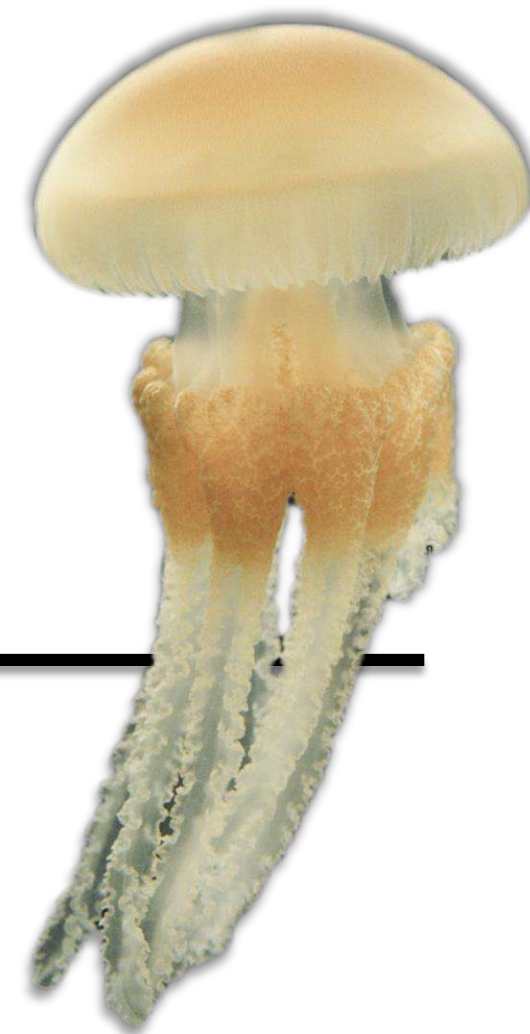


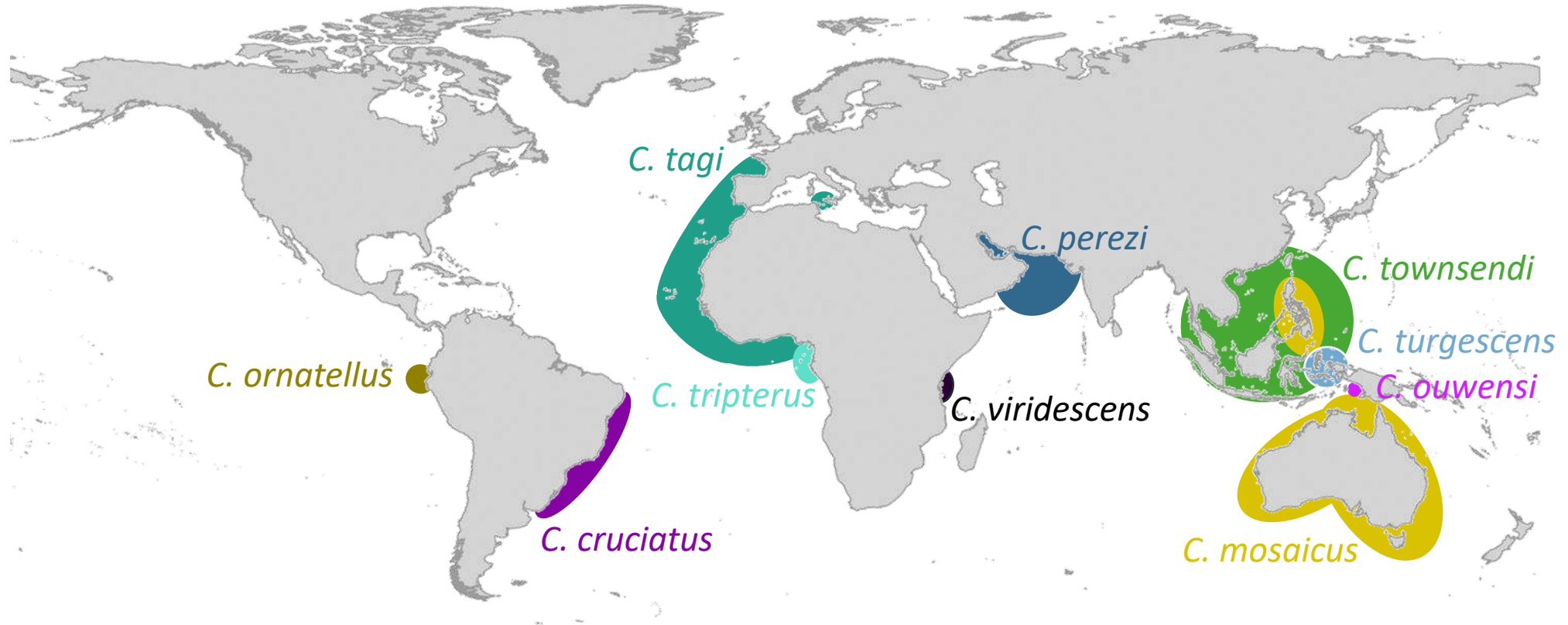


Catostylus tagi life cycle and first insight into its ecology

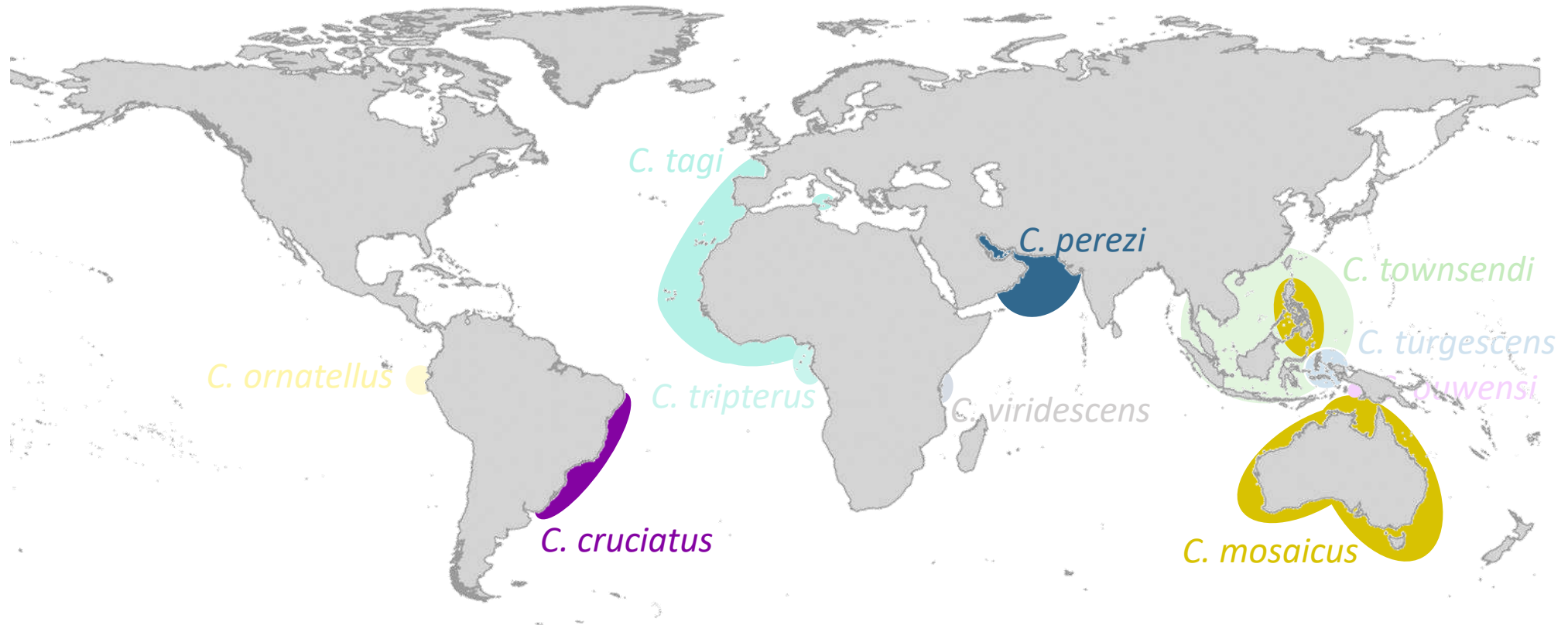
Sonia KM Gueroun, Tatiana M Torres, Antonina dos Santos,
Nuno Vasco-Rodrigues, Raul Gouveia, João Canning-Clode, Carlos Andrade



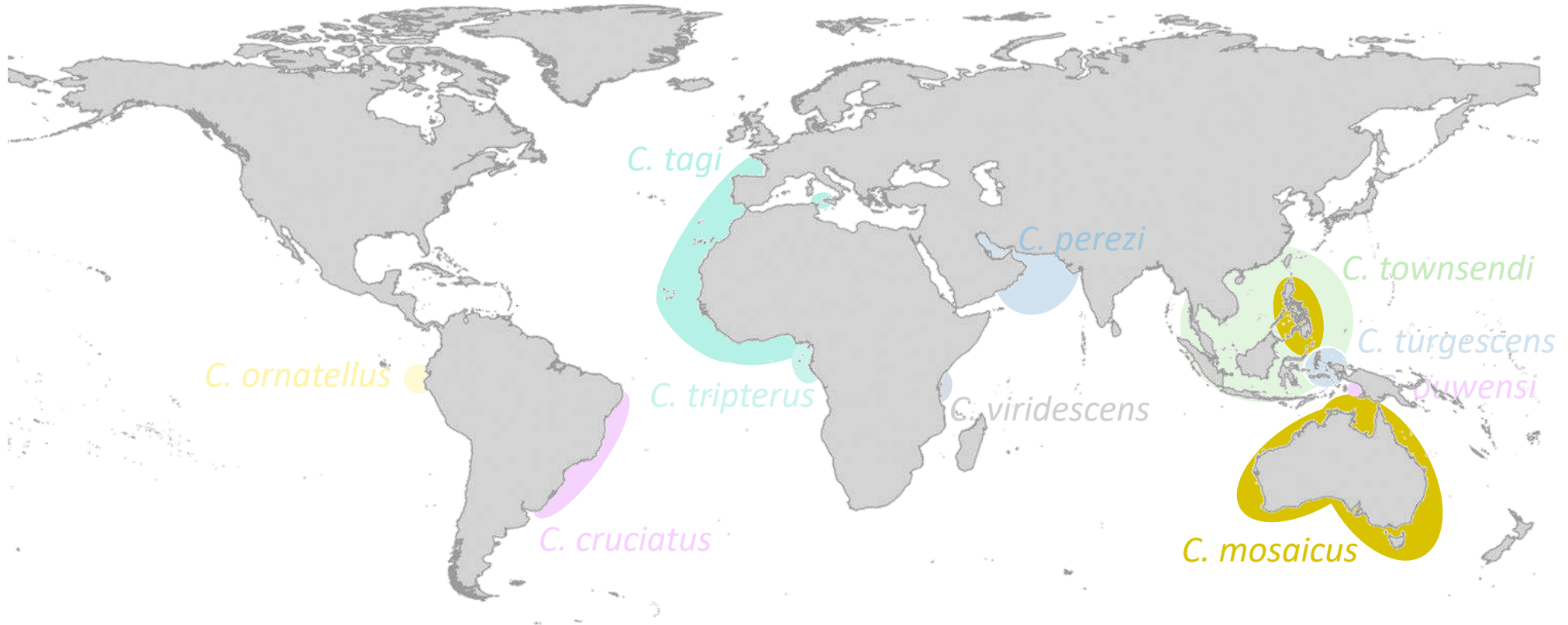
Recognised *Catostylus* species



Exploited *Catostylus* (fisheries and/or aquarium)

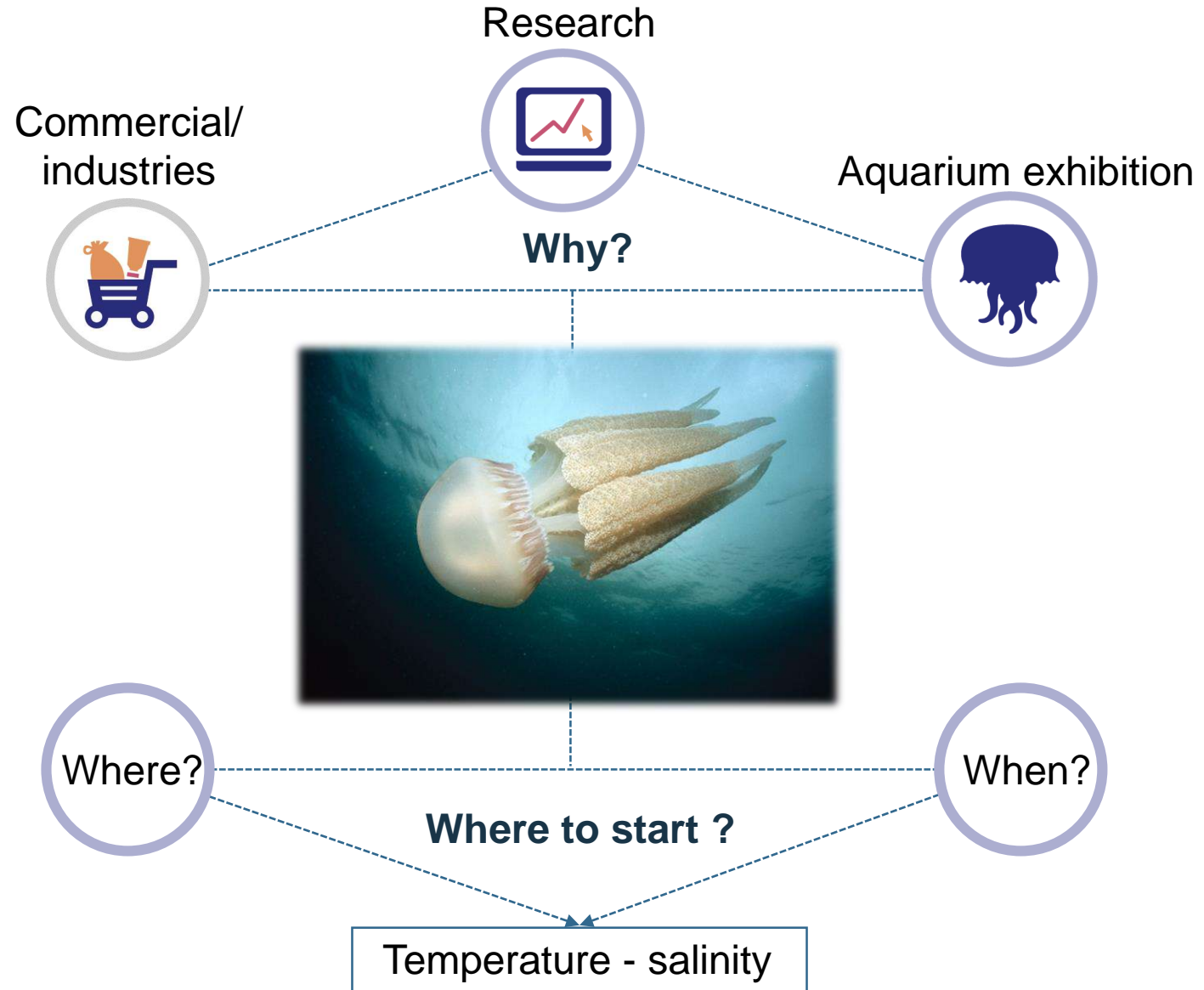


Known life cycle of *Catostylus* spp

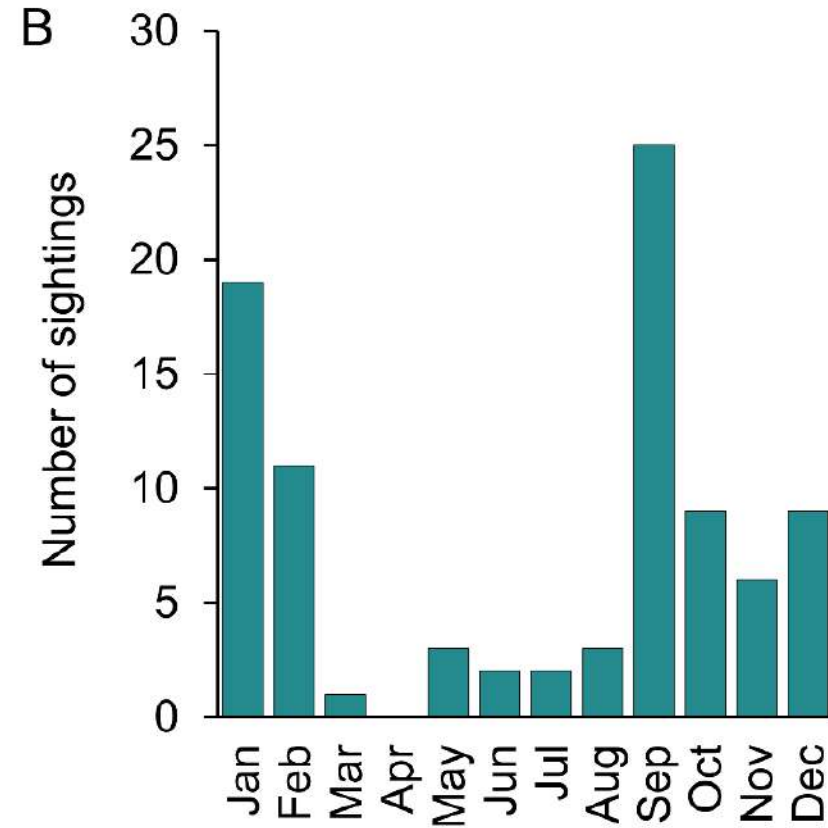
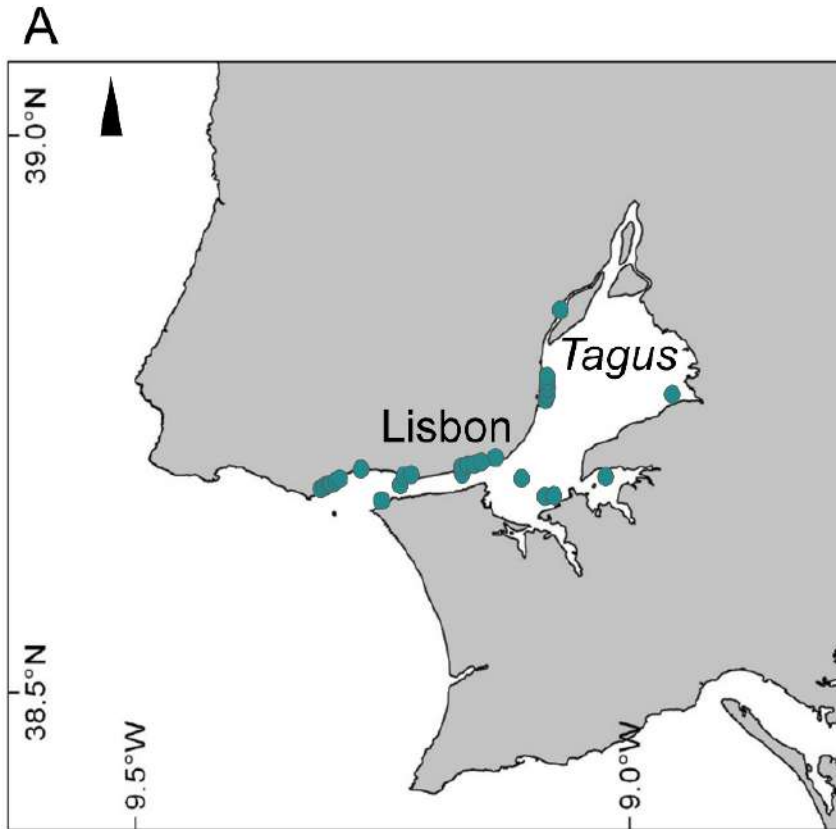
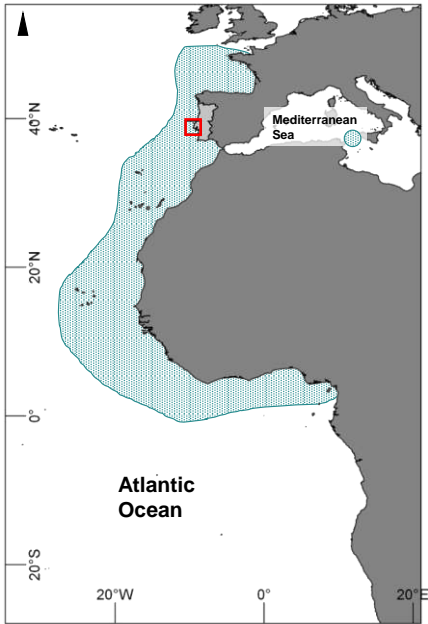




Overview



GelAvista citizen science program



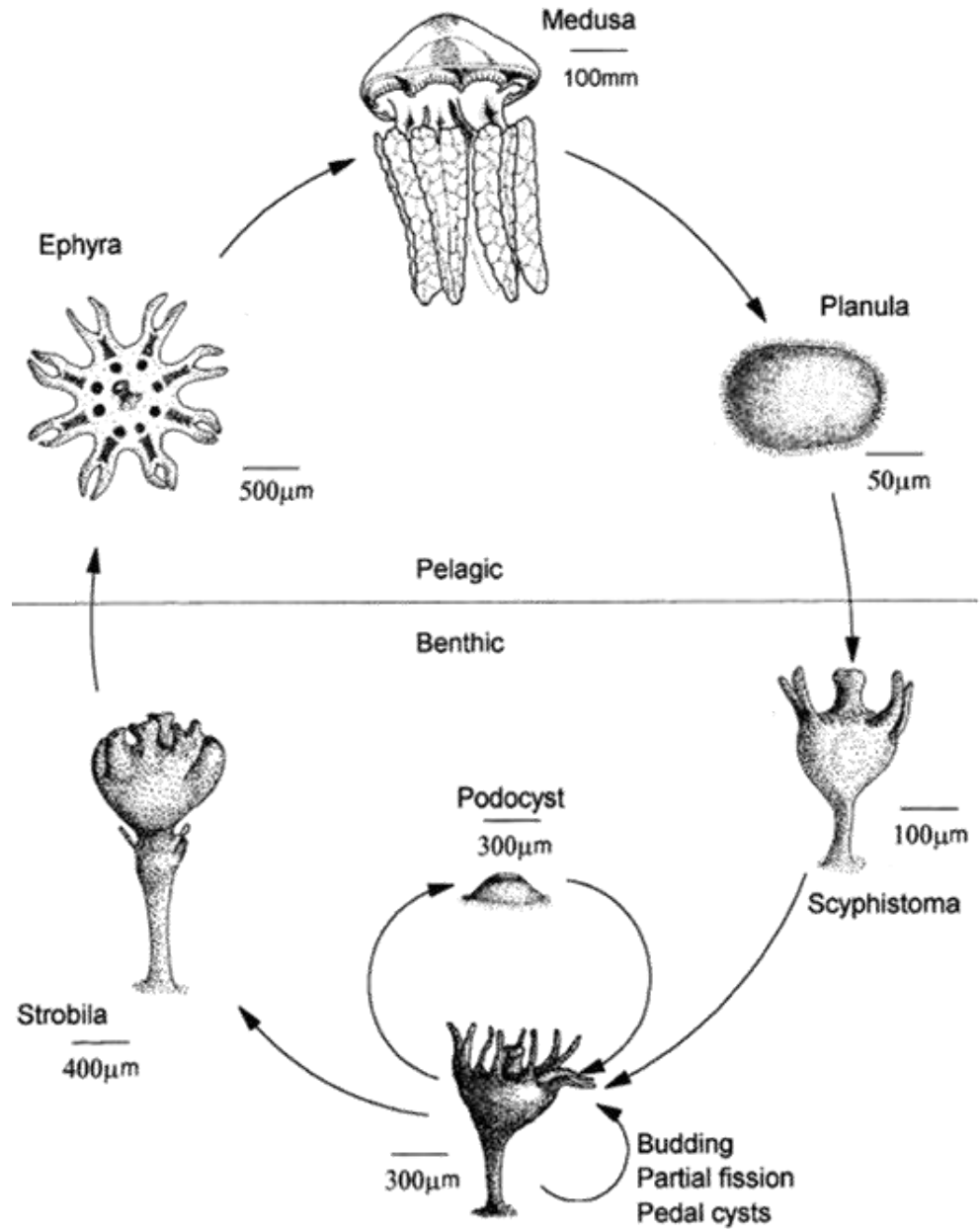
Temperature: 7 to 33 °C

Salinity: 1 to 37‰

(Gameiro *et al.*, 2007; Rodrigues *et al.*, 2017)

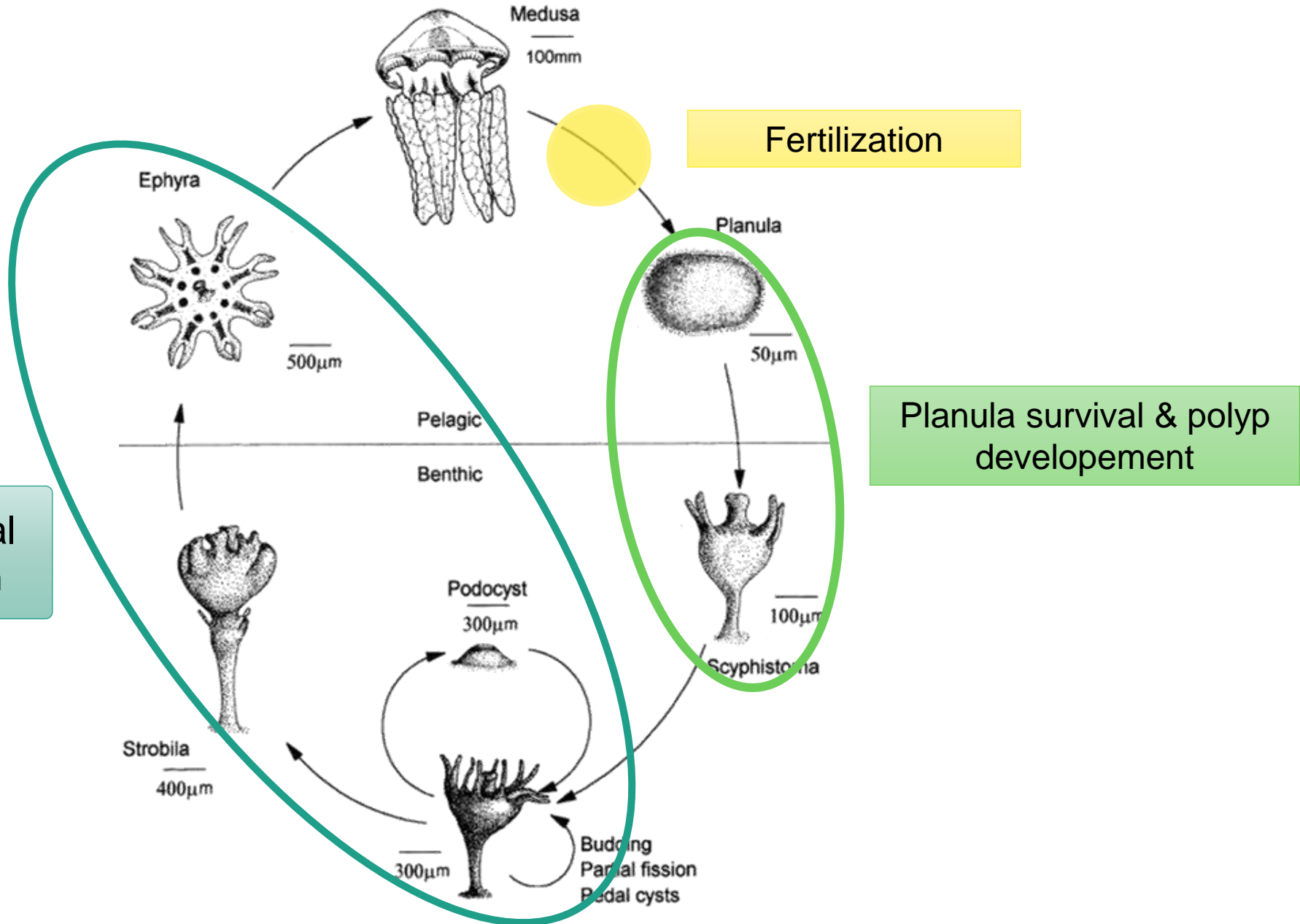


Work strategy





Work strategy

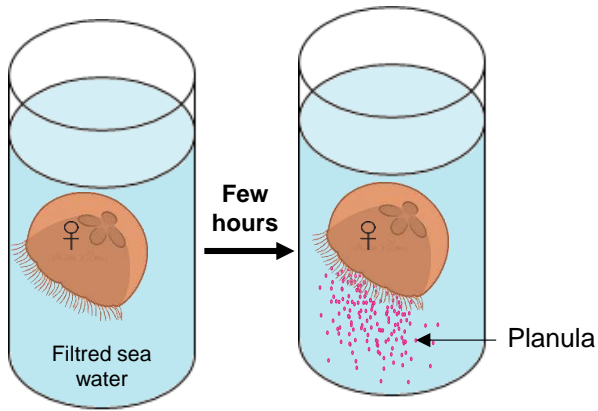




Step 1. Fertilization

Brooding

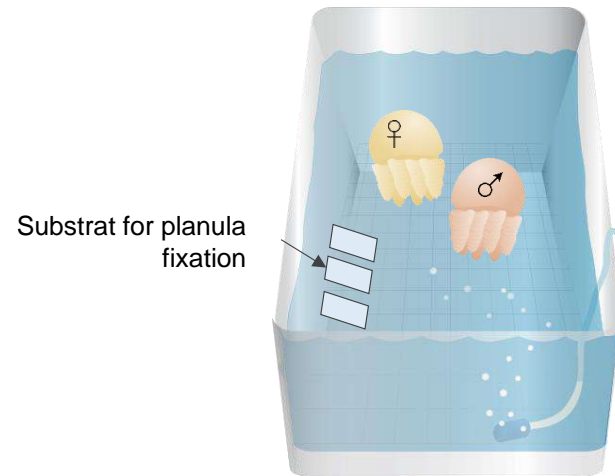
Aurelia spp
Phyllorhiza punctata
Cotylorhiza tuberculata
Rhizostoma luteum
Catostylus mosaicus
...



Non-brooding

Pelagia noctiluca
Rhizostoma pulmo
...

Opt 1. *In vivo* fertilization



Opt 2. *In vitro* fertilization

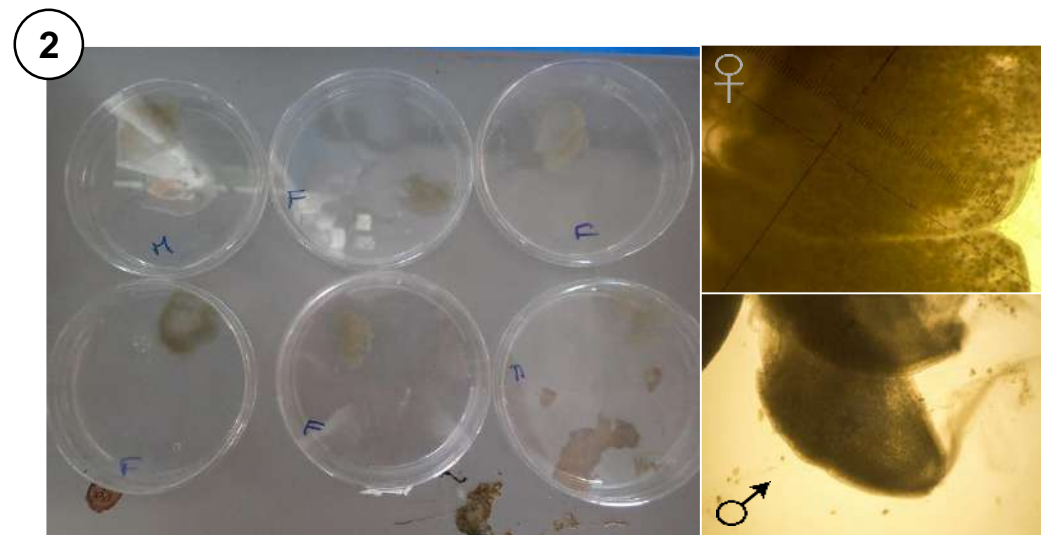
No idea !!!

Opt 2. *In vitro* fertilization

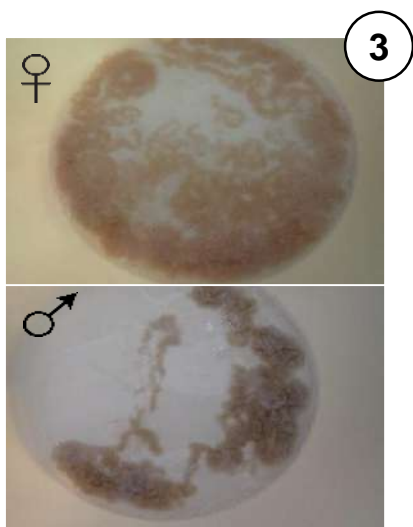
Step 1. Fertilization



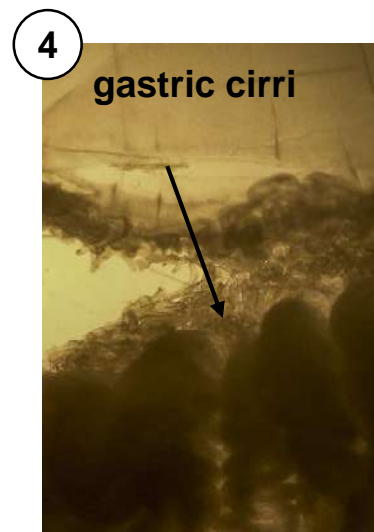
Check gender & gonads maturity



Gonads extraction



Remove tissue and gastric cirri



Gonads in seawater and air bubbling



24 - 36 hrs



Go Jelly Rearing in Oceanário de Lisboa / CMC

Tank: Ephyrae: 11 L Kreisel (8 L jars*); metaephyrae: 300 L Kreisel (60 pseudo Kreisel*); adults: 300 L Kreisel [*culture in Maricultura Center of Calheta (CMC)_Madeira Island]

4 meals per days: Rotifers (*Brachionus plicatilis*) fed with *Nannochloropsis* sp., AF Artemia nauplii (INVE) and smashed mussel flesh (once per day)

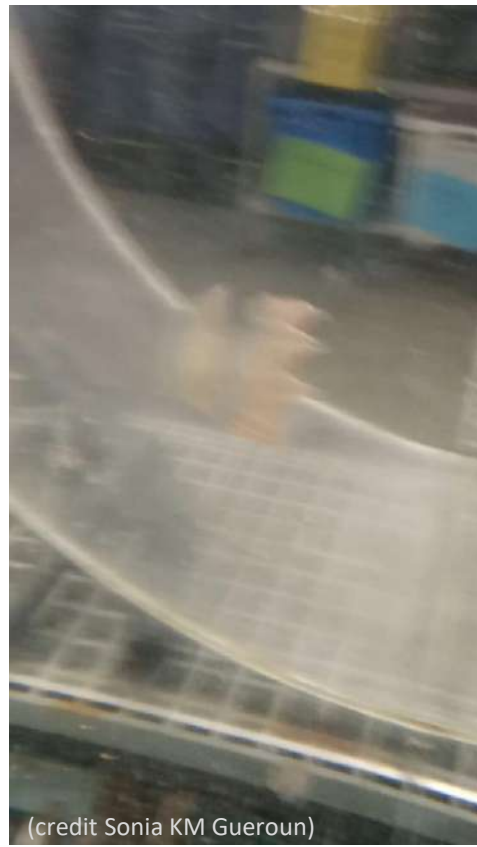
Water: 20 ± 1 °C ; 35 salinity

Mid-December (≈2wks)



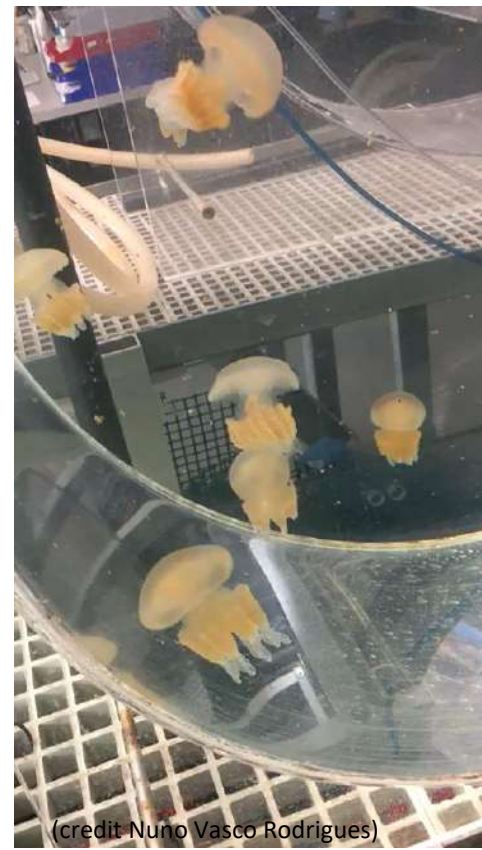
(credit Sonia KM Gueroun)

Early-January (≈ 4 wks)



(credit Sonia KM Gueroun)

Mid-January



(credit Nuno Vasco Rodrigues)

Mid-April



(credit Raul Gouveia)



C. tagi life cycle

Planula

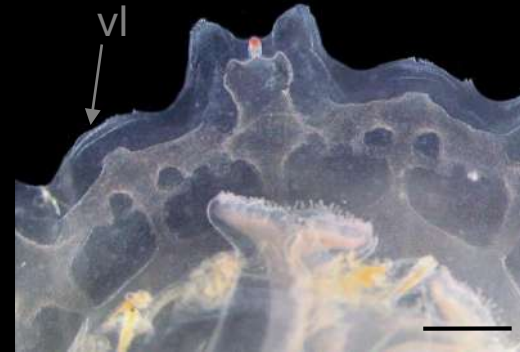
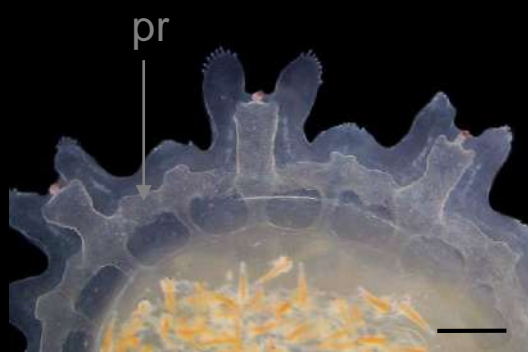
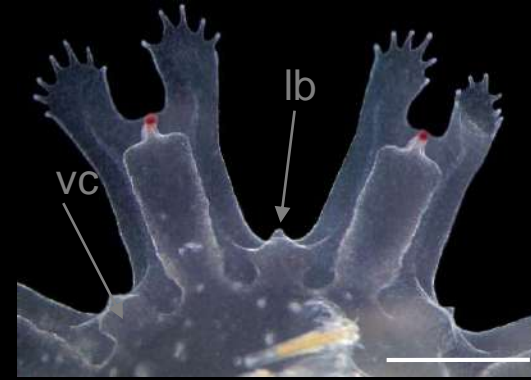
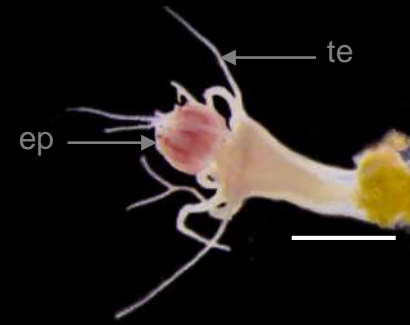
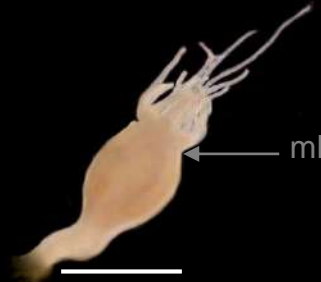
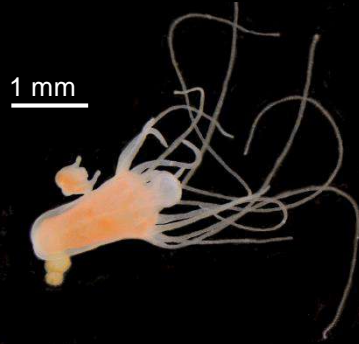
200 μ m

Polyp

1 mm

Strobile

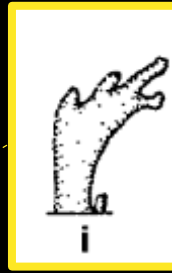
Ephyra – metaephyra





Catostylus tagi

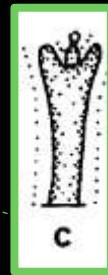
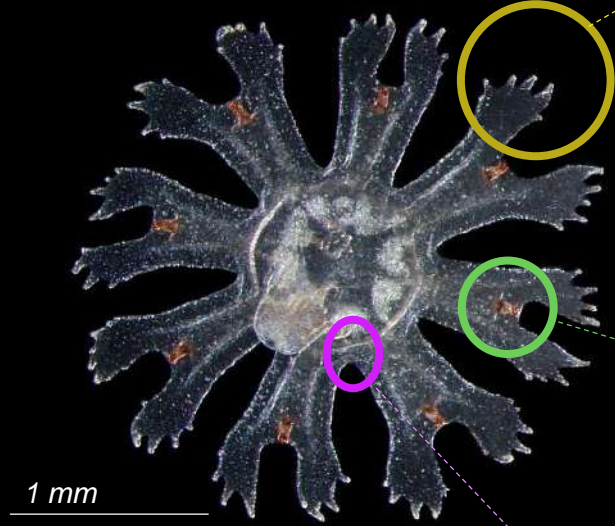
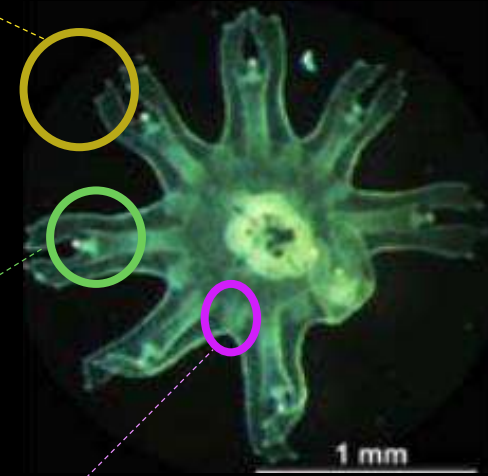
Rhopalial lappet



antler palm-like with finger-like appendages

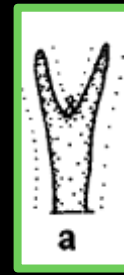
Catostylus mosaicus

(Straehler-Pohl & Jarms 2010)



Rhopalial canal

slightly forked, rounded points



slightly forked



Rhombical

Velar canal



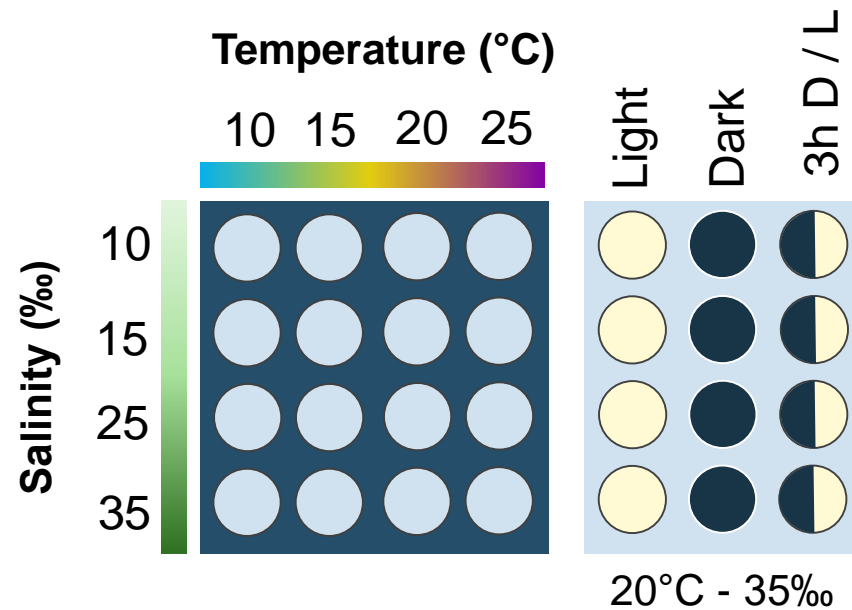
Spade-like



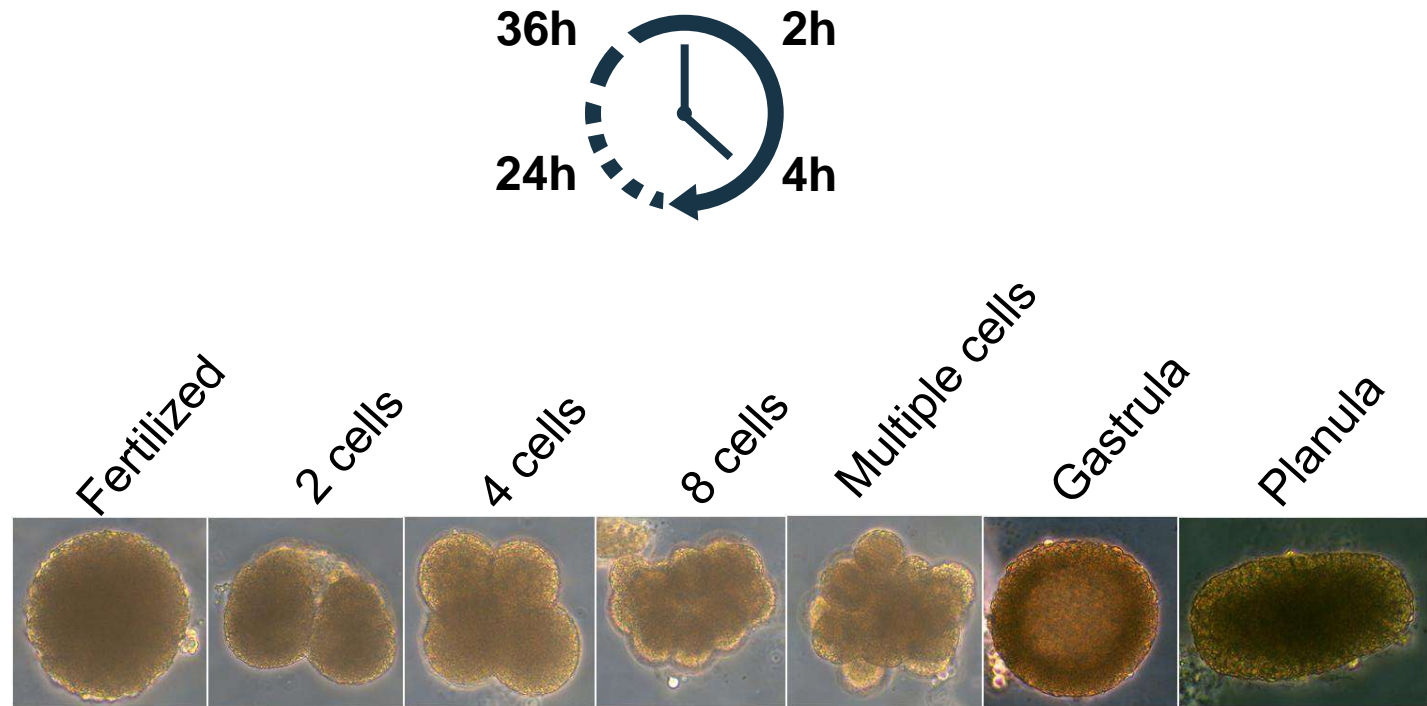
Step 1. Fertilization

Standard conditions: 18°C and 35 salinity => OK

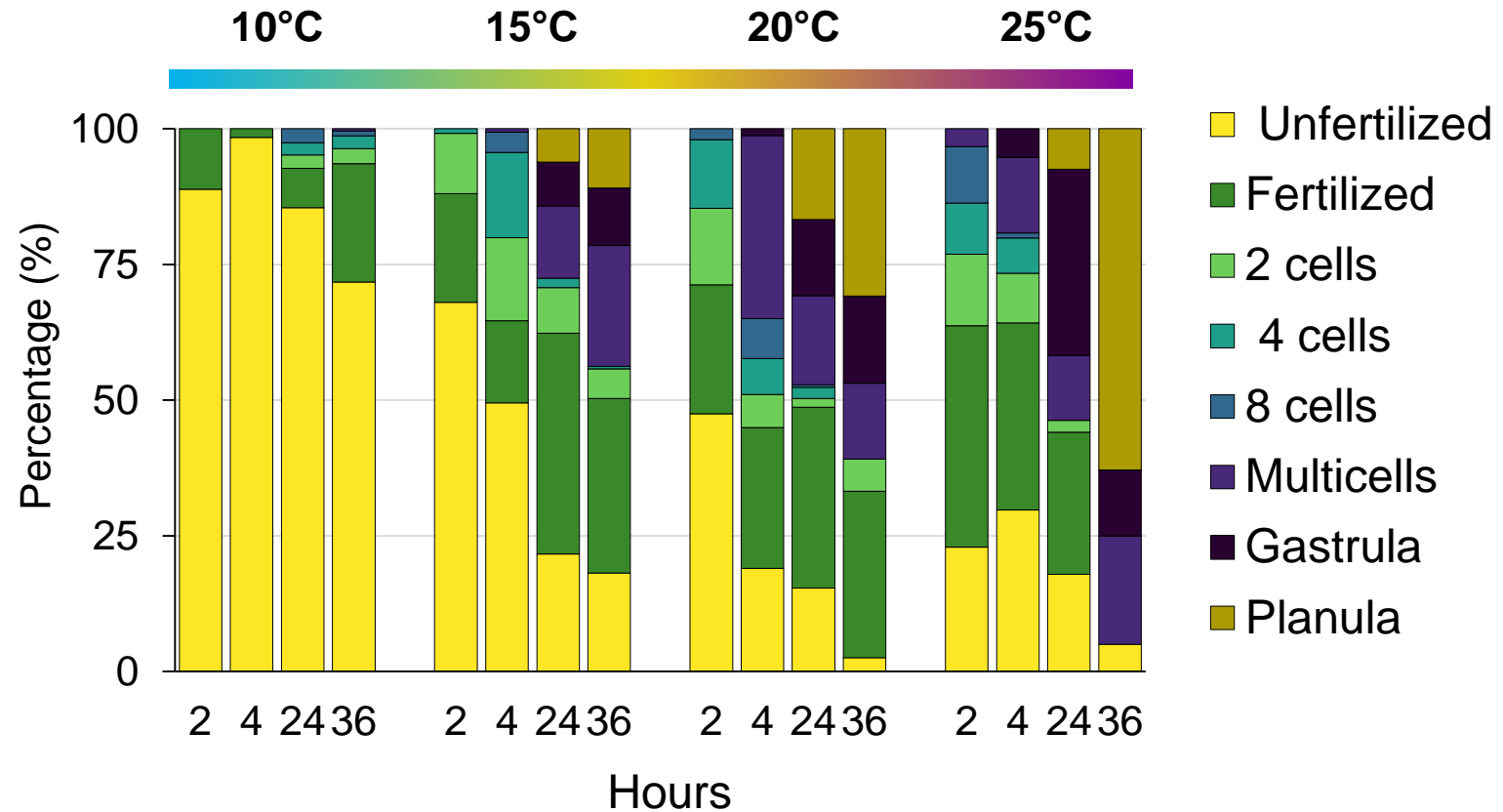
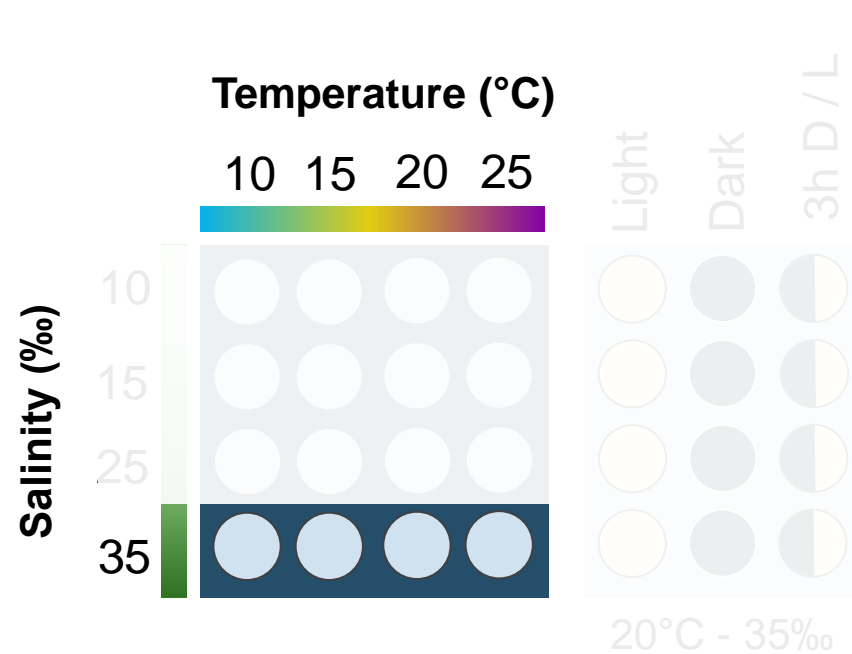
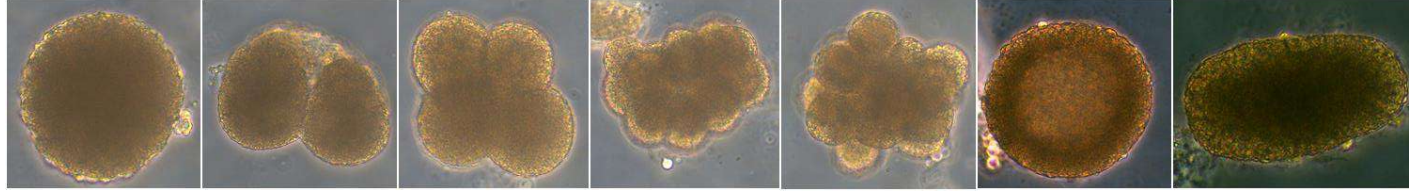
Experimental design



Surveyed parameters

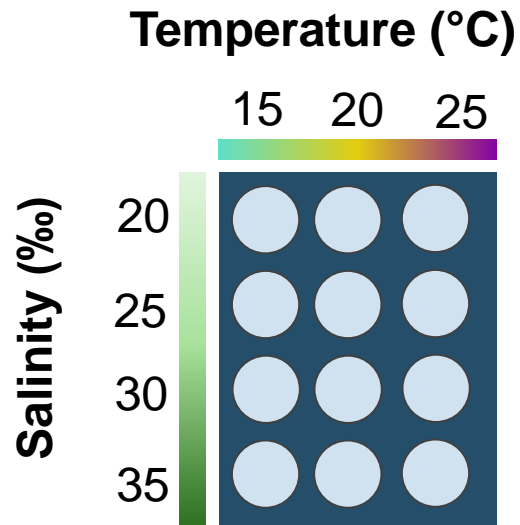


Step 1. Fertilization

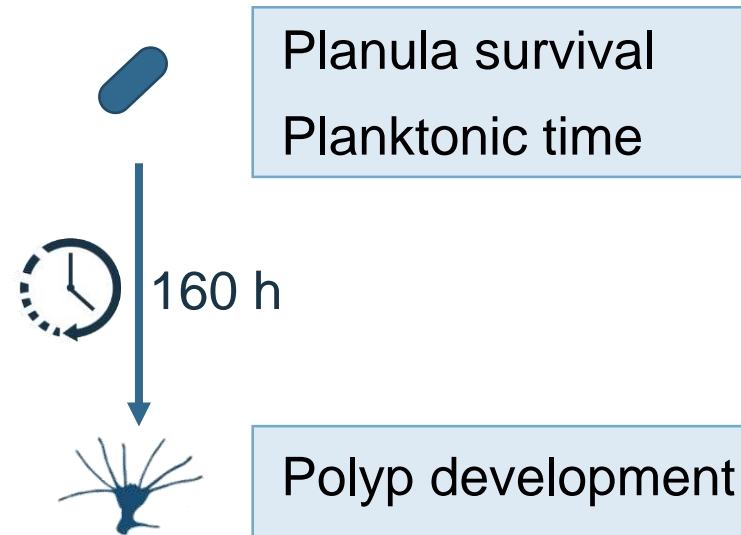


Go Jelly Step 2. Planula and polyp development

Experimental design

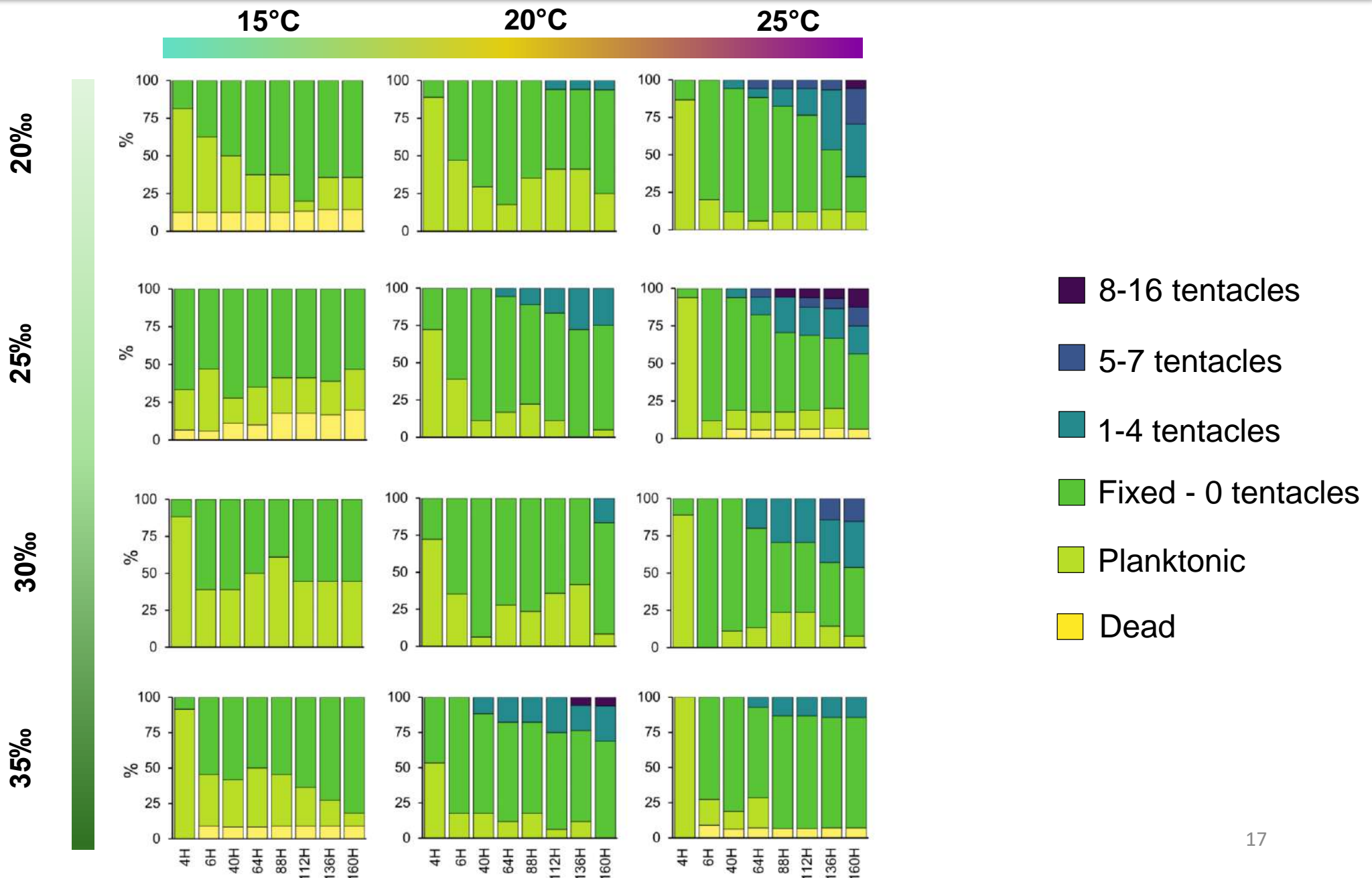


Surveyed parameters

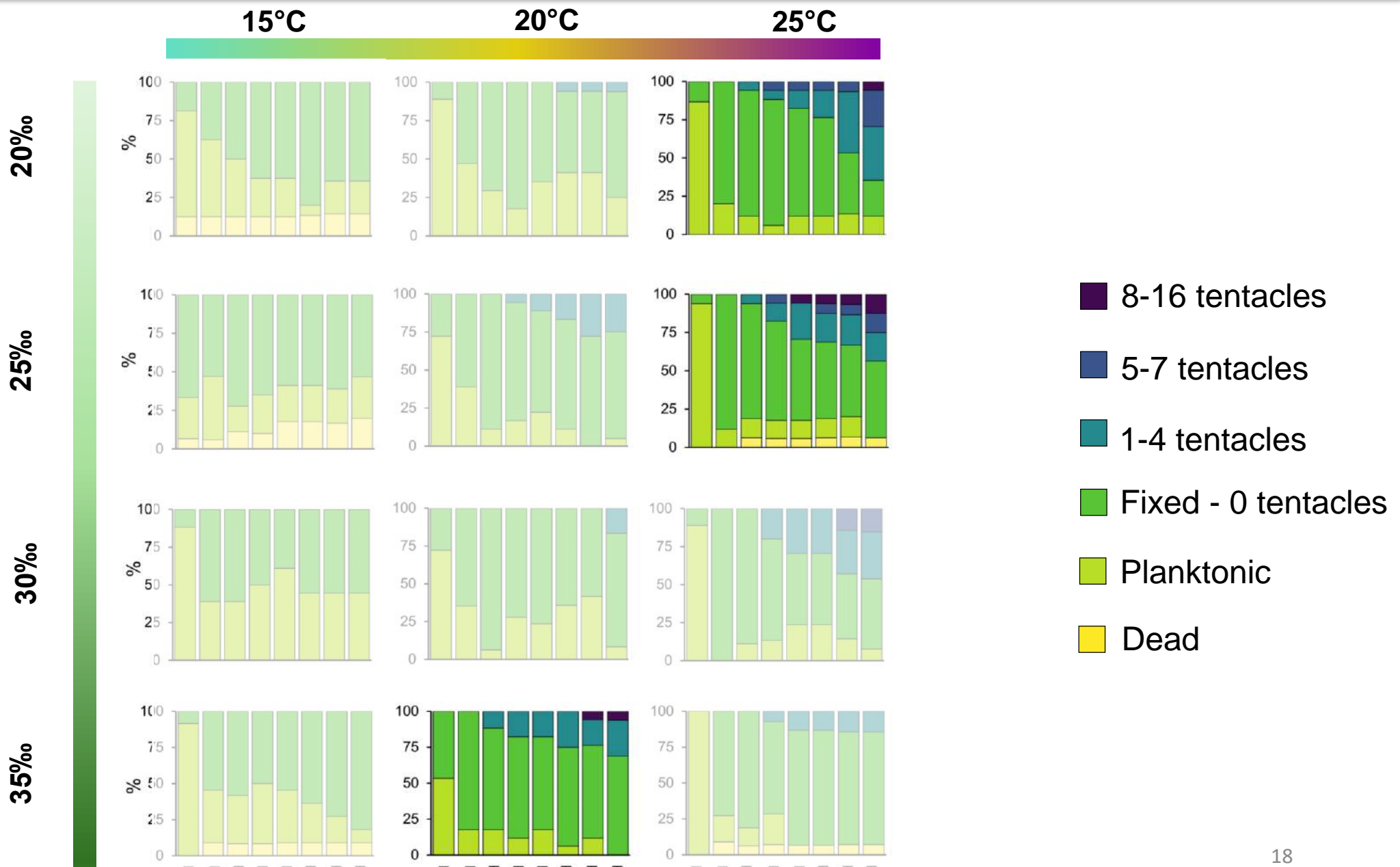




Step 2. Planula and polyp development

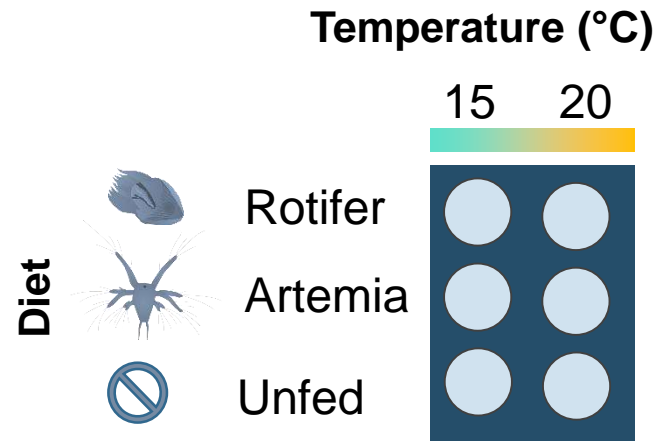


Go Jelly Step 2. Planula and polyp development



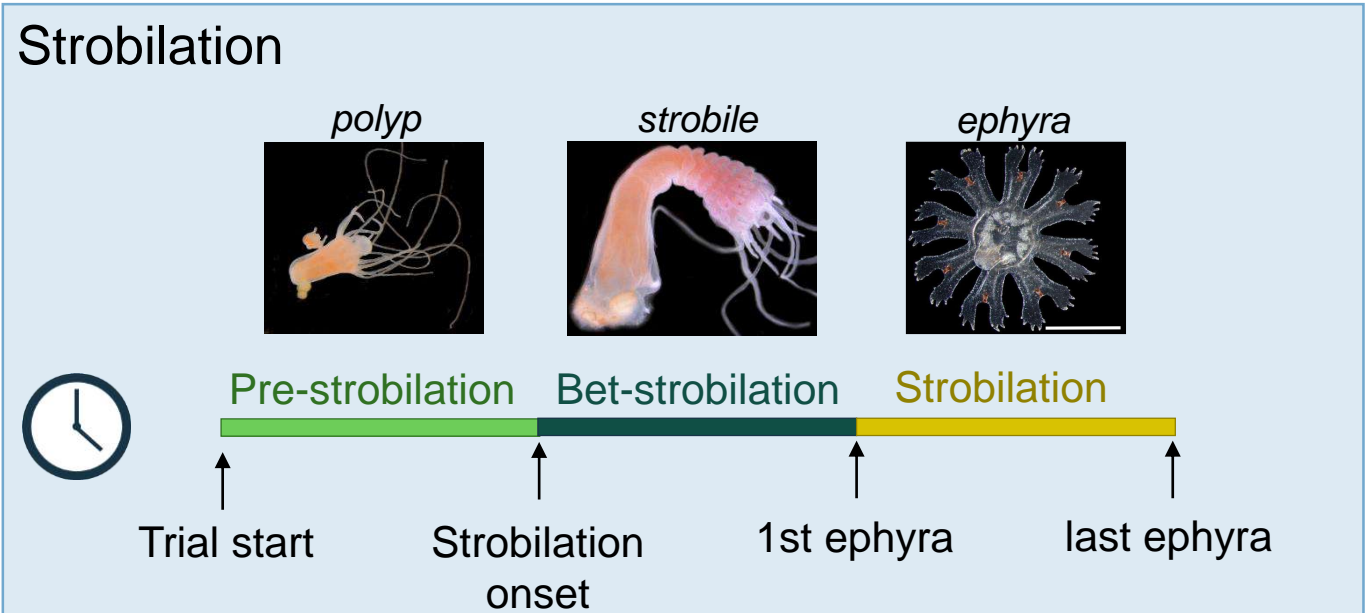
Go Jelly Step 3. Polyp asexual reproduction

Experimental design



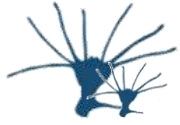
Surveyed parameters (6 weeks)

Polyp asexual reproduction (bud, planuloid, podocyst...)

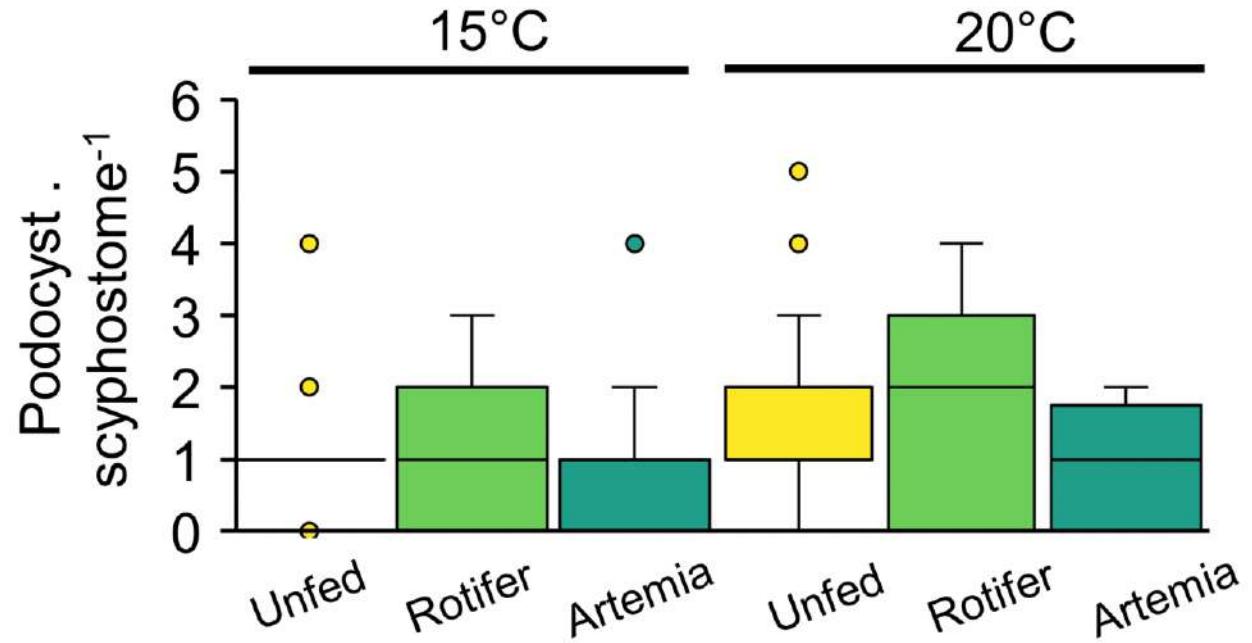
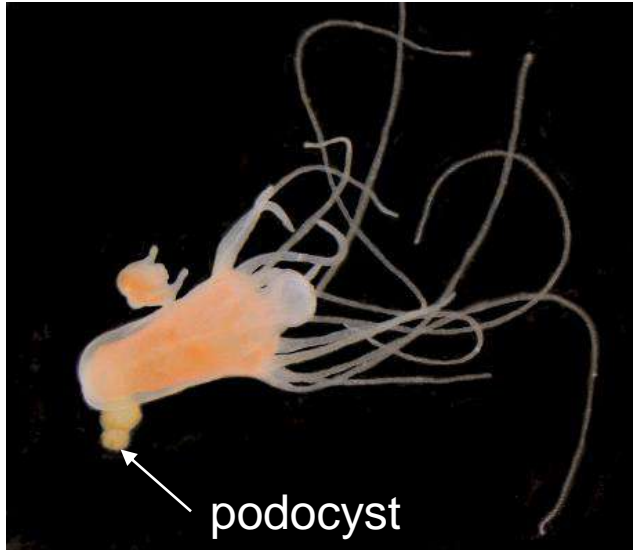


Ephyrae per strobilation

Go Jelly Step 3. Polyp asexual reproduction



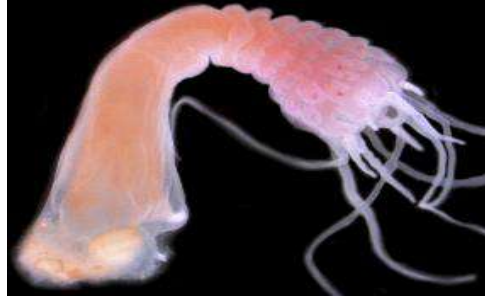
Polyp asexual reproduction (bud, planuloid, podocyst...)



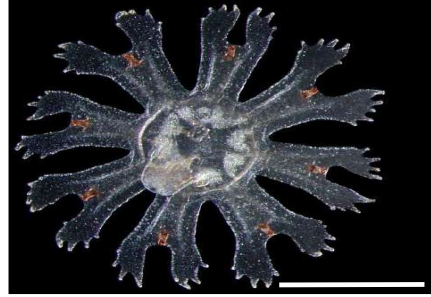
Step 3. Polyp asexual reproduction



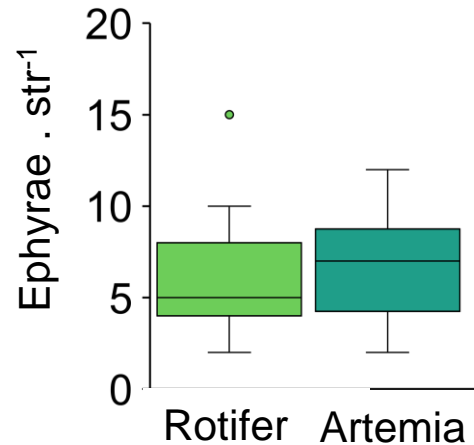
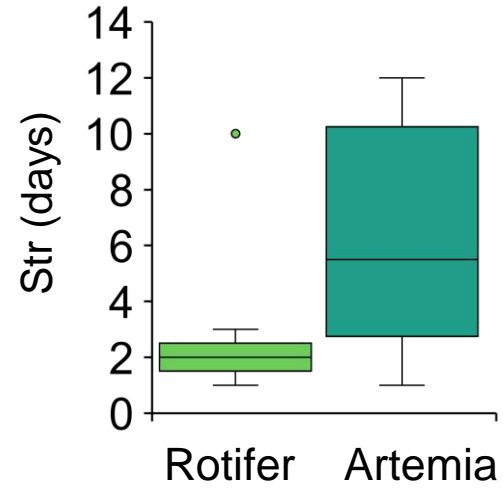
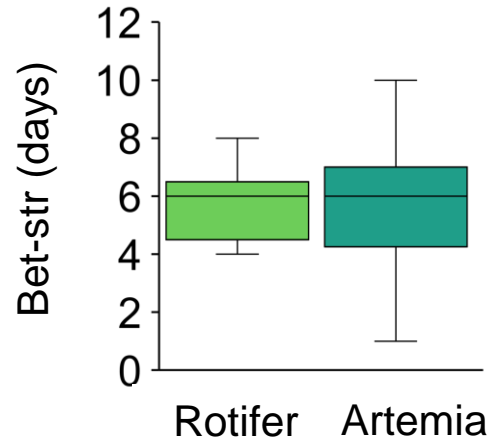
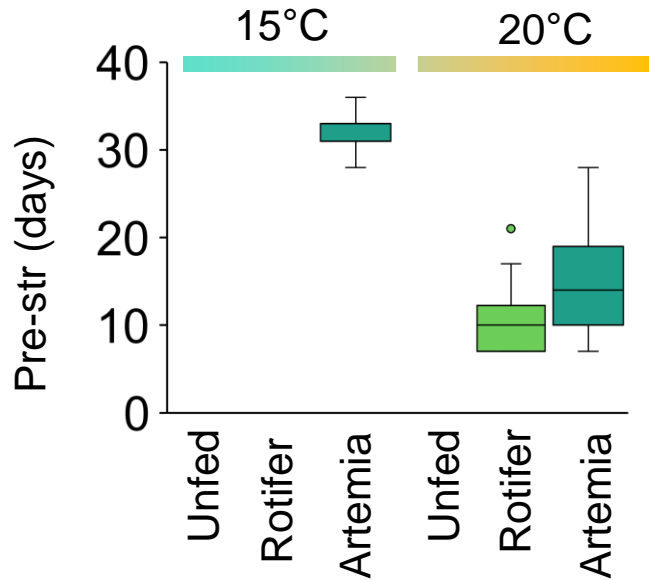
Pre-strobilation



Bet-strobilation



Strobilation





Take home message

Catostylus tagi culture

Step 1. *In vitro* fertilisation

Gonad cleaning
18°C + 35 salinity ; 36 hours
Optimisation **coming soon !!**



Step 2 . Planula

Temperature: 20 – 25°C
Salinity: 20 – 35
Optimum: 25°C - 20 / 25 or 20°C - 35 salinity



Step 3 . Polyp & strobilation

Podocysts
Continous strobilation: 18 – 25°C
Diet: Rotifers - Artemia





THANK YOU / OBRIGADA

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<https://gojelly.eu/>



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