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Three New Records for Myxomycetes of Turkey

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Research Note

Three New Records for *Myxomycetes* of Turkey*

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Abstract: This study was conducted to identify the biodiversity of *Myxomycetes* growing in Derebucak (Konya) and Akseki (Antalya) districts. The specimens have been collected periodically during field trips in 2002 and 2004. While 2 samples were treated with the moist chamber cultures method in the laboratory, 1 taxon was determined naturally. The samples grown were observed using stereo and light microscopes. The 3 new records for the *Myxomycetes* in Turkey are as follows: *Cribraria languescens* Rex, *Arcyodes incarnata* (Alb. & Schwein.) O.F.Cook., and *Macbrideola macrospora* (Nann.-Bremek.) Ing.

Key Words: *Myxomycetes*, new records, Turkey

Türkiye'nin *Myxomycetleri* İçin Üç Yeni Kayıt

Özet: Bu çalışma, Derebucak (Konya) ve Akseki (Antalya) bölgelerinde yetişen *Myxomycetes* biyoçeşitliliğinin belirlenmesi amacıyla yapılmıştır. Araştırma materyalleri 2002 ve 2004 yıllarında periyodik olarak gerçekleştirilen arazi çalışmalarında toplanmıştır. Toplanan myxomycet örneklerine ait taksonlardan ikisi laboratuvarda "Nem Odası Tekniği" uygulanarak, bir takson ise doğal olarak gelişmiştir. Gelişimini tamamlayan örnekler stereo mikroskop ve ışık mikroskobu ile incelenerek tayinleri yapılmıştır. Türkiye myxomycetleri için yeni olan bu üç takson şunlardır; *Cribraria languescens* Rex, *Arcyodes incarnata* (Alb. & Schwein.) O.F.Cook. ve *Macbrideola macrospora* (Nann.-Bremek.) Ing.

Anahtar Sözcükler: *Myxomycetes*, yeni kayıtlar, Türkiye

Introduction

This study was based on the specimens collected from Derebucak (Konya) and Akseki (Antalya) districts in 2002 and 2004 (Figure 1).

The first type of the east Mediterranean climate is seen in Derebucak and Akseki. While winter is the rainiest season for the Mediterranean climate, summers are very dry (Akman, 1990).

Forest areas are especially crucial for the development of *Myxomycetes*. Forest environments, composed of mixed and pure conifer and broad-leaved trees such as *Pinus nigra* Arn., *Pinus brutia* Ten, *Abies cilicica* (Antinori & Kotschy) Carrière subsp. *isaurica* Coode & Cullen, *Cedrus libani* A.Rich., and *Quercus* spp. form an important part of the study area (Dural et al., 1995; Duran, 2002).

Some studies were carried out previously by Yağız et al. (2002), and Yağız & Afyon (2003, 2005) in the neighbourhood of the study area.

Related studies (Lado, 1994; Ergül & Dülger, 1999, 2000, 2002a, 2002b; Ocak & Hasenekoğlu, 2003, 2005; Sesli & Denchev, 2005) were reviewed and it was found that new taxa had been found for Turkey. Three taxa were added to the Turkish *Myxomycetes* flora as new records.

Materials and Methods

The specimens were collected from the Derebucak (Konya) and Akseki (Antalya) areas during field trips of 2002 and 2004. The samples come from decaying woods of *Pinus nigra*, *Abies cilicica*, and *Platanus orientalis*. *Myxomycetes* were collected with their substrates when

*This study's abstract was published and its poster was presented in the 18th National Biology Congress.

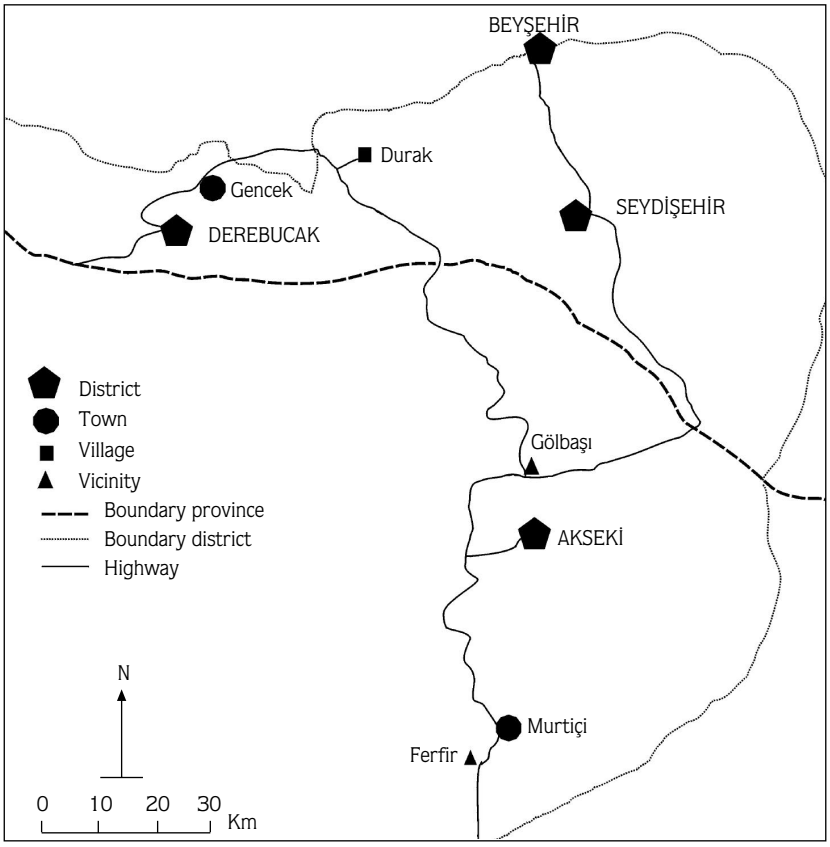


Figure 1. The study area.

they were in a natural sporophore phase. The materials not carrying naturally developed myxomycete sporophore were treated with the moist chamber cultures method, developed by Gilbert & Martin (1933) in order to grow myxomycetes that might potentially develop spores. Microscopic features of the samples were determined in the laboratory. They were identified with the help of Martin & Alexopoulos (1969), Nannenga-Bremekamp (1991), and Neubert et al. (1993). The samples were prepared as herbarium material and stored in the laboratory of Selçuk University, Education Faculty, Science Education Department.

Results

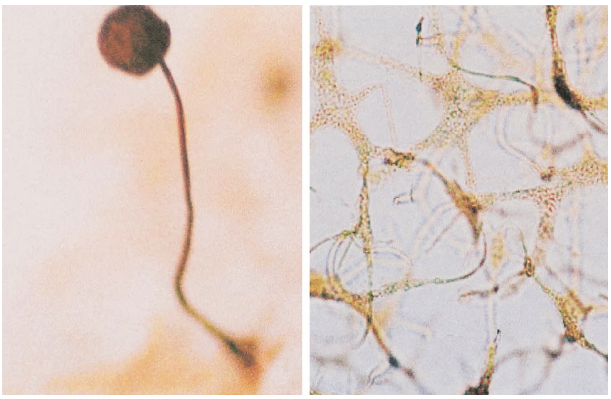
The following 3 taxa are new to Turkey:

Cribrariaceae

1. *Cribraria languescens* Rex

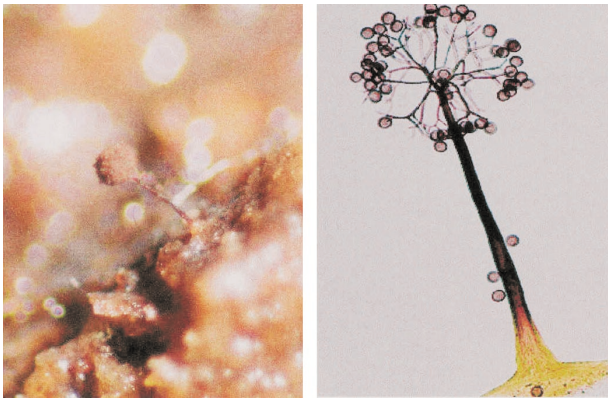
Sporangia scattered, stipitate, small 0.25-0.4 mm in diameter, nut brown, often with lilaceous or purplish tints or shades, to dark purplish brown; stalk concolorous above, darker below, usually long, slender and tenuous, up to 10 times the diameter of the sporangium (Figure 2a); cup usually well developed, occupying the lower third or half of the sporangium, finely ribbed and dotted with dark granules, net varying from open to rather close, the threads slender, with few free ends; nodes large, thickened, flat and angular; dictydine granules pallid to purplish brown 0.3-1.5 µm in diameter; spores dull reddish or copper coloured in mass, pale by transmitted light, globose, nearly smooth, 6-7.5 µm in diameter (Figure 2b).

Lister's illustration is too purple, although some specimens assigned to *C. cuprea* approach it (Martin & Alexopoulos, 1969). In size and general appearance, *C. languescens* overlaps *C. microcarpa*. Both species are rather small, slender, and long-stalked. *C. languescens* has a larger, flatter node and a brown and copper colour as compared with the smaller, more rounded nodes and ochraceous colour of *C. microcarpa*, which is also smaller and with a relatively longer stalk. *C. languescens* always



a b

Figure 2. *Cribraria languescens*: a. Sporangium (×35), b. Net and dictydine granules (×400).



a b

Figure 3. *Macbrideola macrospora*: a. Sporangium (×40), b. Hypothallus, capillitium, and spores (×200).

has a calyculus, which *C. microcarpa* lacks. Instead, *C. microcarpa* includes a disc at the base of the sporangium (Martin & Alexopoulos, 1969).

Konya: Derebucak-Gencek road 5 km, on the wood of *Abies cilicica*, 1220 m, 02.11.2002, DY. 37.

Stemonitidaceae

2. *Macbrideola macrospora* (Nann.-Bremek.) Ing

Sporangia scattered or solitary, stipitate, globose, dark brown, 0.12-0.3 mm in diameter, their total height 0.3-2.0 mm; stalk straight, slender, subulate, translucent, clear brownish yellow below, darker above, arising from a discoid hypothallus (Figure 3a); columella brown, cylindrical, attaining one-third to one-half the height of the sporangium, with a small collar where it meets the stalk, dividing above into the 2 or 3 primary branches of the capillitium; capillitium of dichotomously forking branches terminating in short, rigid, diverging branchlets; spores in mass dark brown; lilac-brown or grey-brown in transmitted light, the wall thinner and paler on 1 side, minutely warted, 12-14 µm in diameter (Figure 3b).

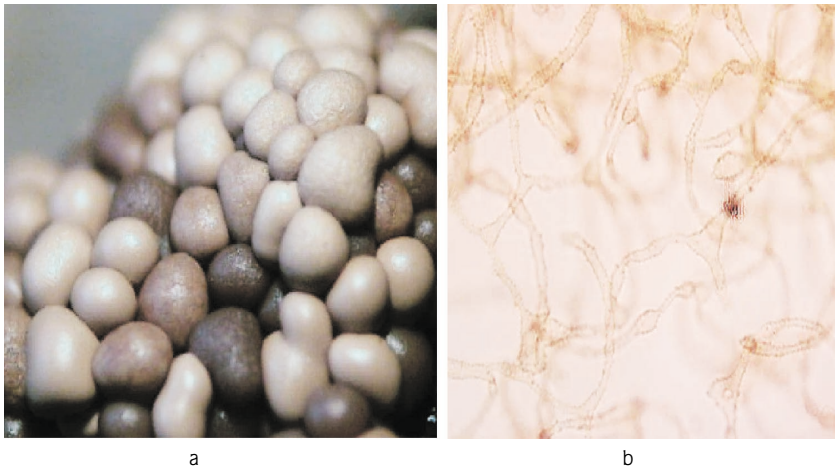
M. macrospora is distinguished with its larger spores from *M. cornea* (Nannenga-Bremekamp, 1991).

Konya: Derebucak; around Durak village, on the wood of *Pinus nigra*, 1400 m, 16.11.2002, DY. 62; Gencek-Derebucak road 5 km, on the wood of *Pinus nigra*, 1220 m, 16.11.2002, DY. 64.

Trichiaceae

3. *Arcyodes incarnata* (Alb. & Schw.) O.F.Cook

Sporangia subglobose (Figure 4a), sessile or with a short stalk, crowded and heaped, rarely somewhat scattered, 0.4-0.8 mm in diameter; pale copper-coloured,



a b

Figure 4. *Arcyodes incarnata*: a. Sporangium (×40), b. Capillitium (×400).

fading dull ochraceous; hypothallus inconspicuous, scanty; peridium membranous, somewhat opalescent, persistent, irregularly dehiscent above; capillitium a non-elastic network of branched and anatomising threads, mostly 3-4 µm in diameter, closely marked with warts and spines, ochraceous in mass, pallid by transmitted light, attached to sporangial wall; spores subglobose or angled by mutual pressure, pale pink or ochraceous in mass, pallid by transmitted light, smooth save for a few scattered warts, 6-8 µm in diameter (Figure 4b).

Arcyodes incarnata is widely distributed but not common in Europe (Martin & Alexopoulos, 1969).

Antalya: Akseki, Murtiçi town, Ferfir road 1 km, 530 m, on the wood of *Platanus orientalis*, 11.12.2004, DY. 117.

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