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Agaricus Studies, X. (Basidiomycetes, Agaricaceae)

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G. BOHUS: Agaricus Studies, X. (Basidiomycetes, Agaricaceae). – *Annls hist.-nat. Mus. natn. hung.* 1989, **81**: 37–44.

Abstract – A new species (*A. babosi* sp.n.), a new name and combination (*A. arvensis* var. *subarvensis*), two new combinations (*A. arvensis* ssp. *macrolepis*, *A. macrosporus* var. *excellens*), further data on two rare species (*A. cappellii*, *A. xantholepis*) and a supplementary description of *A. cupreobrunneus* are presented. With 4 figures.

Agaricus babosi sp.n. *
(Fig. 1)

It was necessary to separate *A. babosi* as a new species, because it differs mainly in three features from the most resembling member of the *Langei*-group: *A. langei* (MOELL.) MOELL.

A. langei is not of slender stature, the width of the cap and the length of the stem are about the same. *A. babosi* sp.n., howewer, is of slender stature: the stem is longer than the width of the cap, can be twice as long as the cap diameter. The stem of *A. babosi* sp.n. is under the ring strikingly and rather darkly fibrillose, squamose, also in zones up to the base. The stem of *babosi* sp.n. is relatively slender, in the gathering of Bükk mountain the characteristic values are: 14-23 x 1.5-2.5 cm; in the Torna Karst (Aggtelek National Park) material 8-13 x 1-1.2 cm. However, *A. langei* has a relatively thicker stem as compared to the length: 7-12 x 1.5-3 cm.

PILÁT (1951 a, p.71) separates a variety of *A. haemorrhoidarius* ss. *Pil.* (=*A. langei*), with the name var. *silvaticoides* (nomen nudum): „A typo differt: *A silvaticae* similis sed sporis sicut in typo usque 9(-10) x 4-5 μm. „This variety is validly published by BON (1985, p. 28) with the name *A. langei* var. *silvaticoides* (PIL.) BON. Although PILÁT does not mention either the measurement or the shape or the surface of the stem, it might be possible that he saw this fungus.

Pileus 10-13 cm in diam.; e prope sphaerico–explanatus; brunneus; fibrillososquamulis squamisque in fundo clariore obtectus, centro nudus vel adpresse fibrillosus. Lamellae 5-10 mm latae; roseae, deinde roseolo-chololatario-brunneae, demum nigrofuscae. Stipes 14-19-23 cm longus, 1.5-2.5 cm crassus; cylindricus, vel basim versus attenuatus; albus; infra annulum conspicue et obscuriore fibrillosus-squamosus, etiam in zonis; tactu intente rubescens. Annulus superus; duplex, inferne squamosus radiatim dispositus; albus. Caro

* In honour of the distinguished mycologist Margit Babos, collector of the type material.

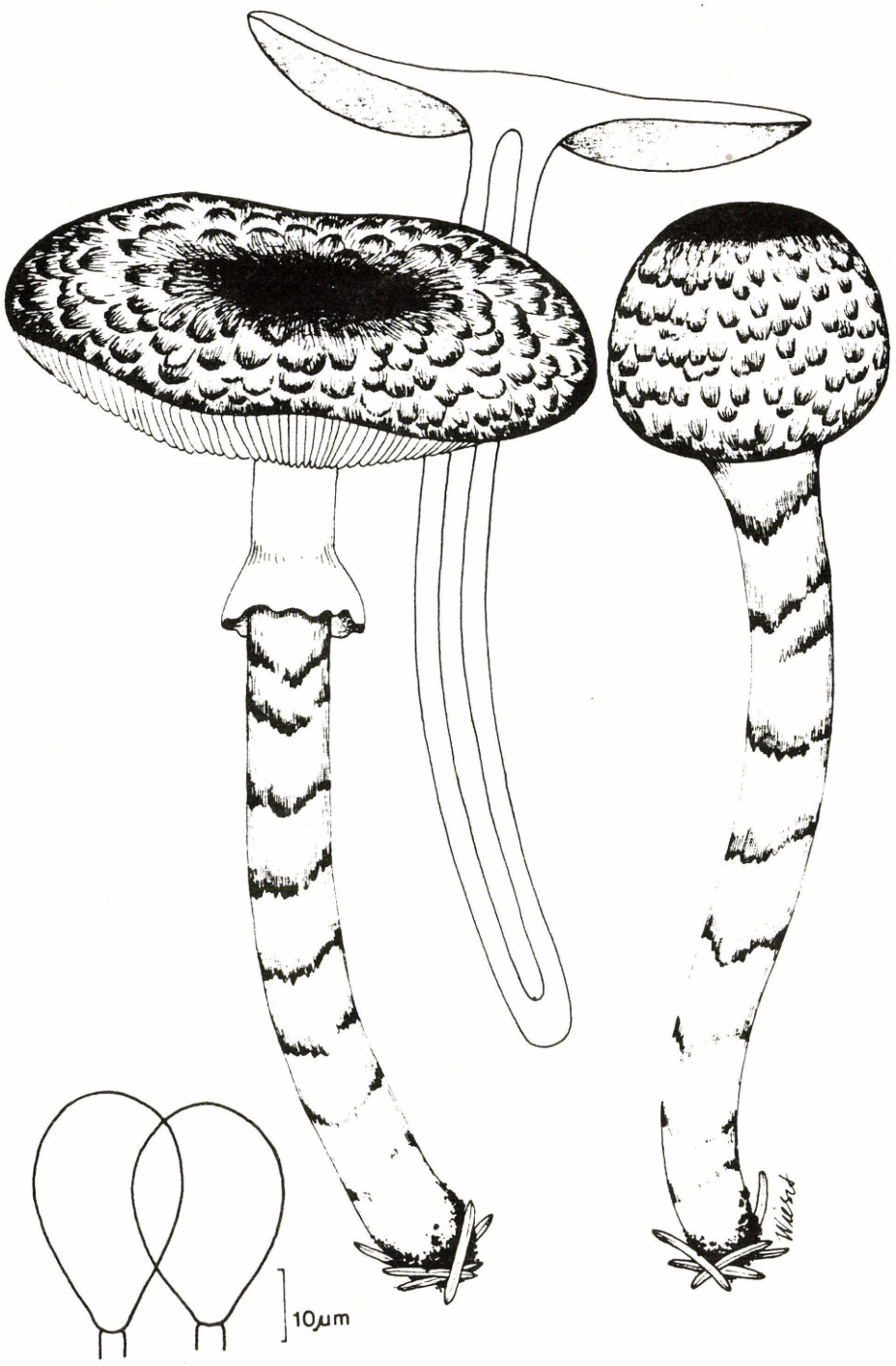

Fig. 1. *Agaricus babosi* sp.n.: fruit bodies (2/3 size), cheilocystidia (1000 x)

in pileo 1-1.2 cm crassa, in stipite tuberculata; fracta cito sanguineorubra. Sporae ellipsoideae, 7-9 x 4-5 μm. Cystidia marginalia ovato–piriformia, 20-35 x 13-20 μm.

Typus: 84367 in Herbario Musei Historico-naturalis Hungarici, Budapest. Mts. Bükk: Méneslápa prope Hollóstető, in piceeto, 23 Oct. 1984, leg. M. BABOS.

Pileus 10-13 cm, nearly globate initially, then expanded; brown; on the disc smooth or innate fibrillose, outwards covered with fine or wider fibrillosquames on lighter ground. Gills 5-10 m333m; rosy, edge whitish, later rosaceous chocolate brown, finally blackish brown. Stem 14-19-23 x 1.5-2.5 cm, cylindrical or attenuated towards base; white, silky; below the ring conspicuously and darker fibrillose-squamose, also in zones; intensively reddening when touched. Ring double; on the underside towards the margin formed as cog-wheel; white. Flesh in cap 1-1.2 cm thick, in stem pithy; when cut quickly turning bloodred. Spores ellipsoid, 7-9 x 4-5 μm. Cheilocystidia balloonshaped, 20-35 x 13-20 μm.

In planted wood of *Picea excelsa*. Further herbarial data: Torna Karst (Aggtelek National Park): Szelcepuszta, in *Picea* wood, 14 Sept. 1988, leg. G. VASAS, Cs. LOCSMÁNDI & A. BATHÓ.

Variability: Exemplars collected in other mountains (Torna Karst: Szelcepuszta, 14 Sept. 1988) show the following differences: the stem is shorter and thinner: 8-13 x 1-1.2 cm, it may be slightly bulbous and the cap is smaller: 6-9 cm.

Agaricus arvensis SCHFF.: FR. var. **subarvensis** nom. et comb. n.
(Fig. 2)

Basionyme: *A. cretaceus* FR. ss. PIL., 1951, Acta Musei Nat. Prague VII B, 1: 80-81. (Nomen incertum). The epithet cannot be used in *Agaricus* in so far as the plate of *A. cretaceus* Fr. executed by PETTERSON under directions of FRIES himself depicts a species of *Leucoagaricus pudicus*- group. Somewhat later PILÁT himself (1951 a) mentions *A. cretaceus* as: „Haec species vel varietas".

The characteristics of the variety: the gills remain whitish, pale for a long time and the cap scarcely turns yellow and when it does, only slightly, stem with a small bulb or truncate at the base.

Description of the gathering – Torna Karst (Aggtelek National Park): between Égerszög and Vörös-tó, in calluneto, 20 Oct. 1988. leg. E. DÁLNOKI –: Pileus 6-8 cm; white, not yellowing when touched, later only here and there pale brown (as at *A. arvensis*); very finely fibrillose-squamulose (under lens). Gills long whitish-greyish, later pale, then slowly darkening. Stem 6-7 x 0.8-1.2 (1.5) cm, cylindrical with slightly bulbous or truncate base; white; finely fibrillose-squamulose as the pileus. Ring as at *A. arvensis*, double layered, the underside splitting into a cog-wheel. Spores ellipsoid, 6.5-8 x 4-5 μm.

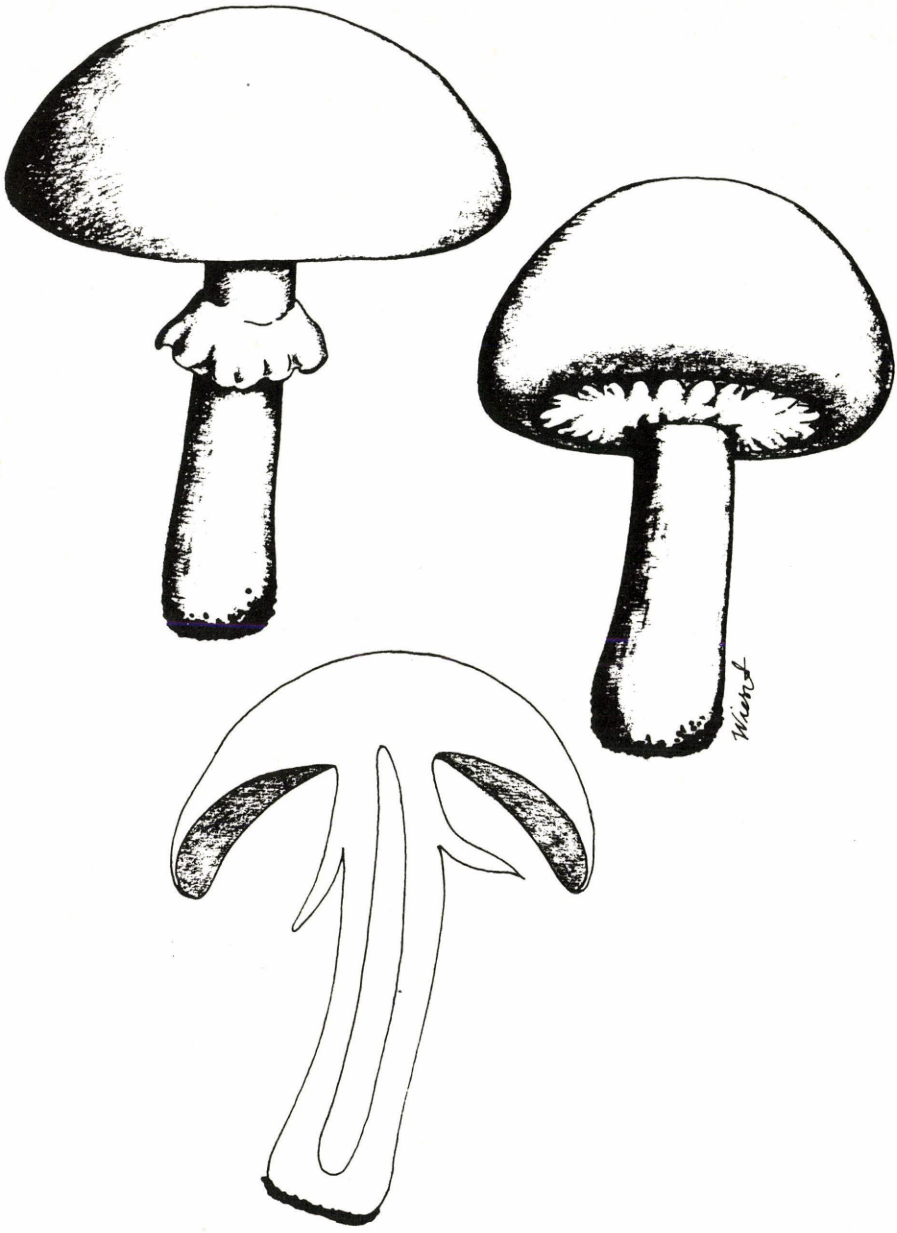

Fig. 2. *Agaricus arvensis* var. *subarvensis* nom. et comb. n.: fruit bodies (nat. size)

Agaricus arvensis SCHFF.: FR. ssp. **macrolepis** (PIL. et Pouz.) comb. n.
(Fig. 3)

Basionyme: *A. arvensis* var. *macrolepis* PIL. et POUZ., 1951, Acta Musei Nat. Prague VII B, 1:134.

According to BON (1985): „Mériterait le rang d'espèce". However, it differs mainly in two features from *A. arvensis*: pileus imbricated squamose and habitat in *Picea* woods. And hence is the proposition for a subspecific status.

Agaricus macrosporus (MOELL. et J. SCHFF.) PIL. var. **excellens** (MOELL.) comb. n.

Basionyme: *A. macrosporus* (MOELL. et J. SCHFF.) PIL. ssp. *excellens* (MOELL.) BOH. 1978, Annls hist.-nat. Mus. natn. hung. 70: 105.

Further recent *A. macrosporus* gatherings confirmed the earlier observation that the stem-length may reach and exceed the cap-width in this species, too, which is however, one of the criteria of *A. excellens* „stem at most as long as the cap is wide". Thus, for the separation of the two taxons, only the ecological difference remains: the habitat of *A. excellens* is woodland.

Agaricus cappellii BOHUS et ALBERT – This species of the *Arvensis*-group with rather great and relatively wide spores was described not long ago (BOHUS & ALBERT 1985). It could be found several times in the habitat of the „type". Further habitat was in the environs of Gödöllő. Here, too, it grew under trees, in frondose wood, by the roadside and also early in the year: 23 April. In this latter material the spore-sizes were mainly 8.5-10 x 6.2-7 μm, but several spores were of bigger size.

Agaricus xantholepis (MOELL.) MOELL – Description of gathering – Börzsöny Mts.: Márianosztra, in frondose wood, leg. K. BUCZKÓ, 30 Aug. 1987. –: Pileus 5-6.5 cm; semiglobate; cuticle breaking up into ochrebrownish fibrillose scales on whitish ground. Gills pale then grey without any rosy colour. Stem 5-6 x 1-1.2 cm; cylindrical, a little clavate; white, turning in most cases immediately deeper yellow. Ring white, membranaceous. Flesh initially white. Spores 4.6-5.2 x 3.5-4 μm.

Agaricus cupreobrunneus (J. SCHFF. et STEER: MOELL.) PIL. (Fig. 4) – Descriptions generally characterize the cap-surface uniformly, the same way as does BON (1985) in his monograph, too: „Revêtement fibrilleux apprimé, brun vineux, un peu squamuleux au début vers le centre mais finement peigné ensuite comme lustré à la fin vers les bords." Considering this, it was not easy to identify correctly such gatherings, where the structure of the cuticle is not as above described, but the caps have distinct dark squames on light underground, standing densely, sparsely or very sparsely, giving a decorative picture. This is shown partly on the XVI. phototable of MÖLLER's monography (1950, 1951), but it is not referred in the text.

Herbarial data of such gatherings: Pilis Mts.: Pilisszentkereszt, on pasture, 11 Nov. 1983, leg. G. VASAS. – Roumania: near Cluj, on meadow, 14 Oct. 1972, leg. K. LÁSZLÓ.

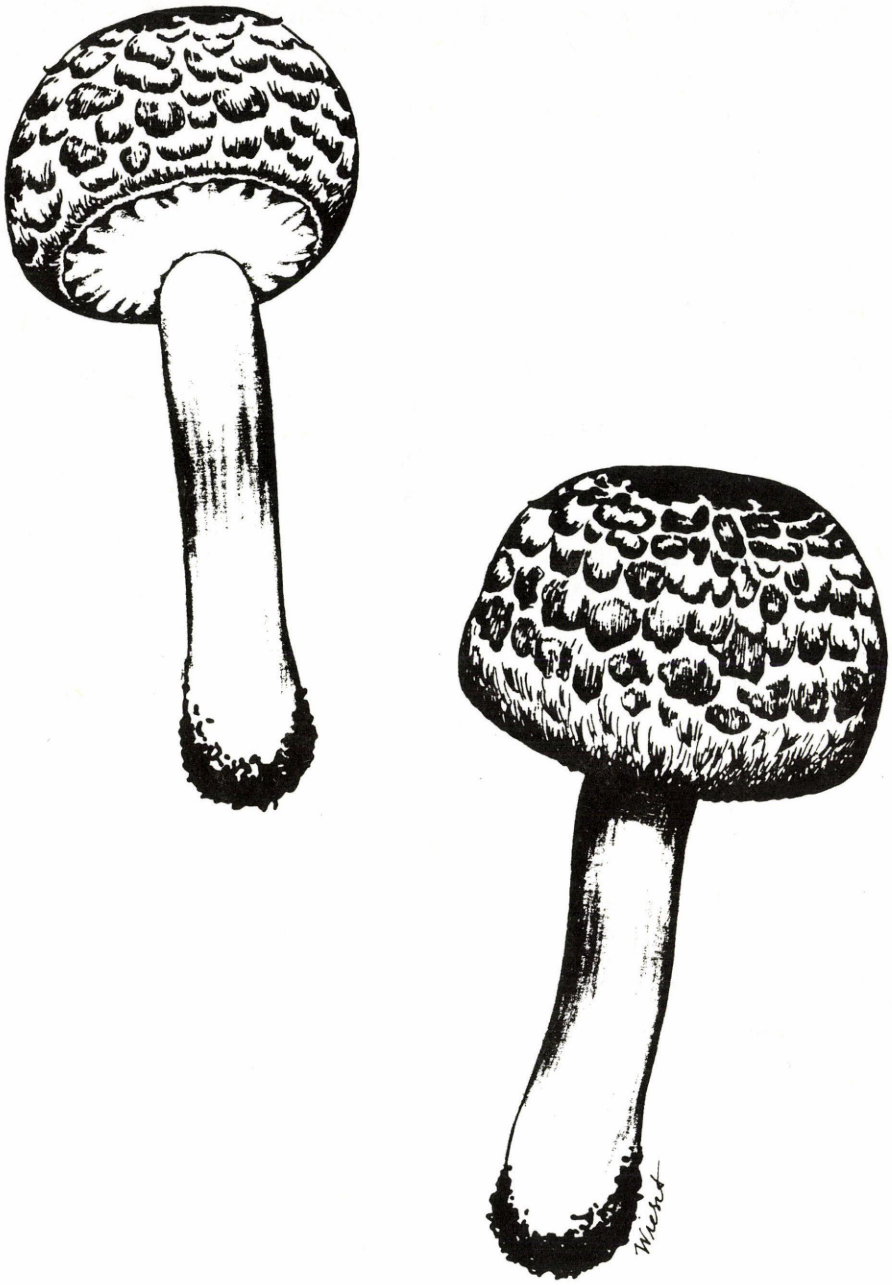

Fig. 3. *Agaricus arvensis* ssp. *macrolepis* comb. n.: fruit bodies (nat. size) after PILÁT's (1951a) photos

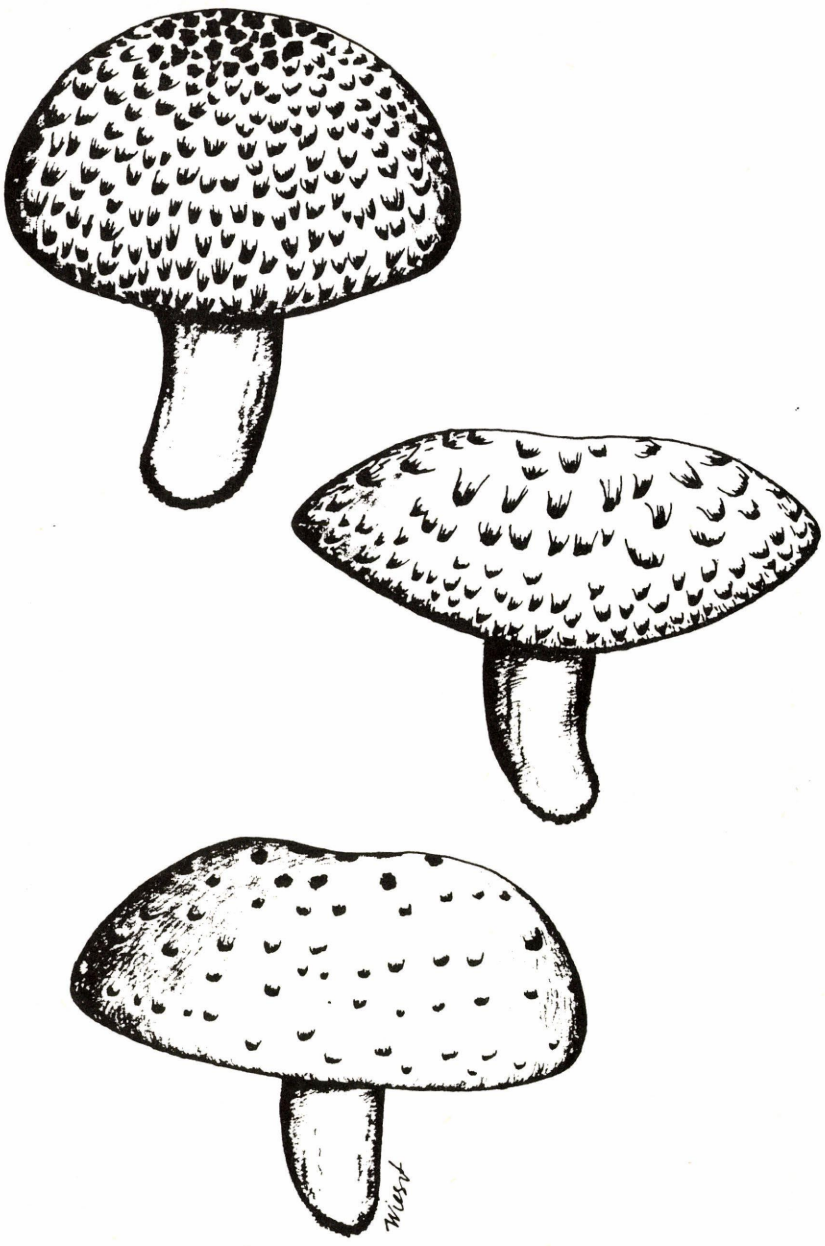

Fig. 4. *Agaricus cupreobrunneus*: fruit bodies (nat. size)

References

BOHUS, G & ALBERT, L. (1985): Nuova specie di fungo Agaricus cappellii sp. n. – *Boll. Gruppo Micol. G. Bresadola* **28**: 4-7.

BON, M. (1985): Clé monographique du genre Agaricus L.: Fr. – *Doc. myc.* **15**: 1-37.

CAPPELLI, A. (1984): Agaricus L.: Fr. – Saronno: 558 pp.

MÖLLER, F. H. (1950, 1951): Danish Psalliota species I-II. – *Friesia* **4**:1-60, 4:135-220.

PILÁT, A. (1951a): The Bohemian species of the genus Agaricus. – *Acta Mus. Nat. Prague* VII B, 1:1-148.

PILÁT, A. (1951b): Hymenomycetes novi vel minus cogniti Čechoslovakiae. – *Studia Bot. Čechoslov.* **12**(1): 1-72.

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