International Journal of Botany

ISSN: 1811-9700

science alert

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International Journal of Botany 1 (1): 90-92, 2005
ISSN 1811-9700

A New Variety of *Badhamia* (Myxomycetes) From Turkey

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Abstract: A new variety of myxomycetes, *Badhamia utricularis* var. *microsporus*, is described from Turkey. It differs from *B. utricularis* by small spores. It has been isolated by the moist chamber technique.

Key words: *Badhamia utricularis* var. *microsporus*, Myxomycetes

INTRODUCTION

Studies on the Myxomycetes started at the end of the 18th century in America and until now, approx. 900 species have been identified[1]. But we come across a very scanty data on Turkish Myxomycetes and about 100 myxomycetes species have been reported from Turkey until now[2,3]. In this study, species of myxomycetes were collected in different localities from Turkey. The macroscopic and microscopic features of these species were determined. After referring to the existing records, it was realized that *Badhamia utricularis* var. *microsporus* is a new variety for science.

MATERIALS AND METHODS

The myxomycetes fructification has been obtained by using of the moist chamber technique in the laboratory. Several kinds of plant remains and bark from living trees were kept in an incubator at the temperature of 25±0.1°C illuminated artificially in a 12:12 h light:dark cycle. The cultures were moistened with distilled water adjusted with KOH to pH 7. After two days the pH of the moisture in the dishes was measured with pH sticks. The moist chamber was then examined every second or third days under a dissecting microscope. When developing myxomycetes were found, the moist chamber was allowed to dry slowly and the myxomycetes were then rewetted for another four-week period an examined as before[4,5] .

The specimens are preserved also as permanent slides in Hoyer's medium. Both microscopic and macroscopic observations have been realized for taxonomical approaches. In the meantime, some photographs from characteristic qualitative objects are taken. All data have been evaluated comparatively for taxonomical aims[6].

The myxomycetes specimen was identified with the aid of the literatures listed in the references[6-11].

This specimen is stored at the Herbarium of Canakkale Onsekiz Mart University, Canakkale, Turkey.

RESULTS

Taxonomic position

Regnum	: *Myceteae*
Division	: *Gymnomycota*
Classis	: *Myxomycetes*
Subclassis	: *Myxogasteromycetidae*
Order	: *Pysarales*
Family	: *Physaraceae*

Badhamia utricularis (Bull.) Berk. var. *microsporus* Dulger and Gonuz var. nov.
Differt a varietate *utricularis* sporis maioribus: 5-6 μ diam.

Sporocarps often in large groups, with some with merged stalks and often hanging down in bunches under the substrate; stalked, rarely spherical, usually prolate, pear-shaped, obovate, subcylindrical, usually with a narrowed base and rounded at the apex, 05-0.8 mm in diam., up to 3.0 mm long without the stalks, which are up to five times longer than the sporangium proper and often procumbent; sporangia, blue-gray, often with green, violet and red iridescent colours, veined by the capillitium showing through the peridium, rarely pale grey from impregnated white lime. Hypotallus membranous; brown to ochraceous; not very conspicuous, venulose, gradually merging into the stalks. Stalks weak, membranous, often branched, often prostrate, merging with each other and bearing a cluster of sporangia, straw yellow. Peridium membranous, iridescent, hyaline or white

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Fig. 1: Stereoscopic appearance of sporangia of *Badhamia utricularis* var. *microsporus*

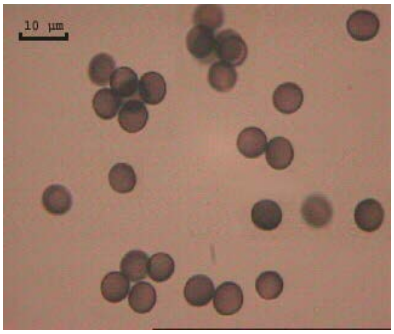

Fig. 2: A microscopical view of spores of *Badhamia utricularis* var. *microsporus*

when empty, smooth or rugulose, covered with a delicate white reticulum from lime granular. Capillitium a rather wide-meshed reticulum of smooth, rather thin tubes completely filled with lime. Spores basely aggregated into readily disintegrating clusters of 3-5 sometimes 7, in mass black or very dark brown, bright violet brown by transmitted light, globose-subglobose, 5-6 µ diam., covered with dark warts or spines, which are slightly more prominent on the outside of a cluster (Fig. 1 and 2).

Locality and habitat: Turkey, Bursa, Uludag-Kirazliyayla, alt. 1450 m, on bark of *Castanae sativa*, 25 September 2001, BD186.

DISCUSSION

Since Gilbert and Martin[4] accidentally discovered that the moist chamber technique was an excellent method for obtaining fructifications of the Standard means for studies and inventories of myxomycetes. It is applicable to almost any kind of substrata but has often been used for bark samples. Moist chamber cultures have yielded sporangia of species too small to be detected in the detected in the field and several new species have been described[12].

Badhamia utricularis slightly resembles *B. capsulifera* and *B. dubia* but these species lack the long membranous stalks and are easy to recognize by the persistent spore clusters and the spores wit their cap of spines. Sometimes *B. foliicola* is similar but this species appears on dead leaves and grass and has a much smaller meshed, more delicate capillitial net, generally consisting of somewhat less smooth tubes which are often slightly physparoid, it also has smaller, free spores[7].

B. utricularis is a very variable species: in colour, form (from almost spherical to long conical), in length and colour of the stalk; the red-brown stalks are usually slim, straight and long, making their flat character not very obvious; also in the shape of the groups, which may hang in bunches under the substrate, or sit crowded on top (with procumbent stalks), or the sporangia may be separate from each other in the groups The loose spore clusters, with slightly irregular shaped spores, are a rather constant character with the exception of the form described as *B. manga* which differs in its typical form but a connected to *B. utricularis* by transitional forms and so is hardly worthy of distinction. The capillitial reticulum of smooth tubes is characteristic of *B. utricularis* but also varies towards the small mesh type of *B. manga* which often show constrictions on the tubes[7].

This variety differs from *B. utricularis* in the spore sizes. The spore diameter of *B. utricularis* given in the literature varies: Martin and Alexopoulos[6], 10-14 µ; Nannenga-Bremekamp[7], (11-)12-14(-15) µ; Farr[9], 9-14 µ; Lakhanpal and Mukarji[10], 11-15.5 µ; Ing[11], 10-14 µ. The spores of variety are 5-6 µ.

In conclusion, the number of known myxomycetes species in the world is 900. Only about taxa have been reported with the moist chamber technique and naturally in Turkey[1-3].

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