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## Two New Myxomycetes Records for the Myxobiota of Turkey

Başaran DÜLGER\*

Department of Biology, Faculty of Science & Arts, Çanakkale Onsekiz Mart University, 17020 Çanakkale - TURKEY

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**Abstract:** *Badhamia gracilis* (T.Macbr.) T.Macbr. and *Diderma crustaceum* Peck are recorded for the first time from Turkey.

**Key Words:** Myxomycetes, new records, Turkey

### Türkiye Miksobotası İçin İki Yeni Miksomiset Kaydı

**Özet:** *Badhamia gracilis* (T.Macbr.) T.Macbr. ve *Diderma crustaceum* Peck Türkiye'den ilk kez kaydedilmektedir.

**Anahtar Sözcükler:** Myxomycetes, yeni kayıtlar, Türkiye

#### Introduction

In April 2007, during routine field trips to different localities in Turkey, many samples of Myxomycetes were collected. According to the checklists by Ergül and Dülger (2000), Sesli and Denchev (2005), Dülger (2007) and Yağız and Afyon (2007), *Badhamia gracilis* (T.Macbr.) T.Macbr. (Physaraceae) and *Diderma crustaceum* Peck (Didymiaceae) were new records for Turkey. These taxa were identified with the aid of the literature (Martin & Alexopoulos, 1969; Thind, 1977; Nannenga-Bremekamp, 1991). The specimens cited are deposited in the Herbarium of Çanakkale Onsekiz Mart University in Çanakkale and in the author's personal collection.

#### Results and Discussion

##### Physaraceae

*Badhamia gracilis* (T.Macbr.) T.Macbr., in Macbride & Martin, Myxom. 35.1934. - *Badhamia macrocarpa* var. *gracilis* T.Macbr., N. Am. Slime-Moulds ed. 2. 37. 1922.

Sporangia stalked, subglobose to kidney shaped, 0.5-0.7 mm in diameter, and up to 1.5 mm tall; pale grey. Hypothallus pale yellow, thin. Stalk weak, thin, delicate, often twisted, ochraceous, 1.2 mm tall. Capillitium filled

with white lime, with irregular constrictions and slightly physaroid, reticulate with small meshes, sometimes merged in the middle into a pseudocolumella. Spores in mass black, dark purple-brown in transmitted light, free, globose or somewhat angular, covered with warts or spines and forming a reticulum with 1-6 meshes to the hemisphere, 12-14 µm in diameter (Figures 1 & 2).

**Locality:** Çanakkale, Çan, 39°56'08.9' N, 27°21'10.5' E, alt. 120 m, on bark of *Quercus* sp., 07.04.2007, Dülger 614.

According to Nannenga-Bremekamp (1991), the fine dark lines, which form only a few meshes over the large dark spores and, if stalked, the pale stalks, which are translucent in the upper part, characterise *Badhamia gracilis*, distinguishing it from *Badhamia melanospora* and the occasionally similar *Physarum reniforme* and *P. notabile*. The last 2 taxa also can be differentiated by a physaroid capillitium and smaller spores.

The spore diameter of *B. gracilis* given in the literature varies: Martin and Alexopoulos (1969), Nannenga-Bremekamp (1991), and Ing (1999) give 12-16 µm, but the spore diameter of our specimen was 12-14 µm.

\* E-mail: basarandulger@yahoo.com



Figure 1. Stereomicroscopic image of the sporangium of *Badhamia gracilis*.

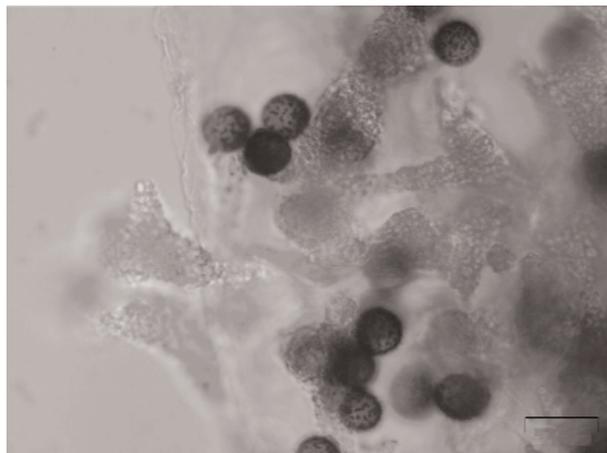


Figure 2. A view of capillitium and spores of *Badhamia gracilis*.

### Didymiaceae

*Diderma crustaceum* Peck, Rep. N. Y. St. Mus. Nat. Hist. 26: 74 (1874);

Synonym: *Chondrioderma crustaceum* (Peck) Berl., in Saccardo Syll. Fung. 7: 373 (1888).

Sporangia crowded, sometimes superimposed, often forming a pulvinate colony, white or pale ochraceous, globose or depressed, often distorted by pressure, 0.3-0.8 mm in diameter on a conspicuous white or creamy hypothallus in which the sporangia are rarely deeply imbedded; peridium double, the outer peridium smooth, chalky, firm, fragile, separated and usually remote from the membranous, blue, iridescent inner peridium; columella small, white, globose or clavate, often lacking; capillitium dark, fading toward tips, rather sparsely branched and with few anastomoses, often with dark accretions on the threads; spores dark, spiny, sometimes appearing subreticulate, 14-15  $\mu$ m in diameter. Plasmodium at first watery, then milky white (Figure 3).

*Locality:* Çanakkale, Çan, 39°56'08.9' N, 27°21'10.5' E, alt. 120 m, on bark of *Abies* sp., 07.04.2007, Dülger 608.

There can be no question that *D. globosum*, *D. crustaceum*, and *D. spumarioides* are much alike in general habit, but examination of a wide range of material shows that the collections fall into 3 groups. The first is characterised by a rather scanty hypothallus, a smooth, calcareous outer peridium that is free and often distant from the grey, membranous, somewhat iridescent



Figure 3. A view of capillitium and spores of *Diderma crustaceum*.

inner peridium, a prominent subglobose columella and small, dark, strongly but sparsely warted spores mostly 10-12  $\mu$ m in diameter. *D. spumarioides* is characterised by very conspicuous limy hypothallus in which the sporangia may be deeply imbedded, with a rough, chalky outer peridium, closely oppressed to the membranous, dull grey inner peridium, a flat, pulvinate, often coloured columella and minutely warted, pale spores mostly 8-11  $\mu$ m in diameter. Our specimen is characterised by a very conspicuous limy hypothallus, with the sporangia superficial or only slightly imbedded in it, with smooth, chalky outer walls remote from the iridescent blue inner peridium, a small, globose or clavate columella that is often lacking and large, dark spiny, sometimes subreticulate spores mostly 14-15  $\mu$ m in diameter. Prematurely dried specimens of *D. spumarioides* may appear to have widely separated peridia.

The most reliable character has been found to be the spore size and spore markings (Martin & Alexopoulos, 1969).

The spore diameter of *D. crustaceum* given in the literature varies: Martin and Alexopoulos (1969) and

Lakhanpal & Mukerji (1981) reported (11-) 12-14 (-15)  $\mu\text{m}$  and 11-12.5 (-15)  $\mu\text{m}$ , respectively. The spore diameter of our specimen was 14-15  $\mu\text{m}$ .

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