

(2995) Proposal to conserve the name *Diplotomma chlorophaeum* (Hepp ex Leight.) K.P. Singh & S.R. Singh against *D. chlorophaeum* Szatala (lichenized *Ascomycota*)

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(2995) *Diplotomma chlorophaeum* (Hepp ex Leight.) K.P. Singh & S.R. Singh in Bull. Bot. Surv. India 26: 64. 1984 (*Lecidea chlorophaea* Hepp ex Leight., Lich. Fl. Gr. Brit.: 328. Sep–Oct 1871), nom. cons. prop.

Typus: Wales, Aberdovey, 1868, *Bloxam* (BM barcode BM000022392 [right-hand specimen]).

(=) *Diplotomma chlorophaeum* Szatala in Ann. Hist.-Nat. Mus. Natl. Hung. 48: 280. 1956 (lectotypus hic designatus), nom. rej. prop.

The lichen originally described as *Lecidea chlorophaea* Hepp ex Leight. (Lich. Fl. Gr. Brit.: 328. 1871) belongs in *Diplotomma* according to current generic concepts. Szatala (in Ann. Hist.-Nat. Mus. Natl. Hung. 48: 280. 1956) intended to make the combination *D. chlorophaeum*, but did not cite the place of publication of Leighton's name and consequently his combination, as such, is not validly published (Art. 41.5, Turland & al. in Regnum Veg. 159. 2018). However, Szatala did include a Latin description, and his name is validly published as the name of a new species. He did not explicitly designate a type (see below), but, at that time, indication of a type was not a requirement for valid publication. The name *D. chlorophaeum* Szatala has always been used to refer to Leighton's species.

Szatala introduced the name with the claimed authorship "(Müll. Arg.) Szat." The reference to Müller must be to *Rhizocarpon chlorophaeum* (Hepp ex Leight.) Müll. Arg. (in Flora 55: 538. 1872 = *Lecidea chlorophaea* Hepp ex Leight., l.c.). Szatala's description indicated a European, saxicolous species with muriform ascospores 14–16 × 7–8 µm in size, which matches Leighton's species. He could not have had in mind *Psora chlorophaea* Müll. Arg. (in Flora 70: 320. 1887), now *Phyllopsora chlorophaea*, a corticolous, tropical species with ascospores 10–12 × 2–3 µm in size, which has never been reported for Europe, or for anywhere closer to Europe than India and Kenya. On analogy with Art. 7 Ex. 6, Szatala's parenthetical citation of "Müll. Arg." appears to be an indication of a type, i.e., that of Müller Argoviensis's name, which, in turn, is that of Leighton's (Art. 7.3). Although Leighton (l.c.) referred to the species as occurring in Germany and Italy and so must have had or been aware of additional material, he cited a single specimen collected by Bloxam at Aberdovey in N. Wales (BM barcode BM000022392 [right-hand specimen]). As the only syntype, this is the obligate lectotype, and accordingly **I designate it here as lectotype of *Lecidea chlorophaea*** (MBT 10015222). To avoid any doubt as to the application of the name, **I also formally lectotypify here**

Diplotomma chlorophaeum Szatala with the same specimen (MBT 10015226).

Singh & Singh (in Bull. Bot. Surv. India 26: 64. 1984) attempted to validate the combination *Diplotomma chlorophaeum*, but the existence of Szatala's validly published name makes *D. chlorophaeum* (Hepp ex Leight.) K.P. Singh & S.R. Singh [as '*chlorophaea*'] an illegitimate later homonym.

The taxonomy of *Diplotomma* is difficult, because the boundaries of many species have proven hard to define. Nordin (in Acta Univ. Upsal., Symb. Bot. Upsal. 33: 51. 2000), regarded *D. chlorophaeum* as merely a synonym of *D. alboatrum* (Hoffm.) Flot. (in Übers. Arbeiten Veränd. Schles. Ges. Vaterl. Cult. [27]: 130. 1849), which he included in *Buellia* as *B. alboatra*, but Nordin's very broad concept of *D. alboatrum* has not been widely followed. *Diplotomma chlorophaeum* is most commonly regarded as distinct from *D. alboatrum* (e.g., by Smith & al., Lich. Gr. Brit. Ireland: 381. 2009). It differs consistently in chemistry from *D. alboatrum* s.str.

The description of *Diplotomma porphyricum* Arnold (in Verh. K. K. Zool.-Bot. Ges. Wien 22: 300. 1872) suggests a species that is close to *D. chlorophaeum* and perhaps synonymous with it, but notes on its type, in Nordin (l.c.: 52), leave room for doubt about the synonymy. They suggest possible parasitism, but *D. chlorophaeum* is not parasitic. Nordin also subsumed *D. porphyricum* (as well as many other species) under *D. alboatrum*.

If *Diplotomma porphyricum* is synonymous with *D. chlorophaeum* in the usual sense, then at present it would be the correct name in *Diplotomma* for that species. However, the name *D. porphyricum* has been little used, and it would be unhelpful to displace the familiar epithet *chlorophaeum*. The uncertainty in the synonymy also makes it unwise to take up the name *D. porphyricum*.

The potential threat posed by the name *Diplotomma porphyricum* means that publishing a nomen novum in *Diplotomma* for Leighton's name, or the lectotypification of *D. chlorophaeum* Szatala on its own, would not provide a permanent solution, as *D. porphyricum* would have priority. The safe solution is to conserve Singh & Singh's 1984 new combination, *D. chlorophaeum*, against *D. chlorophaeum* Szatala, giving it priority to 1871 and that is my proposal.

If this proposal is not accepted, we must choose one of the following options, all of which are unsatisfactory. (1) Take up the name *Diplotomma porphyricum* for Leighton's species, even though the synonymy is not certain; (2) Take up the name *D. chlorophaeum* Szatala, as typified here, even though it might eventually prove to be threatened by *D. porphyricum*; (3) Ignore

the problem, and continue to refer to Leighton's species by the illegitimate name *D. chlorophaeum* (Hepp ex Leight.) K.P. Singh & S.R. Singh.

A proposal to amend Art. 41.8 of the *Code* that would make this conservation proposal unnecessary has recently been published (Hartley & Govaerts in *Taxon* 72: 959–960. 2023). However, any retrospective change to the *Code*, as that proposal involves, is likely to have unanticipated consequences on a larger scale than the proposers realise. With the outcome of that proposal uncertain, it is important to take immediate steps to maintain use of *Diplotomma chlorophaeum* by acceptance of this proposal.

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(2019) Proposal to conserve the name *Acorus calamus var. americanus* (*A. americanus*) (*Acoraceae*) with a conserved type

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(2019) *Acorus americanus* (Raf.) Raf., New Fl. 1: 57. Dec 1836 ≡ *A. calamus* var. *americanus* Raf., Med. Fl. 1: 25. 11 Jan 1828 [Angiosp.: *Ar. / Acor.*], nom. cons. prop. Typus: [U.S.A.], Maine, Penobscot Co., Orono, Basin Frog Pond, 13 Jul 1942, *Ogden & Steinmetz 2473* [Pl. Exs. Grayanae No. 1216 p.p.] (CM No. 313477 [barcode 0005] [excl. ripe fruits in envelope]; isotypi [all excl. ripe fruits in envelopes]: CLEMS No. 02071 [barcode CLEMS0075920], F No. 1595485 [barcode V0462365F], FLAS No. 72248, GH barcode 01010595, IND No. 97395 [barcode IND-0008301], LE barcode LE 01249870, MICH barcode 1207514, MUHW barcode MUHW026899, NO barcode NO 0038632, P barcode P02087753, US No. 1925737 [barcode 03816883], WIS barcode v 0397276 WIS), typ. cons. prop.

The species of *Acorus* have strong practical uses, especially in herbal medicine, pharmacology, as a source of compounds of insecticidal activity, but also in the perfume industry, as a food flavour and, historically, for candies (Buell in *Rhodora* 37: 367–369. 1935; Motley in *Econ. Bot.* 48: 397–412. 1994; Yao & al. in *Insect Sci.* 15: 229–236. 2008; Balakumbahan & al. in *J. Med. Pl. Res.* 4: 2740–2745. 2010; Rajput & al. in *Phytomedicine* 21: 268–276. 2014; He & al. in *Phytochemistry* 210: e113626. 2023). As *Acorus* is inferred to be a sister group to all other extant monocots, its species are of key importance for studies of early monocot evolution at morphological, genetic, and genomic levels (Rudall & Furness in *Int. J. Pl. Sci.* 158: 640–651. 1997; Buzgo & Endress in *Int. J. Pl. Sci.* 161: 23–41. 2000; Shi & al. in *Nature Plants* 8: 764–777. 2022;

Guo & al. in *Nature Commun.* 14: e3662. 2023; Ma & al. in *Nature Commun.* 14: e3661. 2023).

Despite the extensive taxonomic research, the nomenclature of *Acorus* has been approached only recently because of the obscurity of the original material of many historical names. The earliest legitimate species names have been examined, typified and linked to currently recognized taxa in our recent works (Sokoloff & al. in *Diversity* 15: e176, e766, e785. 2023), to ensure the correct application of historical nomenclature and of nomenclatural priority.

Acorus is represented by two species in North America: *A. calamus* L. (Sp. Pl.: 324. 1753) and *A. americanus* (Raf.) Raf. (New Fl. 1: 57. 1836) (based on *A. calamus* var. *americanus* Raf., Med. Fl. 1: 25. 1828) (Löve & Löve in *Proc. Genet. Soc. Canada* 2: 14. 1957; Wilson in *J. Arnold Arbor.* 41: 50. 1960; Packer & Ringius in *Canad. J. Bot.* 62: 2248–2252. 1984; Thompson, *Syst. Araceae Acoraceae Temp. N. Amer.* [Ph.D. Thesis, Univ. Illinois at Urbana-Champaign]. 1995; Thompson in *Fl. N. Amer. Ed. Comm.*, Fl. N. Amer. N. Mexico 22: 124–127. 2000; Les, *Aquatic Monocotyledons N. Amer.*: 3. 2020). These two taxa are sometimes recognized as varieties (Wulff in *Arch. Pharm. & Ber. Deutsch. Pharm. Ges.* 287: 541. 1954; Röst in *Pl. Med. (Stuttgart)* 37: 289–307. 1979; <https://powo.science.kew.org/>, accessed 15 Aug 2023), i.e., *A. calamus* var. *calamus* and *A. calamus* var. *americanus*. The taxonomic status of *A. calamus* and *A. americanus* is confirmed in our forthcoming work (Sokoloff & al., submitted to *Amer. J. Bot.*), using extensive morphological and molecular phylogenetic evidence.

Acorus americanus is a fertile diploid producing obtuse fruits with a few large seeds (see fig. 8A,B in Sokoloff & al. in *Bot.*