

A post-publication review of Ekanayaka *et al.* (2018) on Pezizomycetes

INTRODUCTION

Following the new classification of *Pezizomycetes* and its unique order *Pezizales* proposed by Jaklitsch *et al.* (2016) and Wijayawardene *et al.* (2017), a new system is proposed by Ekanayaka *et al.* (2018) based on a five-genes phylogeny, introducing five new families although these results had been previously suggested by the works of Perry *et al.* (2007), Hansen *et al.* (2013) and Bonito *et al.* (2013). This is a difficult exercise that requires not only phylogenetic competence but also a sound taxonomic knowledge of the group, particularly as the authors choose to illustrate their system with descriptions and illustrations of species which they refer to as being representative which in our opinion are not always suitable for this purpose.

After carefully reading the article, we noted many mistakes, imprecise data and superfluous remarks that should be brought to the attention of readers. **This note can be considered as a post-publication review.**

REVIEW

One concern we have is the choice of the collections, mainly coming from Asia. Naming such collections with names of European species is sometimes rash, especially when the studied material is *exsiccata* as a consequence vital characters are almost entirely missing in the description. We are convinced this is a serious problem because a robust taxonomy in *Pezizales* cannot be provided this way (see for example Baral, 1992). Secondly we do not feel that the use of phase-contrast microscopy is the best way to illustrate the ascospore content and ornamentation of *Pezizales*, especially on rehydrated material.

Here are the main other points we have noted in this article:

Table 1

- 1) Sometimes information on the number of ascospores is given, sometimes not: A consistent method should be applied.

Ascobolaceae

- 1) "... associated with herbivore dung...": Not only, they can be found on various animals dung (for coprophilous species) as detailed by Brummelen (1967), Doveri (2004), etc. We can also cite *Ascobolus behntziensis*, a species which grows on naked humid soil only, as for instance puddles fallen dry or river banks which are regularly flooded. (pers. observ.; Brummelen, 1967).
- 2) *Cubonia* Sacc. (type species = *C. brachyasca* (Marchal) Sacc.): The type species was described by Marchal (1885), as *Lasiobolus brachyascus*, having asci "iodo non coerulescentes" and with hairy apothecia (hyaline hairs reaching 280 µm in length). With such characters, the placement in *Ascobolaceae* is doubtful.
- 3) *Ascobolus albidus*: This is a common and cosmopolitan species which grows on dung, not on "dead stems" as indicated.

Ascodesmidaceae

- 1) "... and all recorded species are coprophilous...": Incorrect if you include the genus *Boubovia* in this family. In fact the integration of the latter in this family should be re-evaluated because this genus falls in a distinct lineage with *Pseudoboubovia* after phylogenetic analyses by Lindemann *et al.* (2015) and Kušan *et al.* (2018), with some *Coprotus* species. In this context, the placement of *Boubovia* and *Pseudoboubovia* in two different families as proposed here is doubtful.
- 2) Table 3: Molecular data are available for genera *Boubovia* and *Coprotus*.
- 3) Table 3: The distinction between apothecial and non-apothecial genera seems to be randomly (e.g. *Trichobolus*, apothecial, and *Coprotus*, non-apothecial). If we refer to a previous article published by the authors (Ekanayaka *et al.*, 2017: 240), "The apothecium can be described as an ascoma with an exposed hymenium"; such a definition can apply to both *Trichobolus* and *Coprotus*...

Caloscyphaceae

- 1) "*Caloscyphaceae* taxa [...] under conifers and calcareous soil": Incorrect, *Caloscypha fulgens* can be found on acid soils (pers. observ.) and also under deciduous trees (pers. observ.).

- 2) “They produce [...] pale apothecia...”: This assertion is inappropriate regarding the bright colour of *Caloscypha fulgens*.
- 3) “Ascospores are [...] guttulate”: *C. fulgens* has eguttulate ascospores or, sometimes, very small granules that can fuse on rehydrated material. They are thin-walled contrary to the drawing in Fig. 6d. See Dougoud (2014).
- 4) “In this paper we illustrate *Caloscypha fulgens* as representative of the family”: with the exclusion of the genus *Kallistoskypha*, this family becomes monogeneric and monospecific, so *C. fulgens* is the only species that can be illustrated.

Chorioactidaceae

- 1) *Trichaleurina javanica*: The characters highlighted in the *Notes* are the same for all species of this genus.

Discinaceae

- 1) “Sometimes they are associated with mycorrhizal associations...”: This is true only for hypogeous members of this family. See for example Hobbie *et al.* (2001), Tedersoo *et al.* (2006), Hansen *et al.* (2013), etc.
- 2) Recent studies: Reference to Van Vooren & Moreau (2009) (and the other articles of this series) is missing.
- 3) Table 6: One, two or three apothecial genera? This important subject is not discussed although there is no consensus between authors. In the article, the three genera are separated. Is the sampling sufficient to validate this proposal? Methven *et al.* (2013) proposed another approach considering the monophyly of *Gyromitra* based on LSU.
- 4) *Gyromitra infula*: “Saprobic on dead stems” should be changed in “Saprobic on dead trunks or on wood remains”
- 5) *Gyromitra infula*: About the stipe, the description doesn’t mention the colour which is an important character because it shows typical shades of purple; “Paraphyses [...] reddish at the apices”: This is a sort of coating that covers the top of paraphyses.
- 6) *Gyromitra infula*: Another important character is not provided: this species grows in summer and autumn, contrary to many other *Gyromitra* species.
- 7) *Gyromitra esculenta*: “Disc blackish brown” applies to dried specimens, the true color is yellowish brown, caramel brown to dark brown following the maturity. This is the same for the colour of stipe: fresh specimens have a whitish to pale cream stipe.
- 8) *Gyromitra esculenta*: “Ascospores 15–20 × 6–10 µm [...] multiguttulate” is impossible for this species or the specimen examined was strongly immature. *G. esculenta* has biguttulate ascospores (polar oil drops), measuring 21–30 × 9–12.5 µm.
- 9) *Gyromitra ambigua*: The determination is doubtful because the ascospore size of this species is 22–33 × 7–12 µm vs. 15–20 × 8–10 µm in the article! The asci are also too short. Note that *G. ambigua* is an oro-boreal species. See for example Carbone *et al.* (2012) for a good description and illustration.
- 10) *Discina perlata*: The determination is doubtful for several reasons: “saprobic on soil”, incorrect, the species grows on dead wood (trunk or stump) or soil with wood remains; “receptacle [...] black”, this applies only on some dried specimens, on fresh specimens the disc color is light to dark brown, and the outer surface is paler, beige to light brown; “excipulum [...] of *textura epidermoidea*”, incorrect: medullary excipulum is of *t. intricata* (as in all species of *Gyromitra s. lato*); “Asci 70–100 × 17–20 µm...”, such a length is impossible, normal length exceeds 400 µm; “ascospores 17–25 × 7–10 µm [...] smooth-walled”, incorrect, the ascospore size is 27–40 × 12–15 µm, and ascospores are ornamented at maturity by a fine, low and incomplete network, with conical apiculi (see Van Vooren, 2017); nothing is said about the ascospore content and Fig. 13e doesn’t show the correct content, i.e. one large central guttule with two smaller polar drops.
- 11) Fig. 13: Note that the collection is named “*Gyromitra perlata*” instead of “*Discina perlata*”.

Helvellaceae

- 1) The phylogenetic works of Skrede *et al.* (2017) are not cited.

- 2) Table 8: *Cidaris* Fr., based on *Verpa caroliniana* Schwein., is a doubtful genus. As no type specimen exists in Fries' herbarium (UPS) or illustration, it is hard to place the genus in our modern systematics.
- 3) Table 8: *Midotis* Fr. is considered as a possible synonym of *Wynnella* (Helvellaceae) or as a member of *Helotiales* in the sense of Durand (1923). As the type specimen from Fries' herbarium is lacking, *Midotis* should be considered as a *nomen dubium*.
- 4) *H. pezizoides*: this collection is genetically not related to this species with regard to the sequences of the epitype provided by Skrede *et al.* (2017).

Kallistoskyphaceae

- 1) It is strange that this 5-genes phylogeny places the genus *Kallistoskypha* in a distinct lineage so far away from the *Caloscyphaceae* although the 2-genes phylogeny by Pfister *et al.* (2013) seemed robust, and micro-morphology of the two genera are very close.
- 2) "Taxa are mainly saprobic": The family is monogeneric and monospecific!

Morchellaceae

- 1) Table 10: *Mitrophora* Lév. is a synonym of *Morchella* because its type-species, *M. semilibera* DC. *nom. cons.*, is a true morel (see for example, Richard *et al.*, 2015).
- 2) *Morchella esculenta*: "mature spores are multi guttulate", false, mature, ejected ascospores are eguttulate, only germinating ascospores can show some guttules.
- 3) *Verpa bohemica*: "Asci ... 2–3-spored..." is true but it's better to write "Asci... 2-spored, more rarely 3-spored"; "Ascospores 60–80 × 20–25 µm...": the width is generally in the range of 17 to 21 µm; "Ascospores [...] granulated": what does it mean? Ascospores are eguttulate.

Otideaaceae

- 1) *Otidea alutacea*: This is probably not the best species to represent this family because this is a complex of species as explained by Olariaga *et al.* (2015). The typical *O. alutacea* has ascospores measuring 15–17 × 7–8 µm, so larger than the dimensions given in the description, and the ascospore shape is typically cylindrical, not "ellipsoid" as indicated. After the description and the photos of Fig. 27, it is doubtful that this collection represents *O. alutacea s. stricto*.
- 2) Table 11: An annotation mentioning the existence of a hypogeous (non-apothecial) *Otidea* species, *O. subterranea*, is missing.
- 3) Table 11: *Wenyungia* is placed in this family without phylogenetic evidence. The description and illustration of *W. sichuanensis* (Wang & Pfister, 2001), especially the Fig. 1 showing an ascus base without crozier, would place the genus in the family *Tarzettaceae*.
- 4) Table 11: *Diehliomyces* Gilkey was placed in *Pezizales, incertae sedis*, by Læssøe & Hansen (2007), in *Otideaaceae* by Jaklitsch *et al.* (2016), in *Pyronemataceae* by Wijayawardene *et al.* (2017), and here in this new family *Otideaaceae*, but no evidence for this choice (or phylogenetic results) is given.

Pezizaceae

- 1) Table 12: *Plicariella* and *Scabropezia* are synonym following Spooner (2001) and Van Vooren & Moyne (2012), the first one having priority.
- 2) Table 12: *Pachyphloides* and *Pachyphloeus* are synonym, the second one being illegitimate.
- 3) Table 12: *Adelphella* has amyloid asci, although it is sometimes hard to see on fresh material (this also can occur in collections of *Peziza*). Molecular data are available in GenBank, sequences are filed under the name *Pachyella babingtonii*.
- 4) Table 12: Molecular data are available for *Lepidotia* in GenBank with sequences under the name *Peziza quelepidotia* which is a synonym of *L. hispida*, the type-species (Van Vooren *et al.*, 2015).
- 5) *Sarcosphaera coronaria*: "Disc purplish brown when fresh" to be changed in "Disc purplish brown to pure violet when fresh, sometimes white in f. *nivea*"; "Stipe white or cream, surface granulate": very strange because this species is not stipitate; "Ascospores [...] ellipsoid...": on mature ascospores the shape is not exactly ellipsoid but subcylindrical as shown in Fig. 28h or 28j.

- 6) *Peziza limnaea*: Nothing is said about the colour in fresh specimens, the pigmentation of paraphyses, or the ecology of the collection. Fig. 29 is not sufficiently adequate to complement the description (e.g. the ascospore ornamentation is not visible on photographs). In this context, it is difficult to confirm the determination but if it was based on the description in Nagao & Fukiharu (2000) it should be another fungus because the Japanese collection represents clearly a different species, based on the ascospore ornamentation and ecology.
- 7) *Peziza varia*: “Ascospores [...] with finely verrucose surface, sometimes embedded in a gelatinous sheath”. This description of ascospores does not correspond to typical collections of *P. varia* which has smooth ascospores, sometimes finely warted (Hansen *et al.*, 2002: 895), without gelatinous sheath. As *P. varia* is considered as a species complex, it is incorrect to write in *Notes* that “*Peziza varia* is characterized by its verrucose ascospores with a gelatinous sheath”.
- 8) *Peziza varia*: In *Notes*, the reference to Ginns (1980) — *Tyromyces kmetii* — is erroneous.

Pulvinulaceae

- 1) The presence of the genus *Pseudoboubovia* in this family is somewhat surprising (see comments under *Ascodesmidaceae*).
- 2) *Pulvinula convexella*: Are the specimens examined part of the type-material? Such an indication is important.
- 3) *Pulvinula convexella*: “Apothecia cupulate...”: This is not the typical shape of apothecia in this genus, i.e. pulvinate (*inde nomen*), and on Fig. 32c the depressed hymenium is due to dessication; “Paraphyses hyaline...”: This is a consequence of rehydrating the material because in living material it should be full of carotenoid small drops. Ascospore size is not provided. And finally, the *Notes* are superfluous because the enumerated characters are common to all *Pulvinula* species.

Pseudombrophilaceae

- 1) *Lasiobolidium* is placed in this family based on sequences of *L. orbicularis* which is not the type species. *L. spirale*, the type-species, appears in a different clade, in *Pyronemataceae* (Perry *et al.*, 2007).
- 2) “Ascospores [...] guttulate.”: Incorrect, in the genus *Pseudombrophila*, ascospores are eguttulate; the globose bodies appearing on Fig. 33k-m are De Barry bubbles, a common gaseous phenomenon in dead ascospores of *Pseudombrophila*.
- 3) The monograph of *Pseudombrophila* by Brummelen (1995) is cited in final references, but not in this part of the text.
- 4) *Pseudombrophila deerrata*: this name is considered as a posterior synonym of *P. merdaria* after Brummelen (1995). This is a cosmopolitan species.
- 5) *Pseudombrophila deerrata*: “Saprobic on soil” is incorrect, it grows on various animals dung or on decaying plants; “Ascospores [...] single guttulate”, this is not a guttule (see remarks in point 2).
- 6) *Pseudombrophila deerrata*: About the ascospore ornamentation, there is a contradiction between the description “... glabrous surface ornamentation” and the notes “... and ornamented ascospores”.

Pyronemataceae

- 1) The name of this family is not correctly written in Fig. 1 “Pyrenemataceae”
- 2) In Table 1, ascospores are said to be “1-nucleate” but ascospores of *Octosporopsis nicolai* can have one as well as two nuclei (Lindemann *et al.*, 2014), several species and varieties of the genus *Octospora* with four ascospores in the asci have two nuclei (H.-O. Baral, pers. comm.), this can also exceptionally occur in *Scutellinia* (Berthet, 1964).
- 3) “*Filicupula*, *Mycogalopsis*, and *Octosporella* form perithecia (Yao and Spooner 1996)”: Neither *Filicupula* nor *Mycogalopsis* nor *Octosporella* are treated in the given reference.
- 4) The references “Doveri 2012” and “Carbone *et al.* 2013a” seem superfluous as far as this family is concerned. The monograph of the genus *Cheilymenia* by Moravec (2005) is not cited, although this is a major group in this family.
- 5) Table 13: Reference to Benkert 2008 should appear in Table 15 instead as it deals with the genus *Pithya*.

- 6) Table 13: *Barlaea* Sacc. 1889 is an illegitimate name (non *Barlaea* Rchb. 1876), published as a *nomen novum* to replace *Crouania* Fuckel 1870, an illegitimate name (non *Crouania* J. Agardh 1842), which now corresponds to the genus *Lamprospora*.
- 7) Table 13: *Aleuria*, *Aleurina*, *Hoffmannoscypha* and *Parascutellinia* have operculate asci.
- 8) Table 13: Molecular data are available for *Chaetothiersia*, see Perry & Pfister (2008).
- 9) Table 13: As re-evaluated by Lindemann *et al.* (2015), *Kotlabaea* Svrček falls in synonymy with *Byssonectria*.
- 10) Table 13: Only scarce and superficial information on the genus *Mycogalopsis* is given in the text, the genus *Mycogala* Rostaf. ex Sacc. which the name *Mycogalopsis* refers to remains unmentioned (Gjurašin, 1925).
- 11) Table 13: Some words on the genus *Hiemsia* would have been informative as the type species *Hiemsia pseudoampezzana* (Svrček) Svrček has been combined to *Octospora* (Caillet & Moyne, 1987). *Hiemsia* is a monospecific genus with one species remaining: *Hiemsia cleistocarpa* Fort & Guarro.
- 12) Table 13: *Patella* F.H. Wigg. is a *nomen rejiciendum* against *Scutellinia*.
- 13) Table 13: *Pustularia* Fuckel 1870 is an illegitimate name (see Eckblad, 1968), today replaced by the genus *Tarzetta*. Here, applied for *Pustularia patavina* (Fig. 1), the genus refers to *Sepultariella* Van Vooren, U. Lindem. & Healy (Van Vooren *et al.*, 2017).
- 14) Table 13: *Sphaerospora* (Vido) Sacc. 1889 is an illegitimate name (non *Sphaerospora* Klatt 1864), synonymized with *Scutellinia*.
- 15) Table 13: “*Tricharina* (= *Ascorhizoctonia*)”: These two genera have been separated by Van Vooren *et al.* (2017) based on molecular, ecological and morphological data.
- 16) Table 13: The genus *Cupulina* is missing (Dougoud *et al.*, 2015).
- 17) Table 13: The genus *Moravecchia* is missing although the reference to Benkert & Kristiansen 1999 is listed.
- 18) Two “*Trichophaea*” are chosen to illustrate this family but nothing is said about the parphyly of this genus (Perić *et al.*, 2015; Van Vooren, 2016).
- 19) *Trichophaea* cf. *boudieri*: The link with *T. boudieri* (which is a *Paratrachophaea*) is incomprehensible regarding the description because the latter has smooth eguttulate ascospores (vs. “guttulate, rough walled [probably warted after Fig. 34l]”. “Ascospores $23\text{--}27 \times 2.5\text{--}3 \mu\text{m}$...”, the width is erroneous after the scale on Fig. 34l-o, but the ascospore size of *P. boudieri* is $15\text{--}20 \times 10\text{--}12 \mu\text{m}$. “Asci $75\text{--}80 \times 6\text{--}7 \mu\text{m}$ [...] inoperculate” seem impossible for a *Trichophaea/Paratrachophaea* species; if these dimensions (including ascospore size) are confirmed, this may be a species of Helotiales. Note that the term “Spines” should be changed to “Hairs”.
- 20) *Trichophaea abundans*: “Saprobic on soil” is incorrect because this species is usually found on burnt places. The shape of ascospores is said to be “ellipsoid” but in this species ascospores are elliptico-fusoid to fusoid, with two polar guttules, and hyaline, not “pale yellow”. As the studied collection is not illustrated, it’s hard to confirm the determination.
- 21) *Cheilymenia theleboides*: The colour is said to be “orange” but in fresh condition, this species is yellow. “Ascospores $10\text{--}15 \times 5\text{--}8 \mu\text{m}$ [...] inner depression on side, [...] with 1–2 guttules” the ascospore size does not fit with *C. theleboides* which has ascospores measuring $15\text{--}19.8 \times 8\text{--}10 \mu\text{m}$ after Moravec (2005); this depression is caused by the ascospore collapsing and is without, and ascospores are eguttulate, De Barry bubbles are not considered.
- 22) *Cheilymenia theleboides*: In *Notes*, “Taxa of *Cheilymenia* [...] differ from the other two genera by having apothecia without hairs and ascospores with guttules [...]”: This is incorrect, *Cheilymenia* is characterized by eguttulate ascospores and numerous species have hairs (at the margin and/or on the outer surface), except in the subgenus *Coprobia*.
- 23) *Cheilymenia theleboides*: “The generic delineation of these genera [*Cheilymenia*, *Wilcoxina* and *Pseudaleuria*] is phylogenetically poorly understood”: This accusation cannot be substantiated as these taxa are taxonomically well-defined and phylogenetically differentiated (see for example, Van Vooren *et al.*, 2017).

- 24) *Humaria hemisphaerica*: This name applies to a species complex (see Alvarado *et al.*, 2018), but the description and the illustrations (Fig. 39) do not fit well with the usual characters applied to this name (or the material HKAS 82077 is fully immature), especially the ascospores measuring “12–17 × 9–11 μm” (vs. 19–25 × 11–13 μm in our collections) and described as “smooth walled” and illustrated in Fig. 39g-h-j-k without guttules (vs. biguttulate and distinctly warted in the current concept of the species). The rather long branch shown on Fig. 1 for the collection HKAS 82077 also suggests another species.

Rhizinaceae

- 1) “Taxa (Table 14) are saprobic on soil...”: This is not true for *Psilopezia* species which grow on dead wood.
- 2) *Rhizina undulata*: “Saprobic on dead wood” should be changed to “Saprobic on burnt soil or wood”
- 3) *Rhizina undulata*: “Ascospores [...] gelatinous cap present at both apices”: These apiculi are not gelatinized but made of callose, a polysaccharide (see Le Gal, 1947, under *R. inflata*).

Sarcoscyphaceae

- 1) In the list of studies the important work by Baral (1984) on the genus *Sarcoscypha* is not cited.
- 2) *Sarcoscypha vassiljevae*: In fresh condition, the apothecia are white to pale cream.
- 3) *Sarcoscypha austriaca*: “Sexual morph: Undetermined”, this sentence is somewhat confusing because *S. austriaca* is the name of the sexual morph, so “Sexual morph: Not described here” should be better. Same remark for *S. coccinea*.
- 4) Table 15: *Pseudopithyella* and *Sarcoscypha* have operculate asci.

Sarcosomataceae

- 1) *Sarcosoma globosum*: An important character of this species is not provided: The flesh is strongly gelatinized.
- 2) *Donadinia sibirica*: “Notes: *Donadinia sibirica* is characterized by the presence of black apothecia and hymenial hairs”, these characters are common to many species in the genera *Donadinia*, *Plectania*, *Pseudoplectania* and *Urnula*... In *Donadinia*, one of the most important characters is that all species are long-stipitate.

Strobiloscyphaceae

- 1) *Strobiloscypha keliae*: “(Description modified from Pfister *et al.* 2013)”: This reference points to an article dealing with *Kallistoskypha incarnata*, no description of *S. keliae* is given in this paper.

Tarzettaceae

- 1) “Asci amyloid or non-amyloid...”: the amyloid character of asci reported here for the hypogeous *Hydnocystis* is incorrect. The only species of “*Hydnocystis*” that was cited with amyloid asci is *H. convoluta* McAlpine, now combined in the genus *Peziza* under the new name *P. jactata* Burds. & Korf. See Kumar *et al.* (2017) for a modern description of this genus.
- 2) The designation of *Tarzetta cupularis* is a mistake because the type-species of the genus *Tarzetta* is *T. catinus* (Holmsk.) Korf & J. K. Rogers (see Rogers *et al.*, 1971).
- 3) In Notes: “Asci of the genera in this family lack croziers...” is incorrect as this is not the case for *Geopyxis* species (see Wang *et al.*, 2016).
- 4) The hypogeous genus *Densocarpa* is missing (Kumar *et al.*, 2017).
- 5) *Stephensia* Tul. & C. Tul. falls in synonymy with *Hydnocystis*, its type-species *S. bombycina* having been combined in the latter (Kumar *et al.*, 2017).
- 6) “However, we did not include *Hypotarzetta* and *Pustularia* into this family as the genus *Pustularia* grouped within the *Pyronemataceae* while, *Hypotarzetta* does not have molecular data available in GenBank”: In its original definition, *Pustularia* Fuckel (renamed in *Pustulina* by Eckblad, 1968) now corresponds to *Tarzetta* (see also our remark about *P. patavina* in § Pyronemataceae, point 8); And, for information, *Hypotarzetta* Donadini is a superfluous genus, its type-species *H. insignis* being a true *Tarzetta* species after our molecular data (unpublished).

- 7) *Tarzetta cupularis*: The ascospores are not figured in Fig. 51 but “Ascospores globose” is erroneous. Any known species of *Tarzetta* show an ellipsoid to fusoid shape in ascospores.
- 8) *Tarzetta cupularis*: “Paraphyses [...] smooth thick-walled”, I don’t understand what it means because such characters usually apply to ascospores not to paraphyses.

Tuberaceae

- 1) “The genus *Underwoodia* produce amyloid asci...”: This is incorrect, no species of *Underwoodia* s.l. has asci reacting blue in iodine solution.
- 2) p. 232, first paragraph, 5th line: correct “Meltzer” to “Melzer”.

List of References

- 1) Citations of Brummelen and Van Brummelen refer to the same author but are not positioned in the same place.
- 2) “Garnweidner E, Lohmeyer TR, Marxmuller H (1991)”: Marxmuller must be corrected to Marxmüller.
- 3) “Hansen K, Liessoe T, Pfister DH (2001)”: Liessoe must be corrected to Læssøe.
- 4) “Kimbroughj W, Luck-Allen ER, Cain RF (1972)”: Kimbroughj must be corrected to Kimbrough JW (and also in Table 3).
- 5) “Perić B (2012)” and “Peric B, Peric O (2011)”: They refer the same article but both versions are wrong. The correct citation is: Perić B, Perić O (2011) Notes on Montenegrin species of *Geopora*. *Mycol Monten* 14: 117–150.
- 6) “Rifai ME (1968)”: Rifai ME must be corrected to Rifai MA.
- 7) “Rifai M (1988)”: Rifai M must be corrected to Rifai MA. The title must be corrected in “*Lazuardia*, a new genus for *Peziza lobata*”.
- 8) “Rubio E, Sánchez JA (2005)”: Sánchez must be corrected to Sánchez. *Arpinia Fusispora* Hohmeyer must be corrected to *Arpinia fusispora* Hohmeyer.
- 9) Citations of “Svrcek” must be corrected to “Svrček”.
- 10) “Wettstein R (1885)”: The word *expedition* in the title should be spelt Expedition.

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