ZELLEROMYCES GIENNENSIS SP. NOV. (RUSSULALES),
A GASTEROID FUNGUS FROM THE SOUTH OF SPAIN

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SUMMARY: Zelleromyces giennensis is proposed and described as a new species, including data on its taxonomy, ecology, morphology, anatomy and relationships with related species.

KEY WORDS: Russulales, Elasmomycetaceae, Zelleromyces giennensis, taxonomy, ecology, Spain.

INTRODUCTION

In previous papers (Calonge & Pegler, 1998; Moreno-Arroyo et al. 1998a, b) has been discussed the possible delimitation of the genus Zelleromyces Singer & A. H. Sm., in relation to Martellia Mattir. and Gymnomyces Massee & Rodway, and the key proposed by Beaton et al. (1984) is considered as the most suitable one to separate the genera of Elasmomycetaceae. The number of Zelleromyces species already described reaches the figure of 15, from which only two have been previously recorded in Spain, Z. hispanicus Calonge & Pegler (Calonge & Pegler, 1998) and Z. meridionalis Calonge, Moreno-Arroyo
& Gómez (Moreno-Arroyo et al. 1998a). The material studied here is preserved in Madrid (MA-Fungi) and in the personal senior author's herbarium (BM).

**DESCRIPTION**

*Zelleromyces giennensis*, Moreno-Arroyo, Gómez & Calonge sp. nov. (Figs. 1-4)

Etym.: *giennensis*, belonging to the province of Jaen, S. Spain.


Gasterocarp 1-2.5 cm diam., subglobose, somewhat lobed, sessile (Fig. 1). Peridium whitish drying pale yellowish, smooth, matt. Gleba white drying yellowish, labyrinthoid, with locules irregularly arranged, empty or partially filled. Columella absent. Basidiospores 10-13 × 7-9 µm (incl. orn.), ellipsoid, rarely ovoid (Figs. 2-4), hyaline, with a myxosporium of continuous or interrupted ridges forming an incomplete reticulum (Figs. 3-4), strongly amyloid. Basidia 30-45 × 6-10 µm, cylindrical, 1-spored. Sterigma 3-5 µm long. Subhymenium pseudoparenchymatous. Cystidia absent. Hymenophoral trama made of hyaline hyphae, 3-6 µm diam., gelatinized, thin-walled, septate, clampless. Peridiopellis 150-200 µm, pseudoprosenchymatous, with gelatinized, agglutinated hyphae. Epicutis a trichodermium, with hyaline hyphae, 4-5 µm diam., septate, gelatinized. Laticiferous elements, 5-8 µm diam., only present in the peridium. Sphaerocysts absent.

Material studied: Spain, Jaen, La Aliseda, 600 m, subhypogeous, under *Pinus halepensis*, 30 basidiomata forming colonies, 28-II-1994, legit J. Gómez & B. Moreno, MA-Fungi 38674 (Holotypus); BM 213.

**DISCUSSION**

*Zelleromyces giennensis* is a well-defined species with a series of characters not found in any other described taxon of this genus. Basidiospores subreticulate, ellipsoid; peridium with laticiferous hyphae; epicutis a trichodermium; basidia 1-spored, and columella, cystidia and sphaerocysts absent.

Other species with ellipsoid spores are: *Z. cinnabarinus* Singer & A. H. Sm., which has a cinnabar red peridium when fresh and broader spores (14-17 × 11-13 µm); *Z. oregonensis* Singer & A. H. Sm., with spiny spores (Singer & Smith, 1960). *Zelleromyces gardneri* (Zeller & Dodge) Singer & A. H. Sm., has spores similar to *Z. giennensis*, ellipsoid to ovoid, but shows a dendroid columella (Singer & Smith, 1960). Another Mediterranean species close to our material is *Z. josserandi* Malençon (Malençon, 1975), but with spores ovoid, basidia 4-spored and basidioma broader, 2-4 cm diam. The remaining species of *Zelleromyces* are remote from *Z. giennensis*, considering the taxonomic features.
Again, we have had difficulties in finding the appropriate genus for our collections, as commented upon in previous occasions (Moreno-Arroyo et al., 1998a, b). However, the presence of reticulate spores, laticiferous hyphae in the peridium and absence of sphaerocysts induced us to include it within Zelleromyces, following Beaton et al. (1984) and Zhang & Yu (1990).

Zelleromyces giennensis seems to be a Mediterranean species associated with Pinus halepensis, being the third of a series of species recently found in Spain: Z. hispanicus Calonge & Pegler (Calonge & Pegler, 1998) growing under Pinus sylvestris and Z. meridionalis Calonge, Moreno-Arroyo & Gómez (Moreno-Arroyo et al., 1998a) which grows under Quercus ilex subsp. ballota. It is expected that these fungi are widespread in our region and that new gasteroid Russulales will be found in future, as the attention and effort put in this subject is increased.

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REFERENCES


Fig. 1. — Zelleromyces giennensis. Basidiomata showing peridium and gleba. MA-Fungi 38674.
Fig. 2. — Zelleromyces giennensis. Basidiospores observed under the LM, after treatment with KOH. A typical subreticulate, amyloid myxosporium can be distinguished. MA-Fungi 38674.
Figs. 3-4. — Zelleromyces giennensis. Basidiospores observed under SEM at different magnification to see in more detail the subreticulate myxosporium. MA-Fungi 38674.