

***Rhodogaster calongei* sp. nov. (Basidiomycota), first European record of the secotiaceous entolomatoid genus from northern Spain**

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Based upon material from northern Spain, the new secotioid *Rhodogaster calongei* E. Horak & G. Moreno, previously misidentified as *Rhodogaster chilensis* E. Horak by Calonge & Pasabán (1995), is described and illustrated. The new taxon is the second representative of the genus *Rhodogaster* so far only once reported from the coastal rain forest in Central Chile.

Key words: *Rhodogaster calongei*, chorology, ecology, taxonomy

The genus *Rhodogaster* was originally described by Horak (1964) from the Selva Valdiviana on the Pacific coast in Central Chile. Its only species, *Rhodogaster chilensis* E. Horak (1964), is characterised by secotioid, stipitate basidiomes with typical, loculate and unexposed hymenophore. Prismatic to quadrate basidiospores are born on tetrasporic basidia.

Accordingly, the habit of this taxon indicates morphologically the missing link (Smith, 1973) between the epigaeous agaricoid-lamellate representatives of the genus *Entoloma* (Fr.) P. Kummer (1871) and the hypogeous, secotioid, and stipeless species of the genus *Richoniella* Constantin & Dufour (1891).

Contrarily to the numerous, remarkably polymorphic and widely-distributed species of *Entoloma* in Europe (Noordeloos, 1992), North America (Hesler, 1967; Largent, 1994), South America (Horak, 1977), Africa (Romagnesi & Gilles, 1979), and SE Asia and Australasia (Horak, 1980), the closely related secotioid genera *Rhodogaster* and *Richoniella* (Romagnesi, 1933; Horak, 1980) encompass only one or few taxa with rather unique (as known so far) and distinct distribution patterns.

The material of the new taxon, *Rhodogaster calongei*, is preserved in the Real Jardín Botánico de Madrid (MA-Fungi, 33292), and a duplicate is kept in the Herbarium of Zurich (ZT 5601).

Rhodogaster calongei E. Horak & G. Moreno, sp. nov. (Fig. 1: 1; Fig. 2: 1–2).

Syn.: *Rhodogaster chilensis* E. Horak ss. Calonge & Pasabán 1995. Bol. Soc. Micol. Madrid 20: 277–279 (misident.).

Pileus –30 mm, globosus vel ovatus, secotioideus, griseobrunneus, siccus, innate fibrillosus. Gleba loculosa, rosea, haud exposita. Stipes (columella) –45 × –0.5 mm, normaliter transcurrents, cylindricus, aequalis, pallidus, siccus. Odor saporque nulli. Basidiosporae 6–10 µm, cuboideae. Basidia 4–spora. Cystidia nulla. Peridium ex hyphis cylindraceutis (–3 µm diam.) cutem formantibus, pigmento griseobrunneo incrustatis, radialiter instructis. Fibulae nullae. Ad et in terram in silvis mixtis. Hispania, prov. Guipuzcoa, Tolosa, 29. VII. 1994, leg. Pasabán. Holotypus MA-Fungi 33292.

Etymology. – “*calongei*” – dedicated to the Spanish mycologist Dr. F. D. Calonge (Madrid).

Peridium (pileus) –30 mm, polymorphic, globose, ovoid or turbinate, apex flattened to subdepressed in mature specimens, margin strongly incurved and always clasping the stipe, persistently enclosing the gleba, pale grey-brown, radially innate-fibrillose, dry.

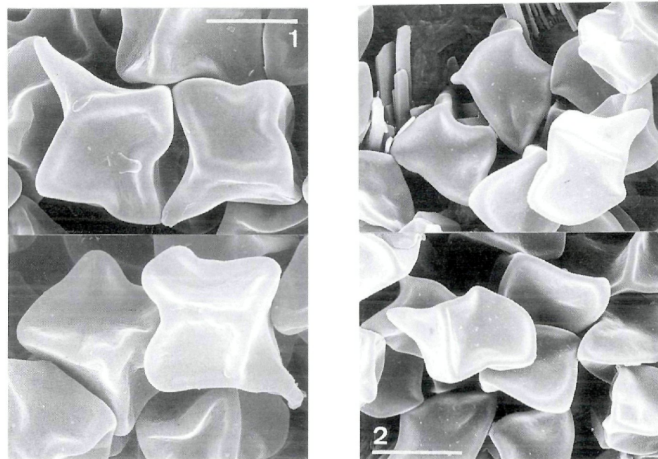


Fig. 1. – SEM photographs of basidiospores. – 1. *Rhodogaster calongei* (holotype). – 2. *Rhodogaster chilensis* (holotype). Bar = 5 µm.

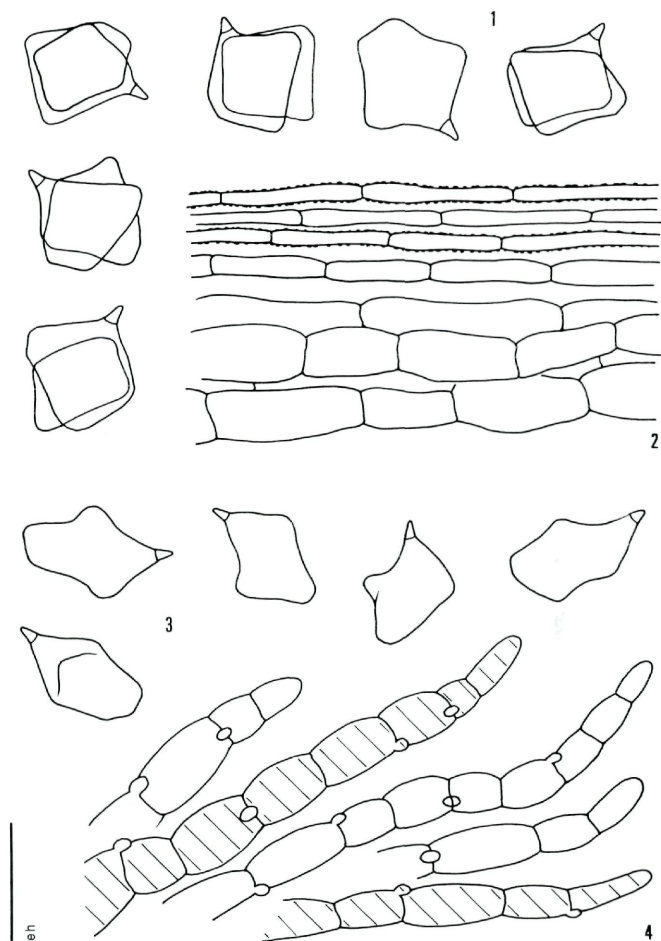


Fig. 2. – Basidiospores and pileipellis. – 1. *Rhodogaster calongei* (holotype). – 2. *Rhodogaster chilensis* (holotype). – Basidiospores: bar = 10 μm . Vertical radial cross section of pileipellis: bar = 20 μm .

– Gleba (lamellae) gyrose to irregularly loculate, pink, not exposed even in aged specimens. – Stipe 45 × 5 mm, transcurrent with columella (but occasionally also absent), cylindrical, equal, pallid to pale grey-brown, smooth to minutely fibrillose, dry, solid, fragile, solitary. – Odor and taste not distinctive. – Context pallid, very fragile both in peridium and stipe.

Basidiospores distinctly cuboid, side length of cube varying from 6–10 µm, occasionally distorted, smooth, with conspicuous apiculus, thin-walled, readily collapsed. – Basidia 22–28 × 8–10 µm, cylindrical to subclavate, 4-spored, sterigmata up to 5 µm long, basal septum clamp-less. – Cystidia absent. – Pileipellis a cutis composed of cylindrical, radially arranged hyphae (3 µm diam.), non-gelatinised walls encrusted with pale grey-brown pigment. Hyphae of subcutis short-cylindrical, up to 25 µm diam. Oleiferous hyphae absent. – Clamp connections absent.

Material examined. – *Rhodogaster calongei* E. Horak & G. Moreno: SPAIN, Prov. Guipuzcoa, Tolosa, Achupia, semihipógeo en suelo calizo, bosque mixto con *Larix*, *Pinus*, *Fagus*, *Acer*, *Quercus*, *Fraxinus*, *Corylus*, 29. VII. 1994, leg. P. M. Pasabán, MA-Fungi 33292, holotype. (Formerly described as “*Rhodocybe chilensis*” Horak ss. Calonge & Pasabán, 1995).

Rhodogaster chilensis E. Horak: CHILE, Prov. Osorno, Pucatrihue, Pacific Rain forest, coastal broad-leaved rain forest dominated by trees and shrubs (Lauraceae, Myrtaceae) and *Chusquea* sp. (Bambuseae), saprobic on soil amongst decayed leaves and litter, 24. IV. 1963, leg. E. Horak (F 39) 63–398 [ZT, holotype; AH 19707, isotype (in Hoyer's medium)].

The new taxon *Rhodogaster calongei* is characterised by its secotiid-stipitate basidiomes. The pileus persistently encloses the labyrinthiform, pink-coloured and non-gelatinised gleba. Accordingly, the isodiametrical, cuboid spores are not actively discharged but are released only during the process of decay of the subhypogaeous basidiomes.

The macromorphological characters of *Rh. calongei* are very close to those reported for the Chilean *Rh. chilensis*, the type species of the genus *Rhodogaster*. The two taxa, however, are readily distinguished by the shape and size of the basidiospores (Fig. 1: 1) and the structure of the pileipellis (Fig. 2: 1, 2). Another microscopical feature separating the two species is the localisation of the pigment being encrusting the walls of the pileipellis hyphae in *Rh. calongei* vs. vacuolar-plasmatic in *Rh. chilensis*. Finally, all septa of the hyphae (including the basal septum of the basidia) are clamp-less in the Spanish *Rh. calongei* whereas in the South American *Rh. chilensis* clamp connections are regularly observed.

Except for the subhypogaeous habit of the basidiomes occurring half buried in duff and litter, the ecology observed on the type lo-

calities of the two taxa is markedly different. *Rh. chilensis* has been found among deep litter and humus in the coastal anectotrophic rain forest (Selva Valdiviana) of Central Chile. The vegetation around the type locality is dominated by trees belonging to the Lauraceae and Myrtaceae with *Chusquea* sp. (Bambuseae) in the under storey.

By comparison, *Rh. calongei* Calonge & Pasabán, 1995; 1996) has been discovered in northern Spain at about 700 m a. s. l. The actual habitat is situated in a mixed forest composed both of conifers (*Larix*, *Pinus*) and broad-leaved trees (*Fagus*, *Acer*, *Quercus*, *Fraxinus*, *Corylus*). No data are available to indicate either ectomycorrhizal or saprobic relationships with the mentioned host plants or their decomposed substrates (rotten wood, bark or foliage) at the site.

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