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Studies in Marasmioid Fungi. - V.
***Marasmius favrei*, a New Species for the Taxon usually called**
Marasmius tremulae

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Summary: On the basis of a comparison between literary descriptions (Favre 1951; Kühner 1947; Velenovský 1947), and revisions of herbarium specimens, *Marasmius favrei* Antonín sp. nov. is described. This fungus usually has been called *Marasmius tremulae* Velen.

Zusammenfassung: Basierend auf dem Vergleich von Beschreibungen (Favre 1951; Kühner 1947; Velenovský 1947) und auf der Revisionen von Herbarbelegen wird eine neue Art *Marasmius favrei* Antonín vorgeschlagen. Dieser Pilz wurde bis anhin unter *Marasmius tremulae* Velen. angeführt.

Résumé: D'après la comparaison des descriptions de la littérature (Favre 1951; Kühner 1947; Velenovský 1947) et les révisions des spécimens d'herbier, une espèce nouvelle, *Marasmius favrei* Antonín, est décrite. Jusqu'à présent ce champignon était nommé *Marasmius tremulae* Velen.

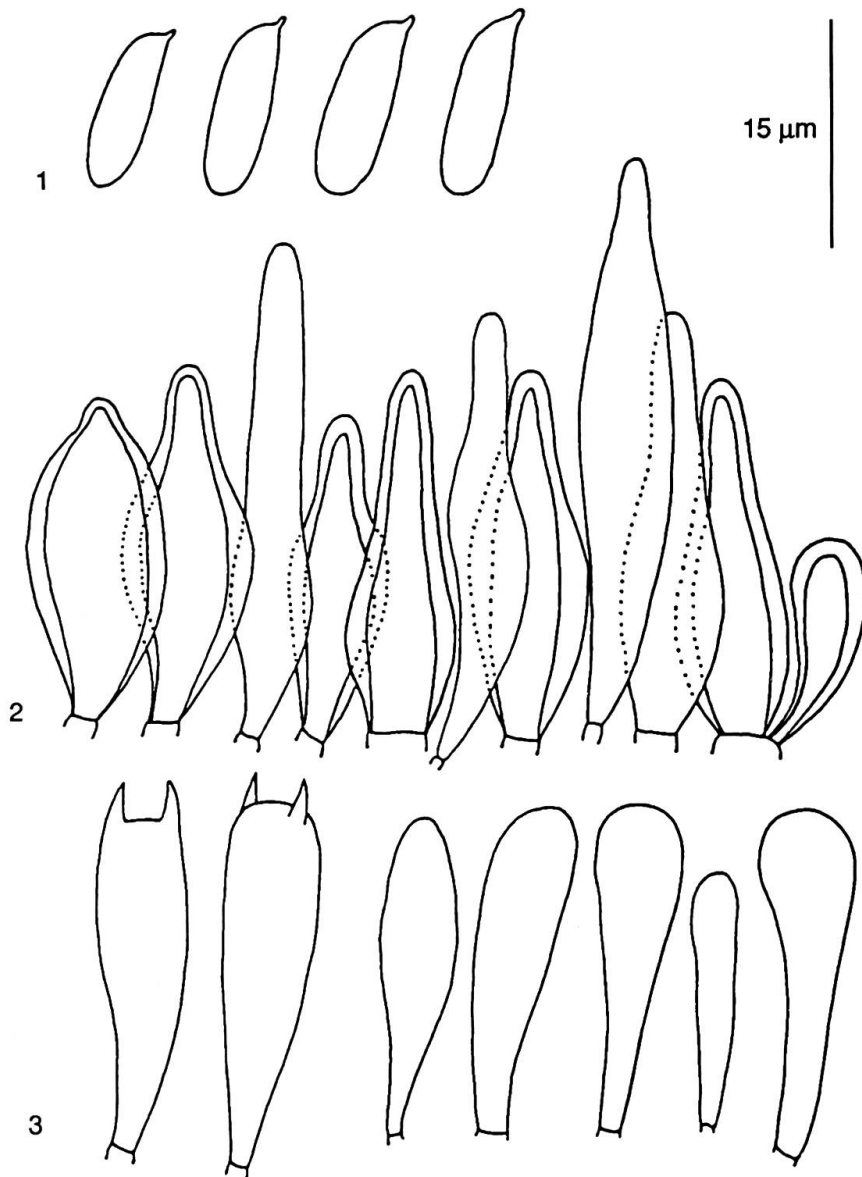
Marasmius tremulae Velen. was described in "Novitates mycologicae novissimae" (1947) as a new species belonging to a group of species now classified in the section Epiphylli Kühner. Since then, it has only been mentioned a few times - from France (Kühner 1947, Favre 1951), USA and Canada (Redhead 1989), USSR (Urbonas & al. 1986), and Iceland (Hallgrímsson 1981) where it has probably been introduced (Redhead 1989). A collection recorded in the USA growing on *Populus tremuloides* leaves (Singer 1965) was not *M. tremulae* as was suggested by Singer but represents a different species than the one mentioned in other publications - *M. epiphyllus* (Redhead 1989). Detailed descriptions have been published by Kühner (1947) and Favre (1951). Although the original description given by Velenovský (1947) is very short, it is possible to find some marked differences between Velenovský's, Favre's and also Kühner's descriptions. Velenovský has described his fungus as "... Pileus ... nudus ... grosse rugosus. Stipes ... laevis. Lamellae .. angustae". In contrast, Kühner and Favre have described a fungus with only a fine rugulose or slightly striate and slightly pubescent pileus, rather reduced lamellae which do not reach the margin of the pileus, and slightly pubescent stipes. In addition, Favre described frequently branched lamellae and eccentric stipes.

Revision of the carpophores of the herbarium specimens showed that the pileus of young carpophores are pubescent to strigose pubescent. Dr. Olivier Monthoux (Geneva) kindly gave me the chance to study Favre's annotated drawings. Favre drew the carpophores with slightly eccentric stipes, and almost always with branched lamellae often forming a net. The differences between Favre's and Kühner's descriptions are in the size of the basidiospores: Favre 11-14 x 2.8-4 μm , and Kühner 8.2-11 x 2.5-3.7 μm (Velenovsky 10-12 μm long). I have measured the basidiospores of Favre's collections and found 10.2-14 x 3.3-4 μm . Nevertheless, in my opinion, both descriptions represent the same species. Velenovský described his species as growing on *Populus tremula* leaves. All recent publications of this species are based on specimens growing on *Populus* leaves (except for Svrček's collection near Sudoměřice which grew on *Sorbus* leaves). However, *Marasmius epiphyllus* (Pers.: Fr.) Fr. is very common on *Populus tremula* leaves. On the basis of these data, I suppose that Velenovský's fungus represented another species (perhaps a small *M. epiphyllus*?) than Favre's and Kühner's one. The slightly longer basidiospores (10-12 μm) described for Velenovský's taxon could be due to the variability of *M. epiphyllus*. This question cannot be solved without a type specimen of Velenovský's taxon, however, has not been preserved. It is very surprising that the notes concerning *M. tremulae* have not been preserved in Velenovský's voluminous estate. Therefore, I consider *Marasmius tremulae* Velen. an insufficiently known species, and I describe Favre's and Kühner's fungus as a new species.

Marasmius favrei Antonín sp. nov..

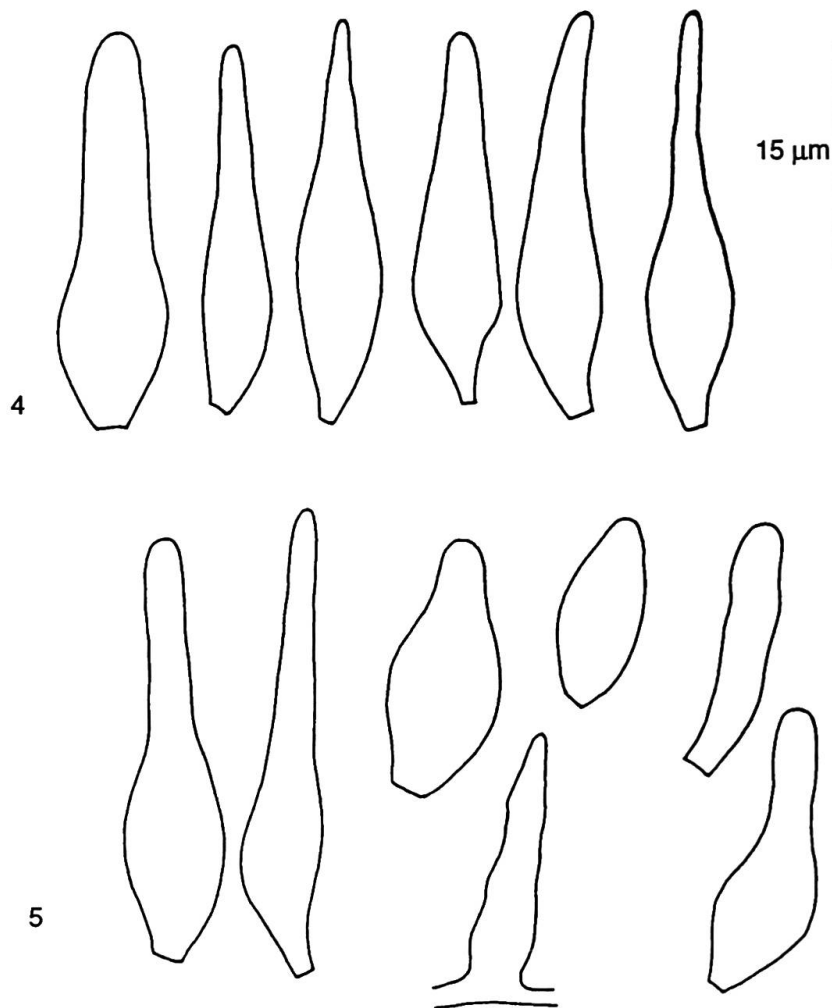
Pileus 1-4 mm latus, membranaceus, rugulosus, minute pubescens. Lamellae angustae vel venosae, intervenosae. Stipes 1-15/0,1-0,3 mm, filiformis, pubescens, ad apicem albidus, ad basim brunneus vel rubro-brunneus. Basidiosporae paene cylindricae, 10-16 x (2,8-) 3,2-4 μm . Basidia bispora, 22-27 x 6-8 μm . Cystidia fusioidea, lageniformia, 21-46 x 6-9 μm . Hyphae absque fibulis. Caulocystidia cylindracea, lageniformia, subuliformia, 8-37 x 2,3-7 μm . Pileipellis hymenidermis, e cellulis laevigatis, late fusioideis vel vesiculosis, hyalinis, rostratis, 14-25 x 6-12 μm . Pileocystidia fusioidea vel paene lageniformia, 24-29 x 4-5,8 μm . Holotypus: Haute Savoie, Vulbens, 1938, Favre (G 9576).

Pileus 1-4 mm broad, membranaceous, almost hemispherical when young, then becoming convex, flat to slightly depressed in the center, slightly rugulose, sometimes slightly but not deeply sulcate, slightly tomentose under lens, young almost pubescent to strigose pubescent; white. Lamellae distant, L = 3-8 (mostly 4-6), lamellulae 0(-1), without collarium, narrow to venose, mostly not reaching the pileus margin, free, often furcate to branched, sometimes



Figures 1-3: *Marasmius favrei* (holotype):
1. basidiospores, 2. pileipellis, 3. basidia and basidioles.

intervenose; white. Stipe 1-15/0.1-0.3 mm, often eccentric, filiform, almost corneous, slightly pubescent; white to whitish above, red-brown to brown below. Basidiospores almost cylindrical, hyaline, smooth, non-dextrinoid, $10-14 \times (2.8-) 3.2-4 \mu\text{m}$, $Q = 2.75-3.28 (-3.50)$. Hymenium: basidia clavate, without clamp connections, 2-spored, rarely 4-spored, $22-27 \times 6-8 \mu\text{m}$. Basidioles clavate to almost cylindrical, without clamp connections, $14-27 \times 3.5-7.5 \mu\text{m}$. Digitate projections often present on the base of the basidia and basidioles towards the subhymenial hypha and forming rarely false clamp connections.



Figures 4,5: *Marasmius favrei* (holotype):
4. hymental cystidia, 5. caulocystidia

Cystidia narrowly fusiform to lageniform, sometimes with a granular cap when fresh, without clamp connections, $21-46 \times 6-9 \mu\text{m}$. Pileus context of non-dextrinoid, branched, thin-walled, cylindrical, clampless, $3-12 \mu\text{m}$ broad hyphae. Trama of the lamellae of non-dextrinoid, branched, thin-walled, cylindrical, $2-8 \mu\text{m}$ broad, clampless hyphae. The same clamp-simulating formations as on the base of the basidia rarely present. Context of the stipe of non-dextrinoid, hyaline and thin-walled hyphae in medulla, and with slightly thickened walls (up to $1 \mu\text{m}$) and slightly brown pigmented hyphae in cortex, without clamp connections, $1.5-10 \mu\text{m}$ in medulla, $1.5-6 \mu\text{m}$ broad in cortex. Caulocystidia cylindrical, lageniform to awlform, thin walled or with slightly thickened walls, hyaline, non-dextrinoid, $8-37 \times 2.3-7 \mu\text{m}$. Pileipellis hymeniform, composed of thick-walled, broad fusiform to vesiculose, hyaline cells

with a prominent obtuse rostrum above, 14-25 × 6-12 µm. Pileocystidia fusiform to slightly lageniform, thin-walled, without clamp connections, 24-29 × 4-5.8 µm.

Marasmius favrei grows on the leaves of various species of *Populus*, e.g. *P. tremula*, *P. nigra* and *P. trichocarpa*, and has exceptionally been collected on *Sorbus* leaves.

Material revised: Czechoslovakia: Třeboň, "Vimperka", 1965, Svrček (PRM 610340). - Sudoměřice, Nemyšl, 1957, Svrček (PRM 867242). France: Haute Savoie, Vulbens, 1938, Favre (G 9576, Holotype).

This species is characterized by a small habitus, long and cylindrical basidiospores, bisporic basidia without clamp connections, pileipellis of rostrate, thick-walled cells, and hyphae without clamp connections. In the section Epiphyllii, only *Marasmius hellebori-corsici* Romagn. was described as often having bisporic basidia in Europe (Romagnesi 1978). However, it differs especially due to the presence of clamp connections and smaller, tear-shaped basidiospores (8.5-12.5 × 3.5-5 µm). From the extra-European clamp-less species, *Marasmius carpenterianus* Sing. from Peru and Mexico differs due to a smooth pileus, more crowded lamellae (10-12), presence of lamellulae, smaller (6-7.7 × 2-4 µm) and ellipsoid basidiospores, also shorter basidia (17-20 × 5.5-6.5 µm) which are mostly 4-spored, and smaller cells of the pileipellis (11.5-16 × 6.5-11.5 µm). Favre (1951) supposed that *Marasmius minutissimus* Peck could be identical with his collection of *Marasmius tremulae*. I have revised the type specimen of Peck's species (NYS), and it represents a quite different taxon. It differs by the smaller basidiospores (9.6-11.2 × 3.2-4 µm), 4-spored basidia, shorter cystidia (16-23 × 5-7 µm), broader pileocystidia (20-32 × 6.5-10.5 µm) and the smooth to slightly rugulose cells of the pileipellis.

Acknowledgements

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