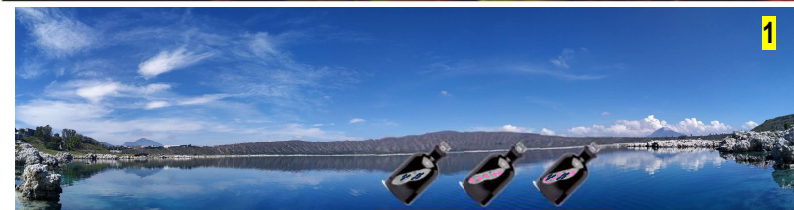


Oxygenic or anoxygenic? *Spirostomum teres* feeding preferences

Miroslav Macek; Carlos Noé Díaz Hernández; Ximena Sánchez Medina;
Cecilia G. López Vázquez; Carlos Alberto Espinoza Rodríguez;
Rocío Jetzabel Alcántara Hernández

¹Universidad Nacional Autónoma de México, Facultad de Estudios Superiores Iztacala, Tlalnepantla;
²Instituto de Geología, CU, Ciudad de México
MEXICO

mmacek@live.co.uk



1

In a monomictic hyposaline crater lake Alchichica (Puebla / Veracruz, Mexico; Fig. 1) *Spirostomum teres* feeding upon picocyanobacteria (PICY) has been periodically analysed using fluorescently labelled *Synechococcus* sp. (FLB) since 2003. We were looking for possible photosynthesizing symbionts' retention, which was observed in the case of unidentified cyanobacterium, deposited within 24 h in quite well defined ubication within the cell (as reported in ECOP Roma 2019). However, dilution experiments performed with 20 µm screen harvested *S. teres* suspended in a prey-free water revealed also curious behaviour of ingested purple anoxygenic photosynthetic sulphur bacteria (APB; molecularly identified as *Thiocapsa* sp.), which were not either digested or deposited in the same place as picocyanobacteria (Fig. 2.)

Analysing the relation between the ciliate and its food biomasses (redundancy analysis, RDA) was shown that upon the present PICY and APB biomasses the ciliate was driven on the opposite directions: abundance of *S. teres* was increasing along with PICY while decreasing with higher APB abundances (Fig. 3.)

According to the literature *S. teres* is a bacteria and purple sulphur bacteria eater, but our observations have proven that throughout the lake stratification period with an anoxic hypolimnion, picocyanobacteria might play more important role both as a prey and a possible symbiont; minute chlorophytes (*Monoraphidium* spp., *Picochlorum* sp.) and diatoms (*Cyclotella choctawhatcheana*) were ingested, too.

The selection of purple *Thiocapsa* sp. has been peaking just when it appeared in the hypolimnetic top layer (July-September; Figs. 4, 5). Higher H₂S concentrations, observed along with green sulphur bacteria *Chlorobium* sp. (Fig. 5b), apparently weakened the ciliate population. If either PICY or APB serve only as feeding sources for the ciliate and/or they are engaged within the symbiotic pathways, has not been solved, yet.

