Pholiota gymnopodia, comb. nov.
A redescription of a forgotten species

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A description is given of the remarkable species Pholiota (Flammula) gymnopodia, which was found in 1939. It was identified by Mr. A.C.S. Schweers; since then, this species has not been recorded from the Netherlands nor from any other country in Europe. It is mentioned in most taxonomic works of the end of the 19th and the beginning of the 20th century, but it is completely absent from the more recent literature. The new combination Pholiota gymnopodia is proposed.

Pholiota gymnopodia (Bull.: Fr.) A.F.M. Reijnders, comb. nov. — Figs. 1, 2


Selected illustrations. Bulliard, Herb. Fr. (1798) pl. 601, fig. 1 (as Agaricus gymnopodius); Cooke, Illust. Br. Fungi (1884) pl. 431 (as A. gymnopodius); Britzelmayer, Hymen. Südbayern (1890) pl. 415 (as Flammula gymnopodia; doubtful).

Description. Cap 45–50 mm diam., plano-campanulate, obtusely umbonate, minutely squamulose, scales rusty-brown; general colour of the pileus orange-brown, with a much brighter yellow marginal zone; margin curved downward. Gills yellow-orange; edge uneven and brighter by the presence of filiform cheilocystidia; L = 40–50, shorter gills of 3 lengths,
height 4–5 mm; deeply decurrent and forming striations on the uppermost part of the stem; thin near the stem and the pileus margin. Stem 6–8 cm × 6–11 mm, cylindrical tapering downwards, fasciculate; upper part yellow-white, lower part brown; fibrillose, slightly rimose, at the top somewhat flocculose but white and velvety at the base. Flesh yellow-white in cap and stem; taste bitter; smell absent.

Spores broadly ellipsoid, 7–7.5 × 5–5.5 μm. Cheilocystidia filiform; mostly 18–20 μm long.

Additional observations following a study of the exsiccatum. A spore print is unfortunately lacking. Spores (after treatment with heated 8% NH₄OH) broadly ellipsoid, smooth; yellow-brown under the microscope, somewhat depressed at the hilum, without a germ-pore, (5.75–)6.4–8.3 × 4.5–5.4 μm (average 7.1 × 5.0 μm) (Fig. 1a). Cheilocystidia filiform, often somewhat broadened (subcapitate) at the apex, up to 30 μm long (Fig. 1b). Pileipellis a cutis with an irregular outline caused by scattered tufts of hyphae, probably remnants of the inconspicuous veil (Fig. 1c); the cutis usually about 100 μm thick; hyphae 3–8 μm diam., rather dark brown, contrasting with the paler coloured pileus trama, though the latter has also darker strips; pigment probably membranal, because walls yellow.

Spore wall staining pink (dextrinoid) in Melzer’s reagent and blue (cyanophilous) in cotton blue.


DISCUSSION

Taxonomic position of Flammula gymnopodia

Among the ochrosporous Agaricales, a species with such deeply decurrent lamellae is an exception. The only genus of such fungi where strongly decurrent gills are observed is
Reijnders: *Pholiota gymnopodia, comb. nov.*

Fig. 2. *Pholiota gymnopodia*. Basidiocarps (× 1), after a water-colour painting by Mr. A.M. Middelhoek.
Tubaria, but classification in this genus is not possible because of significant differences in the clothing of the stem, the dimensions, the colour, and other characters.

A genus like Gymnopilus can be excluded on account of the smooth spores in our species. Pholiota gymnopodia shares a set of characters with Pholiota alnicola (Fr.: Fr.) Sing.; such as the colour of the spores, the absence of pleurocystidia, the presence of cheilocystidia, the dextrinoid spore wall, and the inconspicuous veil. But there are also many differences, like the much taller basidiatoma, the deeply decurrent lamellae, the naked stem, and the shorter spores, reaching 8–10(–12) × 4.5–5.5 μm in P. alnicola. Pholiota alnicola is a very variable species (see e.g. Tjallingii-Beukers, 1987). Even less or not bitter varieties seem to exist, but it is not well possible to include our fungus in this complex of various forms.

Jacobsson (1986) studied in detail the taxonomic position of the ‘Pholiota alnicola’ group. He recognized three species: Pholiota alnicola (Fr.) Sing., P. pinicola Jacobsson, and P. salicicola (Fr. ex Quél.) Arnolds. The fact that P. alnicola sensu lato grows on pine wood as well as on wood of deciduous trees has been observed before by many mycologists. Jacobsson (1986) distinguished separate species on account of colour shades and a somewhat different smell. He stressed much the same as a taxonomic character and therefore distinguished P. salicicola on account of its bitter taste. As our species also tasted bitter, as Mr. Schweers mentioned explicitly, the comparison with P. salicicola may be more appropriate than that with P. pinicola. Jacobsson’s description of the latter species is somewhat fragmentary but complete enough to establish several differences with P. gymnopodia. According to Jacobsson, the smell of P. salicicola is strong and unpleasant, whereas our species was odourless (Schweers). The spores of P. gymnopodia are somewhat shorter and we did not observe a germ pore. But, above all, the deeply decurrent lamellae are not present in P. salicicola, or any other species of the Pholiota alnicola group, they seem to be also less dense in Middelhoek’s painting. The shape of the cheilocystidia seems also to be somewhat different (Fig. 1b). According to Jacobsson’s restricted conception of the species (Jacobsson, 1986), P. gymnopodia must be considered to be a distinct species. This relates even more to the comparison with P. pinicola. In a study of cultural characters in species of Pholiota Jacobsson (1989) found P. alnicola and P. pinicola very similar, but the interspecific matings between isolates of these species were unsuccessful.

Jacobsson (1990) reconsidered the position of P. salicicola and placed it with some doubt into the synonymy of P. alnicola, mainly because of the absence of additional material and different interpretations of the name in the older literature.

In conclusion, there seems to be sufficient evidence to maintain Pholiota gymnopodia as a separate species allied to Pholiota alnicola. It is to be regretted that data on the compatibility of the mycelia of these species are not available.

The occurrence of P. gymnopodia in the mycological literature

After Fries’ (1874) redescription, the species is mentioned many times in the early British literature, e.g. in Cooke (1884), where we find that Plate 431 remarkably resembles our species with its decurrent, rather distant lamellae, its orange-brown pileus colour, its size and stout, striate stipe. Furthermore, the species is present in Massee (1893), who wrote: “a very distinct species” and in Rea (1922), but it is absent from Greville (1823–1828) and Berkeley (1844–1856).

An important indication of the existence of the species is its presence in Saccardo (1887): “species major, caespitose, distinctissima; stipites ultra longi, ...”. Fries (1874) and Saccardo (1887) mentioned that the species had been observed in ‘Vogesis’ by Mougeot (1887). In
the French literature of the 19th century (e.g. Léveillé, 1855; Gillet, 1874) the species is absent as it is also from the Finnish work of Karsten (1876).

On the other hand, it is more frequently encountered in the earlier German mycological literature, starting with Britzelmayer (1891–1894), whose illustration was cited by Killerman (1928). Moreover, the species was included in the compilations of Winter (1884) and Migula (1912), but is absent in Ricken (1915), Michael et al. (1968–1975), and Moser (1978), whilst in the Netherlands the species was previously unknown (Oudemans, 1905). These citations are confined to the older literature, where the species has been repeatedly mentioned. However, how many times it really has been observed is rather uncertain, though Cooke’s plate and Saccardo’s record (Mougeot) give reliable evidence.

Statements about the habitat are vague: on the ground (Fries, 1874; Persoon, 1801; Saccardo, 1887; Winter, 1884; Migula, 1912), on pine sawdust (Cooke, 1881–1891), on both (Masse, 1892–1895; Smith, 1908; Rea, 1922). Probably Cooke had observed the species growing on pine sawdust and the other authors copied this statement. Unfortunately, the habitat of our fungus is somewhat uncertain, but it probably grew on (pine?) wood.

In the recent literature on Higher Basidiomycetes, the species is no longer mentioned. The last note about it can be found in Part II of Dennis et al. (1960), as ‘gymnopodia, Flammula: doubtful’. No mention of it appears in the large compilations of agarics of the beginning or middle of this century (Bresadola, 1927–1933; Lange, 1935–1940; Konrad & Mau-blanc, 1949; Kühner & Romagnesi, 1953), nor does it occur in Singer (1986) or in the specific American works on Pholiota (Smith & Hasler, 1968).

So we must conclude that this well-characterized species, representing a distinct taxon, is strongly declining or has perhaps become completely extinct.

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