PHYSIOLOGY OF THE CTENOPHORE *BEROE OVATA* IN THE CASPIAN SEA WATER WITH AN EVALUATION OF ITS PROS AND CONS OF ITS USE AGAINST MNEMIOPSIS LEIDYI

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ABSTRACT

The invasive ctenophore *Mnemiopsis leidyi* has been causing unprecedented biodiversity and fishery loss in the Caspian Sea. In order to evaluate the feasibility of *Beroe ovata* introduction, to be used as an effective predator on the invasive ctenophore *Mnemiopsis leidyi*, survival and some physiological characteristics (feeding, respiration, reproduction and growth) of *B. ovata* in Caspian Sea water (12.6 ppt salinity) conditions were studied using animals transported from the Black and Marmara Seas to an Iranian laboratory on the Caspian coast.

B. ovata was able to adapt to lower salinity Caspian water when salinity was gradually decreased from 22 to 12.6 ppt The feeding rate of *B. ovata* ranged from 14 to 765 % of body wet weight being highest for smaller individuals (i.e. 13-16 mm). The weight – specific respiration rate was independent of weight over the measured weight range of 0.23-3.87 g WW. The daily specific growth rate of adult ctenophores was equal to 7-11% of body wet weight. *B. ovata* specimens spawned in the Caspian Sea water and their eggs hatched, but larvae survived only a few hours.

Based on these physiological data, we suggest that in the Caspian Sea *Beroe ovata* will be able to ingest *M. leidyi* intensively. It is feared that if immediate actions is not being taken, the biodiversity and fishery in the Caspian Sea will continue to suffer and *B. ovata* seems as the only cure.