# Nomenclatural novelties in *Pezizales*. Part 2

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Ascomycete.org, 13 (5) : 213–215
Mise en ligne le 29/09/2021
10.25664/ART-0338

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**Abstract:** Three nomenclatural novelties are proposed. The first one corresponds to a change of the taxonomic position of *Peziza badioides* Donadini, erroneously placed in *Daleomyces* by us, and now combined in the genus *Phylloscypha*. We also propose to combine *Peziza kallioi* Harmaja in the latter genus. The third one is the transfer of *Peziza simplex* Dougoud & Moyne into the genus *Elaiopezia* based on molecular data.
**Keywords:** *Ascomycota*, *Pezizaceae*, *Elaiopezia*, *Phylloscypha*, taxonomy.

**Résumé :** trois nouveautés nomenclaturales sont proposées. La première correspond à un changement de position taxinomique de *Peziza badioides* Donadini, placé par erreur, par nous, dans le genre *Daleomyces*, et maintenant combiné dans le genre *Phylloscypha*. Nous proposons aussi de combiner *Peziza kallioi* Harmaja dans ce dernier genre. La troisième est le transfert de *Peziza simplex* Dougoud & Moyne dans le genre *Elaiopezia* sur la base de données moléculaires.
**Mots-clés :** *Ascomycota*, *Pezizaceae*, *Elaiopezia*, *Phylloscypha*, taxinomie.

## Introduction

We propose some taxonomic changes related to Pezizales taxa. As in the first part of this series (Van Vooren, 2021), these results come from various works dealing with *Pezizales*, database treatments and results of molecular analyses.

## Material and methods

**Phylogenetic analysis. —** We used the BLAST® search algorithm (Altschul *et al.*, 1990) to find the most closely related sequences from the International Nucleotide Sequence Database Collaboration (INSDC) public database. Selected sequences were aligned using MUSCLE (Edgar, 2004) integrated in MEGA-X software (Kumar *et al.*, 2018), with the default execution parameters, and manually corrected. The analysis of maximum likelihood was performed in MEGA-X on the LSU region (or a combination of ITS and LSU) using a GTR evolutionary model and 1000 bootstrap replications. The phylograms were graphically edited with the online software iTOL v5.6 (https://itol.embl.de, Letunic & Bork, 2019).

The sequenced collections are listed in the Table 1 and were deposited in GenBank.

## Taxonomy

### Novelty #1 and #2

*Peziza badioides* was described by Donadini (1979), mainly characterised by its pseudoapiculate ascospores. The species was described and illustrated in detail by Beretta (2010) and Van Vooren (2013). Thanks to a new multigene phylogeny of the *Pezizaceae* (Van Vooren, 2020), we reinstated several genera, including *Daleomyces* Setch. in which we erroneously combined *Peziza badioides*. This taxonomic change was based on a BLAST result made with the LSU sequence from its holotype (coll. MPU:JCD 210-78). New investigations on this species — based on a recent collection (Table 1) — and morphological comparison with the type collection (Van Vooren & Mauruc, 2020) allow us to correct its taxonomic position and to propose its placement in *Phylloscypha* Van Vooren. Indeed, in living state (and partly in rehydrated material) ascospores contains numerous small granules that often merge in droplets, a character shared by all known *Phylloscypha* species. The amyloid reaction of the asci is also in conformity with this genus, i.e. diffusely bluing on the whole wall, sometimes slightly more intense at the top. Macroscopically, the verrucose outer surface of the apothecia is also typical of that genus. We provide a new phylogenetic analysis based on a combination of ITS and LSU regions of rDNA confirming the molecular affinities of *P. badioides* with *Phylloscypha* (Fig. 1). Thus, we propose the following combination:

***Phylloscypha badioides*** (Donadini) Van Vooren, *comb. nov.* – MB 841246.

Basionym: *Peziza badioides* Donadini, *Bull. Soc. linn. Provence*, 31: 20 (1979).

This analysis also confirms the phylogenetic results by Van Vooren *et al.* (2021) suggesting that *Peziza kallioi* Harmaja is distinct from *Phylloscypha phylogena* (Cooke) Van Vooren. We also propose the following new combination:

***Phylloscypha kallioi*** (Harmaja) Van Vooren, *comb. nov.* – MB 841247.

Basionym: *Peziza kallioi* Harmaja, *Karstenia*, 26 (2): 46 (1986).

### Novelty #3

*Peziza simplex* was described by Dougoud & Moyne (2012), mainly characterised by its small pulvinate ascomata and, microscopically, by its asci arising from a simple septum (no crozier) and eguttulate ascospores. We had the opportunity to recently sequence a paratype of this species. Surprisingly the BLAST results obtained from ITS and LSU sequences suggested affinities with species of the genus *Elaiopezia* Van Vooren (Van Vooren, 2020). Our phylogenetic analysis made on the LSU region confirmed this taxonomic result (Fig. 3). We also compared the generic characters of *Elaiopezia* (see Table 2) with the characters of *P. simplex* (Dougoud & Moyne, 2012).

**Table 1 –** Collections sequenced for this note

| Original name | Collection Ref. | Collector | Country | GenBank Number | |
|---|---|---|---|---|---|
| | | | | ITS | LSU |
| *Peziza simplex* | GM 20070506 | G. Moyne | France | OK058326 | OK058328 |
| *Peziza badioides* | NV 2021.06.25 (LY) | C. Page | France | OK058327 | OK058329 |

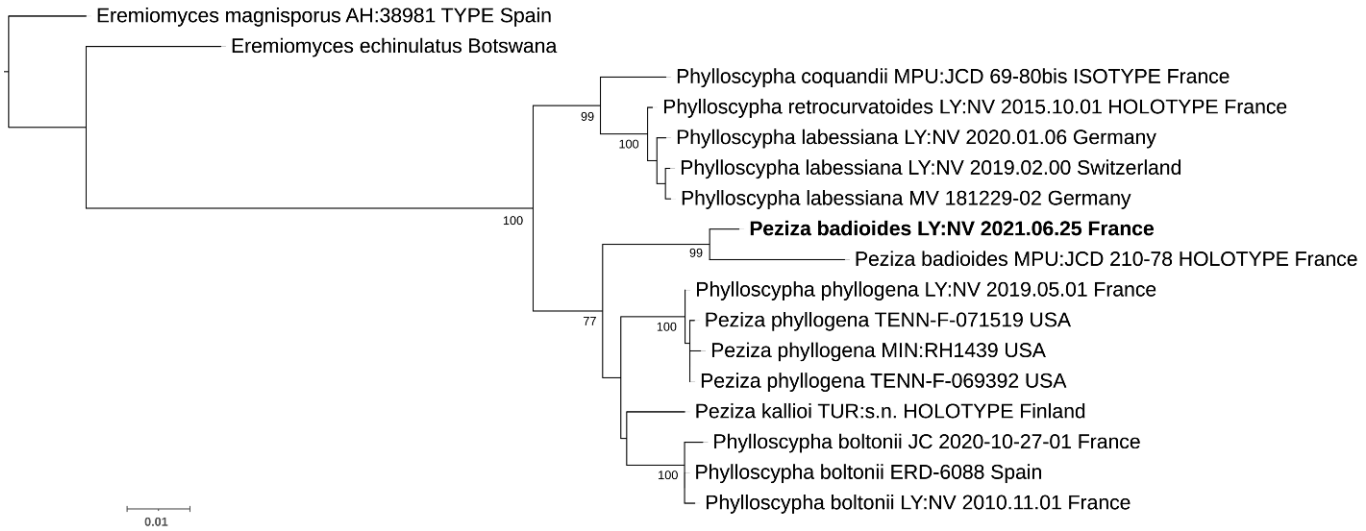


**Fig. 1 –** Phylogram of maximum likelihood (ML) of *Phyloscypha* based on a combination of ITS and LSU regions (1499 positions), rooted with *Eremiomyces* spp. Only nodes with ≥ 70% ML bootstrap support are annotated with their support values.

**Table 2 –** Comparison between generic characters of *Elaiopezia* and those of *P. simplex*

| **Main generic characters of *Elaiopezia*** | ***Peziza simplex*** |
|---|---|
| Apothecia yellow, olive or olivaceous brown | no |
| Flesh without latex | yes |
| Ascus wall diffusely amyloid (W type) | yes [fig. 3] |
| Paraphyses containing a yellow, yellow-ochre or olivaceous pigment | description indicates "wall brownish yellow" |
| Paraphyses sometimes with an external pigment at the top | yes |
| Ectal excipulum of *textura globulosa* | yes |
| Ectal excipulum with small to medium-sized cells | yes |
| Ascospores eguttulate | yes |
| Ascospores sometimes with drops in young state | yes |
| Saprobic lifestyle | suggested by its habitat |

Apart from the colour of apothecia, the latter shares many characters of *Elaiopezia*.

We also propose a picture of the amyloid reaction of an ascus (Fig. 2), a character not illustrated in the original description. The photograph has been taken from the paratype collection GM 20070506.

In this context, we propose the following new combination:

***Elaiopezia simplex*** (Dougoud & Moyne) Dougoud, Moyne & Van Vooren, *comb. nov.* – MB 841248.

Basionym: *Peziza simplex* Dougoud & Moyne, *Ascomycete.org*, 4 (2): 15 (2012).

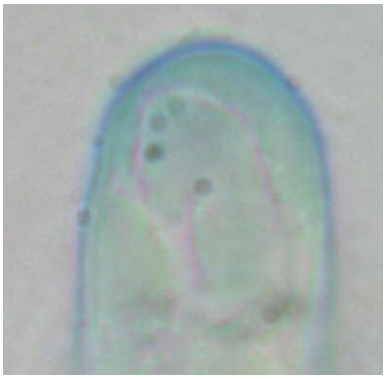

**Fig. 2 –** Amyloid reaction of the top of an ascus of *P. simplex*

## Acknowledgements

We thank Gilbert Moyne and Claude Page for having shared their collections. We also thank Marcel Vega (Germany) for the presubmission review of the manuscript.

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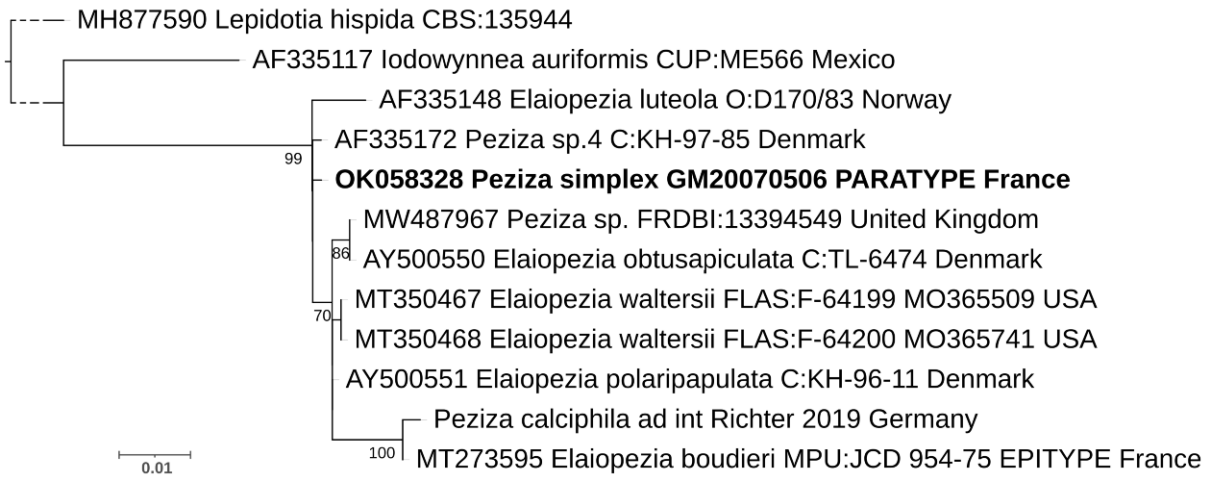


**Fig. 3 –** Phylogram of maximum likelihood (ML) of *Elaiopezia* based on the LSU region, rooted with *Lepidotia hispida* and *Iodowynnea auriformis*. Only nodes with ≥ 70% ML bootstrap support are annotated with their support values.


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