted or newly added in a number of cases.

The cause of these changes lies in the definition of "typus conservandus" that had already been accepted in the *Sydney Code* (1983): "a name may be conserved with a different type from that designated by the author or determined by the application of the Code" (Art. 14.8). Before Sydney, there was no definition of conserved types. The "typ. cons." concept was rather wide and vague; many authors already used "typ. cons." in cases in which e.g. an author proposing a generic name for conservation, was the first who designated a lectotype. Since Sydney, this no longer constitutes "typ. cons.", this qualification only being applied if the proposing author overruled a holotype or an earlier lectotype.

In the *Sydney Code*, the typ. cons. definition did not lead to corrections in Appendix II yet. This is not surprising: it is only after checking the original proposal (and in many cases after checking more literature) that it can be established whether or not the "(typ. cons.)" should be retained. Instructions now ran so as to delete the "(typ. cons.)" in those cases which we were certain to be incorrect since Sydney. As in the Sydney-Berlin interval I had gathered some information on this subject already (e.g. on differences between ING and the Code, and on data sent by Isoviita. I decided to check all bryophyte entries. It appeared that "(typ. cons.)" could be deleted in most cases. On the other hand, there were a few

cases in which it had to be introduced. I made a list of these changes, along with the arguments. The list was circulated in the "Committee for Bryophyta". The comment it got was that the list should be published as a documentation of the changes. It follows below (with slight adaptations).

In order to keep the list as short as possible, I only mention the oldest designation in those cases in which the same species has been designated or mentioned as the type a couple of times.

['Year'] refers to the year in which the Code entry appeared with a type for the first time.

I. Typ. cons. incorrect under Art. 14.*, thus deleted. "References" is/are the (main) source(s) from which it is evident that there has not been an earlier lectotype.

Aloina [1956], D:177.

Anoetangium [1956], G 1(3): 149, D: 177.

Atrichum [1956], D: 178.

Aulacomnium [1956], G 2(3): 149, D:178.

Barbula [1952], B&M: 486, L 1943: 112.

Bartramia [1952], G 2(3): 158; L 1941: 108-111, L 1943: 112-113.

Cynodontium [1956], D: 178.

Gymnostomum [1956], D: 178.

Gyroweisia [1956], B: 439, D: 178.

Hedwigia [1952], L 1943: 114-115.

Hypnum [1956], Rev. Bryol. 4: 121-122, D: 178.

Leptostomum [1956], see note 1, [1961] see note 2.

Meesia [1952] G 2(3): 181, L 1943: 118-119.

Mniobryum [1956], see note 3.

Mnium [1966], G 2(4): 243, Taxon 12: 201.

Pleurozium [1983], Taxon 26: 596-597, see note 4.

Pterygoneurum [1956], D: 178, see note 5.

Timmia [1952], G 2(3): 146, L 1943:119.

Trichostomum [1956], G 1(3): 161, D:178, see note 6.

Adelanthus [1952], CRW: 42.

Diplophyllum [1952], CRW: 42.

Gymnomitrium [1952], CRW: 42.

Lepidozia [1952], L 1949: 6-7.

Mylia [1952], L 1949: 15, 18-19.

Nardia [1952], L 1949:15, 19-20.

Pallavicinia [1952], L 1949: 15, 20-21.

Pellia [*1983], thoroughly revised in 1988.

Plagiochasma [1952], Bull. Torrey Bot. Club 42: 259, CRW: 42-43.

Radula [1952], B: 461, CRW: 43

Riccardia [1952], B: 454, [1949], L: 15, 21-22.

Trichocolea [1952], L 1949: 10-11.

II. Typ. cons. correct, thus retained. "Reference": the earlier, overruled lectotype.

Holomitrium [1961], *H. vaginatum*, see N. Am. Fl. 15: 105.

Leptodon [1952], *L. trichomitrium*, see G 3(4): 220 and note 7.

Mittenothamnium [1956], *M. loriforme*, see Nova Guinea 12: 123.

Neckera [1956], *N. crispa*, see G 3(4): 208.

III. Typ. cons. necessary, thus added. "References": (a) the earliest, overruled lectotype; (b) the conserved type.

Ditrichum [1956], (a) N. Am. Fl. 15:

62 (*D. pusillum*), (b) 178 (*D. homomallum*).
Tortula [1952], (a) B: 440 (*T. muralis*), (b) L 1943: 120 (*T. subulata*).

Explanation of the abbreviations

- B = N.L. Britton, *Fl. Bermuda*. 1918.
 B&M = N.L. Britton & C.F. Millspaugh, *Bahama Fl.* 1920.
 CRW = W.H. Camp, H.W. Rickett & C.A. Wetherby, Names proposed for conservation, in Proposed changes in the Int. Rules of Bot. Nomencl. *Brittonia* 7: 1-51. 1949 (using data from Evans, amongst others).
 D = H.N. Dixon, *Internat. bryol. nomencl. J. Bot.* 77: 176-178. 1939.
 G = A.J. Grout, *Mass Fl. N. Am.* 3 vols, 1931-1940. In a number of cases: in Grout.
 L 1941 = E.L. Little, *Bartramia* Hedwig, nom. gen. cons. prop. *Bryologist* 44: 108-111.
 L 1943 = E.L. Little, Later generic homonyms among North American mosses. *Bryologist* 46: 105-125.
 L 1949 = E.L. Little, Nom. cons. prop. in Hepaticae. *Bryologist* 52: 1-22.

Notes

- 1956 Code: *L. macrocarpum*. This species was not originally included, so we can disregard its designation by Dixon 1939.
- 1961 Code: *L. inclinans*.
- Not mentioned in Dixon 1939. The generic names appear for the first time in the (unofficial) 1947 Code (which is not referred to in the lists above). Even though I have not seen the proposal, nor know of an old lectotypification, I think it is rather sure there has not been another lectotype.
- For *Pleurozium* Mitten, non (Sull.) Mitten, there has not been an earlier lectotypification.
- Dixon 1939 dates from June; thus the designation of *P. subsessile* in Grout's Flora dating from July 1939 does not present a problem.
- Britton 1918 designated *T. cylindricum*; this is not an original species.
- Dixon designated *L. smithii* in Rev. *Bryol. Lichenol.* 7: 137-141.

Water-soluble Permanent Mounting Medium for Microscopic Slides

by
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Water soluble mounting media are usually preferred for the preparation of permanent slides of bryophytes. The most commonly used mounting medium, especially in North America, is Hoyer's solution. It was originally developed by entomologists and introduced for bryology by Anderson (1954). It consists of a mixture of distilled water (50 ml), gum arabic (30 g), chloralhydrate (200 g) and glycerol (20 ml). There are, however, two disadvantages of this mounting medium: First, the microscopic specimens bleach (which helps to make structures of entomological subjects visible, but causes bryophyte specimens to lose their colour). And secondly, delicate cell walls tend to shrink and distort. To avoid these effects, Bowers (1964) reduced the effect of chloralhydrate drastically and recommended a mixture of 20 g gum arabic, 60 ml distilled water, 5 g chloralhydrate and 10 ml glycerol. Other authors avoided the use of chloralhydrate totally and recommended pure gum arabic based mounting media (Sayre, 1941, Frahm, 1981). A disadvantage of these media is that the slides need considerable time to harden and are best stored only in a flat position.

In Europe, glycerolgelatine has been used frequently for permanent slides of bryophytes. To avoid shrinking of structures, the specimen has to be transferred to a mixture of glycerol and water first. Small pieces of glycerolgelatine have to be carefully heated (to avoid boiling, which causes air bubbles) on a microscopic slide; the specimen is transferred into the liquid, is cov-

ered, and gets firm when it cools. Since glycerolgelatine is infected by microscopic fungi, the cover glass must be sealed with Caedax, if the slide must be stored for longer periods. Altogether this is a relatively time-consuming and circumstantial method. Similar but liquid mounting media such as gelatinol need not be heated but take longer time to harden.

In all cases, the specimen has to be transferred to the mounting medium. This is circumstantial, can be troublesome in the case when leaves are folding and can no longer be stretched, and is nearly impossible with small transverse sections of stems or leaves. I therefore tried to find an easier method. When introducing the gum arabic-based mounting medium (Frahm, 1981), I recommended to use a small plastic squeeze bottle ending in a fine tip. The microscopic slide is prepared as usual using water as imbedding medium. If this slide is to be made permanent, a stripe of the mounting medium is squeezed along one side of the cover glass. The water below the cover glass will evaporate automatically within the next hours to all other sides and the mounting medium will be soaked under the cover glass, replacing the water. In this way, the preparation of a permanent slide is possible at any time, without any special treatments, transferring of specimens, even of small transverse sections, within a few seconds. A matter of experience is to find the right amount of mounting medium to be squeezed along the cover glass. If it is too little, parts of the slide will