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Author citation of the generic name *Peziza* (*Pezizales*, *Pezizaceae*)

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Abstract

Yao Y. -J. & Spooner B. M. 1995. Author citation of the generic name *Peziza* (*Pezizales*, *Pezizaceae*). - *Systema Ascomycetum* 14: 17-24.

The citation of the authority of *Peziza* is reviewed with discussion on typification of the genus. The designation *Peziza* was first coined by Dillenius before the starting point of plant and fungus nomenclature. The first valid publication of the name was by Linnaeus in 1753, but in a different sense from the modern usage of the name. Several other authors had used *Peziza* during 1753 to 1822 to accommodate a group of fungi agreeing with the current concept of *Peziza* with lectotypification by *P. vesiculosa*, which has been widely agreed by contemporary mycologists. It is concluded that *Peziza* Fr. is the correct name to be applied. It is also confirmed that *Peziza* L. should be regarded as a synonym of *Cyathus* Pers. As *Peziza* Fr. was sanctioned by Fries and *Cyathus* by Persoon, there is no need for a proposal for conservation or rejection based on the current *International Code of Botanical Nomenclature*.

Introduction

A search for the author citation of *Peziza* for a paper on *Aleuria* Fuckel (Spooners & Yao 1995) rapidly established that the citation for such a well known fungal generic name had not yet been stabilized, although the circumscription of the genus is widely agreed. The proposal by Dennis (1983) to use Willdenow as the authority of *Peziza* was adopted by Spooner & Yao (1995), but further examination of the literature concerning *Peziza* showed it to be necessary to discuss the name in further detail to clarify the authority and to stabilize the nomenclature of this important genus.

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Brief history of the generic name *Peziza*

The designation *Peziza* was coined by Dillenius (1719) but not at a rank that we can take to be a genus. It was first used as a generic name by Linnaeus (1753). Prior to revision of the ICBN in 1981, publications earlier than the accepted starting point of fungal nomenclature, 1 January 1821, were not taken into account for purposes of priority.

There were several authors who had used the name *Peziza* in their work in the course of 1821. A lectotype for *Peziza* Hook. was proposed by Korf (1954), and later, Rifai (1968) conducted a detailed study of the nomenclature of *Peziza* and made a convincing proposal for the use of '*Peziza* [Dill.] L. ex St.-Amans' under the ICBN operating at that time.

Peziza was ascribed to Dillenius by Fries (1822) and later to Linnaeus and Persoon in the additional index to Fries' work (Fries 1832). It is not clear why Fries made this change. Possibly, he later accepted that Linnaeus' binomial should be used, but he sanctioned only the concept of the genus provided by Persoon (1801), judged from the citation of two authors for the name in the additional index.

The starting point date of 1 May 1753, introduced for fungal nomenclature in the Sydney Code of the ICBN (1981), generated a need to determine the correct author citation of this generic name. Various citations occur in the subsequent mycological literature.

Variations of author citation of *Peziza*

Many modern authors have chosen to omit the author citation of *Peziza* when using this generic name, as can be clearly demonstrated by a review of mycological literature published during the past three decades. Where citations are provided these vary considerably, indicating the confusion that exists among mycologists. The following recent examples reflect these variations.

Peziza Dill.

This most preliminary citation was adopted in Saccardo's volumes of *Sylloge Fungorum* (Vols 1-25) and appeared in the important modern taxonomic treatment of Discomycetes in France by Grelet (1979). However, this name is clearly not tenable as Dillenius' name was published before 1 May 1753 and in a work not using the binomial system of nomenclature.

Peziza Dill. ex L.

This citation can be found in Schumacher (1990), where it was cited for the basionym of *Scutellinia* (Cooke) Lambotte, as '*Peziza* Dill. ex L. (ser. *Lachnea* Fr.) subg. *Scutellinia* Cooke'. Another form, *Peziza* L., has been applied, for example, in Hirsch (1984) and in Hohmeyer (1986), who produced a key to European species of this genus. Although this name is certainly nomenclaturally correct, its application may not necessarily reflect the original Linnean concept of the genus.

Peziza [Dill.] L.: Fr.

This is similar to the above, but cites Fries to indicate its sanctioned status. This citation is to be found in Korf & Zhuang (1991b). The "[]" has often been used to indicate pre-starting point names. The form, *Peziza* L.: Fr., can also be found in another paper by these two authors (Korf & Zhuang 1991a).

Peziza Dill. ex Bull.

This may be the most common citation of the name because it is used in *Ainsworth & Bisby's Dictionary of the Fungi* (Hawksworth *et al.* 1983), and subsequently applied in several editions of *Outline of the Ascomycetes* by Eriksson & Hawksworth (e.g. 1993). As the adoption of Dillenius' name by Bulliard (1791) is much later than that by Linnaeus, it has no priority in nomenclature unless it is conserved.

Peziza [Dill.] L. ex St.-Amans

This citation was established and abbreviated as '[Dill.] St-Amans' by Rifai (1968) after a detailed study of the nomenclature of *Peziza* in accordance with the IBCN operating at that time. It has been subsequently applied in the index to *The Fungi* Vol. IVA (Ainsworth *et al.* 1973), and followed in a series of papers on *Peziza* by Donadini (e.g. 1980), who later used *Peziza* L. ex St.-Amans (e.g. Donadini 1982) or *Peziza* L. (e.g. Donadini 1984), and by Svrček (1981) citing 'Dill. ex St-Amans'. Earlier usage of this citation may be found in Dennis (1960) as '*Peziza* St. Amans', which was followed by Romagnesi (1978).

Peziza Willd.

This is probably the earliest adoption of the generic name after the first valid publication of *Peziza* by Linnaeus (1753), as shown by Dennis (1983) who proposed conservation of *Peziza* Willd. against *Peziza* L.

Peziza Dill. ex Fr.

This citation was adopted in *Index Nominum Genericorum (Plantarum)* (Farr *et al.* 1979). Earlier usage can be seen in Eckblad (1968) and Saccardo (1972), and also in the general index to Saccardo's *Sylloge Fungorum* (Reed & Farr 1993).

Peziza Fr.

This form was used by Cannon *et al.* (1985) explicitly to comply with the changes in the Sydney Code; they specified "*non* L. (1753)" and noted Fries' interpretation had to take precedence, but did not discuss this in detail. This has been followed by, e.g. Mornand & Pean (1995).

The citation "Fr.: Fr.", indicating its sanctioned status, is adopted in the recent compilation of Names in Current Use (Greuter *et al.* 1993).

Typification of *Peziza* by various authors

To determine the correct citation for *Peziza*, it is necessary to examine the typification of this name as done by various authors. As with many names in early publications, where indication of the type species of the genus is commonly lacking, *Peziza* was in need of lectotypification. This was first done by Seaver (1927). However, the adequacy of Seaver's choice, as so often the case with lectotypification of early names, has been questioned. He selected *P. cochleata* L.

for *Peziza* L., a choice which was correct at the time it was made as this taxon is one of those originally accepted by Linnaeus. However, this lectotypification has not been widely accepted since then (Rifai 1968; Eckblad 1968; Dennis 1983), possibly due to uncertainty as to the identity of Linnaeus' species. The inadequacy of Seaver's selection was discussed by Rifai (1968) and by Dennis (1983).

The selection of *P. vesiculosa* Bull. as the type species of *Peziza* by Clements & Shear (1931), who clearly referred the name to Linnaeus publication, has received most support from mycologists. Unfortunately, this species does not appear in the original list of species included by Linnaeus. This lectotypification is, therefore, ineffective although the selection was endorsed by Eckblad (1968) and by Farr *et al.* (1979), where the generic name was fully cited as '*Peziza* Dillenius ex E. M. Fries, Syst. Mycol. 2: 49. 1822.'

The generic concepts of *Peziza* by Linnaeus and by Fries cannot be regarded as the same. As shown by Dennis (1983), almost all of Linnaeus' species of *Peziza* have been reshuffled into other genera in modern fungal taxonomy. It is the concept of *Peziza* developed by later authors, e.g. Bulliard (1791), Persoon (1801), St.-Amans (1921), Hooker (1821) and Fries (1922), that has been accepted by contemporary mycologists. Cannon *et al.* (1985) wisely listed the name and citation as '*Peziza* Fr. (1822), non L. (1753)' (duly copied by Mornand & Pean (1995)), having taken note of the paper by Dennis (1983), but they referred only to the designation of the type species by Clements & Shear (1931).

Lectotypification of *Peziza* Dill. ex Fr. is found in Wakefield (1939) when she proposed conservation of *Peziza* Dill. ex Fr. against *Aleuria* Fuckel. The choice of lectotype by Wakefield is the same as that by Clements & Shear (1931), followed by Eckblad (1968). Greuter *et al.* (1993) did not refer any typification to any particular author, and it cannot be determined whether they took this from the earlier equivalent publication by Farr *et al.* (1979) or followed the Wakefield selection.

Typification by *P. vesiculosa* for some other author's *Peziza* has also been made, e.g. for *Peziza* Hook. (Korf 1954), for *Peziza* L. ex Hook. (Denison 1963) and for *Peziza* [Dill.] L. ex St.-Amans (Rifai 1968). These authors held the same concepts in terms of the genus and the lectotype species, although the citations appear different due to the different period of time and to various interpretations of the nomenclature.

After the Sydney Code, Dennis (1983) presented an extensive study of the nomenclature of *Peziza* on the basis of the new starting point of fungal nomenclature. *Peziza lentifera* L. was proposed by Dennis as a substitute for Seaver's lectotype of *Peziza* L. Dennis (1983) also proposed to conserve *Peziza* Willd. against *Peziza* L., but did not make a formal proposal to the appropriate nomenclature committee. Thus, this proposal for conservation has never been discussed by the Committee for Fungi. As Willdenow (1787) did not include *P. vesiculosa*, Dennis (1983) designated *P. crenata* Willd. as the lectotype of *Peziza* Willd. after reviewing all the taxa included in the genus by Willdenow.

The citation *Peziza* Dill. ex Bull. given in Hawksworth *et al.* (1983) was used to avoid a need for change, as they considered Bulliard's usage was the one sanctioned by Fries. Although there has apparently been no lectotypification for Bulliard's *Peziza*, *P. vesiculosa* is obviously the most logical choice.

The usage of *Peziza* by some other early authors has also been taxonomically treated. *Peziza* Gray has been lectotypified with *Peziza stercorea* F. H. Wigg. and reduced to synonymy with *Cheilymenia* Boud. (Rifai 1968). Eckblad (1968) designated '*P. aurantia* Pers. ex Fr.' as lectotype for '*Peziza* Dill. ex Boud.', thus

regarding it as a synonym of *Aleuria* Fuckel, while Rifai (1968) simply treated it as a misapplied name. It is unclear why Fuckel (1870) created the name '*Peziza* Fuckel' as most species included in his list were previously published names of *Peziza* species. This may be regarded as a nomenclatural mistake although this name has been listed as a synonym of *Aleuria* in Eriksson & Hawksworth (1993). Fuckel's *Peziza* was referred to *Helotium* Pers. by Wakefield (1939) and consequently to *Helotiaceae* by Rifai (1968). Eckblad (1968) considered it to be insufficiently known and excluded it from his treatment of operculate Discomycetes.

Among several references cited by Fries (1822) for his *Peziza*, three are the possible source of the generic name, i.e. '*Peziza*. Dill. gen. p. 74.' and '*Pezizæ* spec. Pers. syn. p. 631. Nees Syst. p. 254.' As Dillenius' name is pre-starting-date and lacks a clear generic concept, and as the author citation had been changed by Fries (1832) himself, it is obvious that the generic concept of *Peziza* by Fries (1822) was not taken from this source although Fries adopted the name coined by Dillenius. Apparently, Nees (1816) simply followed the concept of *Peziza* by Persoon (1801) as he referred most of his species to Persoon although he included much fewer species in his work than Persoon did. The specified reference, '*PEZIZA* L. Pers.', in the additional index (Fries 1832) to Fries' volumes clearly indicated that Fries (1822, 1832) based his concept of *Peziza* on Persoon's (1801) work although the name was that of Linnaeus. Similar examples of reference can be found throughout the index (Fries 1832), e.g. *cervina* Pers. Myc. Eur., *farinacea* Pers. Syn. and *farinacea* Pers. Myc. Eur. under *Peziza*.

There is no author reference for generic names in Persoon (1801) and it cannot be directly established from which source Persoon adopted those names. However, among 151 taxa which he included in *Peziza*, Persoon (1801) listed seven of the eight *Peziza* names given in Linnaeus (1753); it is therefore not possible to argue that Persoon (1801) planned to introduce a new generic name, even though four of the species were cited to other authors than Linnaeus. The concept of *Peziza* used by Fries (1822) was based on that of Persoon, but Fries clearly also was using Linnaeus' name from his citation "*L. Pers.*" (see above). It is fortunate that the sanctioning provisions provide a pragmatic answer. As Fries included the lectotype of *Peziza* L. in *Nidularia* Fr., he can be regarded as having used an independent generic name attributed to Fries (1822: 40) alone, and lectotypified by *P. vesiculosa* as already proposed by Wakefield (see above). Fries' later homonym, as it is accepted in the sanctioning work, can be retained over *Peziza* L. (Art. 15.1).

Conclusions

Peziza Fr. or, if desirable to indicate its sanctioned status, *Peziza* Fr.: Fr., is the correct name to be applied to the group of fungi, which typically have a cup-shaped ascoma, and operculate asci with an I+ ascus apex, as the sanctioned names by Fries are conserved against earlier homonyms and competing synonyms (Art. 15.1 of IBCN, 1994).

Linnaeus' concept of *Peziza* is different from the modern concept of the genus adopted by a number of post-linnean researchers, particularly Bulliard (1791), Persoon (1801), St.-Amans (1821), Hooker (1821) and Fries (1822). Therefore, *Peziza* Dill. ex L.: Fr. or *Peziza* L.: Fr. would be inappropriate because those two authors held a different concept of the genus. Fries (1822) ascribed the genus

name to Dillenius and later referred to Linnaeus but followed the generic concept of Persoon. It is clear that Fries' concept of *Peziza* was developed from those post-linnean authors, especially Persoon (1801).

Peziza Fr., or *Peziza* Fr.: Fr. (1822, 1832) is to be used as while he adopted Persoon's concept of this genus, Persoon cannot be regarded as introducing a legitimate generic name himself.

Bulliard (1790, 1791) made an important contribution to the modern concept of *Peziza*, especially as the lectotype of the genus, *P. vesiculosa*, was first described by him. If it be felt desirable to use *Peziza* [Dill.] Bull., this would require a formal conservation against *Peziza* L. Further, Bulliard's publication is antedated by Willdenow (1787), and *Peziza* Willd. is an earlier name which is also applicable to the modern concept of *Peziza* through the lectotypification by Dennis (1983). However, conservation of either *Peziza* Bull. or *Peziza* Willd. is unnecessary because the generic concept of *Peziza* is the same. Neither Bulliard's nor Willdenow's names have protected status. A proposal to conserve either one of them would have to be made against both Linnaeus' and Fries's name and, as indicated here, would be, in any case, superfluous.

The problems of *Peziza* Dill. ex St.-Amans and *Peziza* Hook. were created by the later starting point date in operation prior to the Sydney version of the ICBN. These names are superseded by Fries' name under the current ICBN.

As demonstrated by Dennis (1983), *Peziza* L. should be regarded as a synonym of *Cyathus* Haller ex Willd. [sic!] through the redesignated lectotype species, *Peziza lentifera*. Although Fries did not accept the genus *Cyathus*, it was sanctioned by Persoon (1801) [N.B. Willdenow was the first author to use this generic name after the starting-date of nomenclature according to the finding by Dennis (1983). The author citation of this generic name as 'Haller ex Pers. (1801)' in the *Dictionary of Fungi*, 7th edn should be corrected 'Pers. (1801)' (or 'Pers.: Pers.') as already done in Greuter *et al.* (1993: 300), where a parallel procedure to that adopted here for *Peziza* has been used. Therefore, *Peziza* L. does not affect the usage of *Cyathus* Pers.: Pers.

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