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O kilku gatunkach zielenic z rodzaju *Uva* Playfair 1914

On some green-algae species of the genus *Uva* Playfair 1914

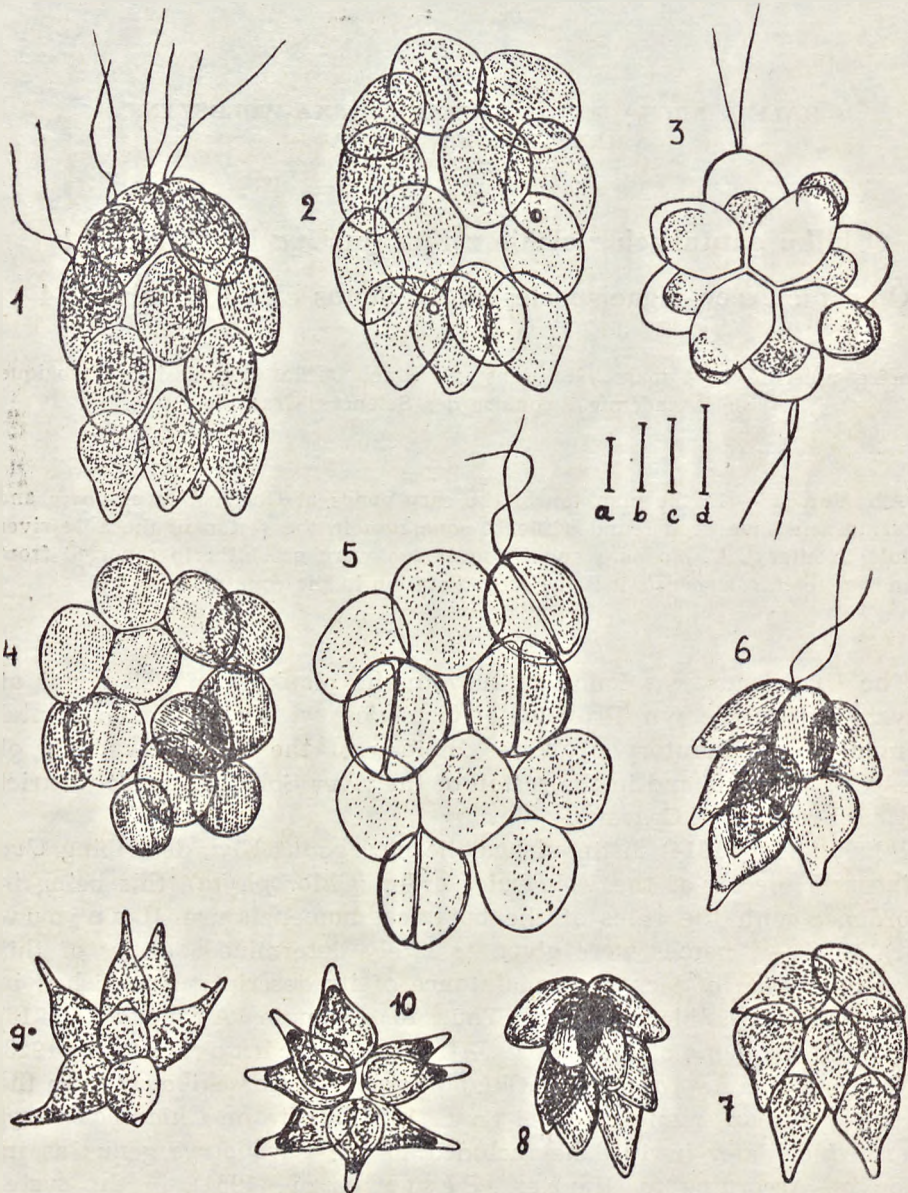
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Abstract — In the plankton of the carp ponds at Gołysz *Uva elongata* and *U. casinoënsis* have been found while *U. squarrosa* in the seston of the Sola river (Vistula tributary). *U. elongata* and *U. squarrosa* were not hitherto reported from Poland; as to *U. casinoënsis* it is the second station in the country.

The *Uva* genus was found in 1967 in the plankton of fish ponds at Gołysz (district Cieszyn, Province of Katowice) within the Experimental Farm of the Laboratory of Water Biology of the Polish Academy of Sciences in Cracow and in the seston of the river Sola at Żywiec (district Żywiec, Province of Cracow).

Playfair (1914) distinguished the new genus *Uva*, describing *Uva casinoënsis* species of the *Volvocales* order (*Chlorophyta*), this being in accordance with the rules of the botanical nomenclature (Lanjou 1961). But new names were given to lately determined species of this genus by reason of lack of acquaintance of its description published in a not easily accessible periodical. Thus, for example, Arnoldi (1916) introduced the name of *Pyrobotrys*. Afterwards Schkorbatov (1923, 1926) wrote on a new organism „*Chlamydosphaera Korschikowi*” from the *Volvocales* group, while Koršikov (1924) wrote on *Chlamydotrys* genus which later in 1938 he included to the *Pyrobotrys* genus as its synonym. According to Huber-Pestalozzi (1961), in the systematics of *Pyrobotrys* genus there was some lack of clarity owing to its rare occurrence and therefore scarce material for comparison. Opinion among some algologists was divided as to the wisdom of distinguishing certain species described by Koršikov (1928, 1938). Thus, for example,

Pascher (1925) drew attention to the similarity between *Chlamydotrys gracilis* and *Chl. stellata*, while Behlau (1935) pointed to the small differences among *Chl. squarrosa*, *Chl. stellata* and *Chl. incurva*. Recently Bourrelly (1960, 1962) returned to the first genus name,



Figs 1—10. 1—5 — *Uva elongata*: 1, 2 — young colonies, 3 — colony in the upper view, 4 — older colony, 5 — colony in the stage of division; 6—8 — *Uva casinoensis*; 9—10 — *Uva squarrosa*: 9 — young colony, 10 — older colony. Fig. 4 magnification a; fig. 5 magnification b; figs 6, 7, 8 magnification c; figs 1, 2, 9, 10 magnification d

bringing back into use the name *Uva incurva* (Arnoldi) Bourrelly 1960 for *Pyrobotrys incurva* Arnoldi 1916 as was later similarly done by Fott (1967) with other species.

It should be stressed that in the course of species determination, in spite of the abundant material taken from the ponds at Gołysz, difficulties sometimes arose in estimating whether the differences in the appearance of the colony were caused by species variability, were connected with their age, or had a feature characteristic for other species.

Uva elongata (Korshikov) Fott 1967 (= *Pyrobotrys elongata* Koršikov) (Huber-Pestalozzi 1961) (figs 1—5). Young colonies composed of more elongated cells were observed, the lower ones being pear-shaped. These colonies had a characteristic elongated conical shape and a tight arrangement of biflagellate cells (figs 1, 2). Colonies 31.2—37.5 μ long, 17.6—26.8 μ wide, cells 10.4—12.4 μ long, 5.3—7.5 μ wide. In the upper view there was a typical arrangement of cells in 4 rings each formed by 4 cells (fig. 3). Besides these there occurred older colonies (figs 4, 5), 56.7—63 μ long, 40.2—41 μ wide, always built of 16 almost round cells, 15.8—16.4 μ long, and 14 μ wide. In some cells 2 long flagella were observed. The cells of some colonies showed the first stages of division, visible as an oblong furrow (fig. 5). The chromatophores which densely filled the cells showed delicate granulated stripes. The dimensions of some adult colonies were slightly larger than those given by Huber-Pestalozzi (1961) after Koršikov.

The species appeared at the end of June 1967 in the three newly filled experimental nursery ponds at Gołysz: abundantly in the control pond No 7, and numerous in the ponds No 2 and No 9 fertilized with nitrogen and phosphate (Krzeczkowska-Wołoszyn, materials in elaboration). It occurred singly at the end of May and very numerous in June in the pond Polny of the complex Mnich to which undiluted wastes from the sugar factory at Chybie were admitted (Kyselowa, unpublished materials).

This is a species probably not hitherto reported from Poland. It was found by Koršikov (1938) in the old bed of a small eutrophic river in south Russia.

Uva casinoensis Playfair 1914 (= *Pyrobotrys gracilis* Koršikov) (Komárek, Ettl 1958, Huber-Pestalozzi 1961) (figs 6, 8). Colonies with 8 cells were noted more frequently, those with 16 cells more rarely. Colony dimensions: length 20.3—37.5 μ , diameter 12—22.5 μ . Cells with 2 flagella and granulated chromatophore were more or less pear-shaped in contradistinction to *U. elongata* where only the lower ones had such an appearance. Cell dimensions: length 9.5—17.2 μ , diameter 6—10 μ .

This species occurred simultaneously with *U. elongata* in the same ponds but in considerably smaller quantities.

As far as we know, it has been reported within the present borders of Poland by Behlau (1935). He grew colonies of this alga in cultures on the soil material taken from the bottom of the river Nysa Łużycka at Zgorzelec (Province of Wrocław). The species is known from Russia, Germany, Holland, Czechoslovakia, Australia, and North America.

Uva squarrosa (Korshikov) Fott (1967) (= *Pyrobotrys squarrosa* Koršikov) (Huber-Pestalozzi 1961) (figs 9, 10). Diameter of the colony 17.3 μ . Colonies of this species always consisted of 8 pear-shaped cells with elongated tails, arranged in 4 rings each having 2 cells. In live material 2 flagella were seen in the cells. Cells 12—12.8 μ long, 4,9—6,5 μ wide. Young colonies with sharply pointed cells and tightly fitted protoplast were observed (fig. 9), as well as older colonies with blunted tails and protoplast not filling the narrowed tails of the cells (fig. 10).

The species occurred not very numerously in September 1967 in the seston of the river Soła at Żywiec (Province of Cracow) with diatoms, blue-green algae, and bacteriae, mainly *Sphaerotilus natans* (Bucka, Krzeczowska-Wołoszyn, unpublished materials).

Probably the species has not hitherto been noted in Poland. It was found by Koršikov (1928) in a small pond in the vicinity of Charkow in Ukraine and by Fott (1967) in Czechoslovakia.

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STRESZCZENIE

Przy opracowywaniu planktonu stawów rybnych Gołysza (powiat Cieszyn, województwo katowickie) oraz sestonu rzeki Soły w Żywcu (powiat Żywiec, województwo krakowskie) znaleziono trzy ciekawe gatunki z rodzaju *Uva* (*Pyrobotrys*).

Uva elongata (Korshikov) Fott 1967 (= *Pyrobotrys elongata* Koršikov) (ryc. 1—5). Spotykano zarówno kolonie młode, jak i starsze, z których pewne były w początkowym stadium podziału. Gatunek ten wystąpił bardzo licznie pod koniec maja i w czerwcu 1967 r. Znaleziono go w stawie kontrolnym oraz w nawożonych azotem i fosforem, doświadczalnych stawkach przesadkowych jak również w stawie, do którego wpuszczono nierozcieńczone ścieki z cukrowni w Chybiu. Gatunek ten prawdopodobnie nie był dotychczas podawany z Polski. Opisany z południowej Rosji.

Uva casinoënsis Playfair 1914 (= *Pyrobotrys gracilis* Korsikov) (ryc. 6—8). Spotykano kolonie 8, rzadziej 16-komórkowe. Gatunek ten wystąpił w tych samych stawach i okresach razem z *U. elongata*, jednak w znacznie mniejszych ilościach. Z obecnych granic Polski podawał go Behlau (1935), który prowadził kultury tego glonu z materiału glebowego Nysy Łużyckiej w Zgorzelcu (województwo wrocławskie). Znany z Rosji, Niemiec, Czechosłowacji, Holandii, Australii i Północnej Ameryki.

Uva squarrosa (Korsikov) Fott 1967 (= *Pyrobotrys squarrosa* Korsikov) (ryc. 9, 10). Obserwowano zawsze kolonie 8-komórkowe, zarówno młode, jak i starsze. Wystąpiły one we wrześniu 1967 r. w sestonie Soly w Żywcu, razem z okrzemkami, sinicami i bakteriami, głównie *Sphaerotilus natans*. Prawdopodobnie nie był on dotychczas podawany z Polski; znany z Rosji i Czechosłowacji.

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