

(1657–1665) Proposals to conserve eight names and reject one species name in *Cladoniaceae* (Fungi)

Teuvo Ahti¹ & Paula DePriest²

¹ Botanical Museum, P.O. Box 7, FI-00014 Helsinki University, Finland. teuvo.ahti@helsinki.fi (author for correspondence)

² Department of Botany, MRC-166, Smithsonian Institution, P.O. Box 37012, Washington, D.C. 20013, U.S.A. depriest@nsmnh.si.edu

During the preparation of a catalogue of names in the lichen family *Cladoniaceae*, with their typifications, we have come across several cases where a well-established name can be saved only through conservation or rejection. We here propose eight names for conservation and one name for rejection. Many of these names were earlier typified in the *Names in Current Use List (NCU)* by Ahti (in *Regnum Veg.* 128: 58–106. 1993). However, the proposed NCU rules failed to gain acceptance in the nomenclature sessions of two botanical congresses (Tokyo 1993, St. Louis 1999) and some of the proposed typifications based on their future acceptance are not in accordance with application of the present *ICBN* (Greuter & al. in *Regnum Veg.* 138. 2000). A few of the 1993 typifications by Ahti were already rectified by Jørgensen & al. (in *J. Linn. Soc., Bot.* 115: 261–404) and Ahti (in *Fl. Neotr. Mon.* 78. 2000) but some are corrected here. The option to conserve specific names, introduced into the *ICBN* after the Tokyo Congress in 1993, has essentially improved the possibility to maintain well-established names in use in *Cladoniaceae*. The endangered nomenclatural status of many of these names has been known to lichenologists for a long time but the required synonymy has been delayed because too many familiar names would have been abandoned. A notorious example is Laundon's (in *Lichenologist* 16: 211–239. 1984) numerous typifications of W. Withering's neglected names. However, such typification of old names is generally extremely laudable, and the unpleasant results can now be efficiently mitigated by the new provisions within the present *ICBN*.

One rich source of designated or potential types of lichen names are the illustrations (drawings) in the *Historia Muscorum* by Dillenius (1742). For most of the illustrations the Dillenian herbarium in Oxford (OXF-Dillenius, Hist. Musc.) contains the original lichen specimens. These are a good source for epitypes for numerous names in *Cladoniaceae*. In principle, one should perhaps designate a modern specimen (preferably in an exsiccata series) as epitype, but in the case of Dillenian figurers we have usually preferred to designate an epitype from the Dillenian herbarium, especially when the identity of the specimen in the illustration is obvious. Several specimens are cited below, using the numbering system adopted by Darbishire in Druce & Vines, *The Dillenian Herbaria* (1907).

(1657) *Baeomyces bacillaris* Ach., *Methodus*: 329. Jan–Apr 1803 [*Fungi*], *nom. cons. prop.*
 Typus: England, Durham, Cleveland, Ayton Moor, W. Mudd in Mudd, *Monogr. Brit. Cladon.* [exs.] No. 70 (BM; isotypi: FH, UPS), *typ. cons. prop.*

The unsatisfactory nomenclatural status of the much used name *Cladonia bacillaris* “(Ach.) Nyl.” has been recognized for a long time; see, e.g., Evans (in *Trans. Conn. Acad. Arts* 30: 395. 1930), Ahti (in *Lichenologist* 12: 130. 1980), and Christensen (in *Lichenologist* 19: 68. 1987). Its cited basionym *Baeomyces bacillaris* Ach. was an illegitimate, superfluous name when published, because the author, Acharius (l.c.), cited four earlier species-level names in synonymy, viz., *Lichen filiformis* Huds. 1762, *L. tubiformis* Lightf. 1777, *L. macilentus* [Ehrh. ex] Hoffm. 1796, and *L. monocarpus* Thunb. 1799. However, its illegitimacy often has not been taken into account when “new combinations” have been made. As a result, the “combinations” have also been illegitimate superfluous names, because the ‘automatic’ type material of *Baeomyces bacillaris* as established under Art. 7.5 of the *ICBN* was not explicitly excluded. The much applied name “*Cladonia bacillaris* Nyl.” (*Lich. Lapon. Orient.*: 179. 1866), from which Acharius's name was excluded was actually a *nomen nudum*. In addition, Ahti (in *Regnum Veg.* 128: 68. 1993) found that it is predated by an earlier name, *Cladonia bacillaris* Genth (*Fl. Nassau*: 406. 1835). The latter name was published in the NCU list by Ahti with a new neotype in the hope that it could be conserved in that way. In fact, Genth's name also suffers from not definitely excluding the type of *Baeomyces bacillaris*, cited as a synonym, although Genth cited himself as the only author of the name.

The intention of this proposal is to make legitimate the established names *Cladonia bacillaris* (Ach.) Genth and *Cladonia macilenta* var. *bacillaris* (Ach.) Schaer. for this common and widespread lichen. Therefore we propose that *Baeomyces bacillaris* Ach. be conserved with a conserved type. We wish to designate a good specimen distributed by W. Mudd in his British exsiccata series (the same specimen was earlier incorrectly designated as “neotype” of *Cladonia bacillaris* Genth by Ahti (in *Regnum Veg.* 78: 68. 1993) rather than any specimen in Acharius's collections, which contain poor or otherwise inadequate material (not suitable

for chemical analyses, for instance). The proposed type specimen gives a negative reaction with *p*-phenylenediamine (PD), indicating that it does not contain thamnolic acid (i.e., it is not *C. macilenta* Hoffm., s. str.).

If the proposal is not accepted, the oldest name at species level is possibly *Cenomyce clavulus* Dufour (in Ann. Gén. Sci. Phys. 8: 54. 1821) (see Ahti, Fl. Neotrop. Mon. 78: 210. 2000), an almost totally neglected name.

Recent publications in which the name *Cladonia bacillaris* is applied in the sense of the proposed conservation include: Thomson (Amer. Arct. Lich. 1: 110. 1984), Stenroos (in Ann. Bot. Fenn. 23: 240. 1986), Swinscow & Krog (Macrolich. East Africa: 41. 1988), Vitt & al. (Mosses, Lichens & Ferns of NW N. Amer.: 199. 1988), Dobson (Lichens (ed. 3): 121. 1992), Türk & Poelt (Bibliogr. Flecht. Flechtenbewohn. Pilze Österreichs: 31. 1993), Trass & Randlane (Eesti suursamblikud: 131. 1994), Krog & al. (Lavflora (ed. 2): 148. 1994), Hammer (in Bryologist 98: 7. 1995), McCune & Goward (Macrolich. N. Rocky Mts.: 77. 1995), Randlane & Saag (in Folia Crypt. Estonica 35: 32. 1999), Lai (Illustr. Macrolich. Taiwan 1: 240. 2000), Thomson (Lich. Wisconsin: 77. 2003).

However, in recent times many authors have followed Christensen (in Lichenologist 19: 61–69. 1987), who regarded *Cladonia bacillaris* as a mere (nameless) barbatic-acid chemotype of *C. macilenta* Hoffm. Esslinger & Egan (in Bryologist 98: 484. 1995) adopted *Cladonia macilenta* Hoffm. var. *bacillaris*, a name whose use also requires the present conservation proposal. More recent, but still insufficient, data from molecular systematics indicate that *C. macilenta* is not uniform (Stenroos & al. in Cladistics 18: 247. 2002). This also makes it important to solve the problem of the name *Baeomyces bacillaris*.

- (1658) *Cenomyce coniocraea* Flörke, Deutsche Lich. 7: 14. 1821 [*Fungi*], *nom. cons. prop.*
 Typus: Sweden, Närke, Svennevad, Korsmon, 1950, *G. Kjellmert* in Magnusson, Lich. Sel. Scand. Exs. No. 388 (UPS; isotypi: B, H, US), *typ. cons. prop.*

The name *Cladonia coniocraea* (Flörke) Spreng. (Syst. Veg. 4(1): 272. 1–7 Jun 1827) is used for a common, well-known lichen. However, lichenologists frequently add “s. auct.” after the name, because it is known (Ahti in Lichenologist 12: 130. 1983) that its type material (no lectotype designated), distributed as No. 138 in the exsiccata set *Deutsche Lichenen* by H. G. Flörke, represents *Cladonia ochrochlora* Flörke (De Cladon.: 75. Jul 1828). In the list of the *Names in Current Use* Ahti (in Regnum Veg. 128: 72. 1993) tried to rectify this situation by selecting a neotype (not effective, because original specimens exist). Because the NCU rules were not accepted, a new conserved type is here proposed. The new type represents the lichen that most authors have called *Cladonia coniocraea* s. str. (for descriptions of *C. coniocraea* and *C. ochrochlora*, see, e.g., Ahti & Hammer, Lich. Fl. Greater Sonoran Desert Region 1: 135, 140, 149. 2002). It is the same collection that Ahti called

“neotype”.

If the conserved type were not accepted, the name *C. coniocraea* would be the correct name for the closely related lichen that is now called *C. ochrochlora*. This is the situation to which Art. 57.1 applies and would be especially confusing because this is a difficult species pair with little taxonomic distinction. It would be no problem if the two species are united, as is being done by a few authors. However, most authors recognize two species. Ahti (in Fl. Neotr. Mon. 78: 139. 2000) established that *C. coniocraea* is limited to the northern hemisphere, whereas *C. ochrochlora* is more widespread, occurring also in the southern hemisphere. The typification problems of *C. ochrochlora* are treated under a separate conservation proposal.

Recent publications in which the name *Cladonia coniocraea* is adopted in the restricted sense (excluding *C. ochrochlora*) include: Santesson (Lich. Lichenic. Fungi Sweden Norway: 63. 1993), Purvis & al. (Lich. Fl. Great Britain Ireland: 204. 1992), Nimis (Lich. Italy: 228. 1993), Hammer (in Bryologist 98: 10. 1995), McCune & Goward (Macrolich. N. Rocky Mts.: 85. 1995), Esslinger & Egan (in Bryologist 98: 484. 1995), Diederich & Sérusiaux (Lich. Lichenic. Fungi Belgium Luxembourg: 88. 2000), Brodo & al. (Lich. Fl. N. Amer.: 247. 2001), Llimona & Hladun (in Bocconea 14: 104. 2001), Hafellner & Türk (in Stapfia 76: 41. 2001), Ahti & Hammer (Lich. Fl. Greater Sonoran Region 1: 149. 2002), Kurokawa (Checklist Japanese Lich.: 21. 2003), and McCarthy (Catal. Austral. Lich.: 39. 2003).

A few authors, for instance Wirth (Flecht. Baden-Württembergs (ed. 2) 1: 302, 322. 1995) and Thomson (Lich. Wisconsin: 78. 2003), have treated *C. coniocraea* in the wide sense, including *C. ochrochlora*, but even to those who want to follow them the new typification would not cause problems.

Adoption of the new, conserved type for the basionym *Cenomyce coniocraea* would stabilize the application of the name *Cladonia coniocraea*. If the proposed new typification were not accepted (and Prop. 1662 to conserve *C. ochrochlora* with a conserved type were accepted, avoiding the need to take up that name in a confusing sense), a new name would probably need to be published for the lichen for which *C. coniocraea* is normally adopted, unless the overlooked name *Cladonia apolepta* (Ach.) H. M. M. Hansen & M. Lund (in Bot. Tidsskr. 41: 67. Jan 1929) is applicable (no type specimen detected). The lichen is extremely common in Eurasia and North America and, therefore, the stabilization of its name is highly desirable.

- (1659) *Cenomyce polydactyla* Flörke, Deutsche Lich. 10: 13. 1821. [*Fungi*], *nom. cons. prop.*
 Typus: [Germany, Mecklenburg-Vorpommern], Rostock, *H. G. Flörke* in Flörke, Deutsche Lich. No. 195A (UPS).
 (=) *Lichen ventricosus* Huds., Fl. Angl.: 458. Jan–Jun 1762.
 Lectotypus (hic designatus): [icon] Dillenius, Hist. Musc.: t. 15, f. 17B. 1742. Epitypus (hic designa-

- (=) tus): [specimen] Herb. Dillenius No. 94.17 (OXF) *Lichen difformis* Huds. (Fl. Angl.: 458. Jan–Jun 1762). Lectotypus (hic designatus): [icon] Dillenius, Hist. Musc.: t.15, f. 18. 1742. Epitypus (hic designatus): [specimen] Herb. Dillenius No. 94.17B (OXF)
- (=) *Cenomyce conglomerata* Dufour, Rév. Clad.: 25. Mai 1821..
Lectotypus (hic designatus): France, *J.-M. Dufour s.n.* (PC-Lenormand).

The name *Cladonia polydactyla* (Flörke) Spreng. is in established use for a common West European and NW African lichen (other extra-European records are misidentifications). The basionym, *Cenomyce polydactyla*, was lectotypified by Ahti (Regnum Veg. 128: 89. 1993) by the specimen cited above. The earlier use of *Cladonia flabelliformis* ["Flörke"] Vain. for this lichen was noted by Ahti (in Ann. Bot. Fenn. 15: 9. 1978) to be erroneous because the presumed basionym was not validly published.

However, our recent attempts to typify old names have brought up at least three synonyms which are threatening its status. As predicted by Ahti (l.c.), *Cenomyce conglomerata* Dufour is based on material (lectotype designated here and some syntypes examined in PC-Lenormand) belonging to *Cladonia polydactyla*. *Cenomyce conglomerata* was published in the same year as *Cenomyce polydactyla*, but from the known dates of publication it cannot be determined which is older. As the former name has almost never been applied since its publication, it seems wisest to include it as a name to be rejected against *C. polydactyla*.

A definitely older name is *Lichen ventricosus* Huds. Since Hudson's herbarium was destroyed by burning, this name must be typified by the cited Dillenian figure (Dillenius, Hist. Musc.: t. 15, f. 17B. 1742, lectotype designated here); in the Dillenian herbarium (OXF) all the ('typotype') material corresponding to fig. 17 represents *Cladonia polydactyla* (no. 94.17 is here designated as epitype). *Lichen ventricosus* and its combinations have been little used and perhaps only for taxa very different from *Cladonia polydactyla* (e.g., brown-fruited species, whereas *C. polydactyla* is red-fruited).

Lichen difformis Huds. (Fl. Angl.: 458. Jan–Jun 1762), another totally neglected synonym of *Cladonia polydactyla*, is also typified here on Dillenian material.

To avoid adoption of neglected names for *Cladonia polydactyla*, its basionym is here proposed for conservation. *Cladonia polydactyla* is unanimously used by all recent publications, such as Purvis & al. (Lich. Fl. Great Britain Ireland: 199. 1992), Santesson (Lich. Lichenic. Fungi Sweden Norway: 67. 1993), Ahti (in Regnum Veg. 128: 89. 1993), Nimis (Lich. Italy: 240. 1993), Burgaz & al. (in Portugaliae Acta Biol., Sér. B, Sist. 18: 131. 1999), Scholz (in Schriftenreihe Vegetationskunde 31: 76. 2000), Hafellner & Türk (in Stapfia 76: 43. 2001), and Llimona & Hladun (in Bocconea 14: 112. 2001).

- (1660) *Cenomyce stellaris* Opiz, Böh. Phan. Crypt. Gew.: 141. Feb–Nov 1823 (based on *Lichen rangiferinus*

var. *alpestris* L., Sp. Pl.: 1153. 1 Mai 1753) [Fungi], nom. cons. prop.

Typus: Herb. Dillenius No. 107.29E, right-hand side specimen (OXF), typ. cons. prop.

The earlier well-established name *Cladonia alpestris* (L.) Rabenh. (a lichen which has some commercial importance) was replaced by *C. stellaris* (Opiz) Pouzar & Vezda by Pouzar & Vezda (in Preslia 43: 196. 1971). The species has frequently been referred to the genus *Cladina* Nyl., as *Cladina alpestris* (L.) Leight. or *Cladina stellaris* (Opiz) Brodo, but based on molecular studies *Cladina* is now placed back into *Cladonia* (Ahti & DePriest in Mycotaxon 78: 499. 2001; Stenroos & al. in Cladistics 18: 252. 2002). Pouzar & Vezda (l.c.) treated the neglected name *Cenomyce stellaris* Opiz as an avowed substitute for *Lichen rangiferinus* var. *alpestris* L., which they lectotypified on the drawing published by Dillenius (Hist. Musc.: t. 16, f. 29F. 1742). Jørgensen & al. (in Bot. J. Linn. Soc. 115: 349, 380. 1994) approved their typification and additionally designated an epitype from Herb. Dillenius (No. 107.29F, OXF). During a visit to Oxford, the senior author confirmed that the cited drawing certainly matches the epitype (is a 'typotype').

Unfortunately the designated epitype and hence the lectotype drawing of it turned out to have been misidentified by all lichenologists, including Crombie (in J. Linn. Soc., Bot. 17: 561. 1880) who published the first catalogue of Dillenius's lichens. The specimen and its figure actually definitely represent *Cladonia evansii* Abbayes (*Cladina evansii* (Abbayes) Hale & W. L. Culb.), not the species that is normally called *Cladonia stellaris*. From the black-and-white drawing the identification is not as obvious as from the herbarium specimen. *Cladonia evansii* is an American lichen restricted to the southeastern United States and Cuba (Ahti in Fl. Neotrop. Mon. 78: 65. 2000). The specimen is whitish-grey (indicating absence of usnic acid), and somebody has tested it with a colour reagent (obviously KOH), which has caused a yellow (now brownish) spot on the thallus, indicating the presence of atranorin. *Cladonia evansii* normally contains only atranorin (rarely additional usnic acid), whereas *C. stellaris* always has the yellow pigment usnic acid and never atranorin. In addition, the specimen is densely and finely dichotomously branched, exactly as *C. evansii* should be. The specimen apparently derives from the collections made by Mark Catesby in the Carolinas about 1723. Dillenius (Hist. Musc.: 108. 1742) actually discusses such material in connection with treatment of the lichens depicted in his table 16, fig. 29 (as *Coralloides montanum fruticuli specie, ubique candicans*). To preserve current usage the earlier typifications must thus be superseded, but because they are formally correct this can only be done through conservation.

One alternative to the conservation of *Cenomyce stellaris* (a *nomen novum* for *Lichen rangiferinus* var. *alpestris*) would be a rejection of that name. This would make it possible to reinstate the name *Cladonia alpestris* (through a new, conserved type), which was in use to about 1975. However, we think it is too late to come back to that name and therefore make our proposal to designate the supporting herbarium specimen, No. 107.29E, to the Dillenian t. 16, f.

29E (rather than 29F, the neighbouring drawing!) as conserved type so that the name *Cladonia stellaris* is kept in use. This specimen and its figure represent *C. stellaris* in its current usage.

Virtually all authors have used *Cladonia stellaris* or *Cladina stellaris* in recent times, including Purvis & al. (Lich. Fl. Great Britain Ireland: 197. 1992), Santesson (Lich. Lichenic. Fungi Sweden Norway: 68. 1993), Nimis (Lich. Italy: 245. 1993), Hansen (Greenland Lich.: 24. 1995), Esslinger & Egan (in Bryologist 98: 484. 1995), Hafellner & Türk (in Stapfia 76: 43. 2001), Brodo & al. (Lich. N. Amer.: 228. 2001), and Kurokawa (Checklist Japan. Lich.: 22. 2003).

The epithets *stellaris* and *alpestris* have never been used for material corresponding to the current usage of *Cladonia evansii*. Therefore it is necessary to rectify the typification.

- (1661) *Cladonia macilenta* Hoffm., Deutschl. Fl. 2: 126. 1796 [*Fungi*], *nom. cons. prop.*
 Typus: Germany, Niedersachsen [Lower Saxony], Oldenburg, Litteler Fuhrenkamp, 1919, *H. Sandstede* in Sandstede, Cladon. Exs. No. 477 (UPS; isotypi: FH, H, TNS), *typ. cons. prop.*

The original material of *Cladonia macilenta* Hoffm. consists of a reference to Ehrhart's exsiccata "*Lichen macilentus*, Pl. Crypt. No. 267". This collection (GOET, LINN-Smith) has been studied (Christensen in Lichenologist 18: 130. 1987; Ahti in Fl. Neotrop. Mon. 78: 210. 2000) and found to belong to *Cladonia floerkeana* (Fr.) Flörke, a closely related species. It would be highly confusing to apply *C. macilenta* for what is now called *C. floerkeana*. Also, *C. macilenta* is a very well-established name. Therefore we here propose that *Cladonia macilenta* Hoffm. be conserved with a conserved type. The proposed type specimen is the same as that erroneously called "neotype" by Ahti (in Regnum Veg. 128: 83. 1993) or (provisional) holotype by Ahti (Fl. Neotrop. Mon. 78: 208. 2000). It represents the thamnolic acid strain of the species (colour reaction with *p*-phenylenediamine, PD, is yellow).

The purpose of the proposed conservation is to stabilize the concept of *C. macilenta* s. str. It is important because some authors (e.g., Wirth, Flecht. Baden-Württembergs [ed. 2] 1: 330. 1995) have treated *C. floerkeana* as a subspecies of *C. macilenta*, and also *C. bacillaris* is often included (see discussion above under conservation proposal on *Baeomyces bacillaris*).

Cladonia macilenta has a worldwide distribution and the name is frequently used in major publications, including Purvis & al. (Lich. Fl. Great Britain Ireland: 198. 1992), Santesson (Lich. Lichenic. Fungi Sweden Norway: 65. 1993), Stenroos (in Gayana Bot. 52: 102. 1995), Esslinger & Egan (in Bryologist 98: 484. 1995), Malcolm & Galloway (New Zealand Lich.: 12. 1997), Ahti (in Fl. Neotrop. Mon. 78: 208. 2000), Brodo & al. (Lich. Fl. N. Amer.: 259. 2001), Ahti & Hammer (in Nash & al., Lich. Fl. Greater Sonoran Desert Region: 146. 2002), Calvelo &

Liberatore (in Kurtziana 29: 52. 2002), and McCarthy (Catal. Austral. Lich.: 38. 2003)

- (1662) *Cladonia ochrochlora* Flörke, De Cladon.: 75. Jul 1828 [*Fungi*], *nom. cons. prop.*
 Typus: Germany, Niedersachsen [Lower Saxony], Oldenburg, Oldenburger Sand, 1918, *H. Sandstede* in Sandstede, Cladon. Exs. No. 241 (UPS; isotypi: FH, H, MIN, TUR-V No. 19413, US-Evans), *typ. cons. prop.*
 [(=) *Cenomyce coniocraea* Flörke, Deutsche Lich. 7: 14. 1821 – inclusion not required if Prop. 1658 is accepted].
 Lectotypus (hic designatus): Germany, *H. G. Flörke* in Flörke, Deutsche Lich. No. 138 (BM; isotypus: PC).
 (=) *Cenomyce carneopallida* (Flörke) Sommerf., Suppl. Fl. Lapp.: 129. 1826 (*Capitularia pyxidata* var. *carneopallida* Flörke, Beitr. Naturk. 2: 281. 19 Sep 1810).
 Lectotypus (vide Ahti, Fl. Neotrop. Mon. 78: 127. 2000): Germany, Harz, *H. G. Flörke 17* (H-ACH No. 1706A).

The problematic nomenclatural status of *Cladonia ochrochlora* was first discussed by Ahti (in Lichenologist 12: 130. 1980). Later he neotypified the name (Ahti in Regnum Veg. 128: 87. 1993) but finally (Ahti in Fl. Neotrop. Mon. 78: 137. 2000; Ahti & Hammer in Nash & al., Lich. Fl. Greater Sonoran Desert Reg. 149. 2002) cited the name as "nom. cons. prop. (ined.)".

In the synonymy of the protologue of *C. ochrochlora* Flörke cites "*Cenomyce coniocraea* á. Flörk. Deut. Lichen. VII. P. 11 (specimina flexuosa incomplete)". This seems to mean that *Cenomyce coniocraea* is a synonym only in part and, despite the á, not including the type. As a result, *Cladonia ochrochlora* is not a superfluous name. Moreover, *Cladonia coniocraea* is treated as a separate species in the same book. The protologue of *C. ochrochlora* states "habitat ad truncos putridos terramque ligneam et turfosam in silvis Germaniae. In silva Rostocker Heide haud infrequens". However, Flörke's herbaria in Rostock and Berlin were destroyed in World War II, and at present we have not found syntype material of this species in other herbaria (such as B, BM, H, MB, UPS, where some Flörke material is housed). The protologue refers to the illustration in Dillenius, Hist. Musc.: t. 15, f. 14A. (1742) that is supported by the specimen No. 90.14 in Herb Dillenius (OXF). The specimen can be identified as *Cladonia polydactyla* (Flörke) Spreng., making it and the illustration unacceptable as types.

Another major reason for our conservation proposal is that the name *Cenomyce carneopallida* (Flörke) Sommerf. (Suppl. Fl. Lapp.: 129. 1826) [basonym: *Capitularia pyxidata* var. *carneopallida* Flörke, Beitr. Naturk. 2: 304. 1810; = *Cladonia carneopallida* (Flörke) Laurer in Sturm, Deutschl. Fl. Abth. 2(24): 32. 1832] predates *Cladonia ochrochlora* (Stenroos in Ann. Bot. Fenn. 26: 314. 1989; Ahti in Fl. Neotrop. Mon. 78: 137. 2000), as does

Cenomyce coniocraea Flörke, whose type material belongs to *Cladonia ochrochlora*. Without conserving *C. coniocraea* with a new type (see Prop. 1658, above), it would be the earliest name for the species. Also other older, untypified names may still turn up.

To stabilize the nomenclature of the *Cladonia coniocraea*–*C. ochrochlora* aggregate it is necessary to typify these names firmly. The neotypification by Ahti (1993) is invalid, because original material (reference to illustration) exists. However, the conserved type proposed above is the same exsiccata collection that Ahti proposed as a neotype. It is present in many more herbaria than cited but was checked in only a few.

Cladonia ochrochlora is recognized in most recent lichen floras and catalogues, such as Swinscow & Krog (Macrolich. East Africa: 51. 1988), Nimis (Lich. Italy: 238. 1993), Purvis & al. (Lich. Fl. Great Britain Ireland: 205. 1992), Santesson (Lich. Lichenic. Fungi Sweden Norway: 66. 1993), Hammer (in Bryologist 98: 15. 1995), Vitikainen & al. (in Norrlinia 6: 21. 1997), Kantvilas & Jarman (Lich. Rainforest Tasmania: 49. 1999), Burgaz et al. (in Portug. Acta Biol. Sér. B, Sist. 18: 140. 1999), Ahti (in Fl. Neotrop. Mon. 78: 137. 2000), Hafellner & Türk (in Stapfia 76: 43. 2001), Brodo & al. (Lich. Fl. N. Amer.: 262. 2001), Kurokawa (Checklist Japan. Lich.: 22. 2003), and McCarthy (Catal. Austral. Lich.: 39. 2003).

Some authors, such as Wirth (1995) and Thomson (2003), have included *C. ochrochlora* in *C. coniocraea*, but no other competing name has recently been used. However, there are several later, little used species-level synonyms based on extra-European material (Ahti in Fl. Neotrop. Mon. 78: 137. 2000), and recently Hammer (in Bryologist 106: 417. 2003) has published new data on Australasian members of this complex.

- (1663) *Cladonia rangiformis* Hoffm., Deutschl. Fl. 2: 114. 1796 [*Fungi*], *nom. cons. prop.*
 Typus: [Germany, Niedersachsen], “Germania (Oldenburg): in turfosis ‘Kehnmoo’ prope Zwischenahn, leg. H. Sandstede” in Zahlbruckner, Crypt. Exs. Mus. Vindobon. No. 2164 (H; isotypi: UPS, W), *typ. cons. prop.*.

Cladonia rangiformis Hoffm. was neotypified by Ahti in his *Names in Current Use List* (in Regnum Veg. 128: 92. 1993). It was not lectotypified because the cited, authentic material in Hoffmann’s herbarium in Moscow may not be original (no collecting year cited and the specimen is from the Netherlands, although the lichen was described in a German flora; Hoffmann’s early herbarium in Göttingen was destroyed). However, the typification must be superseded because the protologue contains a reference to a pre-Linnaean illustration, viz., to Morison (Pl. Hist. Univ. Oxon. 3: 633, sect. 3, No. 9 = sect. 15, t. 7, f. 9. 1699). The cited, very schematic, figure is supported by a specimen in Oxford (OXF-Morison). *Cladonia rangiformis* must be typified by the Morison plate and could be epitypified by this specimen. However, it belongs to *Cladonia portentosa*

(Dufour) Coem. Such a typification would badly upset the nomenclatural stability of two well-known species.

We therefore propose that *Cladonia rangiformis* should be conserved with a conserved type. The authentic Dutch specimen in Hoffmann’s herbarium at MW, earlier proposed as a neotype by Ahti, is not a very good specimen, and is not easily accessible. Therefore above we propose a good specimen in a widely distributed exsiccata set collected in Germany to become the conserved type (isotypes are apparently present in many herbaria, although checked in only two). It represents the common chemotype of the species, lacking fumarprotocetraric acid but containing atranorin and rangiformic acid.

Cladonia rangiformis is one of the most frequent species of *Cladonia* in the Mediterranean countries, extending from Macaronesia through North Africa and Near East to Iran, and also through much of Western Europe. The name is well-established in literature since the early 20th century. It is used in all major recent treatments, such as Purvis & al. (Lich. Fl. Great Britain Ireland: 207. 1992), Ahti (in Regnum Veg. 128: 92. 1993), Santesson (Lich. Lichenic. Fungi Sweden Norway: 67. 1993), Nimis (Lich. Italy: 243. 1993), Burgaz & al. (in Portugaliae Acta Biol., Sér. B, Sist. 18: 146. 1999), Diederich & Sérusiaux (Lich. Lichenic. Fungi Belgium Luxembourg: 90. 2000), and Llimona & Hladun (in Bocconeia 14: 115. 2001).

- (1664) *Cladonia transcendens* (Vain.) Vain. in Hue, Nouv. Arch. Hist. Mus. Nat., sér. 3, 10: 262. 1898 [*Fungi*], *nom. cons. prop.* (*Cladonia corallifera* var. (‘γ’) *transcendens* Vain., Acta Soc. Fauna Fl. Fenn. 4: 179. 3–31. Dec 1887).
 Typus: Canada, British Columbia, Queen Charlotte Islands, Graham Island, McClinton Bay, 1967, I. M. Brodo 13003 (CANL; isotypus: H), *typ. cons. prop.*

Brodo & Ahti (in Can. J. Bot. 74: 1174. 1996) noted that the original material of *Cladonia corallifera* var. *transcendens* Vain. from western North America (“America septentrionalis, Oregon Boundary Commission, 1858, Dr. Lyall” LE, PC, TUR-V No. 14166) belongs to an overlooked chemotype (containing usnic and thamnolic acids) of *C. bellidiflora* (Ach.) Schaer. (which usually contains usnic and squamatic acid) rather than to the Western North American endemic species called *C. transcendens* (Vain.) Vain. They suggested that *C. transcendens* should be proposed for conservation with a new type, and this is being done here. Earlier Ahti (in Regnum Veg. 128: 100. 1993) attempted to neotypify the name in his *Names in Current Use list*, but, as there is original material, his typification must be superseded and the “neotype” is here proposed as the conserved type.

If *C. transcendens* is not conserved in this way, the neglected name *Cladonia sipeana* Gyeln. (in Ann. Mus. Nat. Hungar. 28: 280. 25 Apr 1934; type: U.S.A., Oregon, Lane Co., Coburg Hills, Crawfordsville near Eugene, 1932, F. Sipe 690 [BP; isotypus: OSU, US-Evans]) must be adopted.

Cladonia transcendens is widespread in the Pacific Northwest of North America (Alaska to California) and is accepted in all recent articles and books dealing with the lichen flora of that area, e.g., Thomson (Lich. Genus *Cladonia* N. Amer.: 64. 1968), Ahti (in *Regnum Veg.* 128: 99. 1993), Hammer (in *Bryologist* 98: 25. 1995), McCune & Goward (Macrolich, N. Rocky Mts.: 78. 1995), Esslinger & Egan (in *Bryologist* 98: 485. 1995), Brodo & Ahti (in *Can. J. Bot.* 74: 1173. 1996), McCune & Geiser (Macrolich, Pacific Northwest: 95. 1997), Goward (Lich. Brit. Columbia 2: 160. 1999), and Brodo & al. (Lich. Fl. N. Amer.: 239. 2001).

(1665) *Lichen monocarpus* Ach., *Lichenogr. Suec. Prodr.*: 196. 1799 [‘1798’] [*Fungi*], *nom. utique rej. prop.*
Lectotypus (vide Stenroos in *Acta Bot. Fenn.* 150: 180. 1994): [South Africa, Cape of Good Hope] “E cap. B. Spei”, C. P. Thunberg (UPS-Thunberg No. 26451).

Outside of collections by C. P. Thunberg, the name *Lichen monocarpus* Ach., used as *Scyphophorus monocarpus* (Ach.) Thunb. (*Prodr. Fl. Cap.* 2: 180. 1800), is almost totally neglected. It was identified by Stenroos (in *Acta Bot. Fenn.* 150: 180. 1994) to be *Cladonia didyma* (Fée) Vain. s. str. (containing barbatic and rhodocladonic acids), which is here confirmed. *Lichen monocarpus* clearly has priority over the basionym of that well-established name, *Scyphophorus didymus* Fée (*Essai Crypt. Ecorc.* cxviii, ci. 29 Jan 1825), and therefore deserves rejection.

Cladonia didyma is a widespread and often common pantropical lichen, which also extends to temperate areas such as eastern United States and Japan. The name is used in many recent handbooks and catalogues, e.g., Swinscow & Krog (Macrolich, East Africa: 44. 1988), Ahti (in *Regnum Veg.* 128: 75. 1993), Stenroos (*Gayana Bot.* 52: 99. 1995), Esslinger & Egan (in *Bryologist* 98: 484. 1995), Malcolm & Galloway (*New Zealand Lich.*: 11. 1997), Ahti (in *Fl. Neotrop. Mon.* 78: 193. 2000), Brodo & al. (Lich. Fl. N. Amer.: 251. 2001), Calvelo & Liberatore (in *Kurtziana* 29: 49. 2002), and Kurokawa (*Checklist Japan. Lich.*: 21. 2003).

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