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## BRIEF COMMUNICATION

# Prey selectivity and feeding rates of the scyphozoan *Catostylus tagi* (Haeckel, 1869)

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# INTRODUCTION

- Large blooms of scyphozoan species frequently occur in coastal areas that may cause a depletion of zooplanktonic communities, impacting trophic web.
- Many studies have focused on the feeding ecology of several scyphozoan species; Rhizostomeae order less studied.
- *Catostylus tagi* (Haeckel, 1869): Tejo, Sado and Guadiana Rivers estuaries.
- Lack of ecological studies; studies on the potential properties anti-arthritic, anti-inflammatory, antioxidant and nutritional value.



## AIM OF THE STUDY



Investigate the trophic ecology, examining the prey preference of *C. tagi* on the mesozooplankton community and its feeding rates.

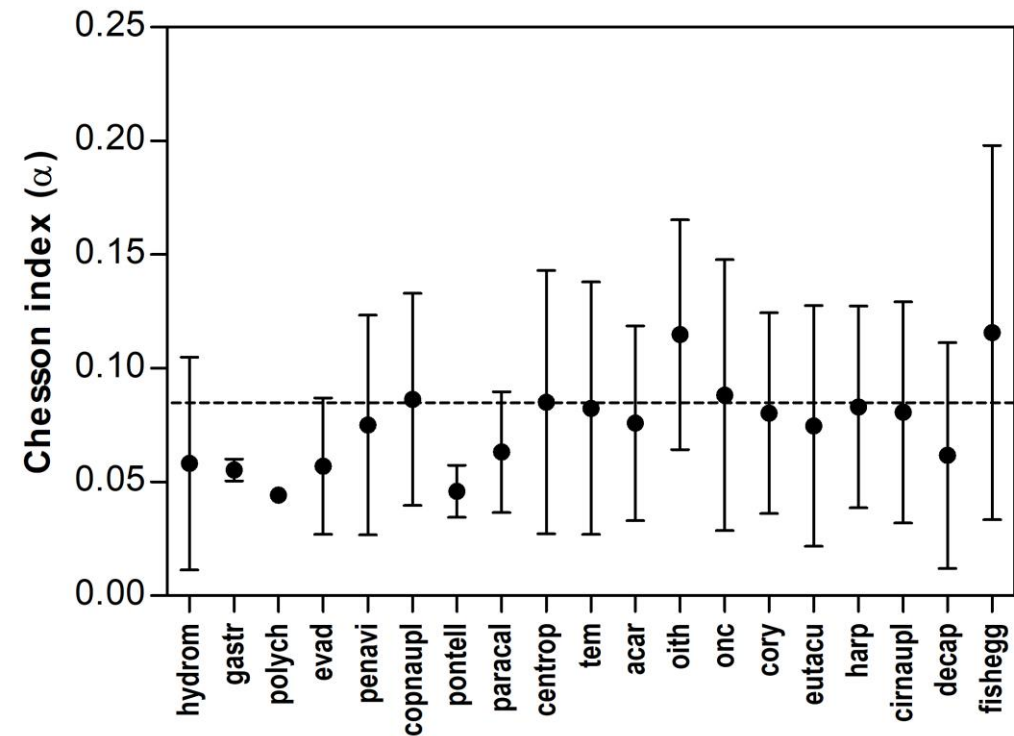
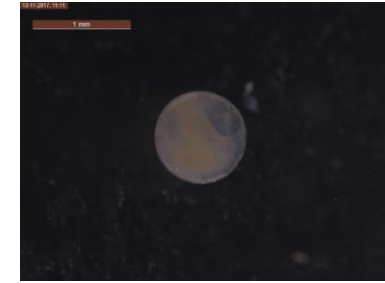
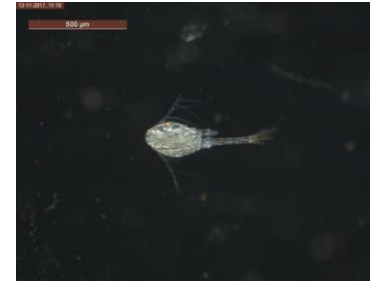
# METHODS

- Selectivity experiments
- 1 individual per experimental unit (12 L)
- Natural zooplankton + fish eggs
- Duration 1 hour
- Size *C. tagi*:  $4.7 \pm 1.5$  cm
- Ingestion ( $I$ ) and clearance ( $F$ ) rates
- Selectivity index Chesson ( $\alpha$ )



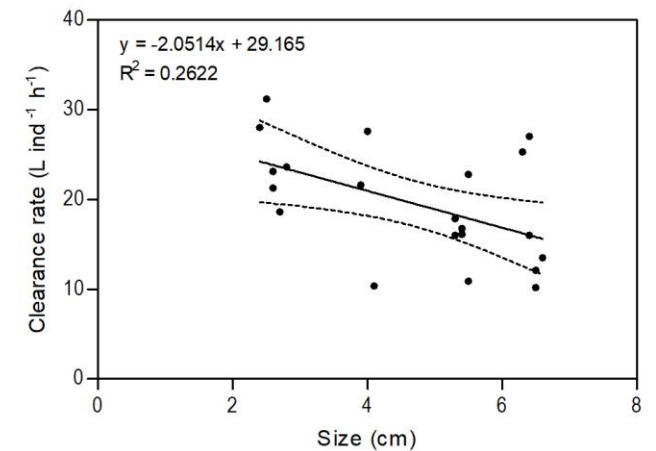
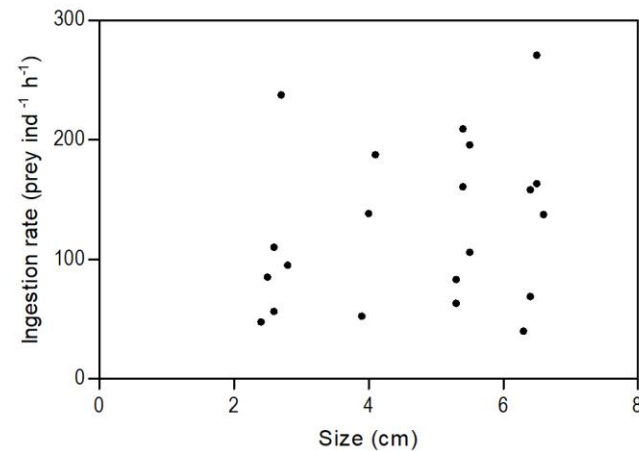
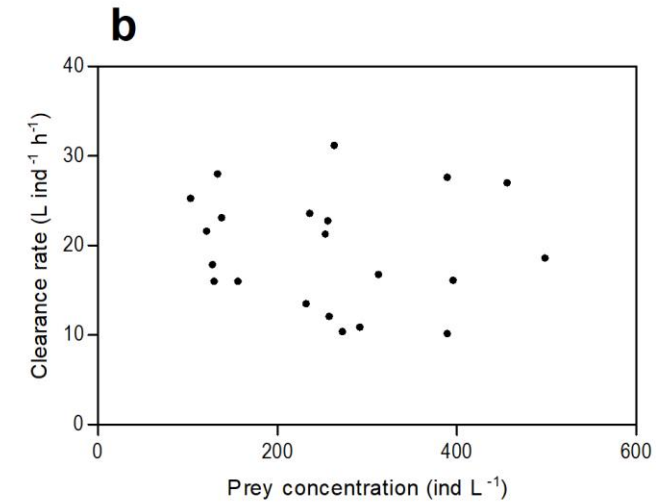
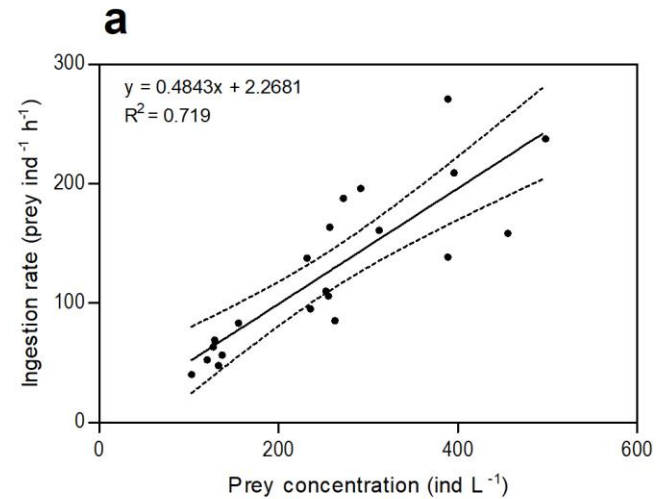
# RESULTS

- The copepods *Oithona* spp. (76.2%), *Oncaea* spp. (19%), copepod nauplii (19%) and fish eggs (57.1%) positive selected (total 19 taxa).
- Other Copepoda, Cladocera, Hydromedusae, Gastropoda, Polychaeta, Cirripedia and Decapoda larvae presented a relative negative selection.



# RESULTS

- Ingestion rate increased with the increasing of food density, but not with jellyfish size.
- No significant relationship was found between the clearance rate and prey concentration, but significant negative relationship with jellyfish size.



## DISCUSSION

- Selectivity similar to congeneric species *Catostylus mosaicus*: preferably ingested small copepods as *Oithona* spp. and nauplii.
- Rhizostomae order consumes smaller prey, when compared to Semaestomeae order: differences in capture surface morphology.
- Non-swimming prey such as fish eggs are more vulnerable to be captured than motile prey.
- Other variables may also explain prey capture efficiency: prey size and their ability to detect hydrodynamic signals, direction of escape movements or natural turbulence.



## DISCUSSION

- No relationship between the ingestion rate and the jellyfish size was found: small size range.
- Higher prey concentration and diversity in stomachs are directly proportional to ontogenetic development.
- *C. tagi* size up to 65 cm: higher feeding rates are expected to be found in nature, increasing the consumption of mesozooplanktonic preys.
- Impact on ichthyoplankton: predation and competition.
- *Oithona*, *Oncaea* and copepod nauplii are important food items for fish larvae and small pelagic fishes co-occurring with *C. tagi* in estuaries and adjacent coastal areas.

## CONCLUSION

- *C. tagi* preferably consumes smaller and non-swimming mesozooplanktonic prey; ingestion rates increase with prey concentration.
- Further *in situ* studies must be conducted to estimate the abundance of *C. tagi* and its potential prey: Predation impact.

# OBRIGADA!

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