

**AMANITA DRYOPHILA (AMANITACEAE) SPEC. NOV. AND  
THE SPECIES OF THE SECTION VAGINATAE  
WITH A SEMIFRIABLE UNIVERSAL VEIL AND ELLIPSOID SPORES**

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*Amanita dryophila* spec. nov. is described. The differential features of the new species with respect to *A. beckeri* as well as its delimitation from the other species of the section *Vaginatae* with a semifriable universal veil and ellipsoid spores are discussed.

INTRODUCTION

In forests of broad-leaved trees of the Italian territory, on calcareous soil, an *Amanita* belonging to the subgenus *Amanita* section *Vaginatae*, with rather unusual characters, has been observed several times.

The habit of the specimens and the macro- and micromorphological features of the universal veil strongly remind of *A. beckeri* Huijsman, but the ellipsoid spores show that a different entity is concerned.

Since none of the taxa described until now possesses the same characters as our collections, we think it necessary to describe a new species here, *Amanita dryophila* Consiglio & Contu.

***Amanita dryophila* Consiglio & Contu, spec. nov. — Fig. 1, Plate 15, 16**

Pileus (5–)8.5–15(–20) cm latus, carnosus, convexus dein explanatus, plerumque haud umbonatus, typice malleatus, subavellaneus vel pallide castaneo-avellaneus vel aurantio-avellaneus, saepe verrucis albidis vel albo-ochraceis ornatus, margine striata. Lamellae confertae, albae, liberae, acie saepe brunnea. Stipes (6–)10–15(–20) × 1.5–3(–4) cm, cylindraceus, albus, aurantio vel avellaneo colore variegatus, exannulatus. Volva albida, vel ochraceotincta, fragilis, friabilis. Caro firma sed facile corrupta, alba, immutabilis; odor atque sapor debiles. Sporarum pulvis albidus.

Sporae 10.6–11.9 × 8.9–10.2 μm, Q = 1.12–1.24, hyalinae, inamyloideae, late ellipsoideae, monoguttulatae. Basidia 40–60 × 12–15 μm, tetraspora; subhymenium ex cellulis elongatioribus constitutum. Cellulae marginales 25–60 × 12–30 μm, piriformes vel clavatae vel sphaeropedunculatae. Suprapellis ex hyphis gelatinis tenuissimis, cylindraceis constituta; subpellis ex hyphis cylindraceis laxe intertextis, 3–8 μm latis, constituta, pigmento praecipue vacuolari. Textura velaris subcellularis, ex hyphis cylindraceis intermixtis plurimis cellulis globosis, hyalinis vel pallide ochraceis constituta.

Hyphae vasculares praesentes. Fibulae absunt.

Habitatio in nemoribus frondosis cum *Quercubus* (*Q. ilex*, *Q. suber*, *Q. robur*, etc.), in humo basica. Autumno.

Typus: Italia, Emilia Romagna, prov. Bologna, Monterenzio, loc. Ronchi, 30.6.1994, leg. G. Consiglio (97020), in herbario MCVE sub n. 736 conservatur.

Cap (50–)85–150(–200) mm broad, rather fleshy, convex to plano-convex, hardly ever completely expanded, with a striate margin, typically marked by some dimples and hollows, suggesting a semi-hypogeous development of the fruit-bodies, lubricous when wet, smooth,

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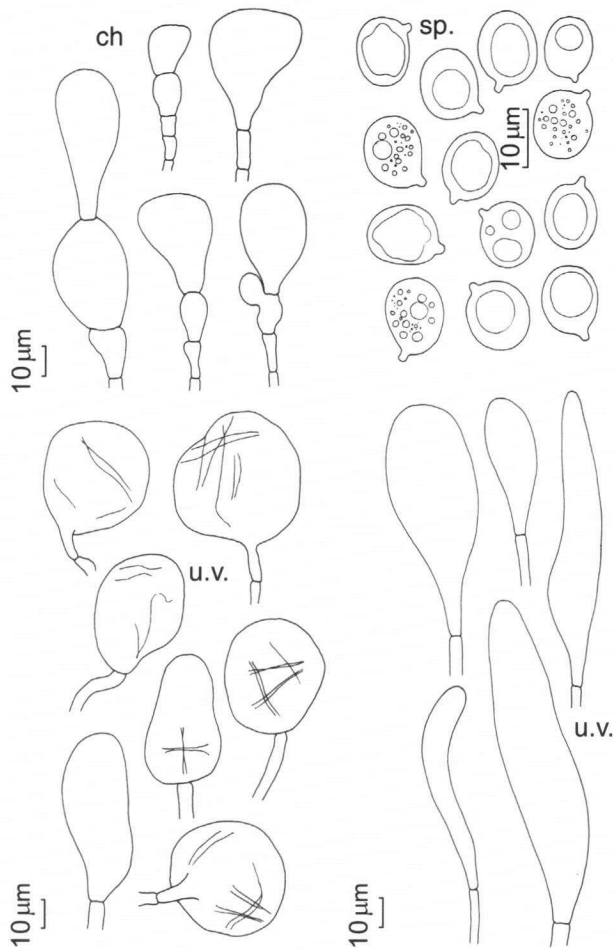


Fig. 1. *Amanita dryophila*. Marginal cells (ch); spores (sp.); universal veil (elongate cells) (u.v.); universal veil (inflated cells) (u.v.). Bar = 10  $\mu$ m.

more or less saturated hazel-brown, sometimes with orange shades, never with grey tinges, often with detersile, white to slightly ochraceous small crumb-like volval remnants or glabrous. Gills rather broad and thick, ventricose, free, white with edge concolorous to pale hazel-orange, finely eroded. Stem (60–)100–150(–200)  $\times$  15–30(–40) mm, stuffed, rather strong, slender, cylindrical, progressively enlarged toward base, but never bulbous, dry, white, flecked with pale hazel or hazel-orange zigzag bands. Partial veil strongly reduced, not forming an annulus. Universal veil brittle, friable, almost never integral but tending to remain in the ground, sometimes forming a sort of volval belt on lower half of stem, white or whitish, often shaded with ochre, not turning grey. Flesh firm, solid but strongly perishable, white, unchanging. Smell and taste indistinct. Spore print whitish.

Spores 10.6–11.9  $\times$  8.9–10.2  $\mu$ m (average 11.3  $\times$  9.6  $\mu$ m),  $Q = 1.12$ –1.24 (average 1.18), hyaline, non-amyloid, broadly ellipsoid, rarely ellipsoid or subglobose, sometimes lacry-

moid, with a large guttula inside, with a marked apiculus. Basidia 40–60 × 12–15 µm, 4-spored, rarely 2-spored, clavate, without clamps; subhymenium composed of branching hyphae with elongate cells. Trama of gills bilateral. Marginal cells 25–60 × 12–30 µm, pyriform, clavate or sphaeropedunculate, thin-walled. Pileipellis with an upper gelatinized region with cylindrical, very frail and irregularly arranged hyphae and with a lower region with cylindrical, 3–8 µm wide, somewhat interwoven hyphae; pileus context with some vascular hyphae. Remnants of the universal veil with a subcellular texture consisting of cylindrical, 2–6 µm wide hyphae, and several inflated, 20–60 µm wide, hyaline to slightly ochraceous cells. Vascular hyphae numerous. Clamps absent.

Habitat — Terrestrial, gregarious in open, sunny forests of broad-leaved trees, mainly *Quercus* spp., on calcareous soil, often bursting out of the soil. Autumn. Not rare in Italy.

*Collections examined.* ITALY: Brescia, Bovegno, 1.X.1984, G. Guarinoni, A. Picena & G. Bontempi (sub '*Amanita beckeri* Huijsman'); Lazio, prov. Roma, Villa Pamphili, 10.V.1986, V. Migliozi, fragment in CAG 2/1.30; Sardegna, prov. Nuoro, Laconi, loc. S. Sofia, 8.XI.1987, D. Farci & Z. Rubiu, M. Contu 87081101; Emilia Romagna, prov. Reggio Emilia, Parco di Roncolo, 21.VI.1997, G. Simonini; ditto, prov. Reggio Emilia, Pulpiano, Viano, 22.VI.1997, G. Simonini; prov. Bologna, Monterenzio, Ronchi, 30.VI.1994, *Consiglio* 97020 (holotypus); *ibid.*, 5.VII.1997, G. *Consiglio* 94025; prov. Modena, Montese, Selva di Castelluccio, leg. G. *Consiglio* & E. Franceschini 94033.

#### DISCUSSION

*Amanita dryophila* belongs to the section *Vaginatae* (Fr.) Quél. and, within this section, can be included in the complex of species with broadly ellipsoid to elongate spores. It shows a very close resemblance to *A. beckeri* Huijsman (1959, sub '*A. strangulata*', 1961, 1962) with which it is often confused on the field. *Amanita dryophila* is remarkably different from this taxon, the most typical species of subsection *Inauratae* (M. Bon) Sebek with a white (not grey) universal veil, because of its broadly ellipsoid (not spherical) larger spores.

Among the similar European species with a semiflexible universal veil and broadly ellipsoid to ellipsoid spores, *A. dryophila* has to be compared with *A. oblongispora* Tulloss & Contu in Tulloss (1994) and with *A. malleata* (M. Bon) Contu (see Piane, 1972; Bon, 1983; Migliozi & Lavorato, 1987; Tulloss, 1994), the only species which, growing in similar habitats, could be confused with *A. dryophila* in the field.

However, *A. oblongispora* is very different from *A. dryophila*, as it has clamped basidia as well as markedly more elongate spores ( $Q = 1.2–1.5$ ) and a cap with grey or ochraceous grey, sometimes buff or fawn, tints, but with hazel-brown or orange shades completely lacking. Moreover, the ecology of *A. oblongispora* is less restricted than that of *A. dryophila* as the former also grows well on acid soils where the latter has never been found.

Also *A. malleata* has grey to whitish grey colours. Moreover, the lectotype designated by Tulloss has gills with a pink tint and a subhymenium not composed of branching hyphae as in *A. dryophila* (cf. Tulloss, 1994: 352).

*Amanita dryophila* is very different from *A. biovigera* Sing., sometimes considered conspecific with *A. mairei* Foley (cf. Fraiture, 1993: 91), which has a cap with much deeper brown bistre to olivaceous bistre colours and a stem flecked with brown bistre, zigzag zones (for the micromorphology, see Tulloss, 1994: 352–353) and from *A. lividopallescens* var. *malleata* (Piane ex) Romagn. with grey ochre to pearl-grey tints and a universal veil with a filamentous texture (Romagnesi, 1982).

Among the extra-European species we have not found anything similar to *A. dryophila*. *Amanita antillana* Dennis, reported from Trinidad, has an olivaceous brown cap and an ochraceous brown veil (Dennis, 1952; Tulloss, 1994).

The species belonging to the complex under discussion can be separated by means of the following key:

- 1a. Basidia clamped; cap with grey to ochraceous grey, sometimes fawn tints; mediterranean species ..... *A. oblongispora* Tuloss & Contu
- b. Basidia not clamped ..... 2
- 2a. Cap hazel-brown flushed with orange; white stem flecked with bands or little scales concolorous with pileus; subhymenium consisting of branching hyphae; in forests of broad-leaved trees on calcareous soil ..... *A. dryophila*
- b. Cap differently coloured ..... 3
- 3a. Universal veil whitish; cap with whitish cream to ash grey or smoky grey tints; stem white or flecked with bands concolorous with the pileus, subhymenium subcellular to cellular ..... *A. malleata* (M. Bon) Contu
- b. Universal veil greyish, cap with brown bistre to olivaceous bistre tints, stem flecked with concolorous bands ..... *A. biovigeri* Sing.

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