

**Gymnopus herinkii spec. nov.: a critical review of the complex of
Agaricus porreus and A. prasioismus**

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Antonín V. and Noordeloos M. E. (1996): *Gymnopus herinkii* spec. nov.: a critical review of the complex of *Agaricus porreus* and *A. prasioismus*. – *Czech Mycol.* 48: 309–313

The taxonomic and nomenclatural problems considering *Agaricus porreus* and *A. prasioismus* are discussed. As a result both names must be considered *nomina dubia*. The new species *Gymnopus herinkii* Antonín and Noordel. is described to replace "*Collybia*" *porrea* sensu auct.

Key words: Basidiomycetes, Tricholomataceae, *Gymnopus*, *Collybia*, *Marasmius*, nomenclature, taxonomy

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V článku jsou diskutovány taxonomické a nomenklatorické problémy komplexu *Agaricus porreus* a *A. prasioismus*. Na základě této diskuse jsou obě jména považována za *nomen dubium*. Jako náhrada za „*Collybia*“ *porrea* sensu auct. je popsán nový druh *Gymnopus herinkii* Antonín and Noordel.

During our studies on the genera *Marasmius* and *Collybia* s.l. in Europe, it became apparent that the rather complex taxonomic and nomenclatural situation around two taxa with onion smell which figure in older literature as *Agaricus* (*Collybia*) *porreus* and *Agaricus* (*Marasmius*) *prasioismus* had to be solved.

In its original concept, *Agaricus porreus* represents a *Mycena* species exuding reddish latex, and having an alliaceous smell. It is obvious also from Persoon's comments that he did not know the species from personal observation. With disregard to the smell it could be close to or identical with the current concept of *Mycena crocata*. Fries (1818) accepted *Agaricus porreus* Pers. exclusive of the mentioned synonyms, and ranged it close to *A. prasioismus*. Later, Fries (1821) placed it in a group of species together with *Agaricus terginus*, *A. fuscopurpureus*, and *A. putillus*, which we now should call a typical *Gymnopus* ("*Collybia*") as well. However, from the descriptions it is not at all clear whether Fries in both works was able to distinguish both species. In the *Epicrisis* (Fries 1838) the author writes that he had become aware of the fact that he confused both taxa in his earlier works. He there describes *Marasmius prasioismus* in the concept that has been in current use by later mycologists, indicating that *Agaricus porreus* of his earlier works (Fries 1818, 1821) is probably the same species. The concept of *Marasmius porreus* in

Fries (1838, 1849 and later works) is another species, strictly bound to *Betula* leaves. This taxon does not seem to be the same as what is currently understood by modern authors as "*Collybia porrea*". Huhtinen (1985) who studied original notes and coloured plates of both taxa in the Fries estate in the Herbarium of Stockholm also came to the conclusion that *Agaricus porreus* in its original concept is probably a synonym of *A. prasioemus*. The concept of *Agaricus prasioemus* has, however, also been changed many times. Fries (1818, 1821) referred to a fungus close to *Agaricus crocatus* (= *Mycena crocata*) with coloured latex but with a garlic smell. As pointed out above, Fries got in later years acquainted with his own species from personal observations, and in the Epicrisis (Fries 1838) *Marasmius prasioemus* is identical with the current concept.

As a conclusion the present authors strongly recommend to consider both *Agaricus prasioemus* and *A. porreus* in the sanctioning work (Fries 1821) as nomina dubia, also following the suggestion made by Huhtinen (l.c.). For *Marasmius prasioemus* in the sense of Fries (1838) we introduced the use of *Marasmius querceus* Britz. (Antonín and Noordeloos 1993), which leaves us to create a solution for *Collybia porrea* in the sense of modern authors. Therefore, we describe a new species, *Gymnopus herinkii* Antonín and Noordeloos in the present paper, conform the use of the generic name *Gymnopus* in the second part of our European Monograph of Marasmioid and Collybioid fungi (Antonín and Noordeloos 1996, in press).

***Gymnopus herinkii* Antonín & Noordel., spec. nov.**

Pileo 15 - 30 mm diam., convexo, appanato vel leviter umbonato, hygrophano, ad marginem pellucide striato, brunneo, deinde pallidiore, glabro. Lamellis subdistantibus vel distantibus, L = 14-17, l = 2-3, adnatis, angustis, pallidis, dein pallide brunneolis. Stipite 40-50 mm longo, 2-3 mm crasso, albo pruinato, purpureo-brunneo. Sapore et odore fortiter alliaceo. Sporis 6.5-9.0(-9.5) × 3.5-4.5 μm, E = (1.6)-1.7-2.2, Q = 2.0, ellipsoideis vel sublacrymoideis. Cheilocystidiis nullis, cellulis cheilocystidiis irregularibus. Epicute pilei ex hyphis cylindraceutis, cum projectionibus, structura dryophiloidea absente. Caulocystidiis cylindraceutis, moniliformibus.

Holotypus: Czech Republic, Bohemia, Lenora, "Boubín", 4 Oct. 1952, J. Kubička & J. Herink (PRM 707189).

Pileus 15-30 mm broad, convex, quickly expanding to appanate, sometimes slightly depressed at centre, with inflexed margin, hygrophanous, when moist translucently striate, brown, on drying pallescent to pale brown (leather-colour), ochraceous-brown, smooth, glabrous. Lamellae rather distant, L = 14-17, l = 2-3, rounded-adnate, narrow, pallid to pale brown. Stipe 40-50 × 2-3 mm, purplish

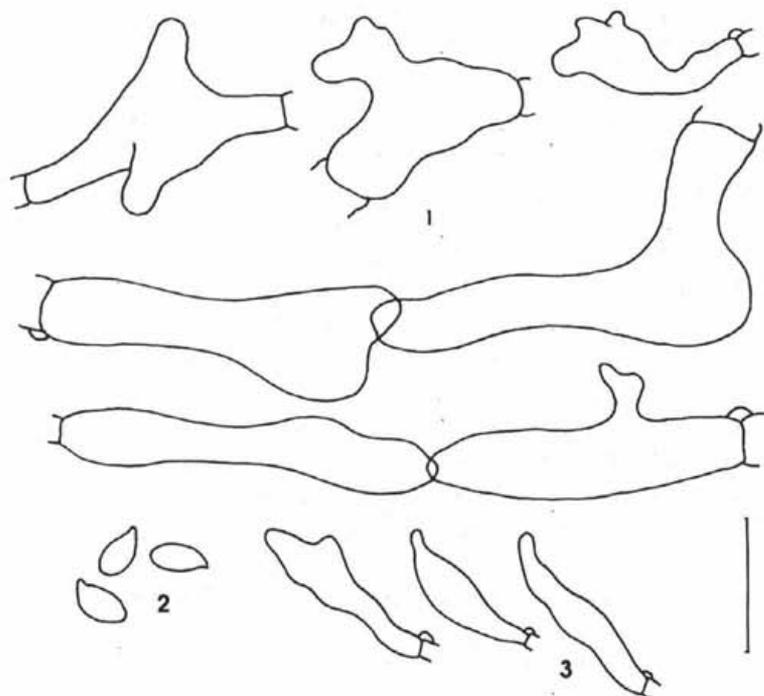


Fig. 1. *Gymnopus herinkii* (holotype): 1. pileipellis elements, 2. spores, 3. cheilocystidioid elements. Scale bar = 20 μm .

brown, entirely white pruinose, white tomentose at base. Smell and taste strong, like that of onions.

Spores 6.5–9.0(–9.5) \times 3.5–4.5 μm , E = (1.6–)1.7–2.2, Q = 2.0, ellipsoid to sublacrymoid. Basidioles 12.5–31 \times 2.5–7.5 μm , subcylindrical. Basidia 23–33 \times 6.2–8.0 μm , 4-spored, clavate. Lamella edge fertile. Well-developed hymenial cystidia absent, but lamella edge provided with some scattered, irregular elements, not projecting beyond other hymenial elements. Pileipellis a cutis of cylindrical to slightly inflated, up to 12 μm wide, thin-walled, smooth or minutely incrustated hyphae, often with lateral projections, terminal elements cylindrical to clavate, often irregularly lobed or with projections, up to 85 μm long, with smooth or minutely incrustated walls. Stipitipellis a cutis of parallel, slightly thick-walled, cylindrical, up to 7 μm wide hyphae, with slightly thick-walled, smooth or minutely incrustated hyphae, incrustations seem to be at least partly dextrinoid. Caulocystidia up to 45 \times 3.0–5.5 μm , cylindrical, flexuous, sometimes moniliform with obtuse apex, thin-walled. Clamp-connections abundant.

Chemical reactions: no part of basidiocarp amyloid, dextrinoid or metachromatic in cresyl blue.

Holotype: Czech Republic, Bohemia, Lenora, "Boubín", 4 Oct. 1952, J. Kubička & J. Herink (PRM 707189).

Gymnopus herinkii grows saprotrophically in raw humus and on leaves in woods especially under *Fagus*, less frequently at forest margins in thermophilic vegetation under *Pinus sylvestris*, with *Berberis vulgaris*, *Prunus insititia*, *Rosa canina*, on both calcareous and acid soil.

Collections examined: Czech Republic, Bohemia, Koněprusy, "Chobotov", 13 June 1985, R. Fellner SUCH 85/81 (BRNM); Lenora, "Boubín", 4 Oct. 1952, J. Kubička & J. Herink (PRM, holotype).

Gymnopus herinkii is a rather rare fungus, characterized by the rather distant lamellae, brown, hygrophanous pileus, strong smell like onion, absence of true cheilocystidia, pileipellis without developed "dryophila-structure" or coralloid elements and the habitat on leaves or raw humus. Its distribution is very poorly known because it is often overlooked and/or confused with species like *Gymnopus impudicus* and *Marasmius querceus*. The descriptions of *Gymnopus herinkii* (as *Marasmius porreus*) by Ricken (1915) and Cléménçon (1981) closely agree with our concept.

Gymnopus brassicolens (Romagn.) Antonín & Noordeloos seems to be its closest relative, differing by a larger, differently coloured pileus, more close lamellae, darker stipe, and smell like rotten cabbage; microscopically in having smaller spores ($5.5-7.5 \times 2.5-4.0 \mu\text{m}$), and more distinctly developed cheilocystidia. *Gymnopus brassicolens* var. *pallidus* Antonín & Noordel. (Antonín & Noordeloos 1996, in print) differs moreover in having distinctly paler basidiocarps and by growing on needles. *Gymnopus impudicus* (Fr.) Antonín & Noordel. differs especially in having differently coloured carpophores, and an unpleasant smell like rotten cabbage, and by its growing on humus or small twigs, and smaller spores. Very closely related also seem to be some North American species placed by Halling (1983) in the sect. *Subfumosae*, viz. *Collybia dichrous* (Berk. & Curt.) Gilliam which differs especially in having a distinct tuberculate knob at the stipe base, larger spores ($9.8-11.8 \times 3.2-4.4 \mu\text{m}$), and saccate to fusoid cheilocystidia; *Collybia polyphylla* (Peck) Sing. ex Halling which differs by having white, sometimes forked lamellae, a usually cylindrical, pallid stipe, and scattered and differently formed cheilocystidia; *Collybia dysodes* Halling differing by a smell like old onion or garlic, a distinctly plicate to sulcate pileus, a cylindrical stipe, that is sometimes broadened towards base, and narrowly cylindrical to flexuous cheilocystidia. *Collybia bififormis* (Peck) Sing. differs by the absence of a distinct smell and by the cylindrical stipe.

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