

A lignicolous variety of *Panaeolus acuminatus* from Sardinia

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Abstract: *Panaeolus acuminatus* var. *quercicola* var. nova is described and taxonomically delimited based on collections from northern Sardinia (Italy). The new variety is compared also with the very rare North-American *Panaeolus fraxinophilus* from which it differs in macro- and micromorphology.

Zusammenfassung: *Panaeolus acuminatus* var. *quercicola* var. nova wird an Hand von Aufsammlungen aus Nordsardinien (Italien) beschrieben und taxonomisch abgegrenzt. Die neue Varietät wird auch mit dem seltenen nordamerikanischen *Panaeolus fraxinophilus* verglichen, von dem sie sich aber makro- und mikroskopisch unterscheidet.

A very interesting taxon of *Panaeolus* growing on decaying wood of *Quercus suber* L. was collected from one locality of northern Sardinia. Strictly lignicolous representatives of this genus are very few and GERHARDT (1996), in his world monograph, only reports *Panaeolus fraxinophilus* A. H. SMITH, a very rare species known only from USA, and *Panaeolus bernicis* A. M. YOUNG, a species with sulphidia, collected once in Queensland, Australia. However, as the particular combination of characters of the Sardinian findings is similar to the grassland inhabiting or coprophilous *Panaeolus acuminatus* (SCHAEFF.) GILLET, but differs in microscopical characters, we feel it necessary to introduce the following new variety.

The description is based on both fresh and dried material; holotype and supplementary collections are kept in WU.

Taxonomy

Panaeolus acuminatus (SCHAEFF.) GILLET var. *quercicola* CONTU & HAUSKNECHT, var. nova (Fig. 1)

A typo sporis cheilocystidiisque minoribus et habitatione ad lignum putridum (*Quercus suber*) differt. Solitarius vel parce gregarius. Vere autumnoque.

Typus : Italia, Sardinia, prov. Calangianus, ad locum vulgo dictum Catala, 15. 4. 2002, leg. M. CONTU (WU 22839, holotypus).

Characters

Pileus: 5-22 mm, not very fleshy, conical-campanulate, not expanding, smooth, very dark blackish-brown then chestnut-brown on drying, with darker, blackish marginal zone, totally isabella in aged basidiocarps, usually not striate. Veil-remnants practically absent even in young stages.

Lamellae: close, very crowded, adnexed, blackish with distinct white lamellar edge, in young stages producing subhyaline droplets.

Stipe: 35-90 x 1-2 mm, slender, fragile, cylindrical-subequal, concolorous with the pileus to almost black, entirely white pruinose when fresh, surface not striate. Mycelium white. Partial veil absent to very evanescent.

Context: very thin, pale ochraceous-buff in the pileus, very dark blackish-brown in the lower part of the stipe and paler elsewhere. Smell and taste indistinct.

Spore-print: blackish.

Spores: 10.5-13.5 x 7.5-10 x 6.5-7.5 μm , in average 11.6-12.3 x 8.5-8.9 x 6.9-7.1 μm , thick-walled, not guttulate, distinctly lentiform in face-view, ellipsoidal in side-view, opaque to subopaque in KOH, with distinct, central germ-pore and small apiculus.

Basidia: 4-spored, 22-28 x 9.5-12.5 μm .

Clamp connections: present but small.

Hymenophoral trama: regular, consisting of hyaline hyphae.

Cheilocystidia: 25-45 x 4-8(-9) μm , hyaline, lageniform, flexuous, with slightly thickened base; lamellar edge sterile. No sulphidia present.

Pleurocystidia: absent.

Stipitipellis: consisting of narrow parallel, septate hyphae, supporting bundles of simple cylindrical flexuose caulocystidia 30-75 x 6-11 μm .

Pileipipellis: cellular-subhymeniform, consisting of globose to clavate cells 35-50 x 17-33 μm with dull brown intraparietal pigment, immixed with scattered hair-like, flexuose pileocystidia (3-6 μm broad).

Habitat: on decaying wood of *Quercus suber*, fruiting singly or in small groups. Spring and autumn. Known only from a single location in Sardinia.

Collections studied (besides type material): **Italy**: Sardegna, prov. Sassari, Calangianus, loc. Catala, 17. 4. 2002 (WU 22840); -- 19. 4. 2002 (WU 22841); -- 3. 5. 2002 (WU 22842); -- 12. 5. 2002 (WU 22843); -- 13. 5. 2002 (WU 22844); -- 16. 5. 2002 (WU 22845); -- 15. 10. 2002 (WU 22846); -- 27. 11. 2002 (WU 22847); -- 20. 12. 2002 (WU 22848), leg. M. CONTU.

Comments

Following the taxonomical system by GERHARDT (1996) our new taxon belongs in *Panaeolus* subgen. *Panaeolus* sect. *Laevispora* E. GERHARDT since the pileal cuticle is dry, an annulus is lacking, pleurocystidia and sulphidia are absent, the cheilocystidia are not metuloid and the basidiospores are not ornamented.

The European grassland inhabiting or coprophilous *Panaeolus acuminatus* comes closest to our new taxon; it is macroscopically hardly distinguishable, but its spores are

distinctly larger and its cheilocystidia, though of similar length, are broader and thicker, with broader neck. Size and colour of the spores are very similar, and it is not certain that the difference in habitat is a constant character until further collections from different sites will prove it (see also GERHARDT 1996: 91).

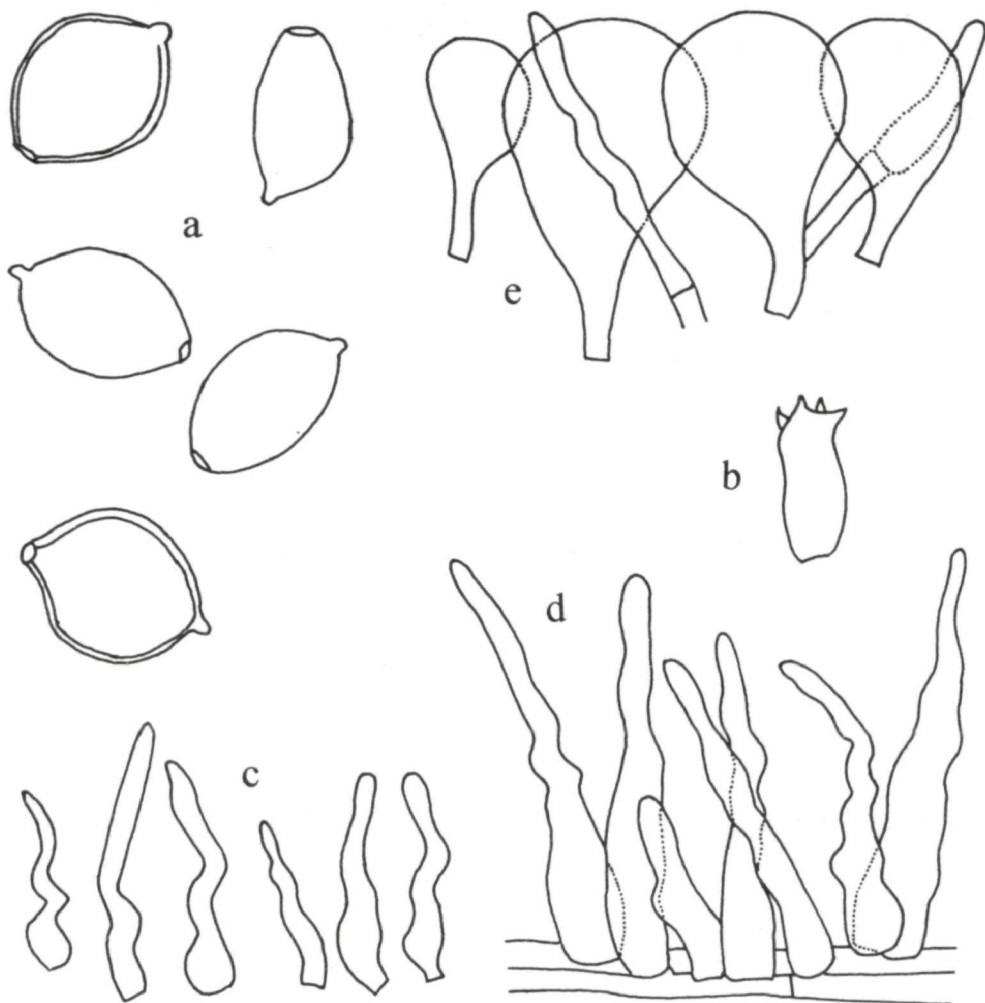


Fig. 1 a-d. *Panaeolus acuminatus* var. *quercicola* (holotype). a spores, x 2000; b basidium, x 800; c cheilocystidia, x 800; d stipitipellis with caulocystidia, x 800; e pileipellis, x 800.

Due to its peculiar ecology our species could be confused with the North-American *P. fraxinophilus* A. H. SMITH (SMITH 1948, OLA'H 1970, GERHARDT 1996), known only from the type-locality in New York, from which it differs, from the macromorphological point of view, by the lack of greyish tinges in pileus and lamellae, the almost black stipe, devoid of reddish tinges and the odourless flesh.

Another similar species is *P. reticulatus* OVERHOLTS (= *P. uliginosus* = *P. fontinalis* according to GERHARDT 1996) but its spores are smaller and shaped differently, not distinctly lentiform, and the ecology is different.

The presence of droplets in very young stages of the basidiocarp could suggest a relation between *P. acuminatus* var. *quercicola* and the species of *Panaeolus* sect. *Guttulati* E. GERHARDT but the only known species in this section, viz. *P. guttulatus* BRES., which is not rare in the coastal pine-woods of Sardinia, sharply differs in definitely smaller, guttulate, not lentiform basidiospores (GERHARDT 1996).

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