ALPOVA PSEUDOSTIPITATUS, SP. NOV. (GASTEROMYCETES), FROM MAJORCA (SPAIN)

by

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Summary. CALONGE, F.D. & J.L. SIQUIER (1998). Alpova pseudostipitatus, sp. nov. (Gasteromycetes), from Majorca (Spain). *Bol. Soc. Micol. Madrid* 23: 91-96.

Alpova pseudostipitatus is proposed as a new species, after studying and comparing it with the rest of accepted species of this genus. The main distinctive character is the presence of a pseudostipe in the basidioma, which is unique in this genus.

Key words: *Alpova pseudostipitatus, Gasteromycetes,* taxonomy, Majorca, Spain.

Resumen. CALONGE, F.D. & J.L. SIQUIER (1998). Alpova pseudostipitatus, sp. nov. (Gasteromycetes), de Mallorca (España). *Bol. Soc. Micol. Madrid* 23: 91-96.

Se propone *Alpova pseudostipitatus* como especie nueva para la ciencia, una vez estudiada y comparada con las otras especies del género. El principal carácter distintivo es la presencia de un seudoestípite en los basidiomas encontrados, hecho que la separa de los demás táxones del género.

Palabras clave: *Alpova pseudostipitatus, Gasteromycetes*, taxonomía, Mallorca, España.

INTRODUCTION

The genus *Alpova* was erected by DODGE (1931) with *A. cinnamomeus* Dodge [= *A. diplophloeus* f. *diplophloeus* (Zeller & Dodge) Trappe & A.H. Sm.] as the type species. Later, ZELLER (1939) studied the developmental morphology of this species. Since then the taxonomic position of *Alpova* has been object of a continuing controversy, owing to its strong links with the genera *Rhizopogon* Fr. emend. Tul. & C. Tul. and *Melanogaster* Corda. In fact, most of the accepted species of *Alpova* have been segregated from these genera by SMITH & ZELLER (1966), TRAPPE (1975), BEATON & *al.* (1985) and LIU & *al.* (1990). However, the best contribution towards a better understanding of the genus *Alpova* has been carried out by TRAPPE (1975), where a possible base of the evolutionary line *Rhizopogon-Alpova-Melanogaster* was proposed, with a key to separate the three genera, with special emphasis on the taxonomy of *Alpova.* TRAPPE (1975) accepted 15 species and in the last edition of the *Dictionary of the Fungi* (HAWKSWORTH & *al.*, 1995) 13 are the species recognised.

Figs. 1-2.–*Alpova pseudostipitatus:* basidiomata in section to observe some aspects of the gleba and pseudostipite (MA-Fungi 36826; *holotypus*).

Despite all these contributions the delimitation between *Rhizopogon* and *Alpova* is far from clear. TRAPPE (1975) established as the main distinctive characters the presence or absence of a palisadic hymenium and clamp connexions. According to him, *Rhizopogon* has a palisadic hymenium and lacks clamp connexions, while *Alpova* lacks of a true hymenium and generally shows clamp connexions. On the other hand, the differences proposed by BEATON & *al.* (1985) are less clear. Finally, CASTELLANO & *al.* (1989) considered the main difference of *Alpova* from *Rhizopogon* as follows: "... spores being borne in a gelatinous matrix that fills the chambers walled off by meandering veins". While in *Rhizopogon* the chambers are empty or sometimes filled with spores but never with a gelatinous matrix. Regarding the genus *Rhizopogon,* a good monograph of the European species has been recently published by MARTIN (1996).

DESCRIPTION

Alpova pseudostipitatus Calonge & Siquier, **sp. nov.**
Expl. nom.: *pseudostipitatus,* means having a pseudostipe.

Basidioma 1.7-2 × 1 cm, *subglobosus vel ellipsoideus ad basim elongatus, pseudostipitatus. Pseudostipe* 1-1.5 × 0.5-0.7 cm, *siccum. Peridium* 0.5-0.7 mm *crassum, pallide vel cinnamomeum, laeve, siccum, duplicatus, hyphae fibulata. Gleba gelatinosa, olivacea, loculis repletis. Sporae* 4-5 × 1-2 µm, *plerunque cylindraceae vel subellipsoideae, laeves, hyalinae, inamyloideae, non dextrinoideae. Basidia clavata* 4-8-*sporigera. Holotypus: Ad terram subter Phragmites sp. in S'Albufera, Muro, Majorica, insulae Balearicae,* 20-X-1996, *leg.* J.L. Siquier & F. Lillo, MA-Fungi 36826, K(M) 54688, JLS 792B.

Basidioma 1.7-2 × 1 cm, subglobose to ellipsoid (figs. 1-2), with a basal elongation resembling a stalk or pseudostipe, 1-1.5 × 0.5-0.7 cm when dry (fig. 3A). Pseudostipe made of globose to ovoid cells, 10-40 µm diam., with fascicles of interwoven hyphae 2 µm diam., some of them with clamp connexions, and a few remaining hyphae resembling residual laticiferous hyphae about 10 mm diam., collapsing in fragments with an amber yellowish content. Peridium 500-700 µm thick, smooth, yellowish-brown, both when fresh and after drying, made of two differentiated layers: an outer one, 400-500 µm thick, with hyphae 2-3 µm diam., with clamp connexions, granular contents and some crystals (fig. 3C). A zone of pigmented amorphous elements, with some hyphae and crystals, can be observed between the two layers (fig. 3D). The inner layer is made of gelatinizing hyphae with some enclosed crystals (fig. 3E). Gleba gelatinous, olivaceous, with white veins arising from the base and disappearing towards the apex (figs. 1-2), loculate, with locules 0.1-0.3 mm diam., filled with a gelatinous matrix when fresh. Tramal plates narrow, 15-50 µm thick with a gelatinized hymenophoral trama. Spores 4-5 × 1-2 µm, cylindrical to subellipsoidal, hyaline, inamyloid, cyanophilous, smooth (figs. 3B-F, 4-5). Basidia clavate, difficult to observe, bearing 4-8 sterigmata, autolysed. Holotypus: Semihypogeous under *Phragmites* sp., in S'Albufera, Muro, Majorca, Balearic Islands, 20-X-1996, leg. *J.L. Siquier & F. Lillo,* MA-Fungi 36826, K(M) 54688, JLS 792B.

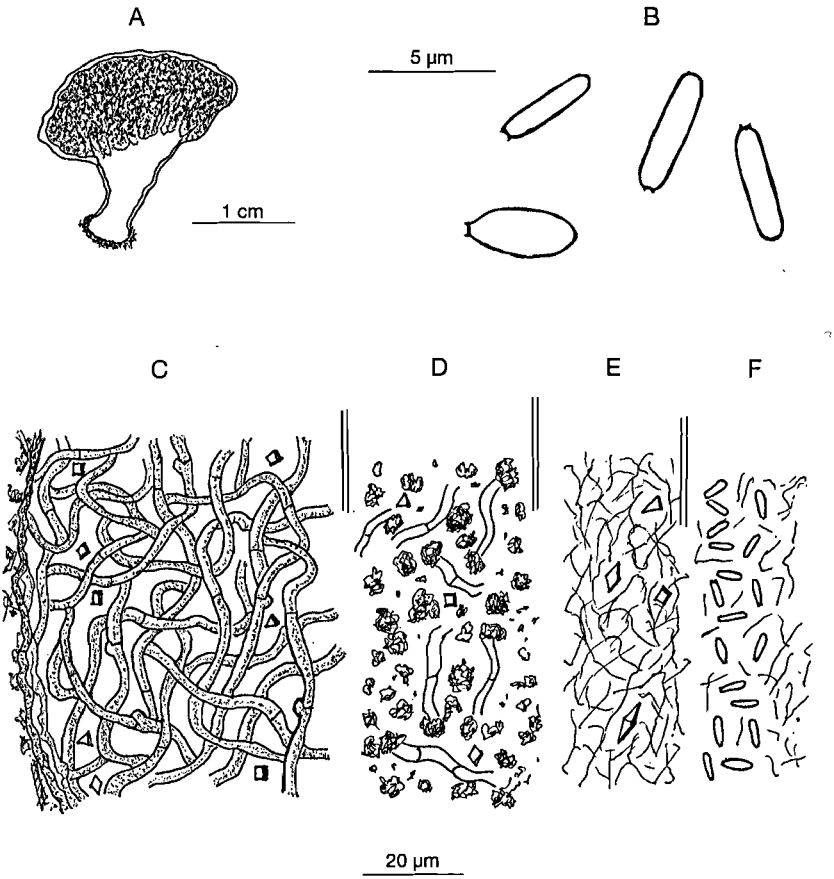
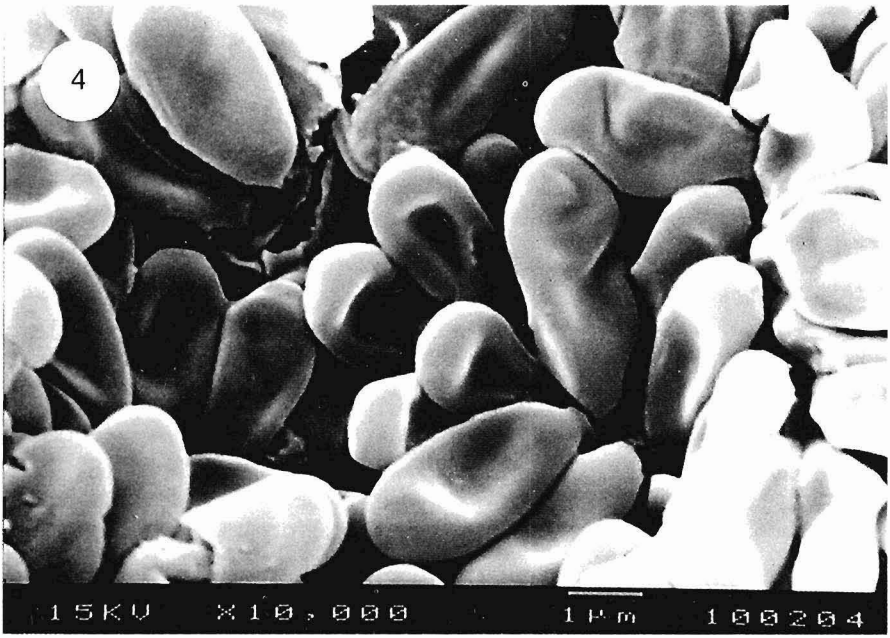
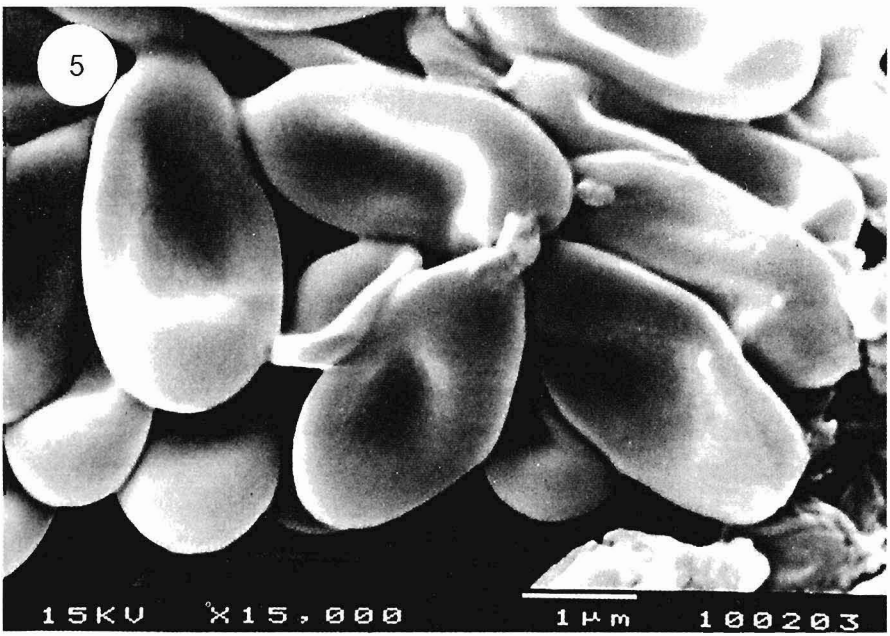


Fig. 3.–*Alpova pseudostipitatus:* A, diagrammatic section of a basidioma; B, spores; C, outer layer of the peridium with clamped hyphae; D, zone of amorphous elements between both layers, with some crystals and hyphal debris; E, inner layer of the peridium made of gelatinazing hyphae and a few crystals; F, gleba with spores (MA-Fungi 36826; *holotypus).*

DISCUSSION

Considering the difficulties in separating the genera *Rhizopogon* and *Alpova*, following TRAPPE's paper (1975) we think that our material is better placed in *Alpova*, owing to the presence of clamp connexions and gleba wthout a palisadic hymenium which is filled with a gelatinous matrix. The ecology, growing under *Phragmites* sp., and the fact of the two collected basidiomata having a kind of stalk or pseudostipe, confer to this specimens a character unique within this genus. Thus, we consider that this taxon could well be undescribed.





Figs. 4-5.–*Alpova pseudostipitatus:* spores as seen in the SEM (MA-Fungi 36826; *holotypus).*

On the other hand, *A. diplophloeus* (Zeller & Dodge) Trappe & A.H. Sm. f. *europaeus* Trappe, seems to be close to *A. pseudostipitatus*, considering the size and shape of spores, but differs in lacking any pseudostipe and in its ecology. Another species with some relationships are *A. luteus* (Zeller) Trappe, which has spores a little larger (4-6.5 × 1.8-3 µm) and also without a stalk, and *A. trappei* Fogel, which shows the same differences as well. According to FOGEL (1977) it is necessary separate *A. luteus* sensu Zeller, which is a synonym of *A. diplophloeus* f. *europaeus* Trappe, from *A. luteus* sensu Trappe (TRAPPE, 1975). The rest of the species, including those from Australia (BEATON & *al.*,1985) are far away from *A. pseudostipitatus*, which is proposed here as a new species.

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