

Chytridium caloneidis sp. nov.

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A new species *Chytridium caloneidis* Kadlubowska is described and illustrated in the paper. The species was found in the Brzeźnia brook near Jedrzejów. It differs from the other species in the genus with unique corrugated wall of sporangium.

Key words: *Chytridium caloneidis*, aquatic fungi, parasites, *Caloneis amphibaena*.

During the investigations on the importance of diatom communities in the evaluation of water pollution (Kadlubowska 1966, 1978) samples were collected in various parts of Poland. In the sample taken in Juli 1961 from the Brzeźnia brook (near Jedrzejów) a new species *Chytridium caloneidis* (*Chytridiaceae*) has been described and illustrated by the author.

The genus *Chytridium* was established by Braun (1855) for *Chytridium olla*. As presently defined by nearly all chytridiologists this operculate genus includes approximately 57 species. Among them a few are well described, but several species are still doubtful members of the taxon (Karling 1977).

Chytridium caloneidis sp. nov.

(Etym. Latin: *Caloneis* – the name of the host)

Sporangium extramaticale, ovoideum 25 × 19 μm, sessile in cellulam hospitis et eandem penetrans. Membrana sporangii irregularis corrugata. Liberatio spore non observata est. Spore sphaericae 4–5 μm diametro. Haustorium intramaticale ca 15 × 2 μm. Duo intramaticales sphaericae cystae 10–12 μm diametro in cellulam hospitis.

In *Caloneis amphibaena* parasiticum.

Habitatio in *Caloneis amphibaena* in rivo Brzeźnia (prope Jedrzejów) Polonia 6 Julii 1961 legit J.Z. Kadlubowska.

Sporangium epibiotic, extramatrical, ovoid $25 \times 19 \mu\text{m}$ sessile on the host cell. Sporangium membrane irregularly corrugate (Fig. 1). Release of the spores

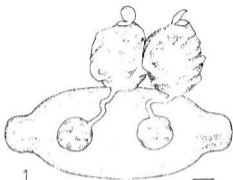


Fig. 1. *Chytridium caloneidis* on *Caloneis amphisbaena*. Two ovoid sporangia with haustoria going into the host cell and two endobiotic resting spores (bar - $10 \mu\text{m}$).

not observed. Spores spherical about $4-5 \mu\text{m}$ in diameter. Haustorium endobiotic ca. $15 \times 2 \mu\text{m}$. Two spherical resting spores $10-12 \mu\text{m}$ in diameter, can be seen in the host cell (Figs 2, 3).

Parasitic on the cell of *Caloneis amphisbaena* (Bory) Cl. Habitat of *Caloneis amphisbaena* in the Brzesnia brook (near Jędrzejów), 6.07.1961.

Iconotype: microphotographs printed in the present paper.

REMARKS

The species of the genus *Chytridium* parasite on algae among them on diatoms for example on *Epithemia* Bréb. - *Ch. epithemiae* Nowakowski, on *Melosira* Ag. - *Ch. melosirae* Sparrow, on *Cocconeis* Ehr. - *Ch. cocconeidis* Canter. No fungal parasites were observed on the genus *Caloneis* (Sparrow 1960).

In the genus *Chytridium* different shapes of sporangia can be found but their walls are in most species smooth.

The ornamented wall can be observed only in few species. For example in *Ch. confervae* (Wille) Minden the sporangium has two opposite apical teeth (Sparrow 1960), while the wall in *Ch. pilosum* Kobayasi et Konno is densely spinose and frequently deeply lobed (Karlíng 1977).

In the species *Ch. caloneidis* described in the present work the sporangium wall is irregularly corrugate. This can be seen in side view as irregular

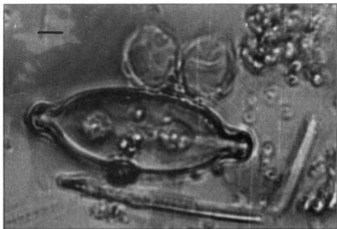


Fig. 2. *Chytridium caloneidis* on *Caloneis amphibaena* Two ovoid sporangia and two spherical resting spores (diatom valve - view).



Fig. 3. *Chytridium caloneidis* on *Caloneis amphibaena* Two sporangia with haustoria (diatom girdle - view) (bar - 10 μ m).

protuberances, similarly as in *Chytridiomyces poculatus* Willoughby et Townley (B a t k o 1975, p. 208, figs 322 AB). The corrugate sporangium wall differs *Ch. caloneidis* from all the other so far known species of *Chytridium*.

REFERENCES

- B a t k o A. 1975. Zarys hydromikologii. PWN, Warszawa. 478 pp.
- B r a u n A. 1855. Ueber *Chytridium*, eine Gattung einzelliger Schmarotzergewächse auf Algen und Infusorien. Monatsber. Berlin Akad. 1855: 378–384.
- K a d ł u b o w s k a J. Z. 1966. Bedeutung von Kieselalgen in der biologischen Wasseranalyse. Verh. Internat. Verein. Limnol. 16: 837–840.
- K a d ł u b o w s k a J. Z. 1978. Methods of the representative analysis of diatom communities. Verh. Internat. Verein. Limnol. 20: 1285–1288.
- K a r l i n g J. S. 1977. Chytridiomycetorum Iconographia. J. Cramer, Vaduz. 414 pp.
- S p a r r o w Fr. K. 1960. Aquatic Phycomycetes 2 ed. Univ. Michigan Press, Ann. Arbor, Mich. 1187 pp.

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Streszczenie

Opisano i zilustrowano nowy gatunek *Chytridium caloneidis* Kadłubowska. Zidentyfikowano go w próbce z małej rzeczki Brzeźnia koło Jędrzejowa. Gatunek ten różni się od innych gatunków rodzaju *Chytridium* pofalowaną ścianą sporangium.