Pluteus Studies, I. (Basidiomycetes, Pluteaceae)

by M. Babos, Budapest

Abstract — Observations on the variability of a new *Pluteus* species (*P. variabilicolor* sp. n.) with a yellow cap. With 7 figures.

Although several and well applicable microscopic features also help in the separation of *Pluteus* species, their identification is occasionally rather difficult. Since usually only one or few fruit bodies appear on the decaying wood substrate, the variability of certain specific characteristics is not sufficiently known. In sites favourable for the fungus, assuring adequate nutrient and water supply (as for instance decaying sawdust heaps), mass appearance of the fruit bodies of several species are known. The reiterated observation of the variability of fruit bodies growing in great numbers and often also in groups, and then collectible in various developmental stages, renders excellent opportunities for the clarification of taxonomic problems.

Of primary importance are the observations concerning a *Pluteus* with a yellow cap when mature, differing from all known species. This rather varying species appeared in masses on a sawdust yard near Szárliget, Vértes Mts., Hungary. My attention was called to the site, producing also great individual numbers of also other rare saprophytic species, by E. VÉSSEY, M. VIRÁG, and I. ZIRKELBACH. The same yellow-capped *Pluteus* was found in smaller numbers on sawdust also in two other localities. Since decaying sawdust affords so much heat and humidity even in the late autumn season that groups or masses of *Leuco-coprinus* species occurring in greenhouses also appear on it, one might have considered even a tropical *Pluteus* species. The only contrary evidence was its collection some years ago, in one or two specimens, on decaying stumps in forests.

Pluteus variabilicolor sp. n. (Figs. 1-7)

Pileus 1.8–7.5–(15) cm in diam.; when young angulately campanuliform or gibbous-convex, convex, later gibbosely explanate or flat; when young mat (duckskin-like), medially rugulose, marginally smooth, later medially more or less rugose-venose, slightly shiny, glabrous, or squamosely to fibrillo-squamosely disrupting and marginally densely striate. When young, its coloration highly divers: yellow with a mustard — brownish green hue, orange-reddish yellow or lemon yellow, developed pileus citrous or chrome yellow, slightly lighter marginad, scales and fibrillo-scales brownish to greyish brown. — L a mellae e marginate; (1.5–)3–8 mm wide; when young very dense, later close or moderately close; with lamellulae; lamellae fine rosaceous already when young, later carneous; edges white, especially well visible in young fruit bodies, later less conspicuous; no yellow colour observable on lamellae. — Stipe 2.5–10×0.3–1 cm, basally even 2 cm wide; when young slender or squat; cylindrical or clavate, basally bulbous or attenuated; occasionally tubulose; colour white or creamy, when young entire surface often with a brownish black velvet: velvety-punctate-fibrillose, on maturing pruinose surface of stipe disintegrating, in some fruit bodies visible only in basal section of stipe, in other specimens stipe entirely whitish to creamy, sericeously shiny, longitudinally fibrous or striped, and the brownish terminal cells discernible only by a lupe. The diverse states can be observed also within a single group of fruit bodies. Basis mycelium white. — Flesh

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Figs. 1–2. *Pluteus variabilicolor* sp. n.: 1 = fruit boides from type material (natural size), 2 = fruit body from Solymár (natural size)

under skin of pileus vivid chrome yellow, otherwise yellow to yellowish, in upper part of stipe yellowish rosy; fragile in cap, but fibrous rigid in stipe, almost hard when young (Figs. 1-2). — Epicutis of pileus consisting of spherocysts, cystidiform elements and elongated cells; without clamp connections. Spherocysts and cystidoid cells spheropedunculate-vesiculose-obpiriform, clavate, bottle-shaped, terminally rounded or with shorter to longer necks or appendages; 28-80×9.3-26µm (Fig. 3). Elongated terminal cells of epicuticulars hyphae thin-walled; apically obtuse or subacute; hyaline or melleous; of unequal thickness; their size varying, 60–200×9.3–20 µm (Fig. 4). — Pruinosity of stipe effected by smaller to larger tufts of brown, cylindrical, fusiform, clavate, or broadly clavate terminal cells, with or without a small appendage; $17-62-(90)\times4.7-17(-23)~\mu m$ (Fig. 5). They can be found also on the white or creamy, apparently glabrous stipes, mainly on its lower part. — Cheilocystids numerous, varying greatly in form and size: spheropedunculateobpiriform, clavate, bottle-shaped, etc., terminally rounded or with a neck or minute appendage; much like epicuticular cystidoid cells; $23-62\times8.5-39~\mu m$ (Fig. 6). — Pleurocystidos clavate, bottle-shaped; pale yellowish or hyaline; 30-70×10-23 µm (Fig. 7). — Spores globose to short ellipsoid; (4.7-)5.4-7×(4-)4.7-5.6 µm; pale rosaceous and often monoguttulate. — Basidia clavate, 4-spored, 20-30×5.4-7.8 µm.

Pile u s 1.8–7.5(–15) cm in diametro; in statu juvenili "mustard"-flavus — brunneoviridescenti-flavus, rubroaurantiaco-flavus vel citrinus, in statu evoluto citrino — chromo-flavus; in medio \pm rugulosus-venosus; forte squamosus — fibroso-squamosus; in statu evoluto margine costatus. Lamellae liberae; in statu juvenili valde confertae; colore etiam juveniliter conspicue rosaceae; acies alba. Stipes 2.5–10 cm longus, 0.3–1 (ad basim usque ad 2) cm crassus; forma varius; albus vel cremeus, sed in statu juvenili saepe superficie toto brunnescenti-nigro velutinus (Figs. 1–2). Caro flavus, juveniliter in parte superiore stipitis flavescenti-rosaceus; in pileo fragilis, in stipite fibroso-rigidus. Neque sapor, nec odor proprius. — E picutis pilei e sphaerocystis, cellulis cystidiformibus (20–80×9.3–26 µm; Fig. 3) et e cellulis elongatis (60–200×9.3–20 µm), melleis vel hyalinis constructa (Fig. 4). Stipites propter cellulas terminales cylindrico-fusoideas, claviformes, late clavatas, brunneas, 17–62(–90)×4.7–17(–23) µm magnas velutini (Fig. 5). Cheilocystidia numerosa, sphaeropedunculato-vesiculosa, clavata, ampullacea, etc., collo minuto vel sine ullo, 23–62×8.5–39 µm (Fig. 6) Pleurocystidia clavato-ampullacea, pallide mellea vel hyalina, 30–70×10–23 µm (Fig. 7). Sporae subglobosae — breviter ellipsoideae (4.7–)5.4–7×(4–)4.7–5.6 µm. Basidia 4-spora. — In cumulo scobis putrido catervatim, singulariter vel caespitose.

T y p u s: 56.936, in Herbario Musei Historico-Naturalis Hungarici, Budapest. Prope Szárliget,

Hungaria, 6. VII. 1977, leg. Babos et Friesz.

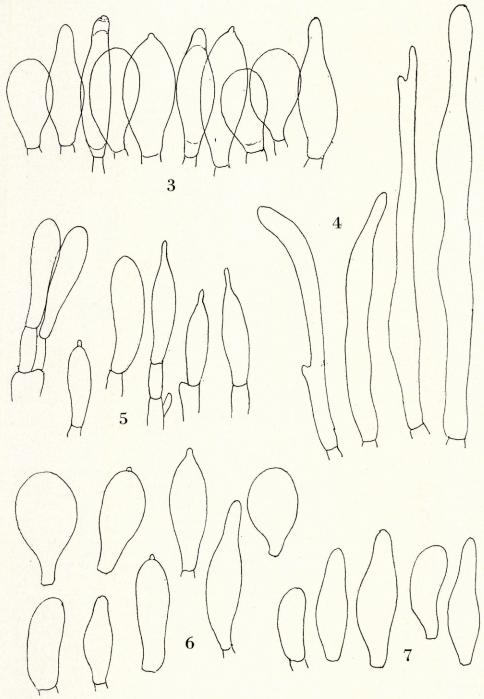
Further herbarial data: 1. Near Szárliget, on decaying sawdust, 19 August 1974, 16 August 1977, leg. Véssey; 18 July 1976, 26 June 1977, 3 July 1977, 9 Oct. 1977, leg. Virág et Zirkelbach. — 2. Dömös, on decaying sawdust, 23 July 1968, leg. Babos. — 3. Solymár, on decaying sawdust, 3 Sept. 1977, leg. Tallér. — 4. Budapest: Mts. Budai, on decaying stump, 19 June 1960, leg. Szőke; 11 June 1972, leg. ?

The European species with a yellow cap (of diverse hues) belong in the Sect. *Hispidoderma* Fayod (epicutis of pileus filamentous) and in the Sect. *Celluloderma* Fayod Subsect. *Eucellulodermini* Sing. (epicutis of pileus consisting of globose-vesiculose-obpiriform-clavate cells; elements are not dimorphic). (VACEK 1948, KÜHNER & ROMAGNESI 1953, ORTON 1960, MOSER 1967, etc.).

On the basis of the epicuticular structure of the pileus, *P. variabilicolor* can be assigned to the Sect. *Celluloderma* FAYOD Subsect. *Mixtini* SING. The subsection contains mainly extra-European species (SINGER 1956, 1975). It is therefore possible that there appeared on the decaying sawdust a termophilous species which differs in the following macroscopic characteristics from the other species constituting the Subsect. *Mixtini*:

Mostly medium to large (pileus 1.8–7.5[–15] cm in diam.). Pileus when young mustard-brownish green yellow, orange-reddish yellow or lemon yellow, later citrous-chrome-yellow; medially also rugoso-venose; glabrous, later often squamosely to fibrillo-squamosely disrupting and marginally densely striate. Lamellae when young finely rosaceous, edges white (no yellow colour visible). Stipe slender or squat; cylindrical or clavate, basally bulbous or attenuated; white to creamy, but when young occasionally entire surface conspicuously velvety blackish brown. Flesh yellow to yellowish when young in the upper part of stipe fine yellowish rosaceous; in stipe fibrillous rigid, nearly hard.

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Figs. 3–7. *Pluteus variabilicolor* sp. n.: 3–4 = epicuticular elements (\times 500), 5 = terminal cells of the stipe (\times 500), 6 = cheilocystids (\times 500), 7 = pleurocystids (\times 500)

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Author's address: Mrs. Margit Babos

Botanical Department

Hungarian Natural History Museum

H-1406 Budapest, Pf. 36.

Hungary

