

PRELIMINARY SEM STUDIES ON NORMAL AND ALTERED GONADS OF *CATOSTYLUS TAGI*

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Introduction

It is known that according to the life stage, an interaction of organisms can change from mutualism to commensalism and vice-versa; even parasitism can be shared. Recent studies have shown a close interaction among jellyfish, fishes and other taxa [1].

Catostylus tagi (Fig.1), the sole European Catostylidae, is an edible Scyphozoa which occurs in summer at Tagus and Sado estuaries. Some aspects of its application in health sciences have already been studied [2].

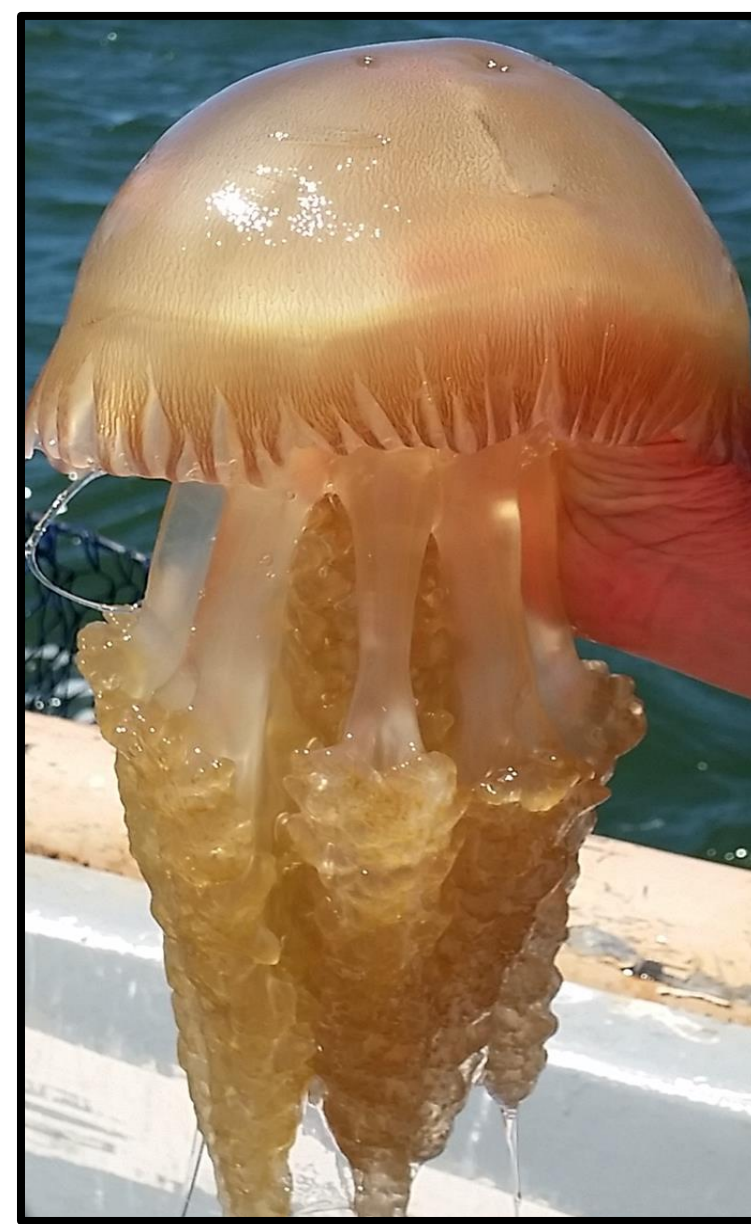


Fig. 1- *Catostylus tagi* (photo by R. Lisboa).

To start the study of its life cycle, the characterization of gonads regarding size and sex were carried out by optical (OM) and electronic microscopies (SEM).

Results

The intact cells of female (Fig.3A) were regular spheres with a mean diameter of 31 μm (n = 400) in September. In the same period, the healthy male cells (Fig.3B) were more abundant, with a somewhat irregular elongated shape and smaller (24 μm , n = 400).

No correlation was found between the sex and the colour of the gonad (green or brown or yellow).

The observations at the gonads of *C. tagi* by SEM exposed some cells with ruptured walls (Fig.3C) and at least two other organisms, a crustacean (Fig.3D) and a cnidarian (Fig.3E).

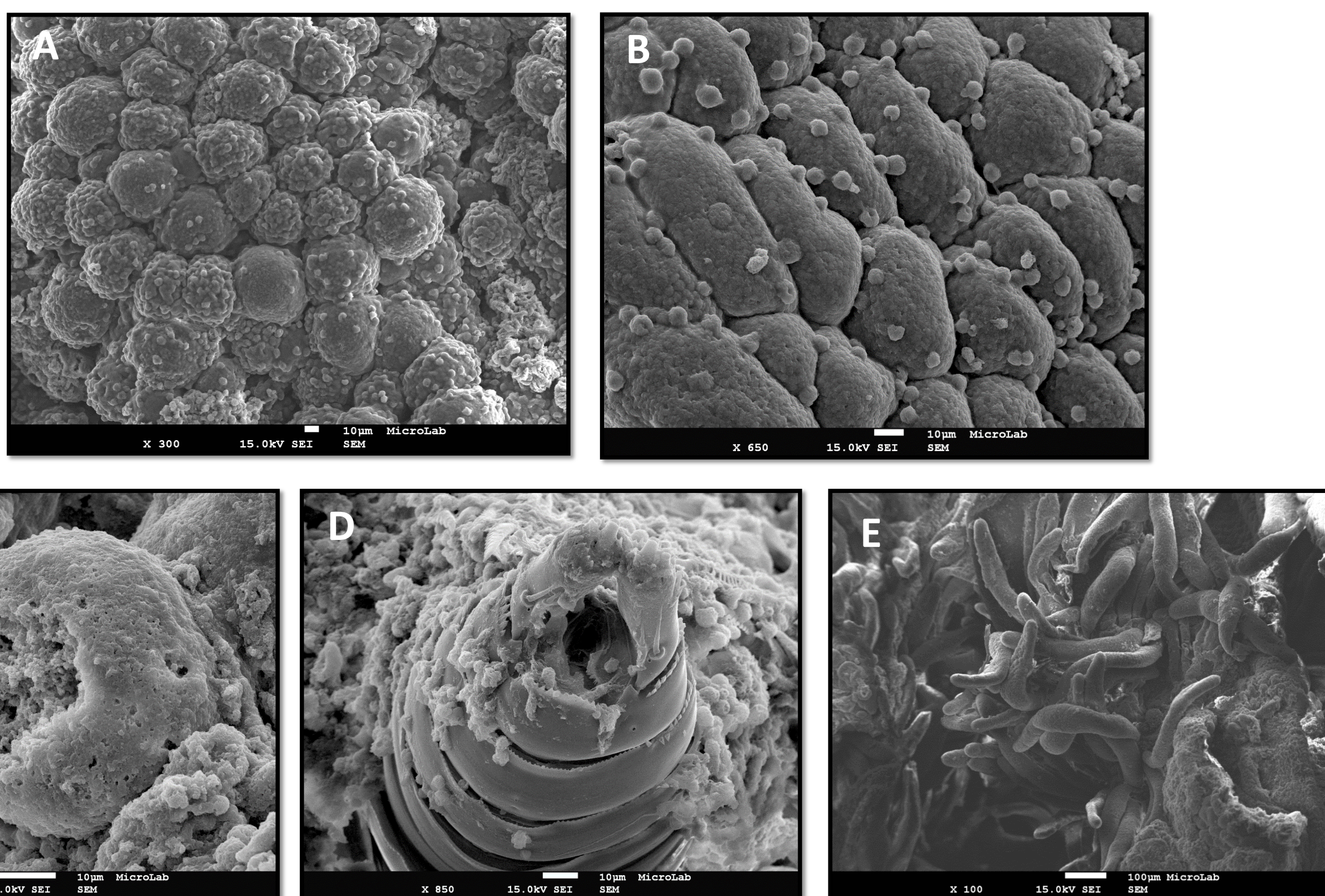


Fig. 3- SEM observations of *C. tagi* gonads; A- Female cells; B- Male cells; C- cell with ruptured wall; D- Crustacean organism; E- Cnidarian organism (photos by I. Nogueira).

Methods

Eighty exemplars (61 males and 19 females) were collected in September 2016.

The gonads (Fig.2) were removed and placed in five fixative solvents (Hollande, Gendre, Bouin, ethanol and formaldehyde) to prevent tissue degradation.



Fig. 2- *C. tagi* gonads (photo by R. Lisboa).

SEM Preparation

Experiments were conducted by depositing the fixed gonads on a metal stub, in which a thin film of a conducting metal was sputtered. Samples were imaged with JEOL Field Emission Scanning Electron Microscope JSM-7001F [3].

Discussion

The crustacean organism observed could be *Hyperia gaudochaudii* (Fig.4), already mentioned in *C. mosaicus*, an Australian jellyfish, although without images available [4].

The cnidarian organism had morphological similarities with *Polypodium hydriforme* (Fig.5) which is known to parasitize the gonads of fish belonging to the family Acipenseridae, commonly named sturgeons [5].

As both *C. tagi* and the sturgeons are estuarine animals, it is not absurd that they share the same parasite.



Fig. 4- *Hyperia gaudochaudii* [4].



Fig. 5- *Polypodium hydriforme* [5].

Future Research

Genetic studies through amplification of genomic DNA (18S rDNA) of the organisms are now in progress.

References

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