(2416–2419) Proposals to conserve the names *Tricholoma populinum* against *T. suffocatum* with a conserved type, *T. sciodes* against *Agaricus hordus*, *A. cingulatus* (*T. cingulatum*) against *A. ramentaceus*, and *A. psammopus* (*T. psammopus*) against *A. concolor* (*Basidiomycota*)

Jacob Heilmann-Clausen,[1] Morten Christensen,[2] Pierre-Arthur Moreau[3] & Machiel Noordeloos[4]

1 *Center for Macroecology, Evolution and Climate, Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, 2100 Copenhagen, Denmark*
2 *Hvidtjørnevej 1, Sorø, Denmark*
3 *UFR Pharmacie, Université Lille Nord de France, 3 rue du Pr Laguesse, BP 83, 59000 Lille, France*
4 *NBC Naturalis, P.O. Box 9517, 2300 RA Leiden, The Netherlands*
Author for correspondence: *Jacob Heilmann-Clausen, JHeilmann-Clausen@snm.ku.dk*

DOI http://dx.doi.org/10.12705/651.19

(2416) ***Tricholoma populinum*** J.E. Lange in Dansk Bot. Ark. 8(3): 14. 1933, nom. cons. prop.
Typus: Denmark, E. Jutland, Edwind Rahrs Vej, Brabrand, 10 Oct 1996, *Christensen MC96-171* (C; isotypus: L), typ. cons. prop.

(=) *Tricholoma suffocatum* Richon & Roze, Atlas Champ.: 81. Oct 1886, nom. rej. prop.
Lectotypus (hic designatus): [icon in] Richon & Roze, Atlas Champ.: t. 28, figs. 1–5. 1886.

Tricholoma populinum is a common ectomycorrhizal associate of *Populus* spp., probably with a circumboreal distribution (see Hongo in Trans. Mycol. Soc. Japan 29: 441–447. 1988; Grubisha & al. in New Phytol. 192: 548–560. 2012; Bessette & al., Tricholomas N. Amer.: 123–124. 2013; Christensen & Heilmann-Clausen, Genus Tricholoma, Fungi N. Eur. 4: 74. 2013). It produces medium-sized to large fruit-bodies, with a fawn to brick cap. It is commonly found on disturbed, nutrient-rich soils, e.g., on roadsides. For modern detailed presentations see Noordeloos & Christensen in Bas, Fl. Agaric. Neerl. 4: 125–126. 1999) and Christensen & Heilmann-Clausen (l.c.: 74–75).

Tricholoma populinum was published by Lange (l.c.) specifically as a nomen novum, writing "*T. populinum* n.n. (*T. pessundatum* **stans* f. *campestris* Fr.)", i.e., for *Agaricus stans* Fr. f. *campestris* Fr. (Fries, Hymenomyc. Eur.: 52. 1874). Fries included "**Ag. stans*" under his treatment of *Agaricus pessundatus* and noted that he would not venture to judge whether it was a distinct species or a variety [of *A. pessundatus*]. Although he was apparently treating the taxon at these alternative ranks, he did not make the varietal combination, but did validly publish the binomial, *A. stans*, which he also accepted later without question (Fries, l.c. 1874). Within *A. stans*, Fries recognized two formae, f. *campestris* and f. *montanus*, noting (Ic. Hymenomyc. 1: 25. 1869) that the upper figures on t. 28 represented *A. stans* f. *campestris*. Since its introduction *T. populinum* has been used consistently in the sense of Lange and in full alignment with Fries (l.c. 1874) cited above (Christensen & Heilmann-Clausen, l.c.: 75). Christensen & Noordeloos (in Persoonia 17: 314. 1999), noting that *T. populinum* did not have a holotype, sought to designate as a "neotype" the specimen proposed above as the conserved type. However, as a nomen novum, *T. populinum* must be typified by the type of the replaced synonym (*A. stans* f. *campestris* Fr.) (Art. 7.4 of the *ICN*, McNeill & al. in Regnum Veg. 154. 2012). Although there is no surviving Fries specimen, the upper part of the illustration in Fries (l.c. 1869: t. 28) was explicitly stated by Fries to be of this form and hence represents original material, precluding neotypification. A specimen provides a better type than an illustration so we propose to accept Christensen & Noordeloos's "neotype" as the conserved type of *T. populinum*. As discussed by Noordeloos & Christensen (l.c.: 107–148), it is obvious that *Tricholoma suffocatum* Richon & Roze (l.c.: 81) is an earlier heterotypic synonym, also referred (but conditionally) to *T. stans* f. *campestris,* cited as "*Tricholoma pessundatum* var. *campestre*". However, almost no modern authors have used this name (one exception is Krieglsteiner, Grosspilze Baden-Württembergs 3: 538–539. 2001). According to Web of Knowledge (accessed 22 Dec 2015), *T. populinum* has been a topic in 22 scientific publications, while only one mentions *T. suffocatum*. To stabilize nomenclature for this common and widespread species we propose conservation of the younger name *Tricholoma populinum* over the older legitimate synonym *T. suffocatum.*

(2417) ***Tricholoma sciodes*** (Pers.) C. Martin, Cat. Basidiomyc. Suisse Rom.: 51. 1919 ≡ ***Agaricus myomyces*** [unranked] ***sciodes*** Pers., Syn. Meth. Fung.: 346. 31 Dec 1801 ('γ'), nom. cons. prop.
Neotypus (hic designatus): France, Pas-de-Calais, Bourlon, Bois communal de Bourlon, in forest under *Fagus sylvatica*, 6 Oct 2014, *Lécuru CL/F14.299* (LIP No. 0300304).

(=) *Agaricus hordus* Fr., Syst. Mycol. 1: 47. 1 Jan 1821 : Fr., ibid. (*Tricholoma hordum* (Fr. : Fr.) Quélet), nom. rej. prop
Neotypus (hic designatus): Denmark, Jutland, Fløjstrup Skov, in forest under *Fagus sylvatica*, 12 Sep 1994, *Christensen MC94-007* (C No. F-58902).

Tricholoma sciodes is a common and widespread ectomycorrhizal associate of *Fagus sylvatica* L. in Europe. It was first recognized by Persoon as an infraspecific taxon of *Agaricus myomyces* Pers. ("γ Ag. *sciodes*") (for notes on Persoon's infraspecific names see Chater & Brummitt in Taxon 15: 143–149. 1966). It produces medium-sized fruit-bodies with a conical to umbonate, innately squamulose, grey cap and is otherwise characterized by an acrid taste of the flesh. For modern detailed presentations see Noordeloos & Christensen (l.c.: 138–139) and Christensen & Heilmann-Clausen (l.c.: 124–125).

The species is quite common in southern Sweden where Elias Fries spent his younger years, but Fries did not adopt Persoon's name, at least in his sanctioning works. Instead he introduced the name *Agaricus hordus* Fr. (l.c. 1821), which fits very well with our species (combined as *Tricholoma hordum* (Fr. : Fr.) Quélet in Mém. Soc. Émul.

Montbéliard 5: 232. 1872). All modern European authors have used *T. sciodes* for this common *Fagus*-associated species (although incorrectly usually citing the authorship as "(Secr.) Martin", ignoring the fact that Secretan's publication has been suppressed – App. VI of the *ICN*, Wiersema & al. in Regnum Veg. 157. 2015). A few authors have accepted *T. hordum*, as a rare and badly known close relative (e.g., Bon in Encycl. Mycol. 36: 111–112. 1984; Riva in Fungi Europaei 3: 263–265. 1988). We find that the original concept of *Agaricus hordus* in Fries (l.c. 1821) matches perfectly with the original and modern concept of *T. sciodes*, and, hence, as established by our neotypification above, *T. hordum* must be interpreted as the correct and sanctioned name for the present taxon. According to Web of Knowledge, *T. sciodes* has been a topic in seven scientific publications, while none mentions *T. hordum*. To avoid an unfortunate name-change we propose conservation of *T. sciodes* over the sanctioned name *T. hordum*. Since no authentic material of *T. sciodes* and *T. hordum* has been traced in Leiden (L) and Uppsala (UPS), respectively, we propose two neotypes, as indicated above, to stabilize the taxonomic interpretation of the names.

(2418) ***Agaricus cingulatus*** Almfelt ex Fr. in Linnaea 5: 507. Oct 1830 : Fr., Syst. Mycol. 3, index: 12. 1832, nom. cons. prop.
Lectotypus (hic designatus): [icon in] Linnaea 5: t. 10. Oct 1830.

(=) *Agaricus ramentaceus* Bull. ex Pers., Syn. Meth. Fung.: 263. 31 Dec 1801 : Fr., Syst. Mycol. 1: 25. 1 Jan 1821 (*Tricholoma ramentaceum* (Bull. ex Pers. : Fr.) Ricken), nom. rej. prop.
Lectotypus (hic designatus): [icon] "Agaric ramentacé" in Bulliard, Herb. France: t. 595, fig. 3. 1793.

Tricholoma cingulatum (Almfelt ex Fr.: Fr.) Jacobashch (in Verh. Bot. Vereins Prov. Brandenburg 33: 55. 1890) is an ectomycorrhizal associate of *Salix* spp. widely distributed on the Northern Hemisphere (Bessette & al., l.c.: 52–53; Christensen & Heilmann-Clausen, l.c.: 156). It produces small to medium-sized fruit-bodies with a fibrillose to felty greyish cap, and a cottony ring on the stem. For modern detailed presentations see Noordeloos & Christensen (l.c.: 136–137) and Christensen & Heilmann-Clausen (l.c.: 156–157).

Bulliard (l.c.: t. 595) nicely illustrated this species but only under the French name "Agaric ramentacé" and so did not validly publish *Agaricus ramentaceus*; this was accomplished by Persoon (l.c.) and the name was sanctioned by Fries (l.c. 1821: 25) and combined in *Tricholoma* by Ricken (Blätterpilze Deutschl.: 338. 1915). After sanctioning the name, Fries (l.c. 1830) published the name *A. cingulatus*, for what in our opinion is clearly the same species. The name is sanctioned in Fries (l.c. 1832: 12), and almost all modern authors now use this name for our species. Some do, however, accept *T. ramentaceum* as a separate species differing by morphology of veil and scales of pileus (most notably Marcel Bon in various works, e.g., Encycl. Mycol.: 36. 1984), but there is no molecular support for this separation (e.g., Jargeat & al. in Molec. Ecol. 19: 5216–5230. 2010, based on material from Bon's herbarium, LIP). According to Web of Knowledge, *T. cingulatum* has been a topic in nine scientific publications, while none mentions *T. ramentaceum*. Because of the long and unambiguous use of the name *T. cingulatum* in taxonomic literature, and in order to avoid a regrettable disturbance for a common and well-known species we hence propose conservation of *T. cingulatum* over the older sanctioned name *A. ramentaceus*.

(2419) ***Agaricus psammopus*** Kalchbr., Icon. Select. Hymenomyc. Hung.: 12. Feb 1873, nom. cons. prop.
Lectotypus (hic designatus): [icon] "*Agaricus (Tricholoma) psammopus* Kalchbr." in Kalchbrenner, Icon. Select. Hymenomyc. Hung.: t. 3, fig. 2. Feb 1873.

(=) *Agaricus concolor* Delile in Seynes, Fl. Mycol. Montpellier: 143. Mai–Jun 1863 (*Tricholoma concolor* (Delile) P.A. Moreau & al.), nom. rej. prop,
Lectotypus (vide Moreau & al. in Cryptog. Mycol. 32: 270. 2011): [icon ined.] A. Raffeneau-Delile No. 24 (MPU).

Tricholoma psammopus (Kalchbr.) Quél. (in Mém. Soc. Émul. Montbéliard, sér. 2, 5: 433. 1875) is a well-known species in Europe where it is an ectomycorrhizal associate of conifers, mainly *Larix* spp. It is even reported from Japan (Hongo, l.c.: 446). It produces medium-sized fruit-bodies with uniform buff to ochraceous colours and a felty to squamulose cap surface. For modern detailed presentations see Noordeloos & Christensen (l.c.: 122–123) and Christensen & Heilmann-Clausen (l.c.: 84–85).

The species has been interpreted consistently in the literature, but recently Moreau & al. (l.c.) traced an older name, *Agaricus concolor* Delile (in Seynes, l.c.) (≡ *Tricholoma concolor* (Delile) P.A. Moreau & al., l.c.), which clearly represents the same taxon. They also combined the name into *Tricholoma* and designated an epitype (LIP No. JMB2010110701). Because of the long and unambiguous use of the name *T. psammopus* in taxonomic literature, and in order to avoid a regrettable disturbance for a common and well-known species we propose that *T. psammopus* be conserved over its older synonym.