

NOTULAE AD FLORAM AGARICINAM NEERLANDICAM – XXXV
On the typification of *Lactarius necator*

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Lactarius necator is neotypified with a collection from Sweden that fits well with the sanctioning description. The plate of Bulliard representing the original concept of *Agaricus necator*, is excluded from the type diagnosis. It is demonstrated that *A. plumbeus* is not conspecific with *A. necator*, and the alternative use of the name *Lactarius plumbeus* (Bull.: Fr.) Gray, as recently proposed by Heilmann-Clausen et al. (1998) is rejected.

Recently, the first author started revising the genus *Lactarius* for one of the forthcoming volumes of the Flora agaricina neerlandica. During this study also some nomenclatural problems were encountered, one of them being the application of the epithet *necator* for the well-known and widespread species with olivaceous-brown colours, associated mainly with *Betula*. In the current literature, this species has been called either *L. necator* or *L. turpis*, and occasionally, mainly in the French tradition, also *L. plumbeus*. Heilmann-Clausen et al. (1998), being aware of the problems connected with the typification of *Lactarius necator* also decided to use the name *Lactarius plumbeus* in their monograph of Nordic Lactarii. The present paper makes clear that the name *L. necator* can be maintained and points out that the name *L. plumbeus* should not be used for that taxon.

Fries (1821: 64) sanctioned *Agaricus necator* Bull. with the following diagnosis:

“*A. necator*, pileo glabro zonato olivaceo-umbrino, margine villosio, stipite farcto.
Krapft. V. f. 1–4. *A. nec. Bull. t.* 14, *Pers. Syn. p.* 435. *Fries Obs.* 1, p. 59. *Lact. Pers. Obs. 2. p.* 42. *Am. venenat. Lam. l.c.* *A. plumbeus. Schum. p.* 345.
Certe ab *A. torminoso* distinctus. Stipes brevis, attenuatus, pileo dilutior, intus albus. Pileus regularis, saepe plano-disciformis, viscosus, firmus, margine demum evoluto. Lamellae albiae, variant lutescentes et incarnatae. *In silvis & nemoribus, passim. Aug.–Oct. (v.v.)*”

Although Fries had seen the fungus in living condition – as indicated by ‘v.v.’ in his description, he largely based this diagnosis on earlier descriptions (Fries, 1815: 59–69; Persoon, 1799: 42; Persoon, 1801: 435).

It is clear from these descriptions that Fries and Persoon described a *Lactarius* species, nowadays commonly known as *L. necator* (Bull.: Fr.) Pers. However, it is remarkable that Fries and Persoon chose the epithet *necator* Bull. for this species. Bulliard published two plates as *Agaricus necator*. The first one, pl. 14, depicts (in the Leiden copy) a pinkish-redish brown *Lactarius* species with zonate pileus and hairy pileal margin, obviously representing what we now are used to call *Lactarius torminosus*. Heilmann-Clausen et al. (1998:

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43) who consulted another copy of Bulliard, mention a plate depicting a blackish fungus with a hairy pileal margin. With Bulliard's second plate (l.c., pl. 529, fig. 2) a fungus is depicted which represents beyond any doubt *L. torminosus*. Fries (1821: 63) was aware of the identity of the fungus illustrated again as *Agaricus necator*, as he listed that plate under *Agaricus torminosus*.

Fries (1832) realised that Persoon's and his own earlier interpretation of the first plate of *A. necator* (Bull., pl. 14) might well have been wrong. He concluded that both Bulliard plates referred to *A. torminosus* and he changed author attribution of the name *A. necator*, listing it as *A. necator* Fr.! One might be tempted to conclude that Art. 48 is operative here and that a new taxon, *A. necator* Fr.: Fr. was created, which was an illegitimate name, even though sanctioned (Rauschert, 1989), but in view of Art. 7.8 and the taxonomic continuity of *A. necator* between (1815) 1821 and 1832, such a conclusion would not be imperative. Fries (1838), however, listed the same species as *L. turpis* (Weinm.) Fr. It is not clear why he changed the name, but it might seem that it was a consequence of his earlier realisation of the problems surrounding the application of the epithet *necator*. It is clear from Fries (1874) that he did so for a very different reason: the species under discussion is considered edible and even a delicacy, so that the epithet *necator* was clearly inept.

Many later authors adopted *L. turpis* in that concept, to replace *Agaricus necator* (Ricken, 1910; Cooke, 1888; Lange, 1940; Neuhoff, 1956). In this century, however, also many authors (Bon, 1980; Hesler & Smith, 1979; Imazeki & Hongo, 1988; Korhonen, 1984; Lundell & Nannfeldt, 1935; Marchand, 1980; Moser, 1983; Rauschert, 1989; Ryman & Holmåsén, 1992) retained the use of *Lactarius necator* in the concept of Fries (1815, 1821).

Fries (1821) sanctioned *Agaricus plumbeus* Bull. His description fits well with the original description and plate of Bulliard (pl. 282, 559 fig. 2 and Hist. Champ. 2: 489–491). *Agaricus plumbeus* Bull.: Fr. stands for a species with a uniformly coloured, not or hardly zoned, dark grey to grey-brown, smooth, more or less viscid pileus with naked margin, lamellae that turn ochre-yellow, and a stipe concolorous or slightly paler than the pileus. As such it does not remind of *L. necator* in its current concept, but more likely it is a species close to either *L. pyrogalus* or one of the group of *L. fuliginosus*. Fries adds in his description that the stipe may have an olivaceous-reticulate surface, which may have misled later authors to interpret it as a form of *L. necator*. It is not clear what *Agaricus plumbeus* sensu Fries 1821 stands for, but it certainly does not represent the current concept of *L. necator*. This is also indicated by Dennis et al. (1960: 95). Fries (1838) placed *Agaricus plumbeus* in sect. *Piperati* with about the same concept as in 1821.

Quélet (1872) described *Lactarius turpis* in a concept similar to that of Fries (l.c.), and also used the name *L. plumbeus* Bull. for a species close to *L. pyrogalus*, differing from that species mainly by the red-brown to blackish brown pileus and white then yellow lamellae. Later, Quélet (1886), however, abandoned this concept of *L. plumbeus*, and gave a new description, which fits well with *Agaricus turpis* Weinm., which is mentioned in the synonymy. It becomes not clear, however, why Quélet changed his mind about the interpretation of *Agaricus plumbeus*. Quélet was followed by several French authors, e.g. Konrad & Maublanc (1937) and Blum (1976). Recently, Heilmann-Clausen et al. (1998) also became aware of the discrepancy between the sanctioning description of *Agaricus necator* and the original plate of Bulliard. They considered the original plate more important than the sanctioning description of *L. necator*, and therefore proposed the use of the name *Lactarius plumbeus*.

From the above discussion it will be clear that there are three good reasons to disagree with the reintroduction of the name *Lactarius plumbeus* to replace *L. necator*, viz. the identity of *A. plumbeus* Bull., the identity of *A. plumbeus* Bull.: Fr., and the identity of *L. plumbeus* (Bull.: Fr.) Quélet.

Another question is whether *Lactarius necator* is in need of replacement because of the questionable identity of plate 14 of Bulliard (the identity of the other plate is irrelevant). The present code (Greuter et al., 1994), explicitly allows us to choose from the sanctioning description those elements that fit with the current concept of a species. In the case of *Agaricus necator* this can be done by accepting the diagnosis of Fries (1821), taxonomically excluding the cited plate 14 of Bulliard. The current use of the name *Lactarius necator* can be fixed with a neotype.

There might seem to be one problem with this procedure, viz. the apparent contradiction between Art. 48 (explicit exclusion of types) and Art. 7.8 (typification criteria for sanctioned names). If the latter article (and hence nomenclatural stability) is to function well, it should take precedence over Art. 48. For that reason the name should be cited as follows:

***Lactarius necator* (Bull.: Fr.) Pers., *Observ. Mycol.* 2 (1800) 42.**

Agaricus necator Bull., *Hist. Champ.* (1792) pl. 14; *Agaricus necator* Bull.: Fr., *Syst. mycol.* 1 (1821) 64. — *Agaricus turpis* Weinm., *Syll. Pl. Nov.* 2 (1828) 85; *Lactarius turpis* (Weinm.) Fr., *Epicr.* (1838) 335.

Misapplied name. *Lactarius plumbeus* (Bull.: Fr.) Gray sensu Quélet, 1888; Konrad & Maubl., 1937; Blum, 1976; Heilmann-Clausen et al., 1998 non sensu Bulliard, nec sensu Fries, nec sensu Quélet, 1872.

Selected icons. Blum, *Lactaires* (1976) pl. 6, upper fig. (as *L. plumbeus*); Bres., *Iconogr. mycol.* 8 (1929) pl. 358 (as *L. turpis*); Cetto, *Funghi Vero* 1, ed. 1 (1975) pl. 357 (as *L. turpis*); Cooke, *Ill. Brit. Fungi* (1887) pl. 987 (as *L. turpis*); Courtec. & Duhem, *Champ. France Eur.* (1994) pl. 1540; Dähncke, *1200 Pilze* (1993) 941; Hagara, *Atlas Húb* (1987) pl. 233 (as *L. turpis*); Heilmann-Clausen et al., *Lactarius* (1998) 43 (as *L. plumbeus*); Konr. & Maubl., *Ic. sel. Fung.* 10 (1937) pl. 318 (as *L. plumbeus*); Korhonen, *Suomen Rouskut* (1984) 136; J. Lange, *Fl. agar. dan.* 5 (1940) pl. 169D (as *L. turpis*); Marchand, *Champ. Nord Midi* 6 (1980) pl. 538; Neuh., *Milchlinge* (1956) pl. 8, fig. 30 (as *L. turpis*); R. Phillips, *Mushr. other Fungi* (1981) 83 (as *L. turpis*); Rick., *Blätterpilze* (1910) pl. 9, fig. 4 (as *L. turpis*); Ryman & Holmåsén, *Pilze* (1992) 560.

Selected descriptions & figures. Bataille, *Fl. monogr. Astérosporés* (1908) 27 (as *L. turpis*); Blum, *Lactaires* (1976) 185–186 (as *L. plumbeus*); Bon, *Doc. mycol.* 10 (40) (1980) 43; Heilmann-Clausen et al., *Lactarius* (1998) 42–43 (as *L. plumbeus*); Hesl. & Smith, *Lactarius* (1979) 549; Konr. & Favre in *Rev. Mycol.* 51 (1935) 131–132 (as *L. plumbeus*); Rauschert in *Česka Mykol.* 43 (1989) 205; Smith & Hesler, *Lactarius* (1979) 549–550; Vesterholt in *Svampe* 28 (1993) 5.

Neotypus: Sweden: Uppland, G:la Upsala parish, the plantation between the railway and Tunaberg (near Uppsala), 9.X.1935, D. Lihnell & Seth Lundell [Fungi Exsiccati Suecici, presertim Upsalienses no 228 (UPS)].

As a consequence of fixing *Lactarius necator* with a neotype, even though taxonomically excluding Bulliard's plate, the re-introduction of *L. turpis* is avoided. As shown above, there is no basis for the application of *L. plumbeus*.

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