Rare species of fungi parasitizing on algae. IV.

JOANNA ZOFIA KADŁUBOWSKA

Department of Algology and Mycology, University of Łódź
Banacha 12/16, PL-90-237 Łódź


The following parasites of the genera Spirogyra Link, Mougeotia Agardh and Oedogonium Link are described: Myzocytium irregularare, Woronina glomerata, Harpochytrium tenuissimum, Woronina polycystis, Chytridium acuminatum. Myzocytium irregularare and Chytridium acuminatum are new to Poland. Also, the first information on Woronina polycystis as a parasite on algae is presented. The figure of cystosori in a cell of Mougeotia mysoensis is the first graphic documentation of this species.

Key words: aquatic fungi parasites, Spirogyra, Mougeotia, Oedogonium

INTRODUCTION

The present study is a continuation of the investigations concerning the fungi parasitizing on algae, first of all on Zygnemaceae (Kadłubowska 1968, 1998, 1999, 2000). It has been revealed that parasitizing fungi attack the species of Spirogyra and Mougeotia (Kadłubowska 2001) and destroy cellular protoplasm, making identification of the host specimens more difficult. The investigations presented enrich our knowledge on the morphology, development and new hosts of these fungi. The samples of algae were collected in various parts of Poland. Dr. Andres Langangen sent the samples from Norway to the author of the present article.

DESCRIPTION OF THE SPECIMENS

**Myzocytium irregularare** Peterson

Thallus endobiotic, irregular in shape, forming short branches. Sporangia short-cylindrical, ca. 5 μm broad. Discharge tube 2 μm wide, distinctly expanded beneath the host wall. Oospore globose 10 μm in diameter. Zoospores 1 μm in diameter (Fig. 1).

Habitat: a cell and conjugating tube of Spirogyra varians (Hass.) Kützing; a pond in Morelowa street (Łódź), 25.05.1970.
The dimensions of *M. irregulare* from Łódź correspond with the description by Batko (1975) and the figure by Skirgiel (1954).

Sparrow (1960) mentioned this fungus among the “Imperfectly known species of *Myzocyrtium*” despite of its branched thalli characteristic of the genus *Lagenidium*. However, this feature can be found also in *Mezocyrtium zoophthorum* Sparrow (Sparrow 1960). Morphological features and dimensions of *M. irregulare* given in the present paper allow numbering this species among “perfectly known species of *Myzocyrtium*”. The species is new to Poland. Also, this is the first information about *M. irregulare* as a parasite on the genus *Spirogyra*. It is known from Europe and the United States as a parasite on *Cosmarium* sp. and *Micrasterias* sp. (Sparrow 1960), and on *Micrasterias rotata* (Grev.) Ralfs (Cejpl 1933).

*Harpochytrium tenuissimum* Korschikov emend. Jane

Numerous uni- and tetra-nucleate thalli on the surface of *Spirogyra maxima* (Hassall) Wittrock. Thalli erect, elongate, 70-110 μm long, 3-4 μm broad. Two uninucleate thalli with a swollen base were observed (Fig. 2).

Habitat of *Spirogyra maxima*: a ditch near the Pond Lipowy (Experimental Pond Farm of the Polish Academy of Sciences at Golysz) (near Cieszyz) 10.05.1965. Morphological, features of *H. tenuissimum* from Golysz correspond with the description of Batko (1975) and Karling (1977).

*Woronina polycystis* Cornu

Three cystosori of 37.8, 38.0 and 45.0 μm in diameter in a cell of *Mougeotia mysoresinis* Iyenger. Cystosori composed of globular, compact masses of angular resting spores. Resting spores small, angular, ca. 4.0 μm in diameter (Fig. 3).


The present report is the first information on this species as a parasite of algae, namely in a cell of *Mougeotia mysoresinis*, the species described a few years ago as new for the European Flora (Kadłubowska and Langanger 1997).

*Woronina polycystis* is reported from Europe quite often; it is a common parasite of the fungi *Saprolegnia* and *Achlya* (Shen and Siang 1948; Sparrow 1960; Batko 1975). Czeczuga (1999) reported this species from springs in the vicinity of Białystok (on plant seeds used as baits).

*Woronina glomerata* (Cornu) Fischer

Numerous sphaerical sporangia 20–30 μm in diameter, with a smooth colourless wall in a cell of *Spirogyra majuscula* Kützing. Zoospores and cystosorus not observed.

Habitat: cells of *Spirogyra majuscula* Kützing; peat bog at Marysin (Łódź), 16.06.1958. Morphological features and dimensions of *W. glomerata* from Marysin correspond with the descriptions by Sparrow (1960). *W. glomerata* is often reported from Europe as a parasite on the *Vaucheria* sp. The author frequently observed sporangia of this fungus in cells of the genus *Spirogyra*.
Fig. 1. *Mycocytium irregularum*. Thallus and sporangium with discharge tube and oospore in cell of *Spirogyra varians*. Scale bar - 10 μm.

Fig. 2. *Harpochytrium tenuissimum*. Numerous thalli on the surface of *Spirogyra maxima*. Scale bar - 10 μm.
Fig. 3. Woronina polycystis. Three cystosori: one in a cell, two near deformed cell of Mougeotia mysorenoides. Scale bar - 10 μm.

Fig. 4. Chytridium acuminatum. Three sporangia on the oogonium of Oedogonium sp. with haustoria attached to three endobiotic resting spores in the oospore of the host. Resting spores with oil globules. Scale bar - 10 μm.
Chytridium acuminatum Braun

Three epibiotic, sessile sporangia, 8.0 \(\mu m\) high (16.6 \(\mu m\) according to Sparrow 1960), 3.0 \(\mu m\) in diameter, with a pronounced umbonate operculum. Sporangium wall smooth, colourless. Zoospores not observed. Three endobiotic resting spores, 7-8 \(\mu m\) in diameter with a double, colourless wall and a single large oil globule (Fig. 4).

Habitat: on the oospore of Oedogonium sp., pond Okręt (near Łowicz), 3.08.1968. The height of sporangia of Ch. acuminatum found in the pond Okręt differs significantly from that given by Sparrow (1960). The sporangia from the pond Okręt are probably young and immature. The figure of resting spores with a double wall presented in this paper is the first graphic documentation of this species. Chytridium acuminatum is a species new to Poland. It has been cited from Germany, Asiatic Russia and France (citation after Sparrow 1960).

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REFERENCES


Rzadkie gatunki grzybów pasożytyjących na głonach. IV.

Streszczenie