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Stomatocysts of Chrysophytes in Lake Shira

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The chrysophytes are distributed over all the continents. As a rule, these are planktonic, freshwater, cold-water inhabitants. There are as well saltish-water chrysophytes species of genera *Chrysococcus*, *Dinobryon*, *Chrysosphaerella*.

One of the peculiarities of chrysophytes is their ability to form siliceous resting stages — hollow formations sized from 2 to 30 μm , as a rule of spherical shape with different surface ornaments which are called stomatocysts. Variation of stomatocysts concentration in the sediments

as well as their relationship with diatoms frustules allows to make conclusions on the situation in a water body during any period.

We performed within the project in 2012 investigation of Lake Shira phytoplankton. The sampling was done in spring (May 25, 2012), in summer (July 11, 2012) and in autumn (September 4, 2012) from different depths in the central part of the lake.

According to data available, the phytoplankton of Lake Shira pelagic zone comprises 17 algae species, but

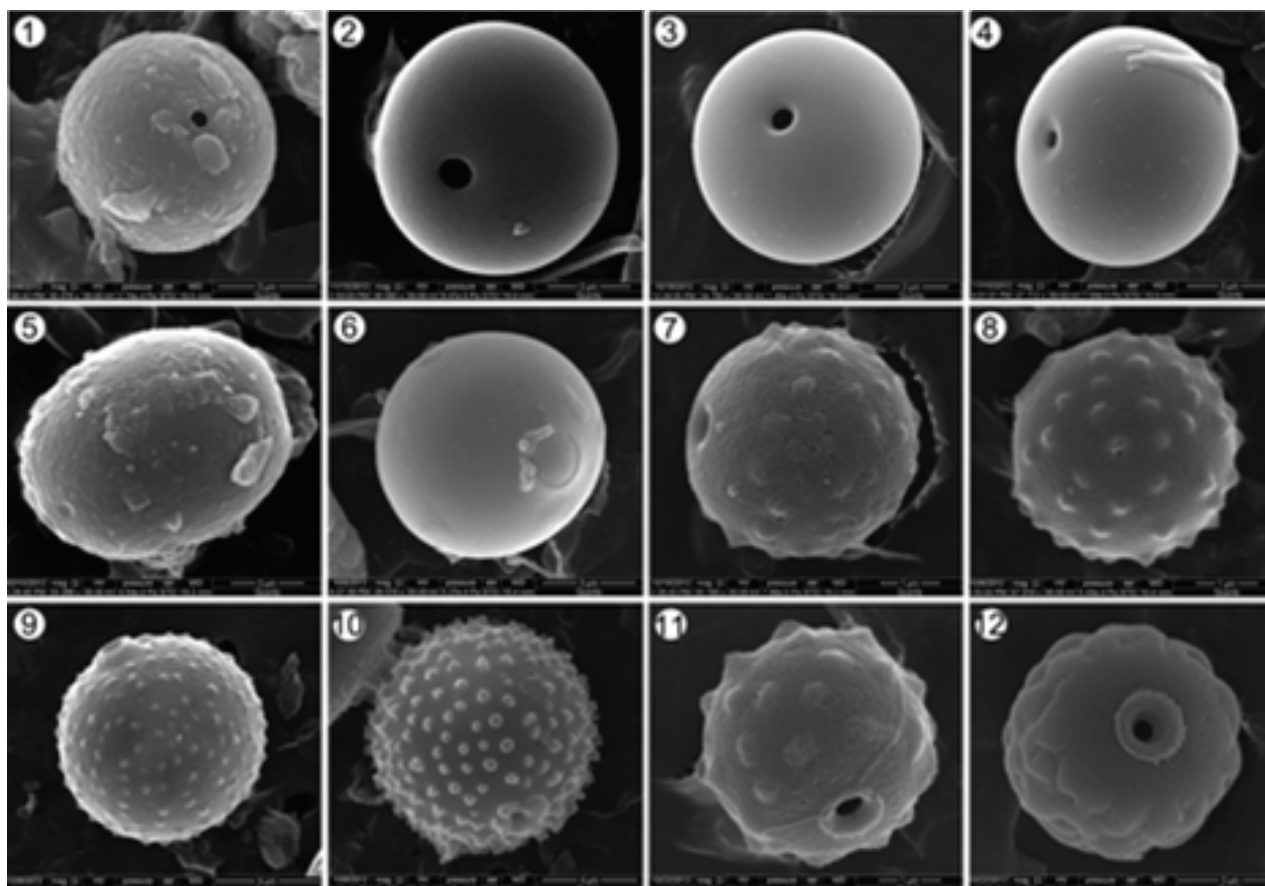


Fig.2. Chrysophyte stomatocysts from Lake Shira (SEM).

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chrysophytes group is not included in this amount. We revealed 22 microalgae species among which there are no chrysophytes as well. Despite this, we have found among the phytoplankton of Lake Shira 12 morphotypes of chrysophytes stomatocysts, 6 of which were found out in the sediments of this lake.

In the spring phytoplankton we found 6 morphotypes of chrysophytes stomatocysts, the maximal amount of which was observed in the water layer of 11 m. Stomatocysts with small spines dominated. Such morphotypes are similar to stomatocyst 211 Duff & Smol described for large Canadian lakes with acid and neutral environment (Duff, Zeeb, Smol, 1995)

In the summer phytoplankton (July 11, 2012), morphotypes without ornaments with large pore dominated (fig. 1). Such stomatocysts are widely distributed and may be related to several species, such as from genera *Paraphysomonas* and *Chrysosphaerella*, for which saltishwater species are known (Belyakova et al, 2006).

In autumn, maximal stomatocysts amount is found in the water layer of 3 m, we found 6 morphotypes among which stomatocysts with dome-shaped processes. Similar stomatocysts were found in Lake Hovsgol sediments (Stomatocyst H22 Firsova (Firsova, Vorobyova, Likhoshway, 2012)).

There dominated in the sediments even stomatocysts without ornaments which are widely distributed and may be related to several species such as *Paraphysomonas* (Duff, Zeeb, Smol, 1995). Their maximal amount is found in the surface layers up to 70 mm.

Thus, taxonomic composition is increased, chrysophytes stomatocysts are found first both in the plankton and in the sediments. Finding of chrysophytes species producing stomatocysts requires further investigations.

Key words: Lake Shira, chrysophycean stomatocysts, phytoplankton, sediments.

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