

*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>

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## (2835) Proposal to conserve the name *Umbilicaria spodocho* (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](mailto:geir.hestmark@ibv.uio.no)

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(2835) *Umbilicaria spodocho* Hoffm., *Deutschl. Fl.* 2: 113. 1796 ('*spadocho*'), 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 spodocho* is a well-known species common on the coastal cliffs of southern Norway and Sweden, but the original spelling of the epithet was '*spadocho*', 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. spadocho*, 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

cannot be considered establishment of a holotype (Art. 9.1 of the *ICN* – Turland & al. in *Regnum Veg.* 158. 2018), as he did not indicate a specific collection or specimen of this exsiccate and, by the reference to “Hercyn.,” apparently had other material. Llano (Monogr. Umbilicariaceae W. Hemisph.: 101. 1950) stated “Type: Ehrhart, Chr. G., Crypt. Exs. 317, in Hoffm. Deutschl. Fl. 113. 1796” without, however, citing any particular specimen or giving any indication of actually having seen a specimen of this exsiccate. This does, however, represent a first-stage lectotypification (Art. 9.17 of the *ICN*). Similarly, Wei & Jiang (Asian Umbilicariaceae: 98. 1993) wrote: “Type: Ehrhart, Chr. G., Crypt. Exs. 317, in Hoffm. Deutschl. Fl. 113 (1796), not seen.” Both copied Hoffmann’s wrong number (317 for 316); no. 317 is *Byssus mollissima* Ehrh.

The problem is that the known specimens of Ehrhart, Pl. Crypt. Linn. no. 316, are of another taxon than *Umbilicaria spodocho* as currently understood. The specimen in GOET is a well-preserved thallus of *U. hirsuta* (Sw. ex Westr.) Ach. (in Kongl. Vetensk. Acad. Nya Handl. 15: 97. 1794) (= *Lichen hirsutus* Sw. ex Westr. in Kongl. Vetensk. Acad. Nya Handl. 14: 47. 1793) with sorediate margins, no apothecia, and has a light lower side densely covered with slender, white rhizomorphs. Similarly, the specimen in James Edward Smith’s herbarium, LINN-HS 1703.19.3, and a specimen in MW are of *U. hirsuta*. This suggests that Ehrhart in his exsiccate No. 316 for his “*L. spadochrous*” consistently used specimens of *U. hirsuta*, a species originally recognized by the Swedish doctor, Peter Olof Swartz, and published by Erik Acharius (l.c. 1794). This may explain why Hoffmann (l.c. 1796) does not supply his ‘*U. spadocho*’ with a separate species number but places his description of this taxon between “9. *U. hirsuta*” and “10. *U. vellea*”. He does, however, list ‘*U. spadocho*’ as an accepted name in the index to the volume.

Hoffmann’s (l.c. 1796) brief protologue is not specific enough to distinguish between the two taxa *Umbilicaria hirsuta* and *U. spodocho* as the latter is currently understood. Adding to the confusion is his reference to some other taxa: “H. 1. quoad specimina a cel Smith ex herbario linneano mecum communicata: Lichen polyrrhizos *Lin.*, inferne cinereus subfuscus vel fusco-nigricans, scutellis distinctis contortis. Irrigata parum virescit frons, etiam polyphylla. Aliena et cum *U. cirrhosa* pl. lich. t. 2. fig. 3. potius conveniens species est: Lich. polyrrhizos *Achar. l. c. t. 2. fig. 4.*”). There is no *L. polyrrhizos* L. (Sp. Pl.: 1151. 1753, ‘*polyrrhizos*’) (from Smith or anyone else) in what is left of Hoffmann’s herbarium in MW, but on the herbarium sheet, LINN-HS 1703.19, with the label of “*Lichen spadochrous*” clipped from Ehrlich’s exsiccate and the specimen numbered as “3”, Smith has in pencil written “polyrrhizos HL” to the right of the label, suggesting that he accepted the specimen as *L. polyrrhizos*. His conception was erroneous because the fairly rare Linnaean taxon now recognized as *Umbilicaria polyrrhiza* (L.) Fr. is a taxon in its own right, typified on a specimen in Dillenius’s herbarium (cf. Jørgensen & al. in *Bot. J. Linn. Soc.* 115: 340, 379. 1994). While Hoffmann (l.c. 1796) stated that *U. spodocho* was distinct from *U. cirrhosa* Hoffm. (Descr. Pl. Cl. Crypt.: 9. 1789, ‘*cirrosa*’), he suggested that it came close to an illustration of *L. polyrrhizos* published by Acharius (l.c. 1794: [post 160], t. 2, fig. 4). The apothecia here depicted by Acharius are however distinctly gyrose, which conforms with *U. hirsuta* but not with *U. spodocho* as currently understood, which has omphalodisc apothecia.

This confusion led Frey (in *Hedwigia* 71: 112. 1931) to state that Acharius (*Lichenogr. Universalis*: 229, 673. 1810) was the first to describe the habit and apothecia of *Umbilicaria spodocho* so definitively that there was no doubt that it is different from other taxa.

Accordingly, Frey gave the author citation for *U. spodocho* as “(Ach. pr. p.) Frey. nov. comb.,” adding his own name because some specimens of *U. spodocho* in Acharius’s herbarium (H-ACH) are labelled “*U. vellea*”. Frey (l.c.) also presented a new comprehensive Latin diagnosis, but provided no indication of a type. Although Hoffmann’s protologue is not very precise, his name cannot for this reason be considered not to be validly published, and thus the author citation should be “Hoffm.” The problem with the Ehrhart exsiccate suggests that, in order to maintain the current application of *U. spodocho*, a new and unambiguous type for the name should be established.

If this proposal is not accepted, *Umbilicaria spodocho* should be considered a synonym of *U. hirsuta*, and another name for the taxon now recognized as *U. spodocho* must be established. The first later published synonym would then be the name for the species, but no such synonym appears to exist. The earlier *Umbilicaria cirrhosa* Hoffm. (Descr. Pl. Crypt. 1: 9. 1789, ‘*cirrosa*’) has sometimes been cited as a synonym of *U. spodocho* (Zahlbruckner, *Cat. Lichen Univ.* 4: 688–691. 1927), but the only known specimen referable to this taxon in Hoffmann’s General Herbarium (No. 8603a, “*Umbilicaria cirrhosa* Helvet”; MW) is a thallus referable to the still earlier *Lichen velleus* L. (l.c.: 1150) (= *Umbilicaria vellea* (L.) Ach. l.c. 1794: 101). Introducing a brand new name for the taxon today well known as *U. spodocho* would break with the principle of avoiding disadvantageous nomenclatural change (Art. 14.1 & 14.2 of the *ICN*).

A separate issue is Hoffmann’s original spelling ‘*spadocho*’. Nylander (*Lich. Scand.*: 115. 1861) suggested that this was an error for ‘*spodocho*’. While the Greek ‘*spodochrous*’ (σποδοχος, ashes and χροιά or χρώα the color of something) means ash-colored or ash-grey, which corresponds well to the color of the upper surface of this lichen; ‘*spadis*’ (σπάδιξ, palm-color, bay), from which the Latin “*spadiceus*” is derived, means date-colored, a deep reddish-brown, which is certainly not how this lichen is colored, neither on its upper nor lower side. Indeed, most modern authors have followed Nylander and adopted the spelling ‘*spodocho*’. However, there is no evidence that this was an orthographic error on Hoffmann’s part, as he simply adopted the epithet from the “*Lichen spadochrous*” of Ehrhart’s exsiccate, and Acharius (l.c. 1794, 1810), Wahlenberg (*Fl. Suec.*: 857. 1826) and other pre-1861 authors maintained the “*spado*” spelling, as did a few later authors (e.g., Merrill in *Bryologist* 9: 83–87. 1906; Llano, l.c.: 97). The name *Umbilicaria spodocho* is, however, used today with that spelling unambiguously in all recent systematic treatments, such as Moberg & Holmåsén (*Lavar*: 158. 1982), Wei & Jiang (l.c.), Krog & al. (*Lavflora*: 297. 1994), Smith & al. (*Fungi Lichens Great Britain*; <https://fungi.myspecies.info>, Kew, British Lichen Society, 2019), and Steenroos & al. (*Lichens Finland*: 708. 2016) and for this reason, I am proposing that this later spelling, *U. spodocho*, be conserved (Art. 14.11 of the *ICN*).

#### Author information

GH, <https://orcid.org/0000-0003-2954-4258>

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