Mycoscience 38: 87–89, 1997

Short Communication

Myxomycetes from Israel IV

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Accepted for publication 9 January 1997

Ten taxa of myxomycetes growing mainly with *Eucalyptus*, oak and pine are described. They were found in Upper Galilee, Mt. Carmel and Central parts of the country and all are new to Israel.

Key Words——Israel; Myxomycetes; Physarales; Stemonitales; taxonomy.

The present paper is the fourth in the series on various species of myxomycetes collected in Israel. Previous records of these fungi have been given in Ramon (1968) and Binyamini (1986, 1987, 1991). Most collections were made during yearly excursions from November 1991 to March 1992. The species here have not been recorded from Israel and the Eastern Mediterranean. The following descriptions are brief and the nomenclature follows Martin and Alexopoulos (1969). Microscopic structures were studied from fresh material. All collections cited are deposited at the Department of Botany of Tel Aviv University (TAU); herbarium numbers are given in parentheses.

Physarales

Badhamia foliicola A. Lister, J. Bot. **35**: 209. 1897. Figs. 1,2

Sporangia subglobose to ellipsoid, 0.5–0.7 mm in diam, grey to greyish; peridium thin, calcareous, white or hyaline when empty; stipe short, 0.3–0.5 mm long, yellowish; capillitial network with limy tubes; spores free, globose, 10–12 μm in diam, minutely warted, brown in mass; plasmodium yellow.

Specimens examined. Sharon Plain (Hadera), on dead branches of *Eucalyptus*, 26.II.91 (91m128).

Our specimens conform to the descriptions and figures in Martin and Alexopoulos (1969).

Badhamia utricularis (Bull.) Berk., Trans. Linn. Soc. **21**: 153. 1853.

Sporangia stipitate, globose to ovate, 0.7–1.0 mm broad, white, clustered in large groups; peridium single, calcareous, translucent, fragile, white, open irregular and leaving a deep basal cup; columella absent; capillitium delicate, uniform, white; stipe slender up to 0.3 mm in length, light brown, often merging with each other and bearing a cluster of sporangia; spores globose, 11–15 μm in diam, distinctly verrucose, loosely arranged into clusters of 5–10 spores, black in mass.

Specimens examined. Upper Galilee (Bar'am wood), on dead branches, 14.XII.91 (91m156).

The clustered sporangia and the spore clusters which are loosely arranged are distinctive of our specimens, and conform well with the descriptions of Martin and Alexopoulos (1969), and Nannenga-Bremekamp (1991).

Badhamia macrocarpa (Ces.) Rost., Mon. 143. 1874.

Sporangia scattered or in small groups, sessile or stipitate, globose or subglobose, 0.3–0.7 mm broad, umbilicate below, white or grey, orange-brown at umbilicus; peridium single, thin, completely filled with white lime; stipe up to 0.8 mm long, narrow and yellow toward the apex and broader and darker at the base; spores subglobose, 12–15 μm in diam, coarsely warted; black in mass.

Specimens examined. Upper Galilee (Bar'am wood), on dead branches, 14.XII.91 (91m157).

The small globose greyish sporangia and coarsely warted spores are characteristic of our specimens.

Physarum decipiens Curtis, Am. J. Sci. II. **6**: 352. 1848.

Sporangia sessile, depressed-globose, 0.4–0.7 mm broad, yellow; peridium with yellow calcareous scales; capillitium whitish-yellowish, calcareous, with angular nodes or branching; spores 9–13 μm in diam, minutely spinulose, black in mass.

Specimens examined. Upper Galilee (Bar'am Wood), gregarious, on dead branches associated with mosses. 14.XII.91 (91m158).

The large spores and rugulose peridium are characteristic of our specimens and conform to the description of Martin and Alexopoulos (1969).

Physarum listeri Macbr., in Macbr. and Martin, Myxom. 62. 1934.

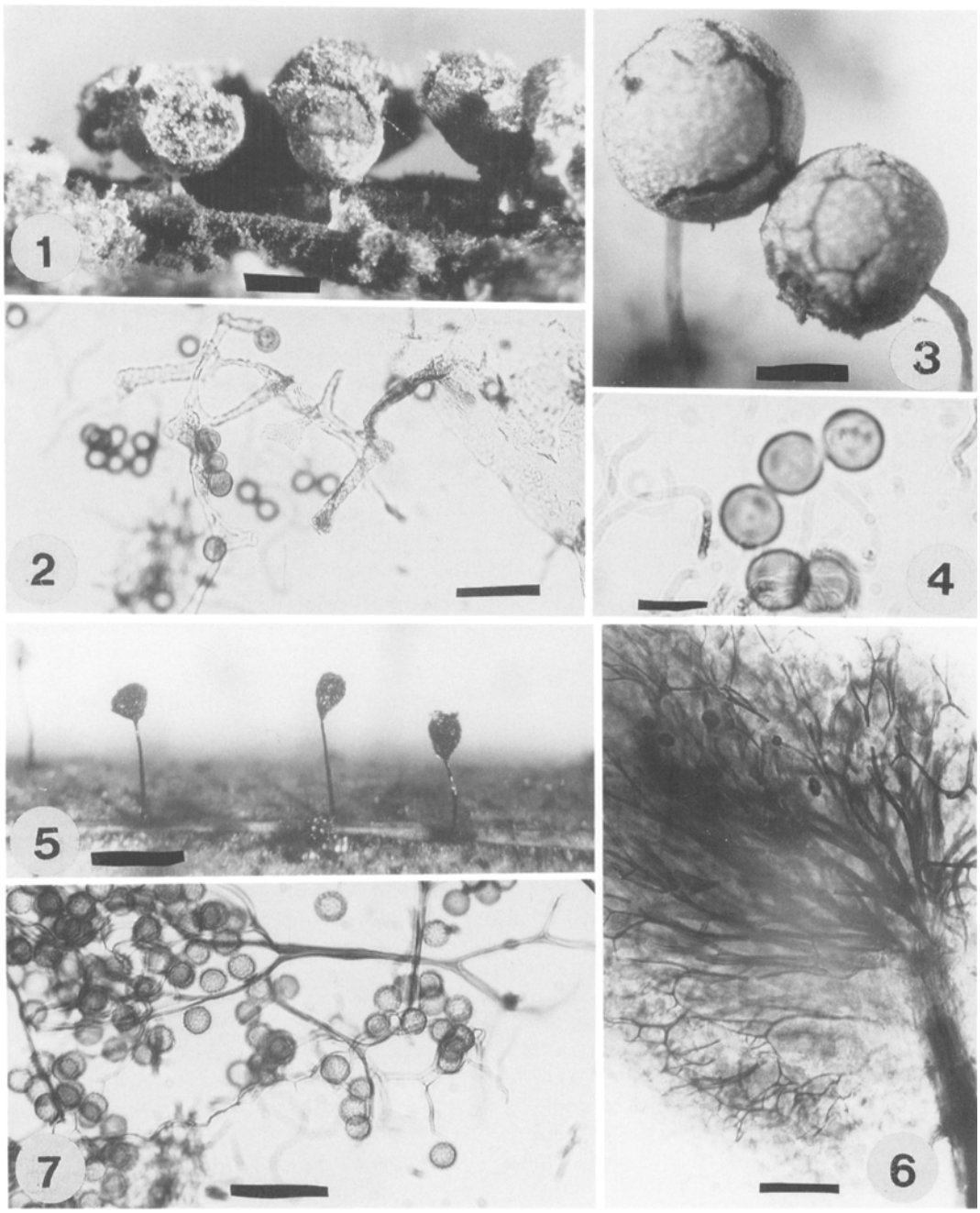
Sporangia stipitate, globose to subglobose, 0.6–1.0 mm broad; peridium double; outer layer thick, smooth, the lime granules up to 3 mm broad; inner peridium dark cream with olivaceous tinge, open irregular from

a persistent basal collar; stipe stout, up to 1.3 mm in length, orange-white, calcareous, smooth; columella yellow, attaining the middle of the sporangium; capillitium, branching with prominent nodes, lime granules similar to those on peridium; spores globose to subglobose, 10-13 μm in diam, spinulose, black in mass.

Specimens examined. Upper Galilee (Bar'am Wood), on dead leaves and branches, 14.XII.91 (91m159).

Physarum penetrale Rex, Proc. Acad. Phila. **43**. 389. 1891. Figs. 3, 4

Sporangia ellipsoid to subglobose, up to 0.5 mm broad, and up to 1.2 mm in height; peridium greenish-grey, becoming blackish; capillitium with small nodes; columella reaching nearly to the top of the sporangial cavity; stipe slender, up to 1.5 mm in length, browninsh-reddish; spores globose, 5.5–7 μm in diam, minutely



Figs. 1–7. 1, 2. *Badhamia foliicola*. 1. Sporangia. Scale: 3 mm. 2. Capillitial threads. Scale: 11 μm. 3, 4. *Physarum penetrale*. 3. Sporangia. Scale: 5 μm. 4. Spores. Scale: 6 μm. 5, 6. *Comatricha fimbriata*. 5. Sporangia. Scale: 5 μm. 6. Capillitium. Scale: 7 μm. 7. *Comatricha longipila*. Capillitium. Scale: 7 μm.

spinulose, dark brown; plasmodium orange-yellow.

Specimens examined. Sharon Plain (Hadera), on dead *Eucalyptus*, 2.III.92 (92m144).

Physarum sessile Brandza, Ann. Sci. Univ. Jassy **11**: 116. 1921.

Sporangia sessile, globose, 0.3–0.7 mm broad, ash-grey; merging into simple plasmodicarps, which are up to 5 mm long; peridium singler, thin, covered with lime; lime granules up to 1.5 μm wide; columella absent, or sometimes nodes massed together to form pseudocolumella; capillitium reticulate with rounded nodes up to 30 mm broad, calcareous; spores globose, 6–8 μm in diam, distinctly warted, black in mass.

Specimens examined. Upper Galilee (Bar'am Wood), on dead leaves of *Quercus*, 14.XII.91 (91m160).

The small spores up to 8 μm and the lime granules up to 1.5 μm wide are characteristic of our specimens and agree well with Martin and Alexopoulos (1969).

Stemonitales

Comatricha fimbriata G. Lister & Cran, in G. Lister, J. Bot. **55**: 122. 1917. Figs. 5, 6

Sporangia stipitate, globose, 0.2–0.35 mm broad, and up to 1.5 mm in height, brown; stipe brown-black, slender, 0.5–1 mm in height, entering the sporangium as a short columella; capillitium with brown threads, free or with few anastomoses; spores globose, 10–13 μm in diam, minutely spinulose, greyish-brown.

Specimens examined: Sharon Plain (Hadera), on dead branches of *Rubus*, 13.III.91 (91m123).

This species differs from our *Comatricha longipila* Nann. - Brem. by the scanty capillitium and larger spores. Our specimens conform to the descriptions and figures in Martin and Alexopoulos (1969).

Comatricha longa Peck, Ann. Rep. N.Y. State Mus. **43**: 70. 1890.

Sporangia stipitate, cylindric, 8–12 mm long, black, densely crowded or massed; peridium fugaceous; columella dark, slender, reaching nearly the tip of the sporangium; capillitium with few anastomoses near the columella, free ends forking; stipe short, up to 4 mm in length, black, shining, smooth; spores verrucose-reticulate, 8–10 μm in diam, black in mass.

Specimens examined. Upper Galilee (Bar'am Wood), on dead branches, 24.I.91 (91m161).

The black mass of long sporangia and the distinctive spores are characteristic of our specimens and conform to the descriptions of Martin and Alexopoulos (1969).

Comatricha longipila Nann.-Brem., Acta Bot. Neerl. **11**: 31. 1962. Fig. 7

Sporangia cylindrical or ovate, up to 0.6 mm in diam and up to 2 mm in height, brown, stipitate; peridium evanescent, sometimes persistent as a collar around the stipe; columella merging into the capillitium just below the apex of the sporangium; capillitium dark brown, dichotomously branched; spores globose, 6.0–7.0 μm in diam, dark brown in mass; plasmodium translucent-white.

Specimens examined. Sharon Plain (Hadera), on dead branches of *Eucalyptus*, 7.III.91 (91m115).

This species is closely related to our *C. fimbriata*, from which it is distinguished by denser capillitium with numerous anastomoses, and small spores.

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