



Three new myxomycete records from Turkey

Gönül EROĞLU*, Gıyasettin KAŞIK, Celâleddin ÖZTÜRK

Selçuk University, Science Faculty, Department of Biology, Konya, Turkey

Abstract

This study has been made on the specimens obtained from different study areas in Turkey. One of the new records has been found in the field as sporocarp while the others have been grown by moist chamber culture method. These new records are *Licea testudinacea* Nann.-Bremek., *Didymium vaccinum* (Durieu & Mont.) Buchet., *Physarum famintzinii* (natural) Rostaf.. The new myxomycete records were added to the myxobiota of Turkish.

Key words: Myxomycete, new records, Denizli, Isparta, Konya, Turkey

----- * -----

Türkiye’den üç yeni miksomiset kaydı

Özet

Bu çalışma Türkiye’nin farklı bölgelerinden elde edilen örnekler üzerine yapılmıştır. Yeni kayıtlardan biri arazide sporokarp olarak bulunmuşken diğerleri nem odası kültürü metoduyla geliştirilmiştir. Bu yeni kayıtlar *Licea testudinacea* Nann.-Bremek., *Didymium vaccinum* (Durieu & Mont.) Buchet., *Physarum famintzinii* Rostaf. (doğal) dir. Yeni miksomiset (civıkmantar) kayıtları Türkiye’nin miksobiyotasına eklenmiştir.

Anahtar kelimeler: Miksomiset, yeni kayıtlar, Denizli, Isparta, Konya, Türkiye

1. Introduction

Myxomycetes are defined as eukaryotic microorganisms with a plasmodium as the assimilative stage and a sexually produced resting spore as the propagule (Ing, 1999). *Myxomycetes* (plasmodial slime moulds) are best known from temperate and boreal forests, where they are commonly found in association with decaying coarse woody debris and leaf litter on the forest floor (Martin and Alexopoulos, 1969). The wide range of temperature and precipitation conditions and the irregular topographic structure of Turkey have created a great diversity of ecological conditions. Nevertheless, the number of identified fungi species in Turkey does not show parallelism. In recent years some macrofungi and myxomycete have been added to the Turkish mycobiota by some researchers (Atila and Kaya, 2013; Eroğlu and Kaşık, 2013). To date, only 231 myxomycete taxa have been determined in Turkey (Sesli and Denchev, 2008). However, the number of myxomycete taxa in the world is about 750 but there are approximately 1000 myxomycete taxa recognized up to 2011 (Joshaghani et al., 2013).

2. Materials and methods

The materials appropriate for the growth of myxomycete were collected from different districts in Turkey. Tree bark, leaves, branches, and decayed wood pieces that could host plasmodium or spores were collected. After these materials were taken into the laboratory, moist chamber culture was applied. This technique is highly suitable for the growth of myxomycete. During the culture process the materials were moistened to prevent the myxomycete from drying out and their development was followed by stereomicroscope. The developed myxomycete was extracted carefully from their substrate. The samples were placed on cartons and into boxes of the same size. Photos of sporophore and the microscopic features of the samples were taken. Diagnoses of the samples were carried out using

* Corresponding author / Haberleşmeden sorumlu yazar: Tel.: +903322233462; Fax.: +903322410549; E-mail: contact@gonuleroglu.com.tr

© 2008 All rights reserved / Tüm hakları saklıdır

Nannenga-Bremekamp (1991), Neubert et al. (1993, 1995), and Martin and Alexopoulos (1969) as sources. The myxomycete samples are kept at the Mycological Application and Research Centre Fungarium at Selçuk University.

3. Results

Short descriptions, habitats, localities, collection dates, fungarium numbers (*Fungarium N.*), and images of the taxa are given. As a result of laboratory studies, three new records are listed below. *Licea testudinacea* Nann.-Bremek., *Didymium vaccinum* (Durieu & Mont.) Buchet., *Physarum famintzinii* Rostaf. were added to the myxobiota of Turkish.

Myxomycetes Renault

Liceales E. Jahn

Liceaceae Chevall.

3.1. *Licea testudinacea* Nann.-Bremek.

Fig. 1. a-b

Sporocarp groups, pulvinate, 0.2-0.8 mm in diameter, very dark brown to black with a net of ridges across the surface. Peridium double, pale orange-brown in transmitted light, edges of lobes and the rather small plates with a dense row of knobs on the margin. Spores in mass dark brown, brown-grey in transmitted light, (10-)11-13(-15) µm in diameter, wall thick but with a very conspicuous pale thin germination area occupying about one third of the surface, minutely warted.

Turkey-Isparta, Karacaören, on wood of *Pinus* sp., 198 m, 16.05.2011, *Fungarium N.* 618, *Fungarium N.* 651, *Fungarium N.* 655.

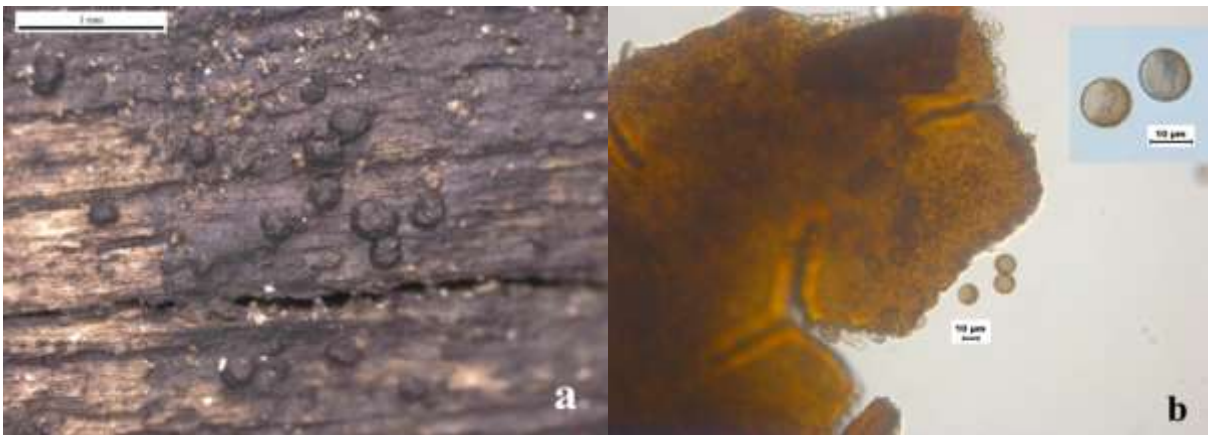


Figure 1. *Licea testudinacea* a- sporocarp, b- peridium and spores

Physarales T. Macbr.

Didymiaceae Rostaf.

3.2. *Didymium vaccinum* (Durieu & Mont.) Buchet

Fig. 2. a-d

Sporocarp groups, usually short stalk, sometimes sessile, the sporangia hemispherical, wide. Stalk up to half the height of the sporocarp and very thick, grooved, limy, ochraceous. Peridium double, the outer layer a smooth lime shell, composed of stellate lime crystals which are equal as large as spore, inner layer colourless. Columella hemispherical, covering more than half of the base, pale ochraceous. Capillitial tubules sparsely branched, colourless, pale yellow-brown, radiating from and connected to the columella. Spores in mass black, dark purple-brown in transmitted light, with a paler area, 9-12 µm in diameter, covered with large dark warts.

Turkey-Konya, Hadim, on wood of *Pinus* sp., 1880 m, 23.07.2009, *Fungarium N.* 67

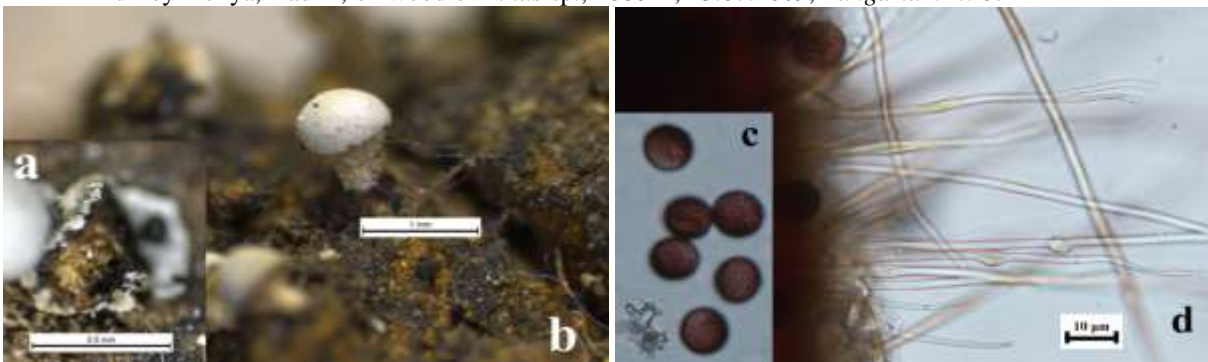


Figure 2. *Didymium vaccinum* a- columella, b- sporocarp, c- spores and stellate lime crystals, d- capillitial tubules connected to the columella and spores

Physaraceae Chevall.

3.3. *Physarum famintzinii* Rostaf.

Fig. 3.a-b

Sporocarp sessile, heaped, rugulose, brownish orange, globose or reniform, about 0.4-0.6 mm in diameter. Peridium is membranous, bearing clustered deposits of yellowish brown lime granules. Capillitium is abundant, elastic, the nodes white, angular and branching. Spores are purplish brown, spinulose, 9-12 µm in diameter.

Turkey-Denizli, Çivril, Hacıgadirler, pine forests, on litter of *Pinus* sp., 840 m, 08.11.2007, *Fungarium* N. 653, (natural).

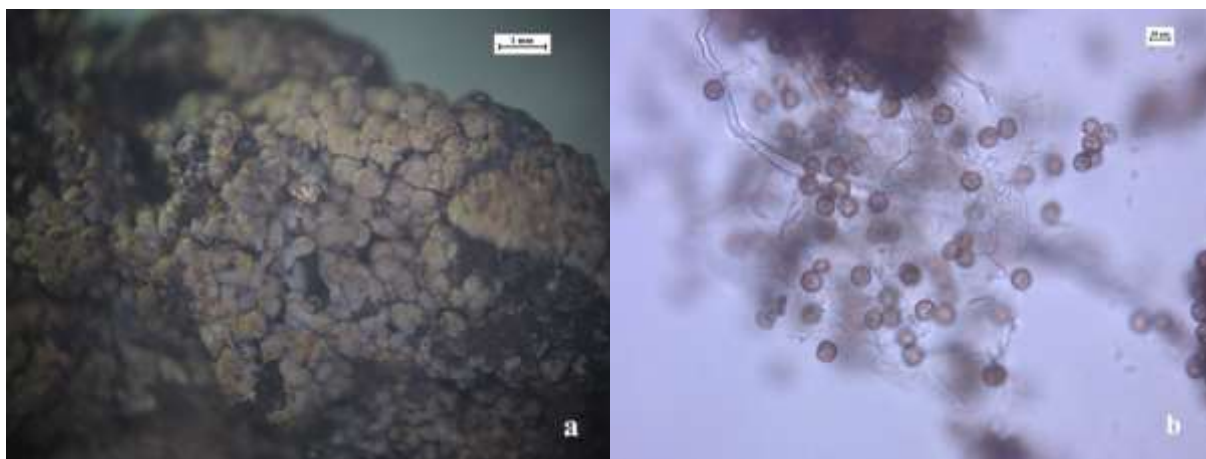


Figure 3. *Physarum famintzinii* a- sporocarp, b- capillitium and spores

4. Conclusions

Licea testudinacea can be distinguished from other *Licea* species by the greyish spores with a large germination pore. *Didymium vaccinum* is easily recognised with a hand lens by the hemispherical sporangia, the thick short stalks and the large convex columella. *Physarum famintzinii* has the heaped sporocarp as *P. confertum* T. Macbr., but with a brownish orange colour is different. As a conclusion of, these new records have distinctive features to facilitate diagnosis.

References

- Atila, O. Y., Kaya, A. 2013. Macromycetes on Sarıkız (Kayseri/Turkey) district. *Biological Diversity and Conservation (BioDiCon)*. 6/2. 50-54.
- Eroğlu, G., Kaşık, G. 2013. Myxomycete of Hadım and Taşkent districts (Konya/Turkey) and their ecology. *Biological Diversity and Conservation (BioDiCon)*. 6/3. 120-127.
- Eroğlu, G., Kaşık, G., Öztürk, C., Aktaş, S. 2014. Karacaören Baraj Gölü (Bucak-Burdur) çevresinden bazı miksomisetler. 22. National Biology Congress Book of Abstract, pp. 1581. 23-27.06.2014, Eskişehir, Türkiye.
- Eroğlu, G., Öztürk, C., Kaşık, G., Aktaş, S. 2011. Some Myxomycetes from Çivril (Denizli-Turkey) province. XVI. Congress of European Mycologists Book of Abstract, pp. 262. Halkidiki, Porto Carras 19-23.9.2011, Thessaloniki, Greece.
- Ing, B. 1999. *The Myxomycetes of Britain and Ireland*. Slough, England: The Richmond Publishing Co.
- Joshaghani, A.A., Falahian, F., Nejadstari, T., Khavarinejad, R.A., Saadatmand, S. 2013. Two new Myxomycetes records for Iran mycoflora. *Pakistan Journal of Botany*, 45(4): 1813-1816.
- Martin, G.W., Alexopoulos, G.J. 1969. *The Myxomycetes*. Iowa City: University of Iowa Press.
- Nannenga-Bremekamp, N.E. 1991. *A Guide to Temperate Myxomycetes*. Bristol: Biopress Limited.
- Neubert, H., W. Nowotny and K. Baumann. 1993. *Die Myxomyceten (Band I)*. Gomaringen: Karlheinz Baumann Verlag.
- Neubert, H., W. Nowotny and K. Baumann. 1995. *Die Myxomyceten (Band II)*. Gomaringen: Karlheinz Baumann Verlag.
- Sesli, E., and C.M. Denchev. 2008. Checklists of the Myxomycetes, larger Ascomycetes, and larger Basidiomycetes in Turkey. *Mycotaxon*, 106: 65–67. + [complete version, 1–138, new version uploaded in January 2013]. Website <http://www.mycotaxon.com/resources/checklists/sesli-v106-checklist.pdf>.

(Received for publication 04 February 2014; The date of publication 15 April 2015)