MycolObs - Mycological Observations Vol. 11: 28-30 2025-02-22

Article received 30 November 2024, accepted 25 January 2025

Novelties in the Family Psathyrellaceae. Part VII. New combination and new synonym proposals

Pietro Voto[1a*], Claudio Angelini[23b]

[2]Via Cappuccini 78/8, I-33170 Pordenone, Italy
[3]Jardín Botánico Nacional Dr. Rafael Ma. Moscoso, Santo Domingo, Dominican Republic

[a]pietrovoto@libero.it; https://orcid.org/0000-0003-1922-1324
[b]claudio_angelini@libero.it; https://orcid.org/0000-0002-5485-6889

*Corresponding author: pietrovoto@libero.it

Key words:
Agaricomycetidae
Agaricales
type molecular revision
ITS sequences

Abstract: ITS sequences of the holotypes of some American Smith's species housed at the herbarium MICH were generated. Basing on the results obtained, *Coprinus subpurpureus* corresponds to the European Lange's collections; *P. inflatocystis* is sister to psathyrelloid species of the genus *Coprinopsis* therefore the new combination *Coprinopsis inflatocystis* is proposed; *Psathyrella sharonensis* is conspecific with *P. cernuum.* Finally, morphological comments on *P. submaculata* are added.

Coprinus subpurpureus A.H. Sm.
Mycologia **40**(6): 684 (1948)

Material sequenced: A. H. Smith 26158 (MICH 10265), holotype; USA, Michigan, Cheboygan Co., Colonial Point, Burt Lake, 31 July 1947, in wet places in high woods among oak, beech, and maple; GenBank ITS1 PV015139, ITS2 PV015141.

Current name: *Tulosesus subpurpureus* (A.H. Sm.) D. Wächt. & A. Melzer, *Mycol. Progr.* 19(11): 1213 (2020).

NOTES

We could not obtain a full ITS sequence therefore we generated two single sequences of the ITS1 (PV015139) and ITS2 (PV015141) regions. These American sequences match those generated from Lange's European collections and offer a molecular support to the conspecificity of the collections from both continents.

Psathyrella inflatocystis A.H. Sm.
Memoirs of the New York Botanical Garden **24**: 298 (1972)

Material sequenced: L. R. Hesler 21319 (MICH 11954), holotype; USA, Tennessee, Sevier Co., Great Smoky Mountains National Park, Chimneys, near Fort Harry, 6 May 1954, on deep humus and soil in hemlock woods; GenBank ITS PV017465.

NOTES

The ITS sequence of this material is sister to the psathyrelloid taxa of the genus *Coprinopsis* P. Karst.

Smith (1972) had noted a '*faintly fibrillose*' appearance of the pileus but described the pileipellis as only composed of '*a layer of vesiculose cells 2-4 deep*'. At the time this character was known of some other psathyrelloid taxa, such as *Psathyrella melanthina* (Fr.) Kits van Wav. and *P. marcescibilis* (Britzelm.) Singer [currently *Coprinopsis melanthina* (Fr.) Örstadius & E. Larss. and *C. marcescibilis* (Britzelm.) Örstadius & E. Larss, respectively], without suggesting a connection with coprinoid taxa with a filamentous pileipellis.

Blasting the type sequence the best match with respect to vouchers of described species is with the types of *Coprinopsis uliginicola* (McKnight & A.H. Sm.) Örstadius & E. Larss. (91.96% identity), known from North America, and with *C. jilinensis* G. Rao, H.N. Zhao, B. Zhang & Y. Li (95.60% identity), known from China.

In contrast, we found strong molecular identities, between 98.96% and 100.00%, with a number of unidentified vouchers originating from the USA (Indiana and Ohio), six of which can be viewed at the following sites:

- *Coprinopsis* sp. 'IN02', voucher S.D. Russell MycoMap 7901, GB ON059454, https://mycomap.com/gallery/album/6238-coprinopsis-sp-in02-7901-album/;

- *Coprinopsis* sp. 'IN02', voucher S.D. Russell iNaturalist 98387800, GB OM987347, https://www.inaturalist.org/observations/98387800;

- *Coprinopsis* sp. 'IN02', voucher S.D. Russell iNaturalist 27756266, GB ON059460, https://www.inaturalist.org/observations/27756266;

- *Coprinopsis* sp. 'IN02', voucher OMDL K. Canan iNaturalist # 188596343, GB PP156401, https://www.inaturalist.org/observations/188596343;

- *Coprinopsis* sp. 'IN02', voucher S.D. Russell iNaturalist 25260242, GB ON059476, https://www.inaturalist.org/observations/25260242;

- *Coprinopsis* sp. 'IN02', vouchers S.D. Russell iNaturalist 17834367, GB ON059479, https://www.inaturalist.org/observations/17834367.

These web pages show photographs of the basidiomes and provide good colour iconographic documentation of the macrocharacters of the species.

Coprinopsis inflatocystis (A.H. Sm.) Voto & Angelini, *comb. nov*. [MB 857638]

Basionym: ***Psathyrella inflatocystis*** A.H. Sm., *Memoirs of the New York Botanical Garden* **24**: 298 (1972)

From Smith's (1972) description of *Psathyrella inflatocystis* and the images cited above, we note that this species has the general appearance of the common *Coprinopsis melanthina* from which differs in the white fibrils and squamules on pileus and stipe (compared to usually brown, blackish brow, grey), rare to scattered pleurocystidia (compared to completely absent), and an indistinct spore germ pore (compared to completely absent). The spore range is practically the same.

Psathyrella sharonensis A.H. Sm.
Memoirs of the New York Botanical Garden **24**: 258 (1972)

Material sequenced: A. H. Smith 64638 (MICH 12051), holotype; USA, Michigan, Washtenaw Co., Sharon Hollow, 11 October 1961, on hardwood log; GenBank ITS PV017466.

NOTES

The ITS sequence of the type material is identical to various sequences of *Homophron cernuum* (Vahl) Örstadius & E. Larss. and therefore *Psathyrella sharonensis* must be treated as a superfluous synonym of this *Homophron* species.

Smith (1972) treats both *Psathyrella sharonensis* and *P. cernua* (Fries) Moser in *Psathyrella* subgen. *Homophron* sect. *Cystidiosae* A.H. Sm. His dichotomous key separates them with the fork '*Pileus developing pinkish tints when faded; spores ovate to angular-ovate in front view*' for *P. sharonensis*; '*Not as above*' for other taxa including *P. cernua* (Fries) Moser [currently *H. cernuum*] and *P. submaculata* (G.F. Atk.) A.H. Sm. (see below for further comments on this taxon). However, *Homophron cernuum* can show pinkish shades on fading and Smith (1972) himself describes it with a discoloring pileus '*sometimes tinged pinkish*'.

Furthermore, he reported the spore size as 6 – 7 × 3.5 – 4 µm for *P. sharonensis* and 7 – 9 × 4 – 4.5 µm for *H. cernuum* but, based on several European collections and descriptions (for instance Ludwig 2007; Muñoz & Caballero 2013, Örstadius & Knudsen 2012), we know that the spore size of *H. cernuum* falls in the range 6 – 9 × 3.5 – 5 µm. Our molecular result demonstrates that *P. sharonensis* only represents a collection of *H. cernuum* with the spore size in the lowest expected range and not an autonomous species.

Psathyrella submaculata (G.F. Atk.) A.H. Sm. is another species that Smith (1972) treats in *Psathyrella* subgen. *Homophron* sect. *Cystidiosae*. and that he only separates from *H. cernuum* by smaller spores (6 – 7 × 3.5 – 4.5 µm).

Voto (2020a) transferred this species to *Homophron* and included it in his key (Voto 2020b) also basing its separation from *H. cernuum* on its smaller spores. However, Smith's (1972) description of *P. submaculata* is almost identical with that of *P. sharonensis*, including the spore size and the pinkish ('*pinkish buff*') shades on fading. Since there is no relevant difference between *H. cernuum* and *P. submaculata*, we propose to treat *P. submaculata* , likewise *P. sharonensis*, as another superfluous synonym of *Homophron cernuum*.

REFERENCES

Ludwig E (2007) Pilzkompendium 2. Ed. Fungicon. Berlin

Muñoz G, Caballero A (2013) Contribución al conocimiento del género *Psathyrella* (incluidos taxones ahora transferidos a los géneros *Coprinopsis* y *Parasola*) en la Península Ibérica (II). *Boletín Micológico de FAMCAL* **8**:17–46

Örstadius L, Knudsen H (2012) *Psathyrella* (Fr.) Quél. In: Knudsen H, Vesterholt J (eds) Funga Nordica. Agaricoid, boletoid, cyphelloid and gasteroid genera. Nordsvamp, Copenhagen (Denmark):692–728

Smith AH (1972) The North American species of *Psathyrella*. *Memoirs of the New York Botanical Garden* **24**:1–633

Voto P (2020a) Novelties in the family Psathyrellaceae. Part IV. *Rivista Micologica Romana, Boll. Amer* **110**(2):87–91

Voto P (2020b) [continuously updated] Key to Psathyrellaceae. A.M.E.R. Associazione Micologica Ecologica Romana (last accessed 19 December 2024)
Available from: https://www.ameronlus.it/chiavi_micologia.php