

HALINA BUCKA

Kilka gatunków glonów ze stawów w Gołysz — Some species of algae from ponds at Gołysz

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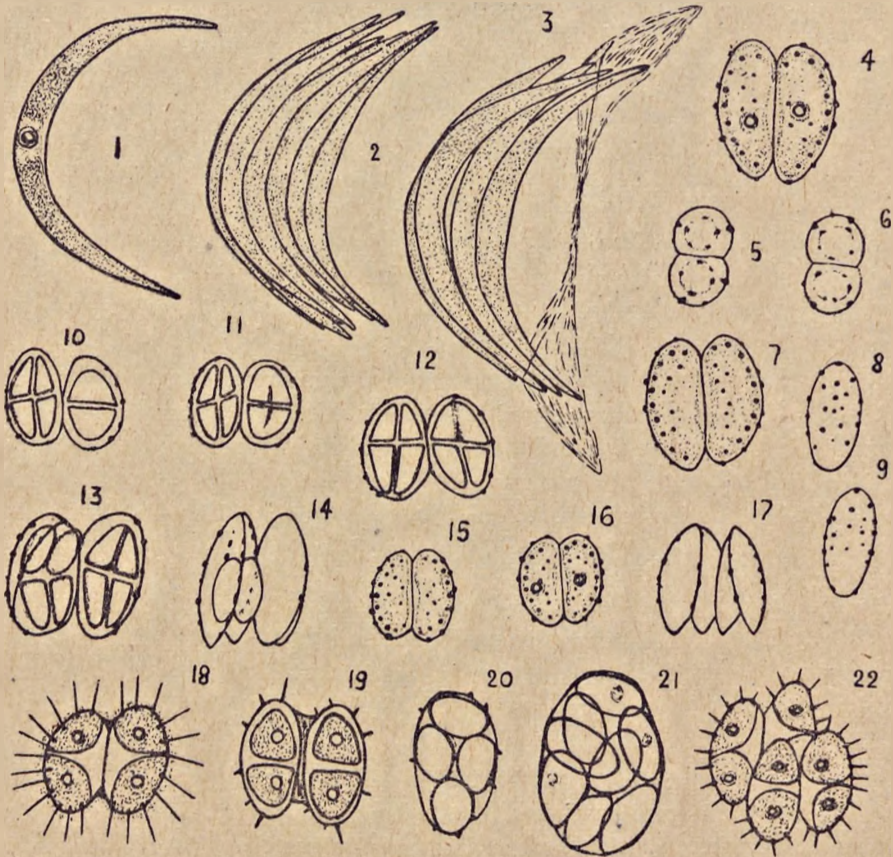
During my investigation on nanoplankton carried out at the farm at Gołysz (district Cieszyn) in 1962 some interesting species of algae were found. The material examined was preserved in 5% formalin. The sculpture of the membrane was stained with methylene blue. The gelatinous sheath was stained with indian ink and the pyrenoids with Lugol's fluid.

Ankistrodesmus arcuatus Korschikov (1953) (figs. 1—3). Cells in axile 48—50 μ long, 4—4.5 μ wide; the distance between the ends of a cell 16—28 μ . Nucleus distinctly visible in individual cells. Other features correspond to the description given by the author. Cells sometimes appeared singly, but mostly in groups of four, more rarely of eight, overlapping each other.

It was found in large quantities in the pond „Wyszni IV” fertilized with ammonium sulphate and superphosphate, on 13th August, fairly numerous on 1st September, and in small quantities in the unfertilized pond „Wyszni VI” in the second decade of August. Probably not hitherto reported from Poland.

Didymocystis polonica Bucka n. sp. (figs. 4—17). Cenobia exclusively of two cells (fig. 4). Cells elliptic, convex on the outside, mainly rounded at the poles, sometimes slightly sharpened, with almost circular cross-section (figs. 5—6). Cells 6.7—7.5 μ long, 2.5—3.2 μ wide, and 3.1—3.5 μ thick. Membrane furnished with granules varying in size and number; some of them scattered irregularly on its surface (fig. 7), other always form a distinctly C-shaped series of single granules at the anterior and posterior side of the cell. Besides this, the granules running in the middle of the cell side and varying in size are separated and unequally arranged. They usually form an incomplete series reaching one of the cell poles

(figs. 8, 9) or, in certain specimens, both of them. Granules incrustated with ferric hydroxide give a yellow-brown colour to the cells in spite of their small dimensions. The chromatophore plate with a pyrenoid is always visible. Pyrenoides of a coenobe usually arranged at different heights.



Figs. 1—22. *Ankistrodesmus arcuatus*: 1. a single cell with a nucleus visible in the middle, 2. colony composed of eight cells, 3. daughter cells with remains of the mother cell wall; 4—17. *Didymocystis polonica* n. sp.: 4. a two-celled coenobe with a C-shaped series of separate granules, 5—6. an apical view of a coenobe, 7. coenobe with irregular granules arranged in a different way, 8—9. a side view of a coenobe, 10—12. the stages of multiplication, characterized by the formation of four autospores within a mother cell, 13—14. daughter coenobia liberated from mother cell wall after its rupture, 15—16. daughter coenobia, 17. coenobe with two empty mother cells; 18—22. *Dicellula planctonica* for. *simplicior* n. for.: 18. two-celled coenobe, cells provided with bristles and two parietal plate chromatophores each containing a pyrenoid, 19. coenobe composed of two cells distinctly held together by means of their membrane with chromatophores already divided, 20—21. cells with four and eight autospores, 22. two daughter coenobia loosely connected by mucilage not yet separated.

Owing to a mass appearance of this species it was possible to observe the stages of division leading to the formation of four autospores (figs. 10—12) and of two daughter coenobia in a mother cell released after its rupture (figs. 13—14). There is, therefore, no doubt as to the eventual including of this species into the genus *Scenedesmus*.

It differs from *D. Grahneisii* Heynig (1962) by an arcuate series of granules not united into a list, being more distinctly shifted aside, and by the lack of an inner longitudinal list. Moreover, it is distinguished from *D. inconspicua* Korschikov (1953) by having additional scattered granules; from *Dicellula inermis* Fott (1959) also by the presence of the irregular granules mentioned above and of a distinct arcuate series of granules.

It was found in smaller and larger quantities from the end of July till the beginning of October in nannoplankton samples collected from the ponds „Wyszni II” and „Wyszni IV” fertilized with ammonium sulphate and superphosphate, and also in the unfertilized pond „Wyszni VI”. Its most numerous occurrence was observed in the pond „Wyszni III” fertilized with ammonia water and superphosphate on 12th and 26th September, and also on 12th October, forming a yellow-brown sediment.

The fixed material is kept in the collections of the Laboratory of Water Biology of the Polish Academy of Sciences in Kraków.

Diagnosis: Coenobia solummodo bicellularia. Cellulae ellipsoideae, longitudine 6,1—7,5 μ, latitudine 2,5—3,2 μ, crassitudine 3,1—3,5 μ. Membrana verrucis variis instructa. Verrucae nonnullae in membranae superficie irregulariter disjectae, aliae in cellulae partibus antica et postica seriem verrucarum singularum semper distinctam ad instar litterae C formantes. Verrucarum series cellulae lateris medium percurrens e verrucis disjunctis inaequaliter dispositis constans. Chromatophorus tabelliformis, pyrenoide 1. Propagatio per divisionem quae ad autosporarum 4 in cellula matricali una productionem procedit.

Habitatio: Proveniebat copiosissime in nannoplanctone piscinae cypri-norum oeconomiae Golysz (in districtu Cieszyn), una cum Protococcalibus minus numerosis.

Iconotypus: figs. 4—17.

Dicellula planctonica Svirenko for. **simplicior** Bucka n. for. (figs. 18—22). Coenobia composed of two cells clinging closely together; cells 16.4—18.4 μ long, 7.2—10 μ wide, with bristles not reaching half their length (fig. 18). The remaining characteristics are in accordance with the diagnosis of the species. The form described above differs from the type by having distinctly shorter bristles.

The stages of multiplication beginning with the division of chromatophores (fig. 19) similar to the description given by Fott (1933) were observed till the formation of four, more rarely of eight autospores

within a mother cell (figs. 20—21). In each colony only two daughter coenobia were found not separated, loosely connected by mucilage, formed as the result of this division, with relatively short bristles on daughter cells (fig. 22).

It appeared in the pond „Wyszni IV” (fertilized with ammonium sulphate and superphosphate) in very large quantities on 18th and 27th July, also singly on 1th September, besides which it appeared in the pond „Wyszni V” (fertilized as above) sporadically on 13th August and in small numbers on 26th September.

The fixed material is kept in the collections of the Laboratory of Water Biology of the Polish Academy of Sciences in Kraków.

Differt a speciei typo setulis multo brevioribus.

Habitatio: In piscinis Wyszni IV et Wyszni V oeconomiae Golysz (in districtu Cieszyn) (figs. 4—17).

In conclusion I would like to express my sincere thanks to Dr. J a d w i g a S i e m i ń s k a for her help and valuable advice in identification of the species and in preparing this text for publication. I am also indebted to Dr. T a d e u s z T a c i k for translating the diagnosis into Latin.

STRESZCZENIE

W roku 1962 znaleziono w nannoplanktonie stawów karpionych w gospodarstwie Golysz (pow. Cieszyn) kilka ciekawych gatunków glonów z rzędu *Proto-coccales*.

Ankistrodesmus arcuatus Korschikov (1953), (ryc. 1—3). Występował pojedynczo, najczęściej po 4 w kolonii, masowo w sierpniu. Z Polski prawdopodobnie dotąd nie podawany.

Didymocystis polonica n. sp. (ryc. 4—17). Od gatunku Heyniga (1962) różni się większym przesunięciem rzędu brodawek w kształcie litery C ku zewnętrznej stronie komórki, ich oddzielnym i równomiernym ułożeniem bez łączenia się w listewkę oraz niepełnym i zmiennym rozmieszczeniem rzędu brodawek wzdłuż środka boku komórki; od *D. inconspicua* Korschikov (1953) różni się ponadto dodatkowymi, rozrzuconymi brodawkami, a od *Dicellula inermis* Fott (1959) również nieregularnymi brodawkami oraz wyraźnym, łukowatym rzędem pojedynczych brodawek. Obserwowano stadia 4 autospor w komórce macierzystej. Masowo wystąpił z końcem września i na początku października.

Dicellula planctonica Svirenko forma *simplicior* n. for. (ryc. 18—22). Błona pokryta szczecinkami, nie dochodzącymi do połowy długości komórki. Notowano stadia 4 i 8 autospor w komórce macierzystej oraz podwójne dwukomórkowe siostyczne cenobia. Od gatunku różni się znacznie krótszymi szczecinkami, stąd wyodrębniono ją jako nową formę. Pojawiła się w dużych ilościach w drugiej połowie lipca.

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ERRATA

Str.	Wiersz od góry	Jest	Powinno być
319	23	6,1—7,5	6,7—7,5
357	podpis pod ryc. 3	Średni ciężar ciała	Średni ciężar ciała

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