Notes and News

Predation-prey vulnerable interactions among rotifers and fish in Guanting Reservoir, China

During my early studies of zooplankton research observed cases of population density enhancement of Asplanchna priodonta that accompanied winter-spring algal blooms of Peridinium gatunenze in Lake Kinneret. The identification (and counts) of Asplanchna were accomplished quickly and easily due to their stomach contents, which commonly included 3-5 cells (40-60 um diameter) of dark colored Peridinium cells (Photo 1). Asplanchna is translucent organism, but a dark lump of *Peridinium* cells allowed me to see rather easily the entire rotifer and, no doubt, that of any fish that visually tracked zooplankton. The darker lump created a vulnerability to the otherwide translucent Asplanchna.



Photo 1: *Asplanchna priodonta*. Dark lump: Ingested *Peridinum* cells, Lake Kinneret (size: 1.4 mm).

Some 36 years later (2006) I reevaluated my earlier observations, but

this time I did so through the view point of predatory fish in Guanting reservoir in China. Guanting was the first reservoir that was constructed (1951-1954) as part of the Yongding River System in the Huallal district within the Province of Hbei. The objective of constructing the Guanting system was to improve the drinking water supply and aid in flood control, as well as to improve the fishery. Unfortunately, over the years agricultural and industrial developments accompanied population by increase in the catchment caused water quality and fishery deterioration. Collaborative surveys of the limnological features of Guanting was carried out by an Israeli company and the Guanting Reservoir Administration-Beijing Hydraulic Research Institute. Twenty-nine fish species were found in Guanting of which 10 are commonly exploited, these included: 5 Carps: (Silver Carp, Grass Carp, Bighead Carp, Crucian Carp, and Common Carp) and 5 native species. Beside limnological, climatological, and morphometrical features of Guanting, the fish gut contents were analyzed of which a distinct common stomach component was Asplanchna sp. present as a dark Surprisingly, lump. increased magnification clearly defined these darkly colored lumps as an aggregation of 2-3 specimen of Keratella sp. This was a reminder of the *Peridinium* cells forming dark lump in the stomach of A. priodonta in Lake Kinneret. Thus, the process was clear; the dark Keratella-laden lump within the stomach of Asplanchna allowed fish predatory to capture the Asplanchna, which otherwise would be difficult for the zooplanktivorous fish to see.

Reference

Gophen M 2014 The limnology of Guanting Reservoir (China). The Journal of Ecology, Photon 108: 283– 289.

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