

# *Hyphoderma etruriae* (Meruliaceae, Basidiomycota): a rare corticioid fungus collected in Macedonia

Mitko Karadelev<sup>1</sup> & Lidija Koteska<sup>2</sup>

<sup>1</sup> Institute of Biology, Faculty of Natural Science and Mathematics, Arhimedova 5, 1000 Skopje, Macedonia, e-mail: mitkok@pmf.ukim.mk

<sup>2</sup> Macedonian Mycological Society, Arhimedova 5, 1000 Skopje, Macedonia, e-mail: lidija-tt@hotmail.com (corresponding author)

Received: November 30, 2012 ▷ Accepted: March 15, 2013

**Abstract.** *Hyphoderma etruriae* has been collected on rotten wood of Greek juniper (*Juniperus excelsa*) in the southeastern part of Macedonia. This very rare species belongs to the family *Meruliaceae* and is known only from Italy.

**Key words:** Basidiomycota, corticioid, Greek juniper, *Hyphoderma etruriae*, Macedonia

---

## Introduction

During field work focused on fungi occurring in around the Chalakli village, a specimen of *Hyphoderma etruriae* Bernicchia has been collected. The species belongs to the family *Meruliaceae* (*Polyporales*). The basidiocarp of the species is resupinate, adnate; hymenophore, whitish to cream coloured, grandinoid, with small sparse granules; the hyphal system is monomitic, hyphae are hyaline and without clamps. Cystidia are tubular and capitate, basidiospores cylindrical-ellipsoid, not staining in Melzer's reagent.

Bernicchia (1993) described this corticioid species collected from the Burano Reserve in Southern Tuscany. The species was found for the first time in the dune area of the reserve, from late autumn to late spring, in a hollow caused by an old wound on dead wood of a living *Juniperus phoenicea* L. According to the known distribution, *Hyphoderma etruriae* is a very rare species, recorded only a few times in Italy from Tuscany, Apulia, Sicily, and Sardinia regions, and growing on *Juniperus macrocarpa* Sibth. & Sm. or *J. phoenicea* (Bernicchia & Gorjon, 2010).

## Material and methods

The relevant morphological and ecological characteristics of the sample have been recorded and the specimen has been photographed in its natural habitat. The sample has been taken to the laboratory for further research. The required macroscopic and microscopic measurements have been obtained by use of a ruler, light microscope and micrometres. Microphotographs have been taken using a LW Scientific microscope and MiniVID camera. The material has been examined under light microscope in Melzer reagent and KOH 5%. Thirty spores have been measured, and the measurements have been done in Melzer's reagent or 5% potassium hydroxide (KOH). Identification has been conducted by referring to Bernicchia and Gorjon (2010). The material has been stored at the Macedonian Mycological Collection (MCF) housed at the Faculty of Natural Sciences and Mathematics in Skopje, Macedonia.

## Results

The material has been collected on rotten wood of *Juniperus excelsa* (M. Bieb.) Ant. from Chalakli village, Vlandovo municipality, situated in the southeastern part of the country (Fig. 1). The forest consists purely of *J. excelsa*. The altitude of the locality where *Hyphoderma etruriae* has been collected is approximately 200 m. The species was collected on 18<sup>th</sup> November 2003.

The fruitbody is fully resupinate, tightly attached to the substrate, effused, cream-coloured, forming thin patches several centimetres large, surface grandinoid with small sparse granules, margin thin, not especially differentiated, effused, byssoid then continuous, cream-coloured (Fig. 2).

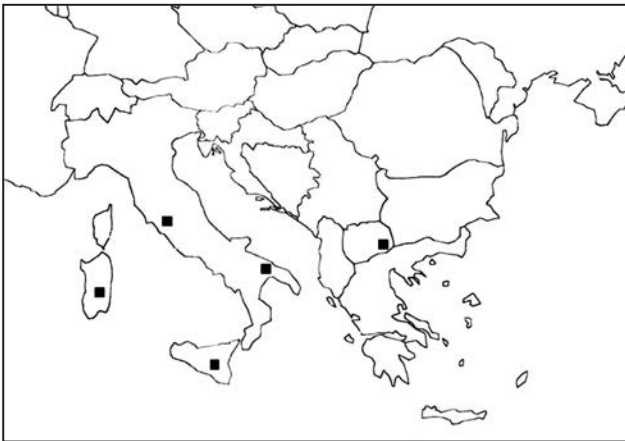


Fig. 1. Map of known distribution of *Hyphoderma etruriae*.



Fig. 2. Fruitbody of *Hyphoderma etruriae*.

The hyphal system is monomitic, the hyphae hyaline, thin-walled, 1–3  $\mu\text{m}$  wide, richly branched and irregularly interwoven, difficult to observe because of the abundant crystalline encrustation. Cystidia usually

in groups, capitate, thin-walled, considerably projecting from hymenophore, lower part of cystidium tubular, 20–45  $\times$  2  $\mu\text{m}$ , apex globose, 4–6  $\mu\text{m}$  in diam. Numerous encrusted hyphal ends in the hymenium and subhymenium, encrusted apical part approximately 11–18  $\mu\text{m}$  long and 3  $\mu\text{m}$  wide. Basidia subcylindrical-clavate 25–39  $\times$  6–8  $\mu\text{m}$ , filled with oily substance, with four sterigmata, without a basal clamp. Spores cylindrical-ellipsoid, smooth, thin-walled, hyaline, with oil drops or irregular oily bodies in the protoplasm, not staining in Melzer's reagent (Fig. 3).

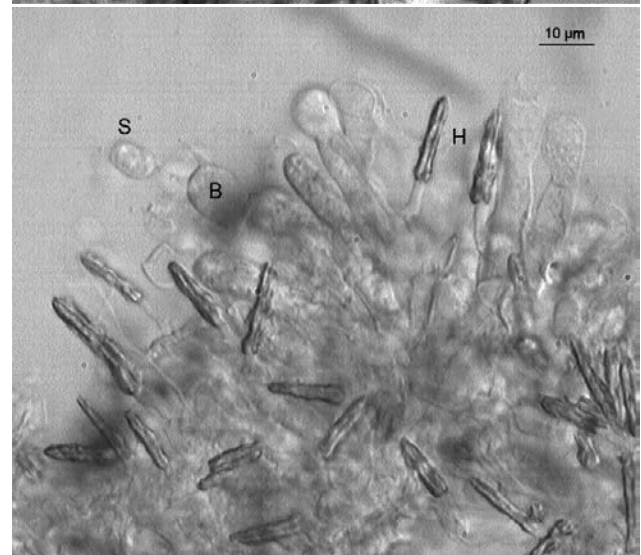
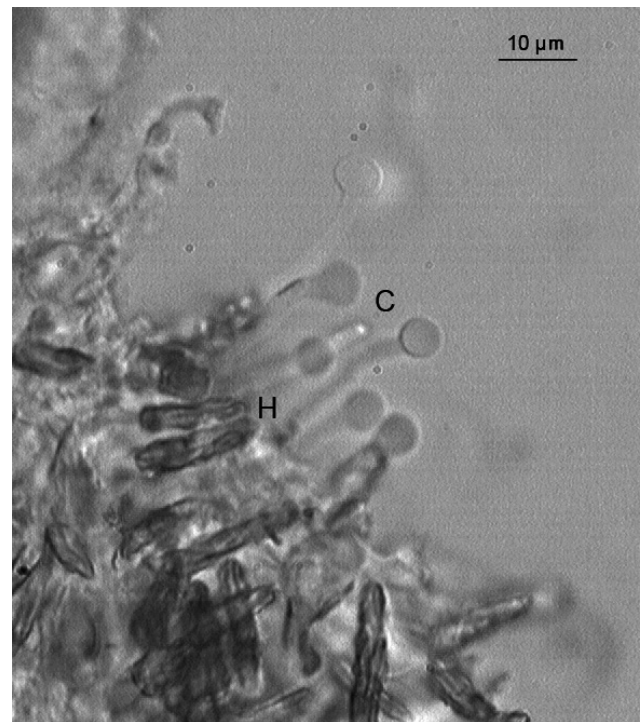


Fig. 3. *Hyphoderma etruriae* – microscopic features: B) Basidia, C) Cystidia, H) Hyphal ends, and S) Spore.

**Spore dimensions of the studied specimen ( $\mu\text{m}$ ):**

L	L*	W	W*	Q	Q*
8.8–14.7	11.8	4.9–6.9	5.9	1.8–2.1	2

L = length; W = width; Q = range of variation in L/W ratio; L\* = mean length; W\* = mean width; Q\* = quotient of the mean spore length and mean spore width.

*Hyphoderma etrusciae* differs from the other species of the same genus by its grandinioid hymenophore, capitate cystidia, encrusted cystidial hyphal ends and cylindrical ellipsoid spores. According to Bernicchia

(1993), it is a well-distinguished species, microscopically similar only to *Hyphoderma orphanellum* (Bourdot & Galzin) Donk.

**References**

- Bernicchia, A.** 1993. *Hyphoderma etrusciae* sp. nov. (*Corticaceae*, *Basidiomycetes*) from the natural reserve of Burano, Italy. – *Mycotaxon*, **46**: 37-40.
- Bernicchia, A. & Gorjon S.P.** 2010. *Corticaceae* s.l. *Fungi Europaei* n° 12. Edizioni Candusso, Italia.

