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Research Note

New Records in *Coprinaceae* and *Bolbitiaceae* from Mut (Mersin) District

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Abstract: As a result of taxonomic investigations carried out in the Mut (Mersin) district, 9 species belonging to 2 families (*Coprinaceae* and *Bolbitiaceae*) are recorded for the first time for the macrofungi flora of Turkey. These species are *Psathyrella badiophylla*(Romagn.) Park.-Rhodes, *P. bifrons* (Berk.) Smith, *P. cernua* (Vahl: Fr.) G.Hirsch, *P. murcida* (Fr.) Kits van Wav., *Agrocybe splendida* Clç., *Conocybe subpubescens* P.D.Orton, *C. fuscimarginata* (Murr.) Sing., *C. tenera* (Schaeff.: Fr.) Fay. and *Pholiotina aporos* (Kits van Wav.) Clç.

Key Words: New records, Basidiomycetes, macrofungi, Mut, Turkey.

Mut (Mersin) Yöresinden *Coprinaceae* ve *Bolbitiaceae*'den Yeni Kayıtlar

Özet: Mut (Mersin) yöresinde yapılan taksonomik araştırmalar sonucu, iki familyaya (*Coprinaceae* ve *Bolbitiaceae*) ait dokuz tür Türkiye makrofungus florası için ilk kez kayıt edilmiştir. Bu türler *Psathyrella badiophylla*(Romagn.) Park.-Rhodes., *P. bifrons* (Berk.) Smith, *P. cernua* (Vahl: Fr.) G.Hirsch., *P. murcida* (Fr.) Kits van Wav., *Agrocybe splendida* Clç., *Conocybe subpubescens* P.D.Orton, *C. fuscimarginata* (Murr.) Sing., *C. tenera* (Schaeff.: Fr.) Fay., *Pholiotina aporos* (Kits van Wav.) Clç. dur.

Anahtar Sözcükler: Yeni kayıtlar, Basidiomycetes, makrofunguslar, Mut, Türkiye

Introduction

Turkey has a very rich plant flora and its deciduous and coniferous forests are in particular very productive and suitable for macrofungi growth. Macrofungi species grow in saprofitic, parasitic and mycorrhizal forms in these forests. Approximately 1000 macrofungi species have so far been identified in Turkey. However, there are many regions which have not been studied yet. For this reason the macrofungi flora of Turkey is not complete. The aim of this study is contribute to this macrofungi flora. In this respect 9 *Basidiomycetes* species belonging to 2 families (*Coprinaceae* and *Bolbitiaceae*) collected during field trips in 1999-2001, have been investigated. In the light of the literature on Turkish macrofungi flora (Işıloğlu & Watling, 1992; Işıloğlu & Öder, 1995; Kaşık & Öztürk, 2000; Kaşık et al., 2000; Öztürk et al., 2000), these species have been identified as new records for the Turkish macrofungi flora.

Materials and Methods

The materials for this study were collected on field trips carried out in the environs of Mut between 1999 and 2001. The habitat and morphological characteristics of the macrofungi in the localities were recorded and photographed for diagnosis. Spore prints were obtained and microscopic studies were made using a research microscope in the laboratory. Spores were drawn with 10 x 40 enlargement. For each species, a diagnosis was prepared using the habitat, morphological and microscopic characteristics. Species were identified with the help of the literature (Watling, 1973,1982; Phillips, 1981; Michael et al., 1983-1987; Moser, 1983; Grünert & Grünert, 1984,1991; Hennig & Kreisel, 1987; Breitenbach & Kränzlin, 1991,1995; Dähncke, 1993; Pacioni, 1993; Pace, 1998).

The specimens are kept at the Selçuk University Mushroom Application and Research Centre Fungarium in Konya.

Results

Coprinaceae

1. Psathyrella badiophylla (Romagn.) Park.-Rhodes *Bull. Mens. Soc. Linn. Lyon*, 21: 155 (1952).

Macroscopic features

Pileus 0.5-2 cm across, conical-campanulate when young, then campanulate to campanulate-convex (Figure 1), surface smooth, dull, reddish-ochre, brown when young, pallid-tawny to almost whitish when dry. Flesh light to dark brown, thin, odour pleasantly polyporoid, taste mild. Lamellae whitish grey when young, then turning deep brown to tobacco brown-cinnamon brown, broadly adnate. Stipe 2-5.5 x 0.1-0.2 cm, cylindrical, whitish-cream, surface thin longitudinally fibrillose, fragile.

Figure 1. Basidiocarps of *Psathyrella badiophylla* (1/1 life size).

Microscopic features

Spores 10-14 x 5-6 µ, elliptic, smooth (Figure 2), dark red-brown, with a germ pore.

Figure 2. Basidiospores of *Psathyrella badiophyll*a.

Distribution

Sertavul village, in walnut orchard as gregarious, 1500 m, 04.05.2000, Doğan, Öztürk, Kaşık 553.

2. Psathyrella bifrons (Berk.) Smith *Contr. Univ. Mich. Herb.,* 5:40 (1941).

Macroscopic features

Pileus 1.3-3 cm across, conical-campanulate when young, then campanulate to campanulate-convex (Figure 3), surface smooth, dull, hygrophanous, ochre-brown with a faint purple or grey tint when moist, with an (orange) ochre-brown centre, pale ochre to cream-beige when dry, marginal zone paler to whitish, margin acute, with fugacious velar fibrils attached to it when very young. Flesh light to dark brown, thin, odour pleasantly polyporoid, taste mild. Lamellae grey-white when young, dark purple-brown when old, ascending and broadly adnate, edges whitish-ciliate. Stipe 4-8 x 0.2-0.4 cm, cylindrical, slightly tapered toward the apex, solid when young, hollow when old, fragile, surface indistinctly longitudinally white-fibrillose on a whitish background, satiny, apex white-powdered, base slightly white-tomentose.

Microscopic features

Spores 11-14.5 x 6-8 µ, elliptic (Figure 4), dark red-brown, with a germ pore.

Distribution

Sertavul village, in walnut orchard as gregarious, 1500 m, 04.05.2000, Doğan, Öztürk, Kaşık 554.

Figure 3. Basidiocarps of *Psathyrella bifrons* (1/1 life size).

Figure 4. Basidiospores of *Psathyrella bifrons*.

3. **Psathyrella cernua** (Vahl: Fr.) G. Hirsch *Wiss. Z. Friedrich-Schiller-Univ.Jena, Math.-Naturwiss. Reihe*, 33:815 (1984).

Macroscopic features

Pileus 1.5-3.5 cm across, hemispherical when young, then convex to plane and sometimes irregular in shape (Figure 5), centre with an obtuse umbo, surface strongly hygrophanous, dull, smooth, dark grey-brown with a reddish tone and translucent-striate up to halfway to the centre when moist, light cream-coloured to almost whitish when dry, margin smooth when young, undulating when old. Flesh whitish to grey-brown, thin, odour spicy, taste mild. Lamellae whitish when young, then light grey-brown to dark red-brown, broadly adnate, some with a small decurrent tooth, edges finely whitish-to brownish-floccose. Stipe 2.5-7 x 0.2-0.5 cm, cylindrical, often bent, solid when young, hollow when old, rigid, fragile, surface smooth, satiny, finely longitudinally white-fibrillose on a whitish to light dingy yellowish background, apex white-powdered.

Figure 5. Basidiocarps of *Psathyrella cernua* (1/1 life size).

Microscopic features

Spores 7-8 x 4-5 µ, elliptic, smooth (Figure 6), reddish-brown, with a germ pore.

Figure 6. Basidiospores of *Psathyrella cernua.*

Distribution

Dağpazarı village, under poplar stumps, 1500 m, 25.05.2000, Doğan, Öztürk, Kaşık 712.

4. **Psathyrella murcida** (Fr.) Kits van Wav. *Persoonia,* Suppl., 2: 281 (1985).

Macroscopic features

Pileus 2-4 cm across, conical-campanulate when young, then convex to almost plane, with an obtuse umbo (Figure 7), surface dull, smooth to somewhat radially wrinkled, when moist dark red-brown, sometimes with a grey-blackish tinge, margin paler and translucent-striate up to halfway to centre, with white velar fibrils when very young, pileus becoming a warm, pale ochre-brown from the centre outward when drying. Flesh whitish to grey-brown, thin odour faintly polyporoid, taste mild to slightly astringent. Lamellae beige-brown when young, then increasingly dark grey-brown, broadly, adnate, edges smooth. Stipe 2-8 x 0.2-0.8 cm, cylindrical, enlarged toward the base, hollow, rigid, fragile, surface white to yellowish and entirely white-fibrillose, apex white-pruinose.

Figure 7. Basidiocarps of *Psathyrella murcida* (1/2 life size).

Microscopic features

Spores 8.5-12 x 5-7 µ, elliptic, smooth (Figure 8), dark reddish-brown, with a germ pore.

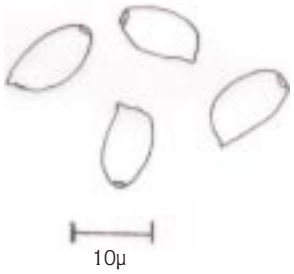

Figure 8. Basidiospores of *Psathyrella murcida*.

Distribution

Ten kilometres along the Gülnar road, in mixed oak and pine forest, 1050 m, 10.04.1999, Doğan, Aktaş 82, Göksu village, in pine forest, 450 m, 18.05.2001, Doğan, Öztürk, Kaşık 1216.

Bolbitiaceae

5. Agrocybe splendida Clç. *Nova Hedwigia*, 28: 1, (1976).

Macroscopic features

Stipe 0.5-2(3) cm across, hemispherical when young, then convex to plane, centre sometimes depressed or slightly umbonate (Figure 9), surface lubricous and ochre- to gold-yellow when moist, silky and cream-coloured to light yellow with a darker centre when dry,

Figure 9. Basidiocarps of *Agrocybe splendida* (1/1 life size).

margin with whitish velar fibrils when young, acute, smooth. Flesh whitish, thin, odour farinaceous, taste mild, faintly rancid. Lamellae beige when young, then increasingly dark tobacco-brown, ascending broadly adnate with a small decurrent tooth, edges whitish-floccose. Stipe 4-7 x 0.2-0.4 cm, cylindrical, base at times somewhat enlarged, solid when young, hollow when old, stiff, elastic, entire surface whitish-fibrillose-floccose on a beige to light brownish background, without an annular zone, apex white-powdered, base sometimes with white mycelium.

Microscopic features

Spores 13.5-16.5 x 8-10.5 µ, elliptic, smooth (Figure 10), light red-brown, thick-walled, with a germ pore.

Figure 10. Basidiospores of *Agrocybe splendida*.

Distribution

Dağpazarı village, on grass outside pine forest, 1500 m, 18.05.2000, Doğan, Öztürk, Kaşık 120.

6. Conocybe subpubescens P.D.Orton *Trans. of British Mycol. Soc.*, 43: 195, (1960).

Syn: *Conocybe cryptocystis* (Atk.) Sing.

Macroscopic features

Pileus 1-2.5 cm across, conical campanulate (Figure 11), surface smooth, hygrophanous, bright ochre-rust brown, strongly sulcate. Flesh cream whitish, thin, odour or smell not distinctive. Lamellae cream-coloured when young, then cream-ochre to rust-brown, finely adnexed, edges smooth to whitish-flocculose. Stipe 8-10 x 0.1-0.2 cm, cylindrical, stipe base bulbous and base with whitish mycel, very heavily downy-hairy, rust brown.

Figure 11. Basidiocarps of *Conocybe subpubescens* (1/1 life size).

Microscopic features

Spores 10-16(17) x 6-9 µ, elliptic, smooth (Figure 12), rust-brown, thick-walled, with a germ pore.

Distribution

Gökçetaş village, Sumakkuşağı plateau, in cedar forest, 1700 m, 04.05.2000, Doğan, Öztürk, Kaşık 543.

7. Conocybe fuscimarginata (Murr.) Sing. Nova Hedwigia, 29: 210, (1969).

Figure 12. Basidiospores of *Conocybe subpubescens*.

Macroscopic features

Stipe 1-3 cm across, hemispherical when young, then campanulate-convex (Figure 13), surface smooth to finely radially veined-wrinkled, dingy beige to grey-beige when moist and yellowish-cream when dry, sometimes with a somewhat darker centre and a tinge of salmon, dull to satiny, margin acute. Flesh ochre-brown, thin, odour herbaceous, taste mild. Lamellae cream-coloured when young, then cream-ochre to rust-brown, finely adnexed, edges smooth to whitish-flocculose. Stipe 4-8 x 0.15-0.3 cm, cylindrical, at times somewhat enlarged toward the base with a small bulb, fragile, hollow, surface white to cream-coloured, pale brown in age, especially toward the base, satiny, slightly longitudinally fibrillose.

Microscopic features

Spores 10.5-12.5 x 6.5-8 µ, elliptic, smooth (Figure 14), rust-brown, thick-walled, with a germ pore.

Distribution

Dağpazarı village, on goat manure, 1500 m, 25.05.2000, Doğan, Öztürk, Kaşık 721.

8. Conocybe tenera (Schaeff.: Fr.) Fay. *Annales des Sciences Naturelles, series*, 79: 357, (1889).

Macroscopic features

Pileus 1-2 cm across, conical when young, then campanulate to convex (Figure 15), surface smooth, dull, rust-brown and translucent-striate almost to the centre when moist, ochre with a darker centre when dry, margin

Figure 13. Basidiocarps of *Conocybe fuscimarginata* (1/1 life size).

Figure 14. Basidiospores of *Conocybe fuscimarginata*.

Figure 15. Basidiocarps of *Conocybe tenera* (1/1 life size).

acute, sometimes dentate. Flesh cream-coloured to ochre, thin, almost odourless, taste mild, not distinctive. Lamellae cream-coloured when young, rust-brown when old, narrowly adnate, edges whitish-floccose. Stipe 4-8 x 0.1-0.2 cm, cylindrical, base slightly bulbous, hollow, fragile, surface smooth, with pale powder toward the apex, light brown when young, then increasingly dark red-brown, especially toward the base.

Microscopic features

Spores 10.5-14 x 5-7 µ, elliptic, smooth (Figure 16), thick-walled, red-brown, with a germ pore.

Figure 16. Basidiospores of *Conocybe tenera*.

Distribution

Dağpazarı village, Söğütözü district, in meadows, 1700 m, 25.05.2000, Doğan, Öztürk, Kaşık 698.

9. Pholiotina aporos (Kits van Wav) Cls. *Schweiz Z. Pilzkunde*, 54: 151, (1976).

Macroscopic features

Pileus 1.5-3 cm across, hemispherical when young, then convex to expanded and somewhat undulating (Figure 17), slightly umbonate in centre, moist red-ochre-brown when moist, at times somewhat darker in the centre, striate halfway to the centre, somewhat butyraceous, beige-brown when dry, barely striate margin acute. Flesh watery grey-to beige-brown, thin, odour like *Pelargonium*, taste mild. Lamellae beige-brown when young, soon brown to dark ochre-brown, finely adnexed, edges white-ciliate. Stipe 3-5 x 0.2-0.5 cm cylindrical, base at times somewhat enlarged or tapered,

Figure 17. Basidiocarps of *Pholiotina aporos* (1/1 life size).

hollow, rigid, elastic, surface above the annulus light beige-brown and faintly longitudinally striate, surface below increasingly brown to dark brown and in part somewhat pale-fibrillose, annulus membranous-tomentose, pendent, white, upper side striate.

Figure 18. Basidiospores of *Pholiotina aporos*.

Microscopic features

Spores 6.5-10 x 4-5 µ, elliptic, smooth (Figure 18), yellow-brown, thick-walled, without germ pore.

Distribution

Göksu village, on grass, 450 m, 18.05.2001, Doğan, Öztürk, Kaşık 1211.

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