

GENEA SUBBAETICA, SP. NOV., FROM SPAIN

by

B. MORENO-ARROYO¹, J. GÓMEZ² & F.D. CALONGE³

¹ Departamento de Biología Vegetal y Ecología, Facultad de Ciencias,
Universidad de Córdoba. Avda. de San Alberto Magno, s/n. 14004 Córdoba

² Asociación Micológica de las Sierras Subbéticas. Mesones, 4,
14800 Priego (Córdoba)

³ Real Jardín Botánico, CSIC. Plaza de Murillo, 2. 28014 Madrid

Summary. MORENO-ARROYO, B., J. GÓMEZ & F.D. CALONGE (1998). *Genea subbaetica*, sp. nov., from Spain. *Bol. Soc. Micol. Madrid* 23: 85-89.

Genea subbaetica is proposed as a new species and compared with other related taxa of this genus. The main taxonomic features concerning morphology, macro and microscopy and habitat are also studied here.

Key words: *Genea subbaetica*, taxonomy, ecology, chorology, Córdoba, Spain.

Resumen. MORENO-ARROYO, B., J. GÓMEZ & F.D. CALONGE (1988). *Genea subbaetica*, sp. nov., encontrada en España. *Bol. Soc. Micol. Madrid* 23: 85-89.

Se propone *Genea subbaetica* como especie nueva para la ciencia, y se compara con otras próximas dentro del género. Las principales características taxonómicas, tales como morfología, tanto macro como microscópica, hábitat y ecología son tenidas en cuenta en este trabajo.

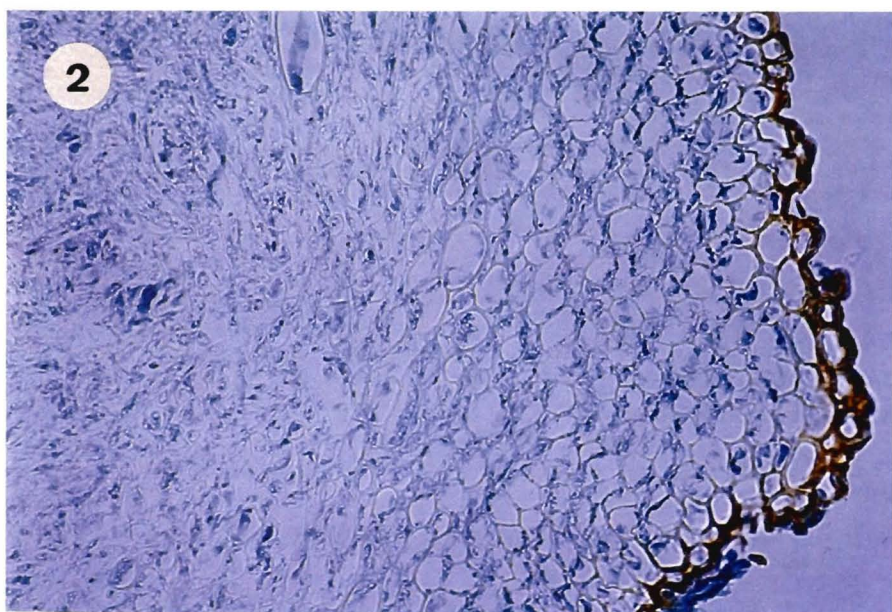
Palabras clave: *Genea subbaetica*, taxonomía, ecología, corología, Córdoba, España.

INTRODUCTION

The genus *Genea* was proposed by VITTADINI in 1831, and 24 species have been accepted since then (HAWKSWORTH & *al.*, 1995). Only eight of these are actually known to be present in Spain (VIDAL, 1991, 1997; VIDAL & *al.*, 1991, 1997). As a result of a search on the hypogeous fungi from Andalusia, South of Spain, several collections of an undescribed taxon were found in the province of Córdoba, which are the matter we are going to deal with here. The material studied is preserved at the herbaria of the senior author (BM) and at the Madrid Botanic Garden (MA-Fungi).

DESCRIPTION OF THE MATERIAL STUDIED

Genea subbaetica Moreno-Arroyo, Gómez & Calonge, sp. nov.
Expl. nom.: *subbaetica*, belonging to Sierra Subbética, S. Spain



Figs. 1-2.—*Genea subbaetica*: 1, fresh ascomata, complete and in section, showing the surface and the gleba folded forming one cavity (MA-Fungi 38474); 2, peridium with a pseudoparenchymatous structure, having an outer layer made of a row of thick-walled cells with brown pigment, and the rest of thin-walled hyaline cells (MA-Fungi 38474).

Ascomatibus brunneis, (0.4)0.5-1(1.5) cm diam., *globosis vel irregularibus aut lente lobatis verruculosis*. *Peridium* 325-400 μm *crassum*, *textura pseudo-parenchymatica*. *Hymenio continuo*, 300-350 μm *crasso*; *ascus pedicellatus, cylindricus*, 240-280 \times 25-30 μm , *octosporeus*; *sporis globosis vel ovoideis, 1-seriatis*, 26-30 \times 22-26 μm , *cum episporio verrucoso incluso*; *verrucae conicae vel cylindricae*, 2-3 μm *altae*.

Córdoba, Carcabuey, Cañasvaldas, *hypogeus, subter Quercus ilex subsp. ballota*, 5-I-1993, *legit* B. Moreno & J. Gómez, BM 7, MA-Fungi 38474; *holotypus*.

Ascoma hypogeous or subepigeous, globose, subglobose to irregular, lobed, (0.4)0.5-1(1.5) cm diam. *Peridium* blackish-brown covered by flattened pyramidal warts, glabrous, with a tuft of basal reddish-brown hairs. *Epithecium* the same colour and structure. *Gleba* folded forming one cavity (fig. 1). *Hymenium* grayish-white continuous. *Odour* difficult to define. *Peridial structure* pseudo-parenchymatous, 325-400 μm thick. *Outer layer* 80-130 μm thick, made of one to five rows of thick-walled cells, 15-30 μm diam., globose to elongated, with brown pigment (fig. 2). *Inner layer* with thin-walled cells, hyaline and of similar size, merging into a subhymenium of interwoven hyphae (fig. 2), which are also hyaline; *Hymenium* 300-350 μm thick. *Asci* pedicellate, 240-280 \times 25-30 μm , cylindrical (fig. 3), octo-sporeous, uniseriate. *Paraphyses* filiform, 3-5 μm thick, hyaline, fusing at the apices to form a pseudoparenchymatous *epithecium*, which resembles *peridium*. *Ascospores* globose to broadly ovoid, 26-30 \times 22-26 μm , including warts, 2-3 μm high, conical to cylindrical (fig. 4).

CÓRDOBA: Carcabuey, Cañasvaldas, hypogeous, under *Quercus ilex* subsp. *ballota*, 5-I-1993, *leg. B. Moreno & J. Gómez*, BM 7, MA-Fungi 38474; *holotypus*.

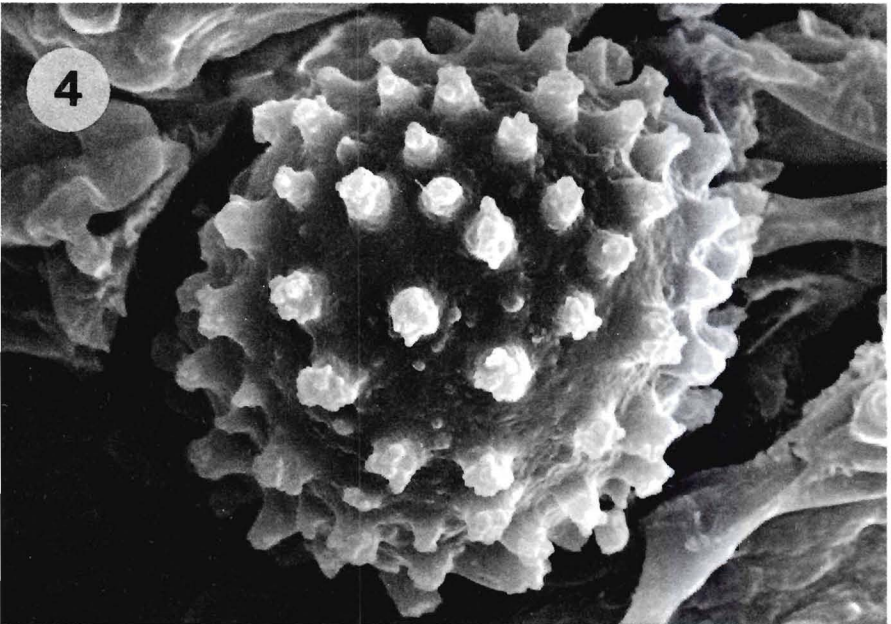
Ecology. All the ascomata studied were growing in calcareous soils, 700-1000 m, always under *Quercus ilex* subsp. *ballota*, aggregated in colonies at about 5 cm depth or under plant debris, from December to March.

Specimens examined. CÓRDOBA: Cabra, El Mojón, 13-II-1993, BM 9; ídem, 19-III-1993, BM 10; ídem, 29-I-1995, BM 191. Carcabuey, Navazuelo, 6-XII-1991, BM 5; ídem, 3-I-1993, BM 6; ídem, 1-I-1994, BM 11. Cañasvaldas, 5-I-1993, BM 7. Priego, Dehesa Vichira, 2-II-1992, JG 61. El Patrón, 16-I-1993, BM 8; ídem, 15-I-1995, BM 190.

In almost all the occasions the collectors have been B. Moreno and J. Gómez. The total number of ascomata collected has been 108, corresponding to 11 collections.

DISCUSSION

After comparing our material with related species, we arrive to the conclusion that there are, at least, two taxa, *Genea verrucosa* Vittad. and *G. thaxterii* Gilkey, which show a clear relationship with *G. subbaetica*. Concerning *G. verrucosa* it



Figs. 3-4.—*Genea subbaetica*: 3, asci with and without spores, and paraphyses (MA-Fungi 38474); 4, ascospore showing typical ornamentation in form of cylindrical to conical-truncate warts (MA-Fungi 38474).

looks very similar to our material when observed macroscopically, but the microscopy is different. According to PEGLER & al. (1993), in *G. verrucosa* the cells of the outer layer of the peridium are $40-80 \times 20-40(60) \mu\text{m}$, and the asci show a dimension of $200-220 \times 26-30 \mu\text{m}$, while in *G. subbaetica* they are $15-30 \mu\text{m}$ diam., and $240-280 \times 25-30 \mu\text{m}$ respectively. On the other hand, *G. verrucosa* fruits in spring and *G. subbaetica* in winter.

Regarding *G. thaxterii*, the main differences are the shape and ornamentation of the spores, which are ellipsoid and covered with hemispherical warts, $2.5-6 \mu\text{m}$ diam. at the base and $1.5-3.5 \mu\text{m}$ high (GILKEY, 1939; VIDAL, 1997). Another close species is *G. harknesii* Gilkey, which differs in having asci with 1 or 2-seriate spores which are covered with semiglobose or truncate warts, and a discontinuous hymenium forming pockets (GILKEY, 1916).

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