

# A further revision of the generic limit between *Lepista* and *Clitocybe*

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HARMAJA, H. 1976: A further revision of the generic limit between *Lepista* and *Clitocybe*. — *Karstenia* 15:13-15.

The genus *Clitocybe* (Fr.) Staude (Agaricales) is amended to comprise only species with cyanophobic spore wall. Species with cyanophilic spore wall and hitherto included in *Clitocybe* are transferred to *Lepista* (Fr.) W. G. Smith, which genus becomes amended as to include species with strongly or weakly cyanophilic spore wall, with collapsed or normal spore walls in mounts of dried lamellae, and with pinkish buff, deep yellow, very pale yellow or pure white spore deposit. *C. fragrans* (Fr.) Kumm. is reported to have warted spores. One new species is also described: *Lepista polycephala* Harmaja. The following fourteen new combinations are made: *Lepista aeruginosa* (Bigelow) Harmaja, *L. agrestis* (Harmaja) Harmaja, *L. amarescens* (Harmaja) Harmaja, *L. diatreta* (Fr.) Harmaja, *L. fragrans* (Fr.) Harmaja, *L. harmajae* (Lamoure) Harmaja, *L. idahoensis* (Bigelow) Harmaja, *L. marginella* (Harmaja) Harmaja, *L. metachroa* (Fr.) Harmaja, *L. metachroides* (Harmaja) Harmaja, *L. odora* (Fr.) Harmaja, *L. phyllophila* (Fr.) Harmaja, *L. regularis* (Peck) Harmaja and *L. robusta* (Peck) Harmaja.

The generic limit between *Lepista* (Fr.) W. G. Smith and *Clitocybe* (Fr.) Staude (Agaricales) was discussed and revised by me in a recent paper (HARMAJA 1974a). *Lepista* was considered to be characterized by a strongly cyanophilic spore wall which is collapsed in a good proportion of the spores, in particular in immature spores and mounts of dried lamellae, while in *Clitocybe* the spore wall is either cyanophobic or weakly cyanophilic and never collapsed in notable amounts of spores. *Lepista* also became amended to comprise also spores with smooth walls and deep yellow colour. Even then it was realized that the delimitation presented was a temporary one. Now I am going to revise that delimitation once more and believe that after this procedure both genera possess essentially more natural limits than before. *Clitocybe* comprises species with completely cyanophobic spore wall; in *Lepista* the spore wall is cyanophilic. The degree of cyanophily now varies in the last-named genus but the staining is always distinct.

The response of the spore wall to cotton blue appears to be a most important character in the taxonomy of the Agaricales (and possibly in all Basidiomycetes), and the true relationships between species seem to be expressed to a high degree when genera are limited to only comprise species with one or the other kind of spore wall: cyanophilic or cyanophobic. Various spore characters, together with the basidial ones, have always been considered the most important in the classification of the order. Thanks to the combined studies with light microscope and transmission electron microscope by Besson-Antoine and Kühner, in particular, we now know that *physically and/or chemically different responses of spore walls to cotton blue relate to differences in quality and/or quantity of the layers of the walls*. It is an outer wall layer, termed as *myxosporium* by the French school, that stains with cotton blue in the spores of *Lepista* s. str. (see KÜHNER 1973), and most probably a homologous layer exists in the cyanophilic spore wall of

those species which in the present paper are transferred from *Clitocybe* to *Lepista*.

The subgenus *Roseospora* Harmaja and the section *Pseudolyophyllum* of *Clitocybe* have thus to be transferred to *Lepista* as the spore wall of their species is (weakly) cyanophilic (HARMAJA 1974a). Also the previous transfers made by me concerned species which before the usage of cotton blue staining were considered to form natural groups: sect. "*Eulepistae*" (i.e. *C. gilva* group) and sect. *Clitocybe* (i.e. *C. nebularis*). It is remarkable that it is previously recognized groups that are transferred because a positive correlation thus exists between previously recognized characters and those unmasked by the cotton blue method.

A new detail, observed by me in the spores of *C. fragrans* (Fr.) Kumm., is also reported here. When stained with cotton blue and observed with high magnification, apparently all mature spores of this species can be seen to possess very low obtuse warts on their walls. In most spores the warts, or pustules, appear to be restricted to the apical half of the spore but in at least some proportion of the spores they extend farther downwards. The size of the warts likewise varies somewhat in the spores of a mount. The warts may absorb cotton blue slightly more than the rest of the wall but this cannot be told with certainty because of their tiny size. *C. fragrans* thus possesses spores which are both pinkish and warted and so the species fits even the previously recognized diagnostic characters of the genus *Lepista*!

With the inclusion of the sect. *Pseudolyophyllum* the genus *Lepista* becomes amended to comprise also pure white and very pale yellow spore colours (see HARMAJA 1969) in addition to the pinkish buff and deep yellow colours. Moreover, as a result of the whole present amendment, in *Lepista* a great proportion of spores in mounts of dried lamellae may have collapsed walls or the spores are normal, and the spore wall may be strongly cyanophilic or only weakly so.

The present taxonomic conclusion naturally results in changes in the infrageneric classification and nomenclature of both *Lepista* and *Clitocybe*. These will be dealt with in separate papers.

In the following the new combinations resulting from the present revision are proposed. Type specimens have always been

examined if available; type studies on some basionyms will be published on another occasion. One new species is also described.

*Lepista polycephala* Harmaja, n. sp. — *A. L. fasciculata praecipue sporis maioribus* (6.0–7.8 × 3.7–4.8 μm) *differt.* — *Typus:* Finland, prov. Kuusamo, par. Kuusamo, Liikasenvaara, Purkuputaansuo, ca. 225 m above the sea, moist hay field on very calcareous ground rich in electrolytes, accompanied e.g. by grasses, *Saussurea alpina* and *Triglochin maritimum* (!), 1971–08–21, Harri Harmaja (H). — *Specimina alia:* Finland: prov. Satakunta, par. Lappi, Rohdainen, Loukosten havumetsä, coniferous forest, 1957–09–20, Holger Sältin (H); prov. Etelä-Häme, par. Lammi, Oinen, 1974–09–06, Eliisa Luukkonen (H).

This new species resembles macroscopically very much *L. fasciculata* Harmaja (HARMAJA 1974b), but differs from that species through the distinctly larger spores which measure 6.0–7.8 × 3.7–4.8 μm. A complete description of *L. polycephala* will be given later in another paper.

*Lepista aeruginosa* (Bigelow) Harmaja, n. comb. (*Clitocybe aeruginosa* Bigelow, Mycologia 50: 37. 1958.)

*Lepista agrestis* (Harmaja) Harmaja, n. comb. (*Clitocybe agrestis* Harmaja, Karstenia 10: 91. 1969.)

*Lepista amarescens* (Harmaja) Harmaja, n. comb. (*Clitocybe amarescens* Harmaja, Karstenia 10: 98. 1969.)

*Lepista diatreta* (Fr.) Harmaja, n. comb. (*Agaricus diatretus* Fries, Syst. Mycol. 1: 83. 1821.)

*Lepista fragrans* (Fr.) Harmaja, n. comb. (*Agaricus fragrans* Fries, Syst. Mycol. 1: 171. 1821.)

*Lepista harmajae* (Lamoure) Harmaja, n. comb. (*Clitocybe harmajae* Lamoure, Trav. scient. parc nat. Vanoise 2: 132. 1972.)

*Lepista idahoensis* (Bigelow) Harmaja, n. comb. (*Clitocybe idahoensis* Bigelow, Lloydia 28: 165. 1965.)

*Lepista marginella* (Harmaja) Harmaja, n. comb. (*Clitocybe marginella* Harmaja, Karstenia 10: 92. 1969.)

*Lepista metachroa* (Fr.) Harmaja, n. comb. (*Agaricus metachrous* Fries, Syst. Mycol. 1: 172. 1821.)

*Lepista metachroides* (Harmaja) Harmaja, n. comb. (*Clitocybe metachroides* Harmaja,

Karstenia 10: 99. 1969.)

*Lepista odora* (Fr.) Harmaja, n. comb.  
(*Agaricus odoratus* Bulliard ex Fries, Syst. Mycol. 1: 90. 1821.)

*Lepista phyllophila* (Fr.) Harmaja, n. comb.  
(*Agaricus phyllophilus* Fries, Syst. Mycol. 1: 83. 1821.)

*Lepista regularis* (Peck) Harmaja, n. comb.  
(*Clitocybe regularis* Peck, New York St. Mus. Bull. 54: 948. 1902. — *Clitocybe phyllophila* var. *tenuis* Harmaja, Karstenia 10: 88. 1969.)

*Lepista robusta* (Peck) Harmaja, n. comb.  
(*Clitocybe robusta* Peck, New York St. Mus. Rep. 49: 17. 1896.)

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- KÜHNER, R. 1973: Architecture de la paroi sporique des Hyménomycètes et de ses différenciations. — *Persoonia* 7: 217-248 + 20-23.