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GYROPORUS AMMOPHILUS, A NEW POISONOUS BOLETE FROM THE IBERIAN PENINSULA

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Gyroporus ammophilus, a poisonous bolete occurring in *Pinus* woods on sandy soils along the western Atlantic coast of the Iberian Peninsula, originally published as a variety of *G. castaneus*, is formally raised to the rank of species. The distinguishing characters of *Gyroporus ammophilus* are given against *G. castaneus* (Bull.: Fr.) Quél. The new species causes severe gastroenteritis when consumed.

Along the Atlantic coast of the Iberian Peninsula a bolete has frequently been collected that initially has been identified as *Gyroporus castaneus* (Bull.: Fr.) Quél. However, neither the shape nor the colour of the pileus fit well with the original description (Quélet, 1886), nor with later descriptions by modern authors such as Watling (1970), Gründ & Harrison (1976), Moser (1983), and Alessio (1984). Moreover, several habitual consumers of the edible *Gyroporus castaneus* suffered from strong and long-lasting gastroenteritis (during 6 to 8 days), some hours after they have ingested specimens of this unknown bolete.

A microscopic study of a few specimens proved that our collections were very similar to *Gyroporus castaneus*. After consulting Dr. Alessio, we decided therefore to publish our material on the rank of variety as *G. castaneus* var. *ammophilus* (Castro & Freire, 1989).

However, the analysis of a great number of additional samples, from different populations and during several years, revealed that the shape and size of pleuro- and cheilocystidia, as well as size of the spores differ significantly from those of *Gyroporus castaneus*. Moreover, ammonia applied to the cap cuticle of our taxon produces a positive reaction (reddish brown after 5 min.), in contrast to *Gyroporus castaneus* which does not show any reaction with this reagens. Table I gives a comparison of the diagnostic characters of both species.

The ecology of our taxon is constant as it has always been found along the Atlantic coast on fixed dunes in association with *Pinus* spp., or, less frequently with other trees and shrubs, such as *Quercus suber* and *Cistus salviaefolius*, on sandy soils with great lixiviation and basic pH (up to 9 in water).

For all these reasons we propose here that our material should be considered a species of its own right, different from *Gyroporus casta* , typical of the Atlantic-Mediterranean region of the Iberian Peninsula.

Gyroporus ammophilus (Castro & Freire) Castro & Freire, *comb. & stat. nov.* — Fig. 1

Basionym. *Gyroporus castaneus* var. *ammophilus* M.L. Castro & L. Freire, Anales Jard. Bot. Madrid 45 (1989) 549 (as '*amophilus*').

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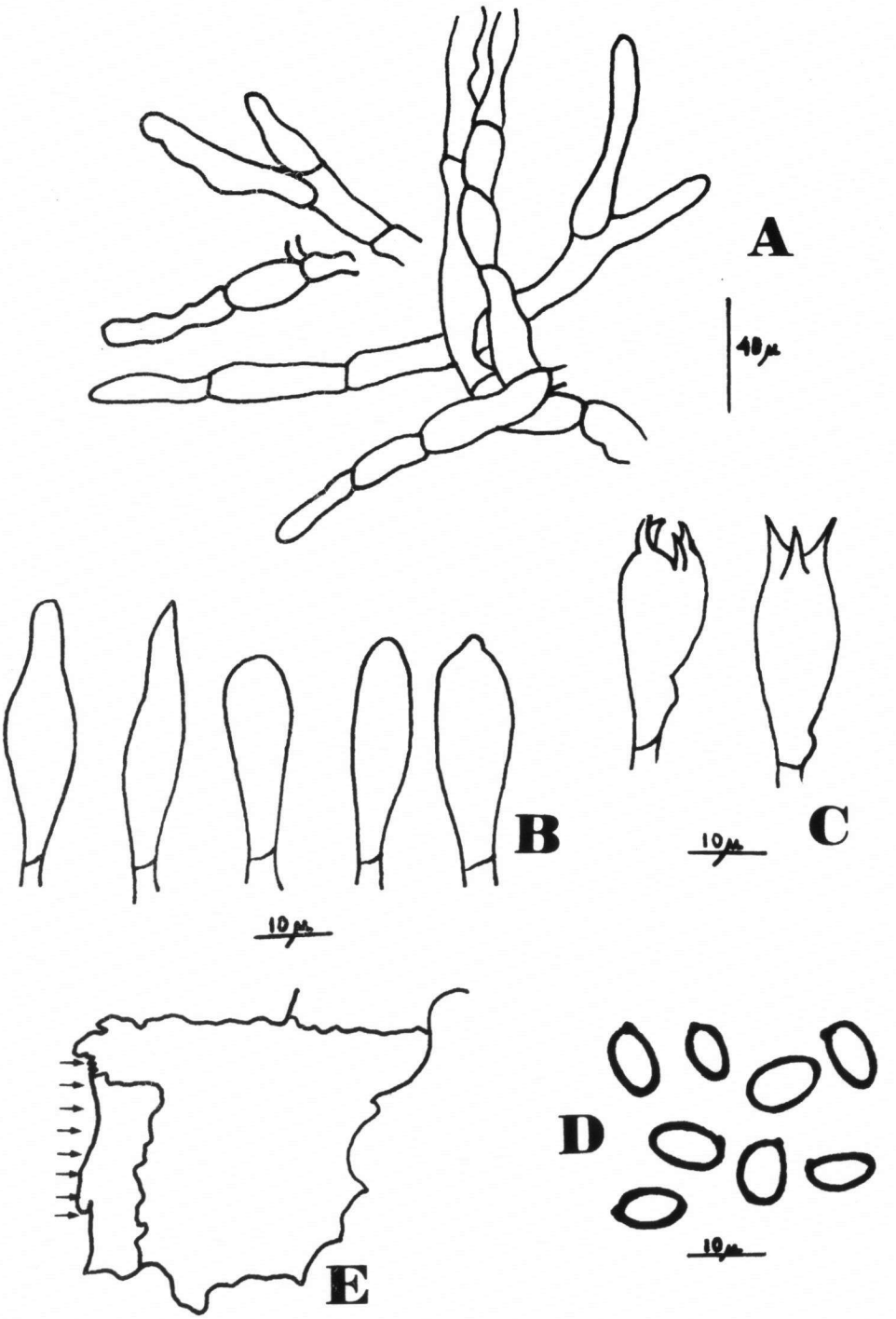

Fig. 1. *Gyroporus ammophilus*. A. Cuticle hyphae; B. cystidia; C. basidia; D. spores; E. distribution map.

Table I. Comparison of the diagnostic characters of *Gyroporus castaneus* and *G. ammophilus*.

	G. castaneus	*G. ammophilus*
Cap	cinnamon to brown, up to 10 cm in diameter	salmon-colour to brown, up to 15(–20) cm in diameter
Stem	brown, solid, then cavernous, finally hollow	salmon-colour, finally brown, solid soon hollow
Tubes and pores	white to straw-colour	salmon to straw-colour, becoming brown in young specimens
Flesh	white or cream-colour, immutable	salmon-colour to pinkish cream, finally bluish
Chemical reaction	cuticle NH_3 negative	cuticle NH_3 positive, reddish brown in 5 min.
Pleuro- and cheilocystidia	capitate or lageniform 25–35 × 5–8(–11) µm	capitate or lageniform, sometimes mucronate 25–30 × 8–11 µm
Spores	8–12(–14) × 4.5–6(–7) µm Q = 1.7–2	8.5–12 × 4–5.5(–6.5) µm Q = 2.1–2.2
Edibility	good	toxic, causing severe gastroenteritis
Habitat	broad-leaved forest, acid soil	coniferous forest, basic sandy soils

Cap up to 15(–20) cm broad, salmon-colour in young specimens, then brown with pink shades, dry, velvety in young specimens, glabrescent with age. Tubes 0.5 cm long, salmon or straw-colour, with concolorous pores, 3–4 per mm. Stem up to 25 cm long and 2 cm thick, irregular and very thick, salmon-colour, turning purple when bruised in young specimens, stuffed at first, but soon becoming hollow. Flesh salmon-colour, not changing colour in contact with air in younger stages, but changing to blue in mature specimens. Smell faint. Taste sweetish.

Spores 8.5–12 × 4–5.5(–6.5) µm, Q = 2.1–2.2, ellipsoid, slightly thick-walled, straw-coloured in water. Basidia 28–35 × 10–15 µm, 4-spored, clamped. Cheilo- and pleurocystidia 25–30 × 8–11 µm, clavate, sometimes mucronate or capitate. Clamp-connections present.

Chemical reactions – Cuticle of cap turns brown red after 5 min. with ammonia.

Habitat & Distribution – In coniferous or mixed coniferous/broad-leaved woods on sandy soil with basic pH, forming ectomycorrhiza with *Pinus* spp. and possibly also with some *Cistaceae* (*Cistus salviaefolius*), *Fagaceae* (*Quercus suber*) and *Ericaceae* (*Erica* spp., *Daboecia cantabrica*). Widely distributed along the Atlantic coast of the Iberian Peninsula, from the Ria de Arousa (Pontevedra, Spain) to the region of Setubal (Estremadura, Portugal).

Toxicity – Causing severe gastroenteritis which increases when consumed for the second time.

Holotype. M.L. Castro & L. Freire, Nov. 1986, Pontevedra, Cangas do Morazo, Barra, Spain (LOU-fungi 5862).

Other collections studied. PORTUGAL: Estremadura, Gambia, 13 Nov. 1991, *Castro & Freire* (LOU-fungi 5150). — SPAIN: Pontevedro, Vilanova de Arousa, O Terrón, 19 Nov. 1983, *Valdés-Bermejo* (LOU-fungi 1019); idem, 14 Dec. 1984, *Valdés-Bermejo* (LOU-fungi 1009); Cangas, Cabo Home, 22 Oct. 1983, *Diz & Grupo Micol. Porriño* (LOU-fungi 1010).

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