

On the typification of the lichen genus *Lepra* Scopoli

By Per M. Jørgensen¹ & Pier L. Nimis²

¹Dept. of Natural History, Bergen University Museum, Allégt.41, Box 7800, N-5020 Bergen, Norway; per.jorgensen@uib.no (corresponding author).

²Dept. of Life Sciences, University of Trieste, Via Giorgieri 10, I-34127 Trieste, Italy.

Abstract The first typification of *Lepra* Scopoli by *Pertusaria discoidea* (Pers.) Malme (= *Lepra albescens* (Hudson) Hafellner), made in the Paris Code (1956), is shown to be correct after studies of the original material in Michelius' herbarium in FI. Details of the latter are given. All other later statements about this case, even in the Code are irrelevant.

Keywords Typifications of generic names based on specimens rather than species.

New taxonomic results (Hafellner & Türk 2016, Lendemer & Harris 2017, Wei & al. 2017) have resulted in a take up of the generic name *Lepra* Scop. This name has not been in use for a long time particularly since the generic name *Pertusaria* DC was conserved against it already in the Paris Code in 1956 (see below). However, this conservation does not prevent use of *Lepra* for a taxon distinct from *Pertusaria*, as proposed by these authors who have different ideas about its typification, none being the correct one, as they failed to interpret the unusual nomenclatural situation (see below) correctly.

Actually Zahlbruckner in his Catalogus (1921-1940) did not record *Lepra* Scop., which he overlooked, probably since it is part of a general work about the natural history (Scopoli 1777), though clearly visible there (Fig.1). In fact, *Lepra* Scop. also constitutes a problem in relation to its typification because of the way it was published. Scopoli (1777) did not in this text refer to any species name, but only cited an illustration, Michelius O.[Ordo] XXXIV, Tab. 52,53, fig.1,2 (Fig.2). None of the authors who have taken up *Lepra* have understood the importance of that fact and have tried to typify the names as if it originally had a species included, thus failing to typify the name correctly.

The only attempts worth considering are those found in the *International Code of Botanical Nomenclature* which appears quite inconsistent through the different editions, a further confusing element in this complex story. *Lepra* Scop. is recorded for the first time in the Paris edition (Lanjouw & al 1956), among the names which *Pertusaria* DC is conserved over, with the following type entry: "T: *Pertusaria discoidea* (Pers.) Malme, Sv. Bot. Tidskr. **20**: 57.1926." [Actually Malme validly made this combination in the scheda of his Swedish exsiccate already in 1923]. In the Montreal Code (Lanjouw & al. 1961), this type was indicated as: "T: *Lichen Ordo XXXIV* sp. Micheli (quis?) [= *Pertusaria discoidea* (Persoon) Malme]. This was repeated until the Sydney Code (Voss & al. 1983) where it surprisingly is recorded as: "T: *non designatus*", this being repeated in subsequent codes. These varying entries reflect the changes in the rules regarding the typification of generic names with no validly published specific name included. John McNeill has kindly informed us that the entry in the Sydney and subsequent editions of the Code is a mistake, reflecting an uninformed correction of the Montreal Code in light of the changes made at that congress about typification of such generic names.

Nevertheless the question on how to binding the entry in the Paris *Code* is. There the name appears to be typified for the first time, but not in a straightforward way. It has been argued that since there is no formal proposal to this entry (which was not the procedure at that time!), it is invalid. This is, as already pointed out by Lendemer and Harris (2017) not a legitimate argument, the entry being sanctioned by several subsequent congresses (though the form of the entry varied). The matter rests on the following question: Is this entry in the Paris *Code* in accord with Article 10.2. Since there is no written evidence, we believe that this entry represents an interpretation of the illustration (Table 53) in Michelius (1729), the species illustrated there being believed to be *Pertusaria discoidea*. Hence it is a type “otherwise chosen”. Such a type can only be superseded “if it can be demonstrated that the selected type is not conspecific with any material associated with... the protologue”. Fortunately Michelius’ herbarium is well preserved at FI in bound volumes (Fig.3 shows the volume containing the specimens in question), closely following the treatment in his masterpiece “Nova genera...” (1729). One of us (PLN) was able to compare the illustrations of Michelius (Table 53, Fig.1 and 2) with the corresponding specimens in his herbarium (Fig.4 and Fig.5).

In the main text Michelius (1729) refers to the specimens illustrated in his Table 53, Fig.1 and 2 as follows:

54. *Lichen crustaceus arboribus adnascens, farinaceus, albus superficiei in acetabulis pulverulentus veluti efflorescente (Tab.53, fig.1).... In Cerris, & Quercubus circa Paterni horreum ac alibi in agri florentino... a D. Sherardo accepimus.*

55. *Lichen crustaceus arboribus adnascens, farinaceus, subcinereus, superficiei in acetabula minoribus, pulverulentus veluti efflorescens (Tab.53, fig.2). Ad Cupressus & Ilices per magnum ambulacrum Regiae suburban Villae, vulgo lo Stradone del Poggio Imperiale.*

Specimens corresponding to the entry 54 of Michelius (Tab.53, fig.1) were contained in an envelope repeating the printed description, locality, as well as a reference to nr.54 in *Nova Plantarum Genera*. This envelope contains five pieces of bark, clearly from two different trees (Fig.4): three specimens on smooth bark (cherry) and two from rough (oak). In both cases the rather excavated soralia are typical of *Lepra albescens* (Hudson) Hafellner (= *Variolaria discoidea* Pers.). They are easily visible at higher magnification, the lower right specimen being that illustrated.

Specimens corresponding to entry 55 of the same work were found in another folder which includes several different specimens, later (19th century?) identified by someone as “*Variolaria amara*”. One of these specimens (Fig.5) matches Michelius’ publication, giving the locality as ‘Poggio Imperiale’ with an abbreviated version of the description in Michelius’ handwriting: “*lichen crustaceus subcinereus*”. This material has the typical, convex, smaller soralia of *Lepra amara* (Ach.) Hafellner. Obviously it is the upper specimen (just by the label) that is illustrated.

Accordingly, Tabula 53 (fig 1 and 2) depicts two different species, both in the genus *Lepra* as defined by the cited authors. Fig.1 is actually conspecific with the type of *Variolaria discoidea* Pers., the basionym of *Pertusaria discoidea* (currently correctly named *Lepra albescens* (Hudson) Hafellner), the species recorded to be the type by the Paris *Code*. Consequently there is no argument for superseding the typification of *Lepra* in that work.

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AUTHOR NOTES

This paper is a by-product of the proposal to conserve the name *Variolaria* Pers. (Jørgensen 2018). During the preparation of this it became clear that the typification of *Lepra* Scopoli as recorded in the Paris Code needed a critical study. The key to the solution was to be found in the Michelius herbarium (FI). Fortunately, P. L. Nimis volunteered to check that herbarium during a visit to Firenze. All data and the text (and photos) about these basic facts were provided by him.

LITERATURE CITED

- Hafellner, J. & Türk, R. 2016. Die lichinisierte Pilze Österreichs - eine neue Checklist der bisher nachgewiesene Taxa mit Angaben zu Verbreitung und Substratökologie, *Stapfia* 104.
- Jørgensen, P. M. 2018. Proposal to conserve *Variolaria* Pers. over *Lepra* Scop. and *Variolaria* Bull. *Taxon* 67: 204.
- Lanjouw, J. & al. 1956. International Code of botanical Nomenclature adopted by the Eighth International Botanical Congress, Paris 1954. *Regnum vegetabile* 8.
- Lanjouw, J. & al. 1961. International Code of Botanical Nomenclature adopted by the Ninth International Botanical Congress, Montreal, August 1959. *Regnum vegetabile* 23.
- Lendemer, J. R. & Harris, R. C. 2017. Nomenclatural changes for North American members of the *Variolaria*- group, necessitated by the recognition of *Lepra* (Pertusariales). *The Bryologist* 120: 183-190.
- Michelius, P. A. 1729 *Nova plantarum genera juxta Tournefortii methodum disposita*. Firenze.
- Scopoli, A. 1777 *Intoducio ad historia naturalem*. Praha.
- Voss, E. G. & al. 1983. International Code of botanical Nomenclature adopted by the Thirteenth International Botanical Congress, Sydney, August 1981. *Regnum Vegetabile* 111
- Zahlbruckner, A. 1921-1940. *Catalogus lichenum universalis*. Leipzig (I-IX), Berlin (X).

FIGURE TEXTS:

Fig.1 The original description of *Lepra* in Scopoli (1777).

Fig.2 Table 53, Fig.1 and 2 in Michelius (1729).

Fig.3 The back of the of the volume of Michelius' herbarium), vol.274 (FI), where the original material of these lichens are included. Photo: P.L. Nimis

Fig.4 The herbarium specimens (FI) corresponding to the table 53, Fig.1 of Michelius (1729). Photo: P. L. Nimis.

Fig.5 The herbarium material (FI) corresponding to the Table 53, Fig.2. of Michelius (1729). Photo: P.L. Nimis.