

(2834) Proposal to conserve the name *Sarcogyne* (*Acarosporaceae*, lichenised *Ascomycota*) with a conserved type

Kerry Knudsen,¹  Linda in Arcadia²  & Volkmar Wirth³ 

¹ Department of Ecology, Faculty of Environmental Sciences, Czech University of Life Sciences Prague, Kamýcká 129, 165 00, Praha - Suchbát, Czech Republic

² Kastri, 22013, Arkadias, Greece

³ Friedrich-Ebert-Str. 68, 71711 Murr; Germany

Address for correspondence: Linda in Arcadia, linda_in_arcadia@cantab.net

DOI <https://doi.org/10.1002/tax.12577>

First published as part of this issue. See online for details.

- (2834) *Sarcogyne* Flot. in Bot. Zeitung (Berlin) 8: 381–382. 10 Mai 1850, nom. cons. prop.
 Typus: *S. clavus* (DC.) Kremp. in Denkschr. Königl. Baier. Bot. Ges. Regensburg 4(2): 212. 1861 (*Patellaria clavus* DC.), typ. cons. prop.

The name *Sarcogyne* is listed in Appendix III of the *International Code of Nomenclature for algae, fungi, and plants* (Wiersema & al., <https://naturalhistory2.si.edu/botany/codes-proposals> 2018–) as conserved from an 1851 publication by Flotow (in Bot. Zeitung (Berlin) 9: 753, 759. 1851), with type “*S. corrugata* Flot.”, against the *Sarcogyne* published by Flotow (in Bot. Zeitung (Berlin) 8: 381–382. 1850), as cited above. The proposal to conserve was made by Jørgensen & Santesson (in Taxon 42: 881–887. 1993), and recommended by the Nomenclature Committee for Fungi (Gams in Taxon 44: 411–414. 1995).

Appendix III states that the rejected *Sarcogyne* (Flotow, l.c. 1850) is homotypic with *Polysporina* Vězda, the type of which is *P. simplex* (Borrer ex Hook.) Vězda, a homotypic synonym of *Lichen simplex* Davies (in Trans. Linn. Soc. 2: 283. 1794), nom. illeg., noted by Jørgensen & Santesson (l.c.) as the type of Flotow’s 1850 name.

Unfortunately, “*Sarcogyne* Flot.” (l.c. 1851) is not a validly published name, so it cannot be conserved. “*Sarcogyne corrugata*” was also not validly published in 1851, and we have not found any validation elsewhere, so “*S. corrugata*” cannot be the type of any generic name. However, the name *Sarcogyne* Flot. (l.c. 1850) is validly published, but its type cannot be *Lichen simplex* Davies, as that would be inconsistent with what Flotow wrote in his 1850 paper.

The present proposal outlines the facts of this difficult case, and seeks to remedy the matter.

Flotow’s 1851 paper in *Botanische Zeitung (Berlin)* 9: 753–759 and 769–776 was published on 24 and 31 October 1851. It contains extracts from three letters: the first, dated 1 October 1845 to C.G.D. Nees von Esenbeck, the second, also to Nees, was begun on 15 October 1845 and completed on 16 October, and the third, dated 13 November 1846, to J.F. Laurer. (A single paragraph dated 1848 was inserted into the text of the third letter before publication.)

Flotow’s explanations are complicated, but throughout he is discussing collections of a single species that he had made at Kynast in Silesia, north of Krkonose (“Riesengebirge” in German). He returned repeatedly to that locality to collect more. He described the material in increasing detail in successive letters. It is clear from his descriptions and explanations that his collections belonged to the species now known as *Sarcogyne clavus* (DC.) Kremp. based on *Patellaria clavus* DC. (in Lamarck & Candolle, Fl. Franç., ed. 3, 2: 348. 1805).

Within the first letter he explained that he was having difficulty determining the material but “[...] in the meantime I call this rare plant from Kynast, [...] ‘*Sarcogyne corrugata*’ [...]” (translated from German). He then gave descriptions in Latin of *Sarcogyne* (pages [i.e., columns] 753 and 754) and of his *Sarcogyne corrugata* (p. 754). Both Latin descriptions are adequate for valid publication, but each name is followed by the phrase “ad int.”, so on 1 October 1845 Flotow had regarded them as provisional names, both in the Latin descriptions and in his German text (the latter by the phrase here translated as “in the meantime”).

In the second letter he stated that he now has a good section and he described the anatomy more thoroughly. This part of the paper (p. 759) ends with a description of *Sarcogyne*, without any “ad int.”.

In the letter dated 13 November 1846, there is a long discussion on the anatomy of *Psora vesicularis*, and Flotow (pp. 771–772) stated as a consequence (translated from German): “With the reinstatement of *Psora*, a stone fell from my heart, because now I can retract my genus *Sarcogyne* again because it can more or less be appended to *Psora* in spite of some differences. [...] Therefore, I go back with my *Sarcogyne* to *Psora* and call it *Psora privigna* Ach. Meth. p. 49 (sub Lecid[ea]). There is no doubt about its identity with the species of Acharius when one is reading the text on it in the Methodus and on *Patellaria simplex* in Wallr[oth]. Compend. I. 348, where it is described very adequately. [...] *Patellaria Clavus* DC. Fl. Franç. Edit. 3. Tom. II. p. 348. No. 939 [...] is the lichen from Kynast that I have described as *Sarcogyne corrugata* β in its developed [adult] state.” [The name *Sarcogyne corrugata* α refers to what Flotow considered, on pages 756–758 to be juvenile material of the same species, and which, on page 773, he listed as a synonym of *Psora privigna*.]

Later (p. 772), once again, he writes that the original sample from Kynast is *Patellaria clavus* = *Sarcogyne corrugata* β in litt. He states (p. 772, end of first paragraph) that *Lichen simplex* Davies does not agree with *Sarcogyne corrugata* [translated from German] “because *Lichen simplex* Dav. is in contradiction concerning both the internal and external structure and its polymorphism [...]” Flotow’s views on 13 November 1846 are summarised by the entry on page 772. He did not accept the name *Sarcogyne corrugata* because he cited it as a synonym of *Psora privigna*. Nor did he accept the generic name *Sarcogyne* because he regarded *Sarcogyne* as contained within *Psora*.

The name *Sarcogyne* appears again, in a passage at the end of page 774 and the beginning of page 775, where it is distinguished from *Psora*. However, this passage is discussing apothecial types (“Fruchtgehäuse der Flechten”) and here the word “*Sarcogyne*” refers to “*Sarcogyne*-type apothecia”. The usage is confusing, but we

find nothing in the text to suggest that Flotow had rejected the conclusion he had reached on page 772. We conclude that he still did not accept *Sarcogyne* as a generic name.

Although this first part of the paper was published at a different date than the second part (24 October and 31 October 1851 respectively), it would not be reasonable to argue that on 24 October, at the end of the first part, Flotow accepted the name *Sarcogyne*, and that *Sarcogyne* was therefore validly published on 24 October 1851. Not only were the two parts of the paper clearly written as a single entity, and undoubtedly submitted to the journal as a single entity, they comprise letters written five years earlier and from what appeared in Flotow (l.c. 1850) cannot reasonably be regarded as representing Flotow's views at any time in October 1851. They document views that Flotow had once held but had rejected at least a year before 1851, at least as regards those views relevant to this conservation proposal. We have not been able to deduce why Flotow chose to publish in 1851 letters that he had written, respectively, six and five years earlier and which no longer represented his views. Neither paper gives any hint of an explanation.

The 1850 paper is also in two parts, in *Botanische Zeitung (Berlin)* 8: 361–369 (3 May) and 377–382 (10 May). It includes extracts from a letter to Fries dated September 1848, i.e., later than the letters published in 1851. The name *Sarcogyne* was first mentioned on page 366. The paragraph containing the name begins on page 365. The key parts of the German text read: “Furthermore, I found monstrous individuals of *Psora simplex* (Dav.), which seemed to me to be a curious *Opographa* in times before possessing a good microscope [...]” “For these anatomical relations, which resemble Umbilicariae, no genus was known to me, and I had already made a new genus “*Sarcogyne*” for it, when I saw the same structure/construction in *Psora vesicularis*, *Ps. lucida* [probably error for *lurida*], etc., which forced me to reinstate this genus [i.e., *Psora*] [...]”

In other words, Flotow stated that in the past he had considered the (then unpublished) name *Sarcogyne* to be that of a good genus, but that now, i.e., September 1848, he does not, regarding it instead as being synonymous with *Psora*. This is consistent with what he stated in his letter of 13 November 1846, published in the 1851 paper.

The second part of the paper begins (p. 377) with a continuation of the same letter to Fries, and that letter continues at least to page 380. It is unclear whether the section beginning on that page headed “Einige Monate später” [some months later] is a postscript to the letter to Fries written some months later or is Flotow's own summary written independently of Fries. The key to “Lichenes Gymnocarpi crustacei” at the end of the paper, on pages 381–382, summarises all that has preceded it in the 1850 paper and does not appear to be part of the letter. It contains a description of *Sarcogyne*. The description consists of the relevant parts of the key couplets leading to the entry for *Sarcogyne*. In the key, Flotow wondered whether *Sarcogyne* might be a section of *Psora*, as he listed “7. *Sarcogyne* Fw. (Sectio *Psorae?*)”, but he clearly accepted the name *Sarcogyne* at generic rank. *Sarcogyne* is numbered, as no. 7, in the same way and in the same typeface as the other genera included in this part of the key, numbers 1–10. *Psora* appears, entirely separately, as number 3. An expression of taxonomic doubt does not invalidate a name (Art. 36.1 of the *ICN*, Turland & al. in *Regnum Veg.* 159. 2018).

Flotow did not explain why he changed his mind between the view expressed in the letter to Fries included earlier in the paper (*Sarcogyne* belongs within *Psora*) and the view expressed in the key (*Sarcogyne* is regarded, albeit tentatively, as an independent genus).

Whatever the explanation, the key at the end of the paper was evidently intended as a summary and conclusion, and it must be presumed to over-ride anything earlier in the paper that is inconsistent with it, particularly as those earlier statements were from a letter dated two years earlier. The name *Sarcogyne* Flot. (l.c. 1850) is therefore validly published.

It is a source of confusion, that Flotow's earlier views, those expressed in his letters of 1845 and 1846, came to be published a year after his later views, those in his letter of 1848 (and in a summary key that may date from 1850), were published. As noted above, we do not know why he chose to publish in this order.

In 1850, Flotow did not describe any new species in *Sarcogyne*, nor did he combine any earlier name into the genus. Jørgensen & Santesson (l.c.) considered the type to be *Lichen simplex* Davies, but did not explain why they held that view. Flotow at first considered his material to be “monstrous” individuals of *Psora simplex* (= *Lichen simplex* Davies). That implies that he knew Davies's species, and recognised that his material was not typical for that species. Then he realised that his own material was too big, too monstrous to be Davies's species, and he erected the genus *Sarcogyne* for it. Later, he wondered whether *Sarcogyne* ought to be treated as a section of *Psora*, but he did not change his view that his collections differed too much from *Lichen simplex* Davies to belong to that species.

Lichen simplex Davies thus cannot be the type of *Sarcogyne* Flot. (l.c. 1850). Flotow clearly considered that the material for which he erected the genus *Sarcogyne* did not belong to that species. The view of Jørgensen & Santesson (l.c.) cannot be accepted.

Flotow did not refer anything to *Sarcogyne* other than his own, unnamed, collections, so there is no name available in the 1850 paper that could be chosen as type.

The earliest attempt to typify *Sarcogyne* that we have found was by Vězda (in *Folia Geobot. Phytotax.* 13: 398. 1978), who designated *Sarcogyne privigna* (Ach.) A. Massal. (Geneac. Lich.: 10. 1854). However, *S. privigna* is based on *Lecidea privigna* Ach. (Methodus: 49. 1803), a legitimate replacement name for *Lichen simplex* Davies (nom. illeg.), so, as explicitly excluded by Flotow (l.c. 1850), it is not acceptable as type. [Vězda was following the interpretation of Magnusson (in *Rabenh. Krypt.-Fl.*, ed. 2, 9(5(1)): 1–28. 1935) not of *Sarcogyne privigna* (Ach.) A. Massal. but of the “new combination” *Sarcogyne privigna* “(Ach.) Anzi” made by Magnusson (1935), which misapplied the epithet *privigna* to the species *S. hypophaea* (Nyl.) Arnold: see Knudsen & al. in *Opusc. Philolichen.* 12: 23–26. 2013.] The only other attempt at typification that we have found is the one by Jørgensen & Santesson (l.c.), which, as noted above, is also unacceptable. So *Sarcogyne* Flot. (l.c. 1850) appears to be untypified.

As “*Sarcogyne* Flot.” (l.c. 1851) is not a validly published name and as the only provision for conservation of an unpublished name (a “designation”) is for those family names conserved under Art. 14.14, the current entry in App. III of “*Sarcogyne* Flot.” (l.c. 1851) should simply be deleted, as, not being a name, it is not covered by the provisions of Art. 14.13 (entries of conserved names may not be deleted). *Sarcogyne* Flot. (l.c. 1850) would then become the correct name for the genus and, as it is currently untypified, we could designate a type in the normal way. However, in view of the confused history of this topic, the general complexity of the case (which makes it possible that some of our nomenclatural reasoning could perhaps be disputed), including the fact that the correct name is currently listed as a rejected name, and the risk that we may have overlooked a previous acceptable typification, we consider it advisable to propose the type and hence also the name for conservation.

Acarospora and *Sarcogyne* are descendants from a common ancestor forming phylogenetically two separate lineages but which need more global sampling to develop a more robust phylogeny permitting a better understanding of their evolutionary relationships (Westberg & al. in *Fungal Diversity* 73: 145–158. 2015; Knudsen & al. in *Bryologist* 123: 11–30. 2020). Under morphological concepts, *Acarospora* had immersed apothecia or pseudolecanorine apothecia, whereas *Sarcogyne* had melanized lecideine apothecia (Knudsen & al. in *Revis. Brit. Irish Lichens*: 12. 2021). Phylogenetic analyses have proven there are no synapomorphic characters to separate species described as *Acarospora* from those described in *Sarcogyne* (Westberg & al., l.c.; Knudsen & al., l.c. 2020). For instance, lecideine apothecia and immersed and pseudolecanorine apothecia occur in both genera. No single species can currently be ascertained as necessarily providing the best type for the genus *Sarcogyne*. We propose *Sarcogyne clavus* as type of the generic name as it represents the original concept of *Sarcogyne* as having melanized lecideine apothecia without algae in the margin (Massalongo, l.c.). It is a cosmopolitan lineage in the Northern Hemisphere, and there has been no controversy about the application of the name. It has large lecideine apothecia up to 4 mm

in diameter with a rough tuberculate margin, beautiful as the knobby back of an American alligator, and a black hypothecium. The holotype of *Patellaria clavus* (France: “trouvée par le C. Ramond, sur les roches calcaires arenacées du Marboré, dans les Pyrénées”) has not yet been located, but may be in FI, G or P, and the matter is under investigation.

Author information

KK, <https://orcid.org/0000-0001-5419-5729>

LA, <https://orcid.org/0000-0002-8151-2838>

VW, <https://orcid.org/0000-0002-4982-9472>

Acknowledgements

We are very grateful to John McNeill, who read an early draft of this paper and made many substantive and helpful comments at that time and in the editorial process. The work of Kerry Knudsen was financially supported by the grant of Ministry of Education, Youth and Sports of the Czech Republic, the program of international cooperation between the Czech Republic and the U.S.A. for research, development and innovations INTEREXCELLENCE, INTER-ACTION, no. LTAUSA18188.

(2835) Proposal to conserve the name *Umbilicaria spodochoa* (lichenized *Ascomycota*) with a conserved type and with that spelling

Geir Hestmark 

CEES, Center for Ecological and Evolutionary Synthesis, Department of Biosciences, University of Oslo, P.O. Box 1066 Blindern, 0316 Oslo, Norway

Address for correspondence: Geir Hestmark, geir.hestmark@ibv.uio.no

DOI <https://doi.org/10.1002/tax.12578>

First published as part of this issue. See online for details.

(2835) *Umbilicaria spodochoa* Hoffm., *Deutschl. Fl.* 2: 113. 1796 ('*spadochoa*'), nom. et orth. cons. prop.

Typus: [Sweden, Bohuslän] An Felsklippen am Meeresufer der Insel Tjörn in Schweden, 1884, *Hellbom* in *Arnold, Lich. Exs.* No. 1101 (O No. 126234; isotypi: FH, G, U), typ. cons. prop.

The lichen currently known as *Umbilicaria spodochoa* is a well-known species common on the coastal cliffs of southern Norway and Sweden, but the original spelling of the epithet was '*spadochoa*', and there is a problem with the typification of this name that the present proposal aims to solve. The specific epithet, as "*Lichen spadochrous*", was first used for an umbilicate lichen by Jakob Ehrhart in the final issue of his exsiccate *Plantæ cryptogamæ Linn. quas in locus earum natalibus collegit et exsiccavit Fridericus Ehrhart, Helveto-Bernas. Decas Trigesima secunda*, dated "Hannoverae 1793", containing 10 taxa. Here we find: "316. Lichen spadochrous

Ehrh. *Upsaliæ*". Ehrhart thus clearly indicated that he is the one proposing a name for this taxon. Other taxa in the same fascicle have other authors indicated. However, Ehrhart provided no description of "*L. spadochrous* Ehrh." It is a nomen nudum – although of course, he included a specimen in the exsiccate. The locality of "*L. spadochrous*" is given by Ehrhart as "Upsaliæ", i.e., Uppsala, Sweden. According to his posthumously published autobiographical notes (Ehrhart in *Ann. Bot. (Usteri)* 19: 1–9. 1796), Ehrhart visited Uppsala between 1773 and 1776 when he studied with Linnaeus father and son, and botanized in the vicinity.

The first description of Ehrhart's taxon was made by Hoffmann (*Deutschl. Fl.* 2: 113. 1796): "*U. spadochoa*, cinereo-glaucula, laeviuscula, subtus sparsim fibrillosa papillosa subfusca. Ehrh. *crypt. exs.* 317. (Lich. spadochrous.) | In montosis.", adding "Hercyn." as its locality (the Harz region in central Germany). Hoffmann's indication of a specific collection in the form of the Ehrhart exsiccate