

NEW COMBINATIONS IN CHLOROPHYLLUM

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Abstract: Taxonomic studies in *Lepiota* s. l. and *Endoptychum*, based both on morphological and molecular data resulted in new combinations.

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INTRODUCTION

The genus *Macrolepiota* Singer is not monophyletic, and it was split up into two genera on morphological and molecular grounds (Vellinga et al., submitted). The genus *Macrolepiota* in its restricted sense is characterized by a trichodermal pileus covering, the presence of stipe covering, visible as coloured bands on the stipe, and spores with a rounded apex with a hyalinous covering over the germ pore. The sections *Macrolepiota* and *Macrosporae* (Singer) Bon, with subsections *Excoriatae* M. Bon and *Microsquamatae* (Pázmány) Bellù & Lanzoni of the infrageneric classification advocated by Bon (1993), belong to this genus.

The second genus comprises *Chlorophyllum* Macc., *Endoptychum agaricoides* Czern., *Leucoagaricus hortensis* Murrill, and *Macrolepiota* section *Laevistipedes* (Pázmány) Bon (*M. rachodes* and allies). This genus is characterized by a hymenodermal pileus covering, a smooth stipe, and spores with or without a germ pore, without a hyalinous covering. The spores may be white or green or brownish in deposit, and the habit varies from agaricoid to scotiid. A proposal to conserve the name *Chlorophyllum* against *Endoptychum* has been put forward (Vellinga & De Kok, submitted). New combinations in *Chlorophyllum* have to be made, and are proposed here.

Molecular studies have repeatedly shown that morphological species definitions of basidiomycetes have to be reconsidered (e.g. Johannesson et al. (1999) on *Sarcodon imbricatus* (L.: Fr.) P. Karst. and *S. squamosus* (Schaeff.) Quéf.; Vellinga (2001) on *Lepiota cristata* (Bolt.: Fr.) P. Kummer and *L. castaneoidisca* Murrill). For this reason is seems advisable to transfer also those species, which are still considered to be synonymous.

NEW COMBINATIONS

Chlorophyllum abruptibulbum (R. Heim) Vellinga, comb. nov.

Basionym: *Leucocoprinus abruptibulbus* R. Heim in Rev. Mycol. 33: 213. 1968.

Chlorophyllum agaricoides (Czern.) Vellinga, comb. nov.

Basionym: *Endoptychum agaricoides* Czern. in Bull. Soc. imp. Nat. Moscou 18 (2): 148. 1845

Chlorophyllum alborubescens (Hongo) Vellinga, comb. nov.

Basionym: *Lepiota alborubescens* Hongo in Mem. Fac. lib. Arts Educ. Shiga Univ., nat. Sci. 12: 40. 1962.

Chlorophyllum brunneum (Farl. & Burt) Vellinga, comb. nov.

Basionym: *Lepiota brunnea* Farl. & Burt, Icones farlowianae: 8, pl. 6. 1929.

Chlorophyllum globosum (Mossebo) Vellinga, comb. nov.

Basionym: *Macrolepiota globosa* Mossebo in Mycotaxon 76: 268. 2000.

Chlorophyllum hortense (Murrill) Vellinga, comb. nov.

Basionym: *Lepiota hortensis* Murrill in N. Amer. Fl. 10 (1): 59. 1914.

Chlorophyllum humei (Murrill) Vellinga, comb. nov.

Basionym: *Lepiota humei* Murrill in Lloydia 6: 220. 1943.

Chlorophyllum mammillatum (Murrill) Vellinga, comb. nov.

Basionym: *Lepiota mammillata* Murrill in Lloydia 6: 220. 1943.

Chlorophyllum neomastoideum (Hongo) Vellinga, comb. nov.

Basionym: *Lepiota neomastoidea* Hongo in Mem. Fac. lib. Arts Educ. Shiga Univ., nat. Sci. 20: 51. 1970.

Chlorophyllum olivieri (Barla) Vellinga, comb. nov.

Basionym: *Lepiota olivieri* Barla in Bull. Soc. mycol. Fr. 2: 113. 1886.

Chlorophyllum rachodes (Vittad.) Vellinga, comb. nov.

Basionym: *Agaricus rachodes* Vittad., Descr. Funghi mang. Italia: 158. 1835.

Chlorophyllum subfulvidiscum (Murrill) Vellinga, comb. nov.

Basionym: *Lepiota subfulvidisca* Murrill in Lloydia 6: 221. 1943.

Chlorophyllum subrhacodes (Murrill) Vellinga, comb. nov.

Basionym: *Lepiota subrhacodes* Murrill in Lloydia 6: 223. 1943.

DOUBTFUL NAME

Agaricus fimetarius Cooke & Massee in Cooke in Grevillea 18: 1. 1889, non *Agaricus fimetarius* L., 1753, nec *Agaricus fimetarius* Bolton, 1788; *Lepiota fimetaria* Cooke & Massee → Sacc., Syll. Fung. 9: 7. 1891; *Leucoagaricus fimetarius* (Sacc.) Aberdeen,

Lepiotoid Genera (Agaricales) in South-Eastern Queensland: 8. 1992.

Leucoagaricus fimetarius sensu Aberdeen (1992) is the same species as *Chlorophyllum hortense*, because of the double annulus, the reddening of the stipe, and spores without a distinct germ pore; Aberdeen did not give the number of sterigmata per basidium. Saccardo (1891) in the original description (based on Cooke & Massee in Cooke, 1889), described a small fungus, with a pileus 14-18 mm in diameter, a stipe of 3-5 cm long, a fugacious annulus, and a squamose stipe. The latter is emphasized in the comments, where it is noted that *Lepiota fimetaria* is close to *L. subclypeolaria* (Berk. & Br.) Sacc., but with a distinctly squamose stipe. This description is quite different from Aberdeen's interpretation of the species. *Chlorophyllum hortense* is one of the few species in the Agaricaceae with 2-spored basidia. However, Aberdeen (1962), who studied Cooke & Massee's collection of *Agaricus fimetarius*, did not comment on the number of spores per basidium, nor did he note the absence or presence of clamp-connections, another important character in this group (*Chl. hortense* is provided with clamp-connections).

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