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Three new macrofungi records for Turkey

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Abstract: *Scotomyces subviolaceus* (Peck) Jülich, *Geoglossum lineare* Hakelier, and *Chlorencoelia versiformis* (Pers.) J.R.Dixon were recorded for the first time in Turkey. The new taxa are described and illustrated. *Scotomyces Jülich* and *Geoglossum* Pers. are also new records at genus level.

Key words: New records, *Scotomyces*, *Geoglossum*, *Chlorencoelia*, Turkey

1. Introduction

Muğla Province is located in south-west Turkey and possesses a Mediterranean climate. *Pinus brutia* Ten., *P. pinea* L., and *Quercus* L. spp. in particular are very common in the region. Sivas Province is located in Central Anatolia and has a terrestrial climate. Sivas is in the Irano-Turanian floristic region and has a high endemism ratio. Because of the suitable climate and the type of vegetation, Muğla and Sivas have a rich macromycota.

It is known that studies about Turkish mycota are being conducted. However, not all of the fungal diversity in different parts of Turkey has been determined. As long as field works increase, the number of new records will rise simultaneously (Akata et al., 2011; Allı et al., 2011; Castellano & Türkoğlu, 2012; Doğan et al., 2012). By these kinds of studies Turkey's biological diversity will be presented. The aim of the present study was to add to the knowledge of Turkey's mycota by new macrofungal records.

The materials for the present study were collected in 2011 during routine field trips in Muğla and Sivas. After an investigation in the laboratory and fungarium, *Scotomyces subviolaceus*, *Geoglossum lineare*, and *Chlorencoelia versiformis* were identified. In the light of the current literature on Turkish macrofungi (Solak et al., 2007; Sesli & Denchev, 2008), *Scotomyces* and *Geoglossum* are new genera and *C. versiformis* is a new species record for the Turkish mycota. The identified specimens are kept at the fungarium of Muğla University.

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2. Descriptions of taxa

2.1. Helotiales

2.1.1. Geoglossaceae Corda

2.1.1.1. *Geoglossum* Pers.

Fruiting body clavate, black or dark brown, dry or viscid, with a wide compressed head. Stem smooth, not split up to head. Spores hyaline to dark brown, septate or not, clavate, cylindrical, or subfusoid. Asci 8-spored, sometimes 4–6 spored. Paraphyses curved or straight, apical cells swollen, agglutinated in a brown substance. Grows in dunes, meadows, bogs, grassland, forests, near roadsides, on soil and mosses, or among debris. Summer to autumn (Hansen & Knudsen, 2000).

2.1.1.2. *Geoglossum lineare* Hakalier (Figure 1).

Fruiting body up to 4 cm, narrowly cylindrical, black. Stem smooth, viscid. Spores 40–66 × 4.5–6 µm, hyaline, guttulate, not septate when young. Septate, pale brown when old. Asci 130–150 × 13–15 µm. Paraphyses straight, sparsely septate, apically enlarged. In mixed forest, in pasture (Hansen & Knudsen, 2000).

Sivas: Yıldızeli, Karalar village, Gökçebel, 06.07.2011, on soil, *H.Güngör* 134.

2.1.2. Hemiphacidiaceae Korf

2.1.2.1. *Chlorencoelia versiformis* (Pers.) J.R.Dixon (Figure 2).

Fruiting body 0.5–1.5 cm across, turbinate, shallow cup-shaped to funnel-shaped, becoming convex-expanded to flattened and undulating. Hymenium smooth, dull, velvety,

Figure 1. *Geoglossum lineare.* a- fruit body, b- ascospore, c- ascus, d- paraphyses.

olive-yellow to olive-green, tapering into a short stalk. Margin turned up or over according to stage of maturity. Stalk 2–5 × 0.5–1 mm and sometimes eccentrically attached. Spores 9–13 × 3–3.5 µm, cylindrical-oblong to allantoid with rounded-off ends, straight or slightly curved, smooth, colourless, occasionally with 2 drops. Asci 80–100 × 7–8 µm, 8-spored. Paraphyses 2-µm thick, cylindrical (Hansen & Knudsen, 2000; Gibson, 2007). Excipulum has slightly clavate end cells in palisade-like arrangement. Fruiting body superficial, single to gregarious, on decayed wood of conifers and hardwoods, fruiting in summer and autumn, most often in autumn.

Muğla: Köyceğiz-Ortaca road, 3 km, 20.02.2011, on *Liquidambar orientalis*, *H.Güngör* 74.

2.2. Cantharellales

2.2.1. Ceratobasidiaceae G.W.Martin

2.2.1.1. *Scotomyces* Jülich

Fruiting body fully resupinate, greyish olive to dark gray-violet, 0.2–0.5 cm thick. Powdery, soft, and membranaceous. *Scotomyces* is a monotypic genus characterised by its non-agglutinated hyphae with clamp connections and vertically branching hymenium. Genus is saprophytic under trunks of decaying plant remains. Spores smooth, light brown to dark brown. Hyphal system monomitic. Genus is easily recognised by its long sterigma (Ellis & Ellis, 1990).

2.2.1.2. *Scotomyces subviolaceus* (Peck) Jülich (Figure 3). Fruiting body 0.5 cm thick, several cm in extent, fully

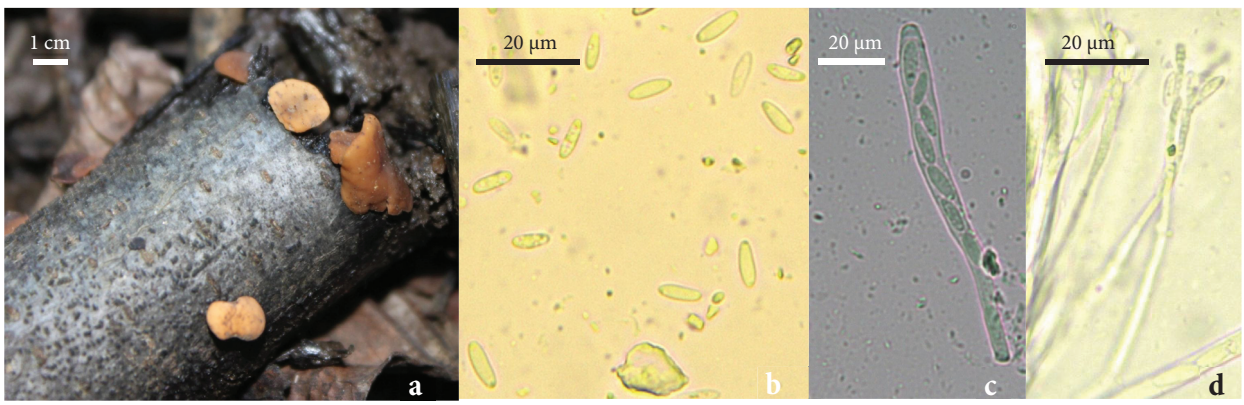

Figure 2. *Chlorencoelia versiformis.* a- fruit body, b- ascospores, c- ascus, d- paraphyses.

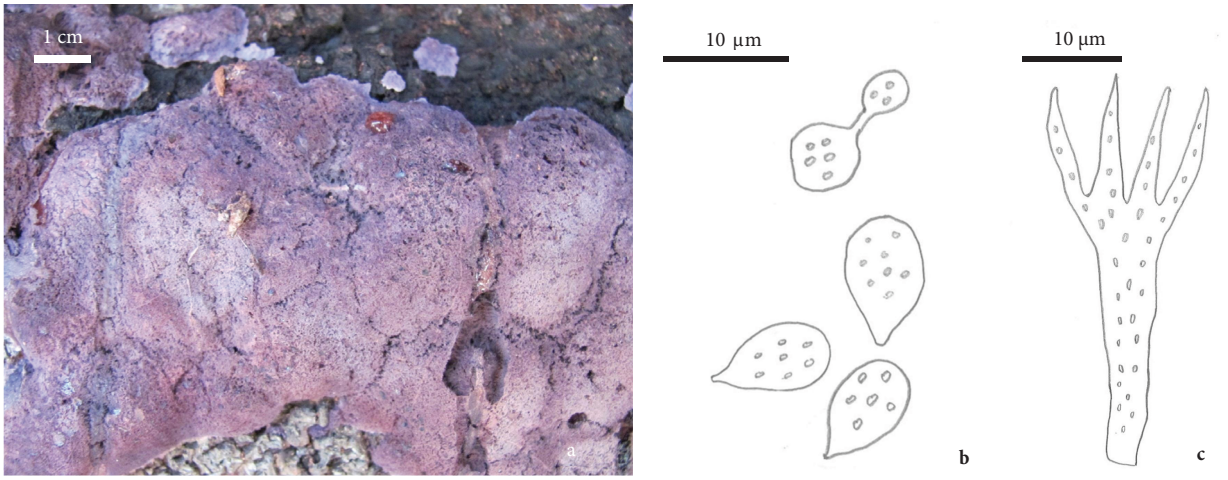

Figure 3. *Scotomyces subviolaceus.* a- fruit body, b- basidiospores, c- basidium.

resupinate, loosely attached to substrate, greyish olive to dark gray-violet, dusty, velvety when dry. Subhymenium and subiculum layered. When young, fruiting bodies are very thin and not layered. Initial phase arachnoid. Spores 6–9 × 4–5 µm, broadly elliptical, subglobose, hyaline to brownish with granules and guttules on a long sterigma. Hyphae hyaline to brownish with clamp connections. Taxon is saprophytic under trunks and branches lying on the ground and rotten plant debris (Breintenbach & Kränzlin, 1986; Ellis & Ellis, 1990).

Muğla: Fethiye, İnlice village, 20.02.2011, on *Liquidambar orientalis, H.Güngör* 22.

3. Discussion

This study presents 3 macrofungi recorded for the first time in Turkey: *Geoglossum lineare*, *Cholorencoelia versiformis*, and *Scotomyces subviolaceus.* All samples are reported from the provinces of Muğla and Sivas.

S. subviolaceus is a unique species of the genus *Scotomyces* (Index Fungorum, www.speciesfungorum.org, accessed 20 June 2011). Long and hydra-like sterigmata on the basidia are characteristic of the species.

Geoglossum species are called earthtongues because of the slightly expanded, somewhat tongue-like region at the apex. Members of this genus are differentiated from other members of the family by absence of setae in their hymenium. Important diagnostic characters are septa in the ascospores, and the nature and shape of the paraphyses. They are the most populous taxa in the family and especially grow in alpine regions (Dennis, 1981).

The excipulum structure of *C. versiformis* shows certain affinity with species of the tribe Encoelioideae.

C. versiformis and *S. subviolaceus* are collected from *L. orientalis* Mill. forest, which is relict endemic species for Turkey. We conclude that we need more studies on Turkish macromycota.

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