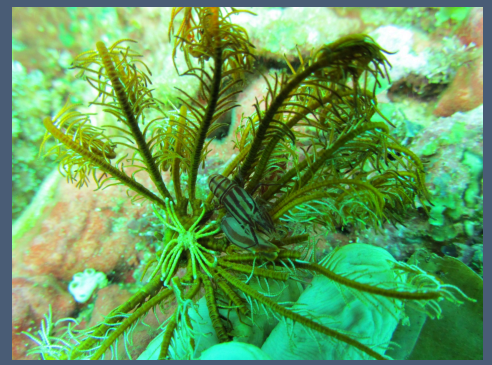
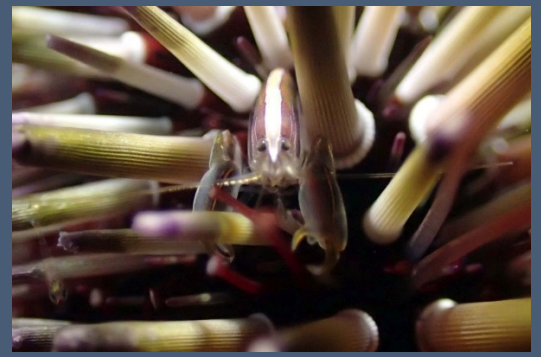



Mimetic Coloration in Four Symbiotic Shrimps: Color Changes and Histological Investigation

Lisa Mussoi, Alexia Lourtie, Hanitriniala Mahavory, Mathilde Isorez, Guillaume Caulier

UMONS Université de Mons

INSTITUT HALIEUTIQUE ET DES SCIENCES MARINES IHSM UNIVERSITÉ DE TOLIARA

BOMB

1

Class: Malacostraceae
Order: Decapoda
Family: Palaemonidae
Genus: *Zenopontonia*
Species: *soror*

Class: Malacostracae
Order: Decapoda
Family: Palemonidae
Genus: *Tuleariocaris*
Species: *holthuisi*

Class: Malacostracae
Order: Decapoda
Family: Alphidae
Genus: *Synalpheus*
Species: *stimpsoni*

Class: Malacostracae
Order: Decapoda
Family: Alpheidae
Genus: *Arete*
Species: *indicus*

Introduction

Z. soror

Cuclcita novaeguineae

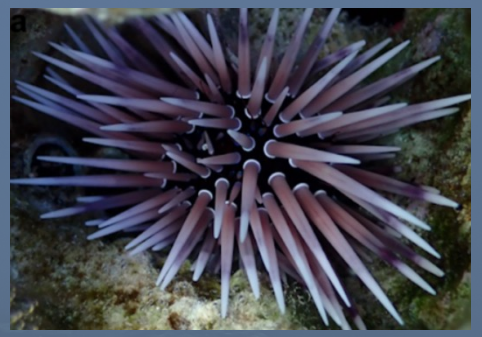
S. stimpsoni

Phanogenia distincta

T. holthuisi

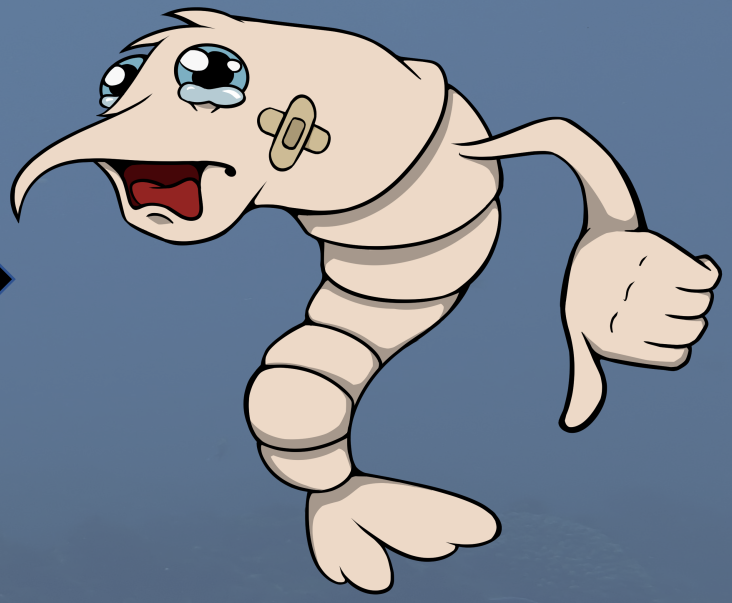
A. indicus

Echinometra mathaei

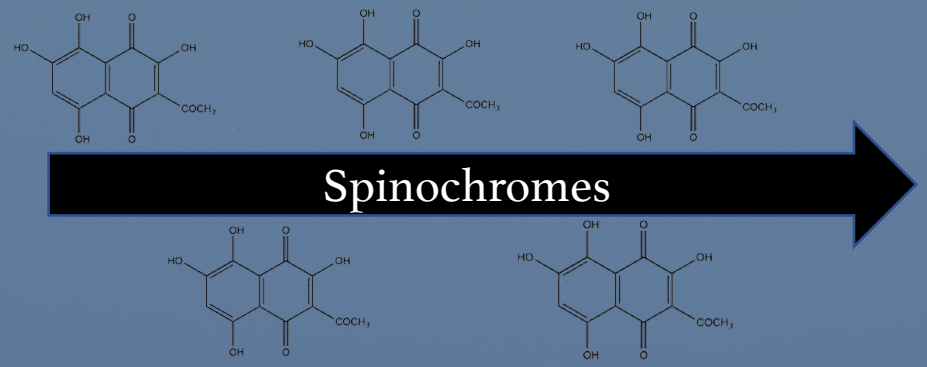


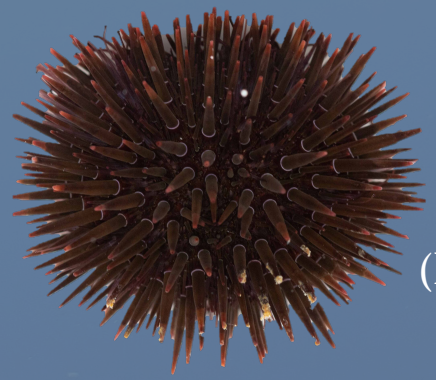
Effect on the host

Host separation syndrom

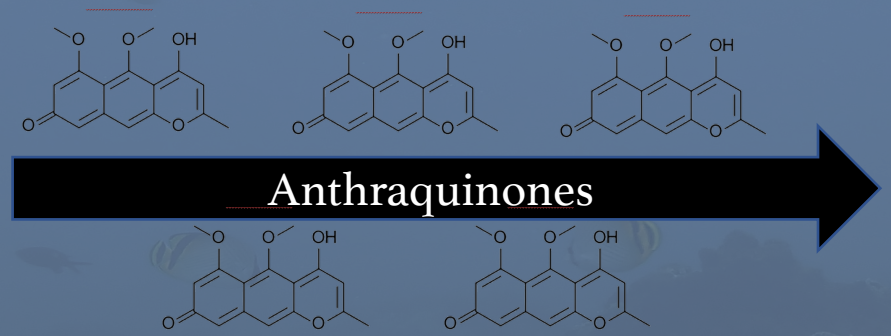


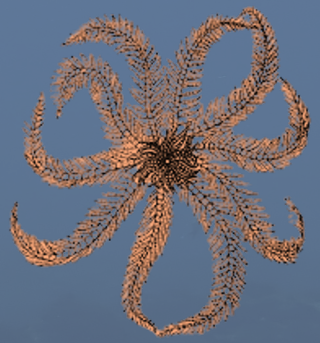
(Brasseur *et al*, 2018)



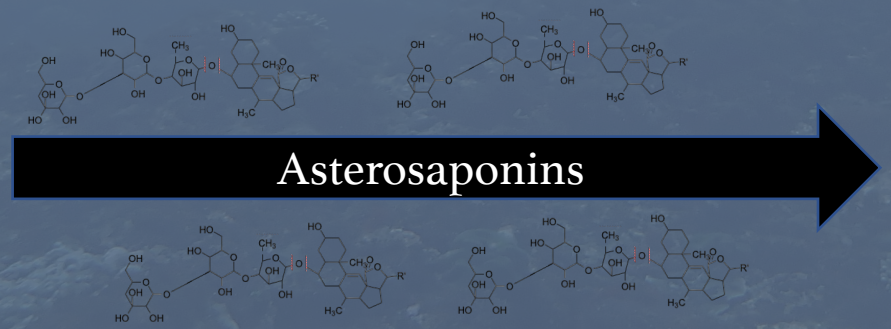


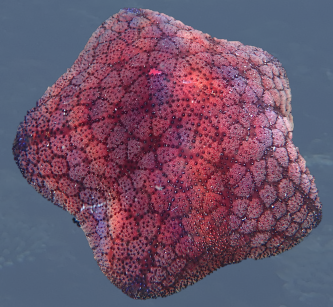
(Brasseur *et al*, 2018)





(Caulier *et al*, 2022)





(Lourtie *et al*, 2023)

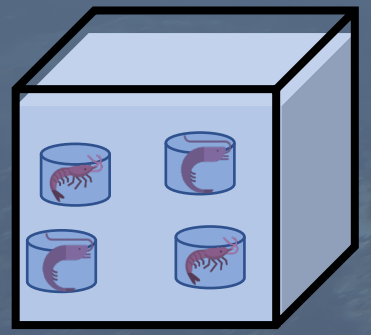
Color change analysis

Histological analysis

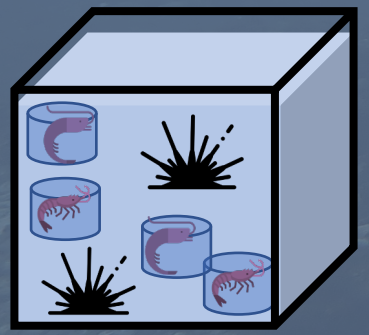
Color change analysis

6h
12h
18h
22h

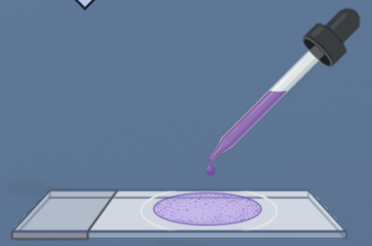
Isolation



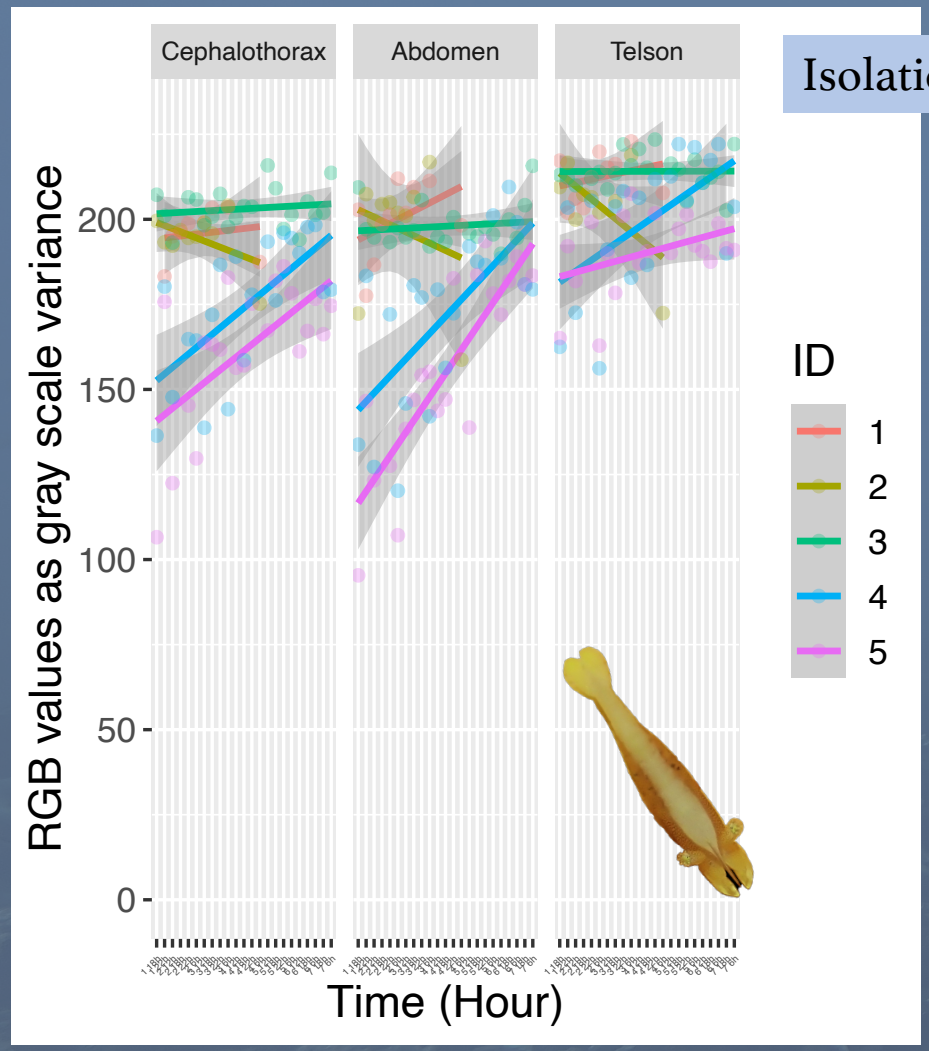
Conditioning

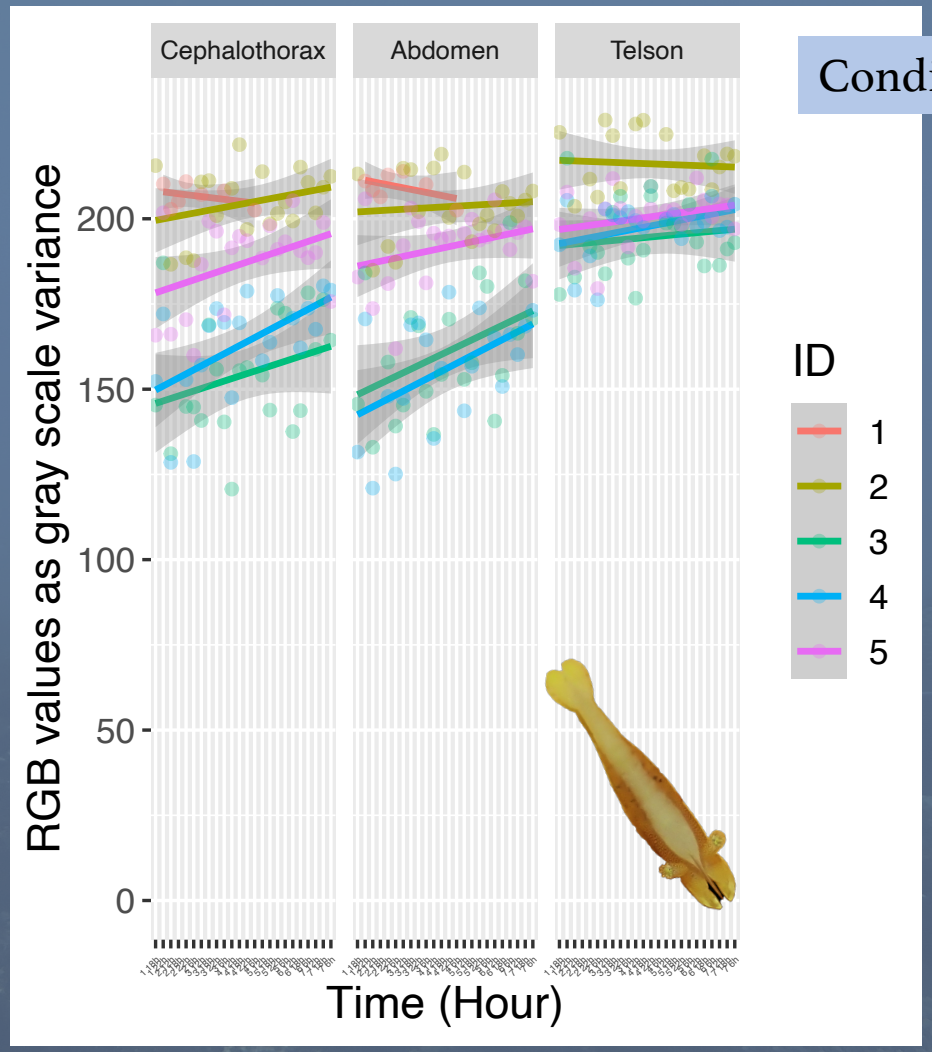


Histological analysis

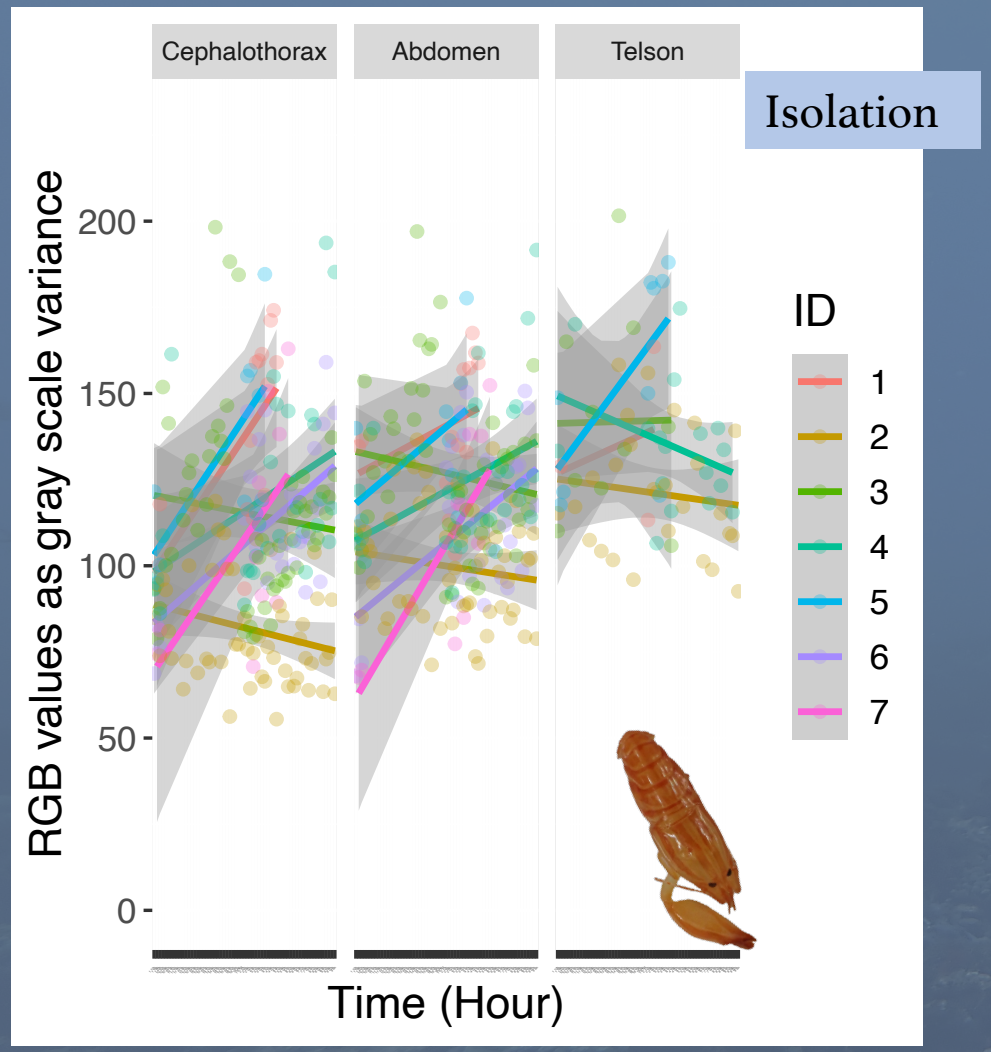


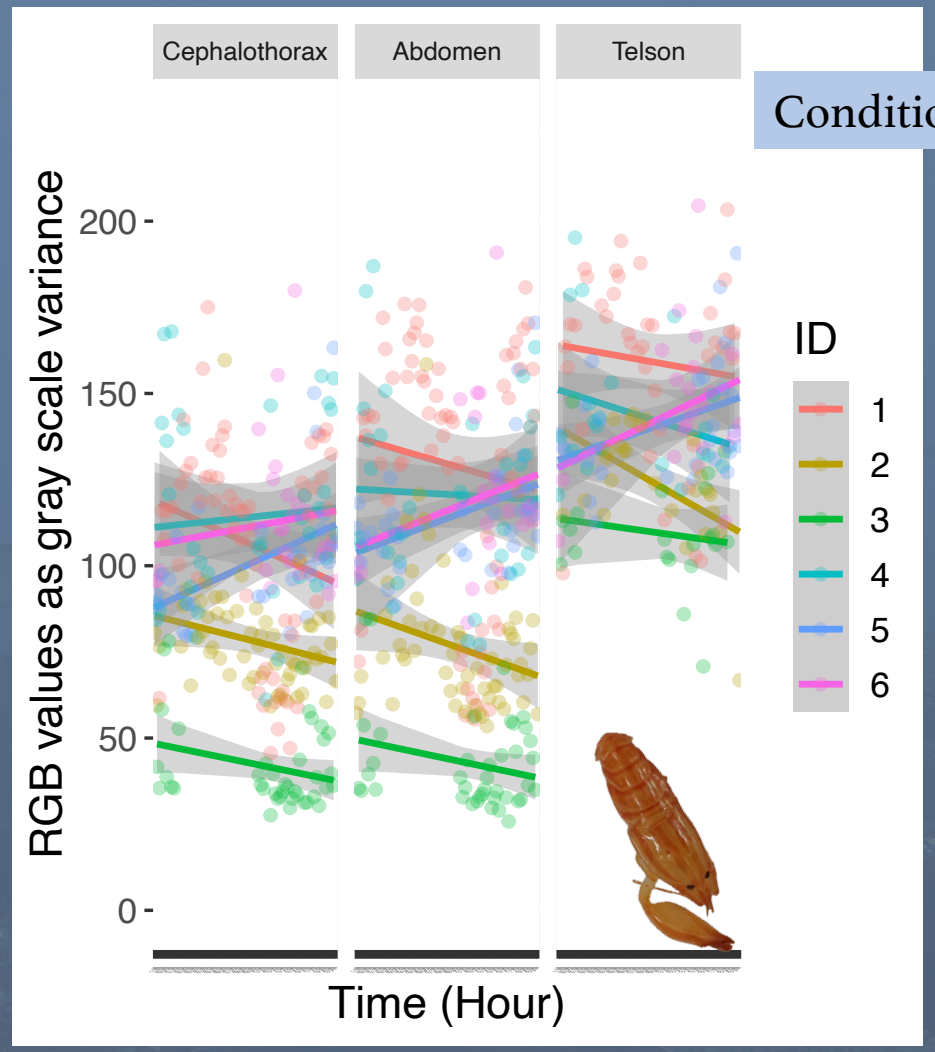
Color change analysis





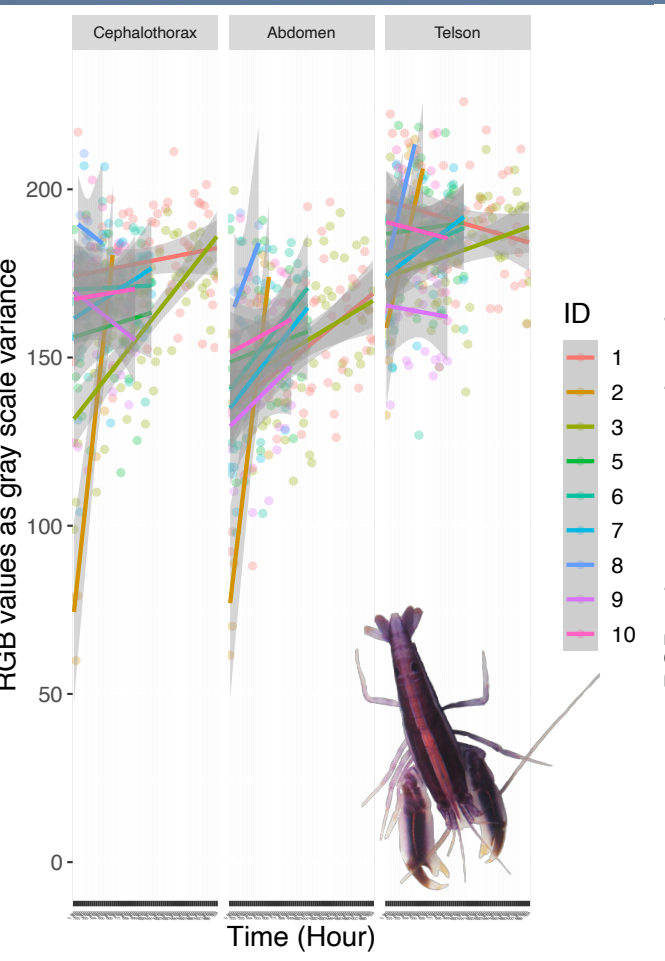
Color change analysis

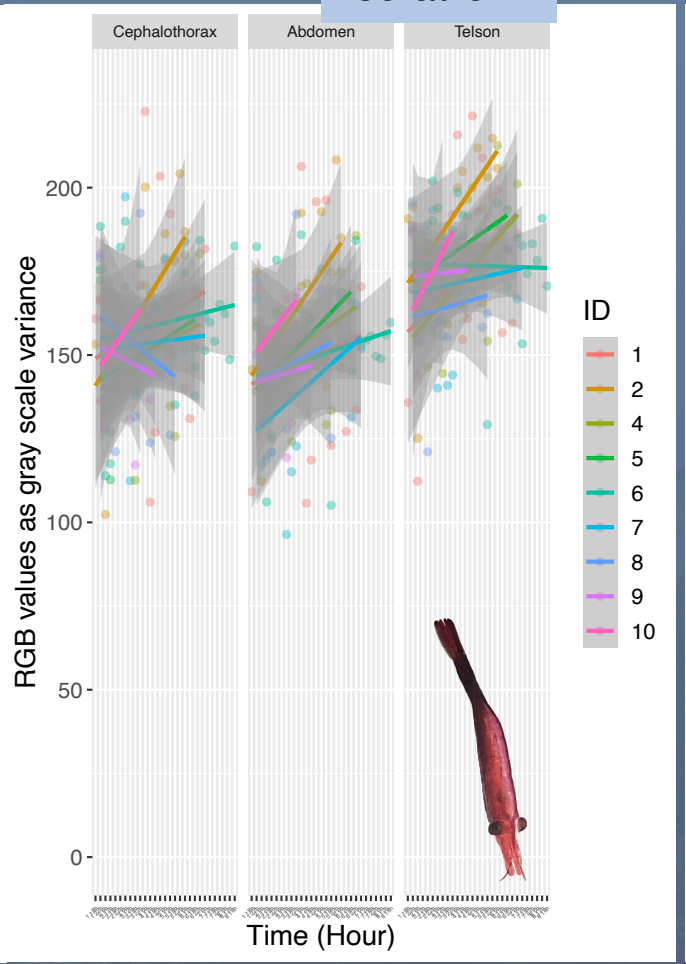




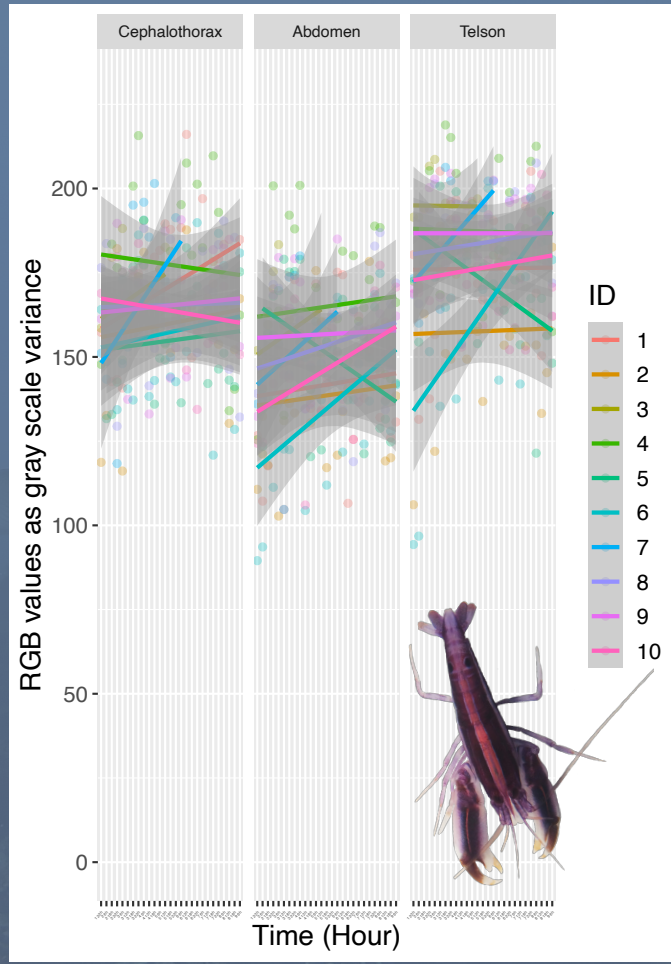
Color change analysis

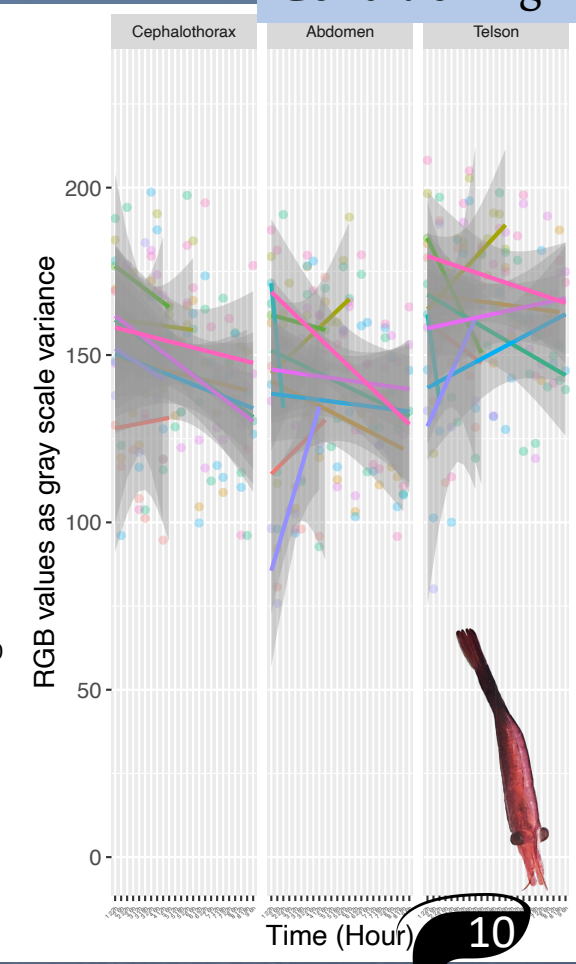
Isolation





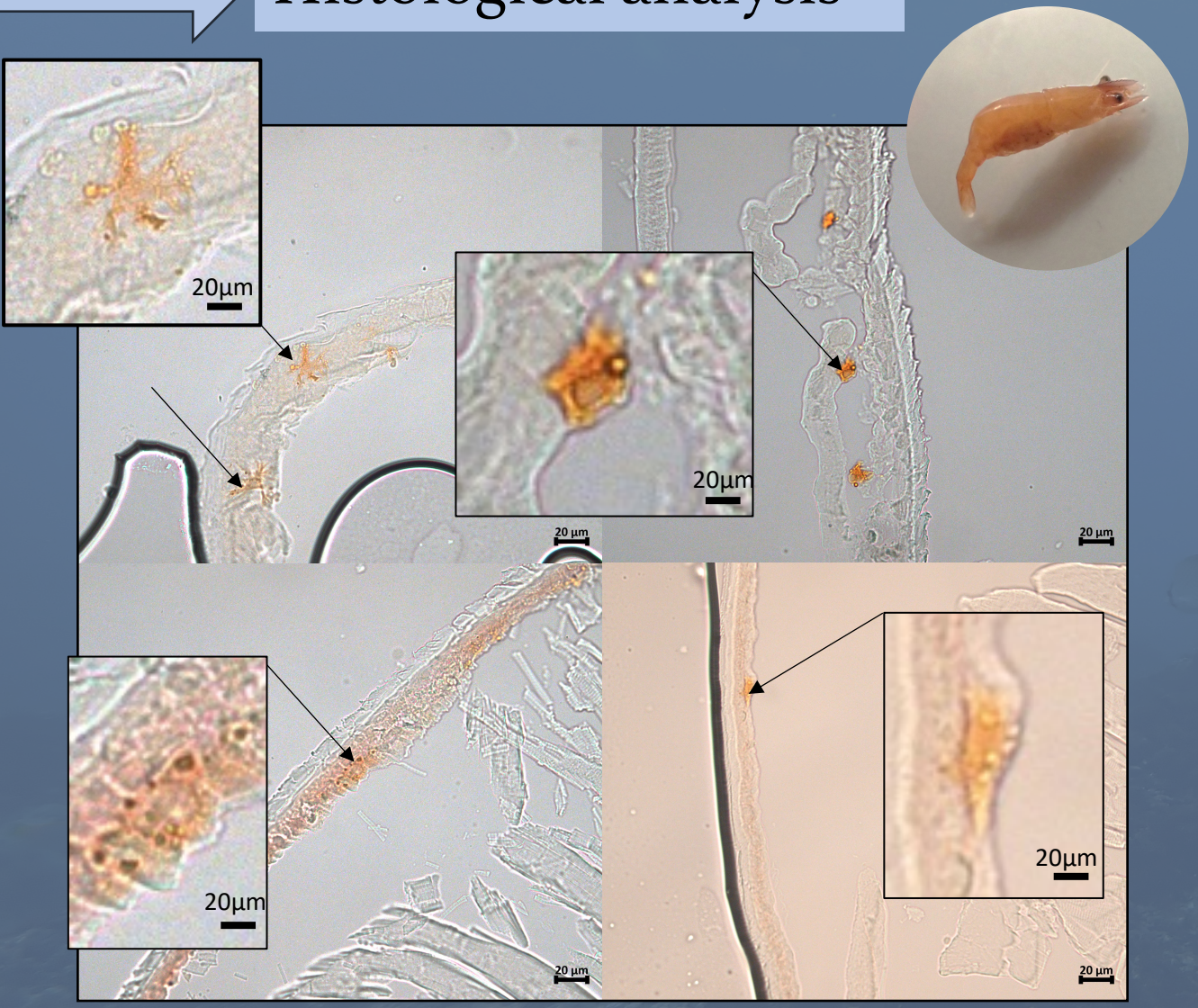
Conditioning





Histological analysis

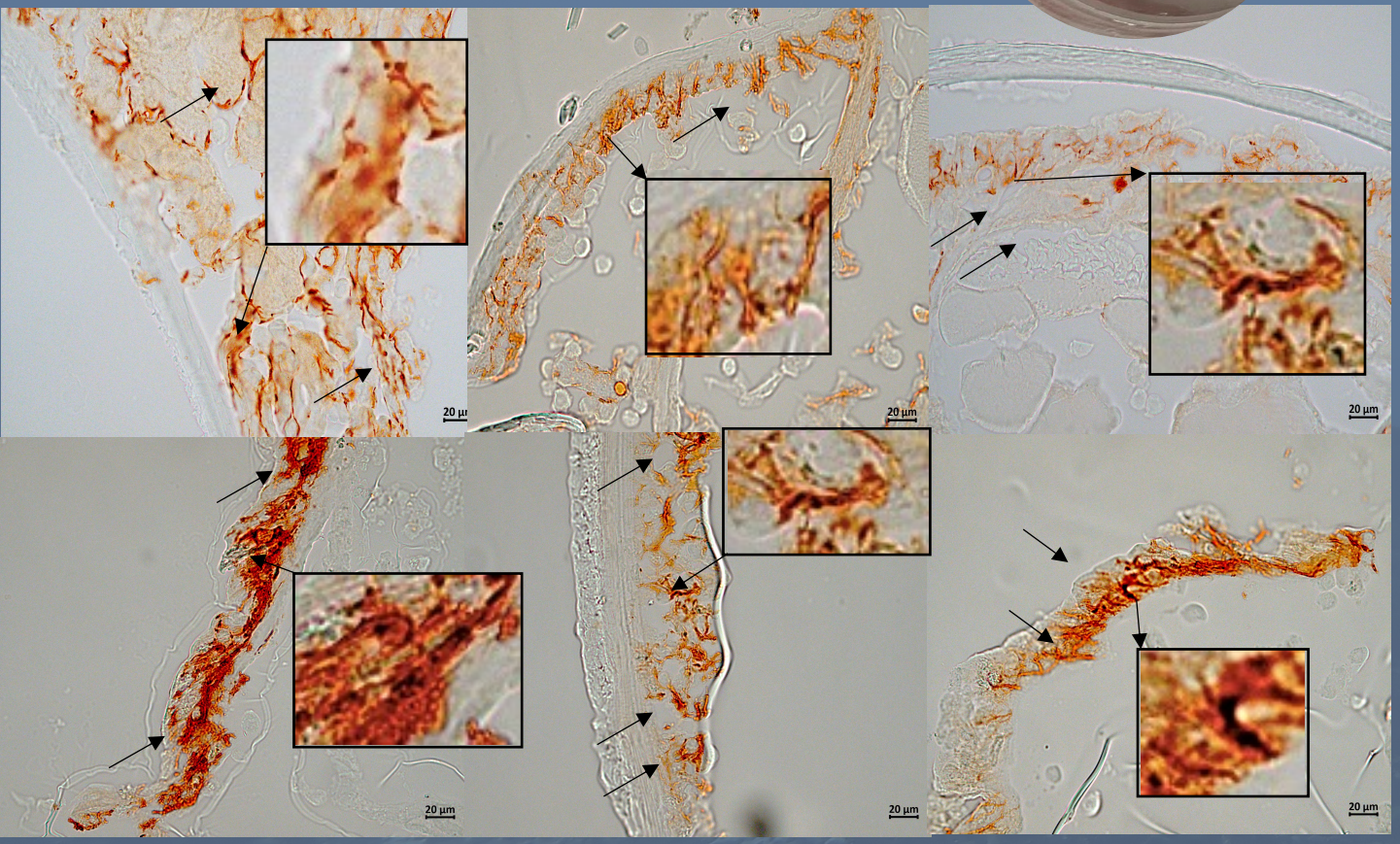
Histological analysis

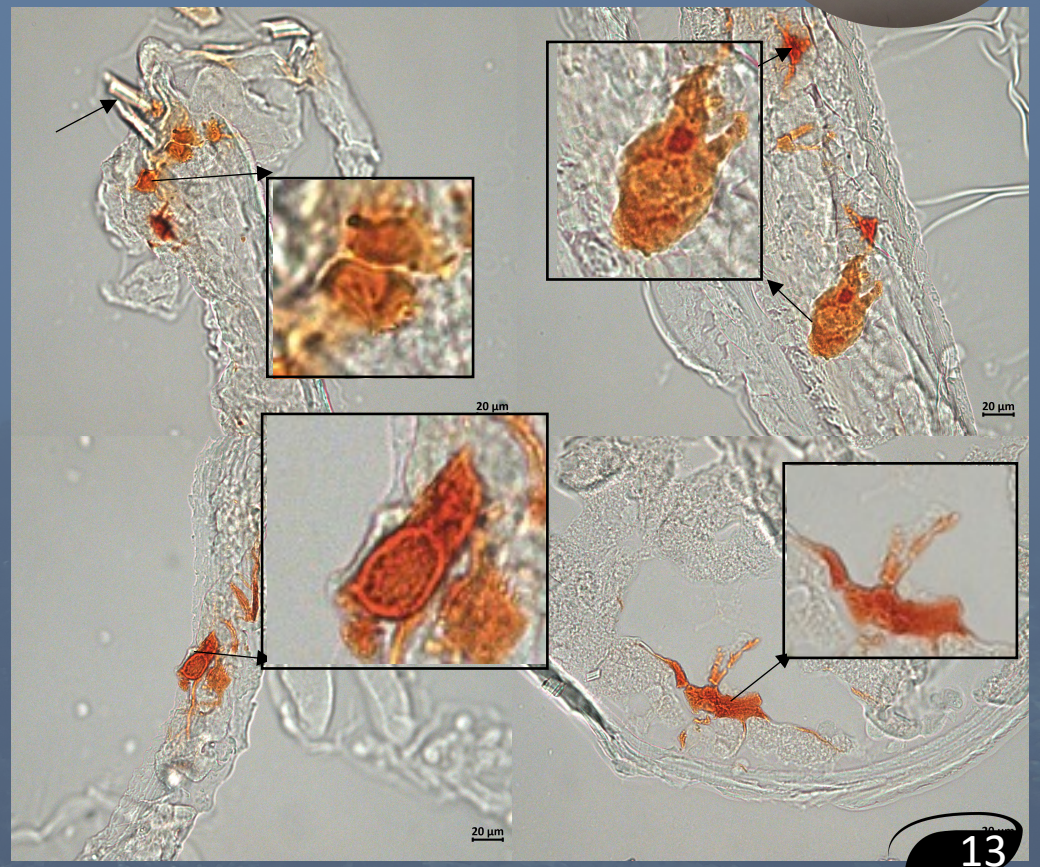


Histological analysis

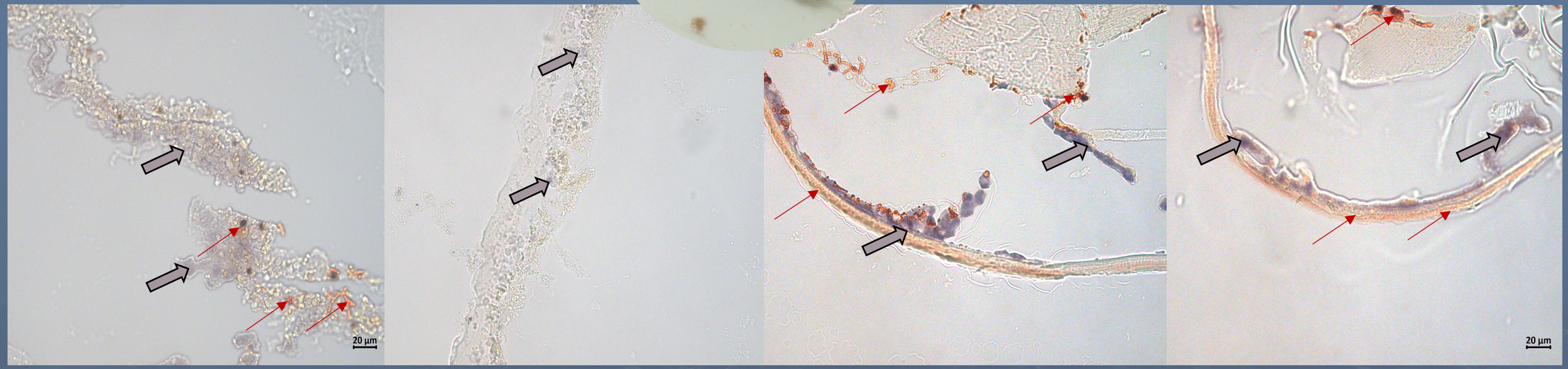
Nyctemal cycle

Diminution of 39%

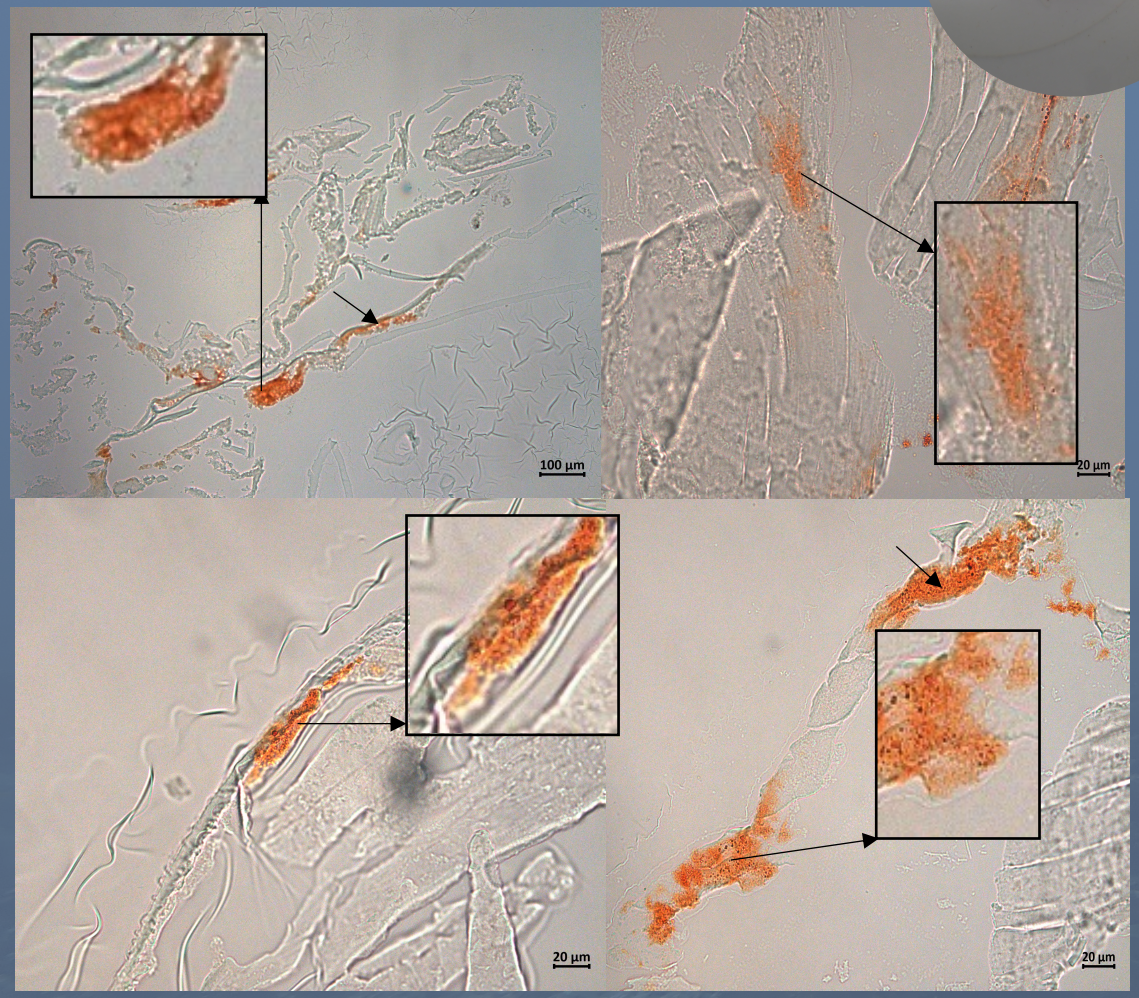




Histological analysis

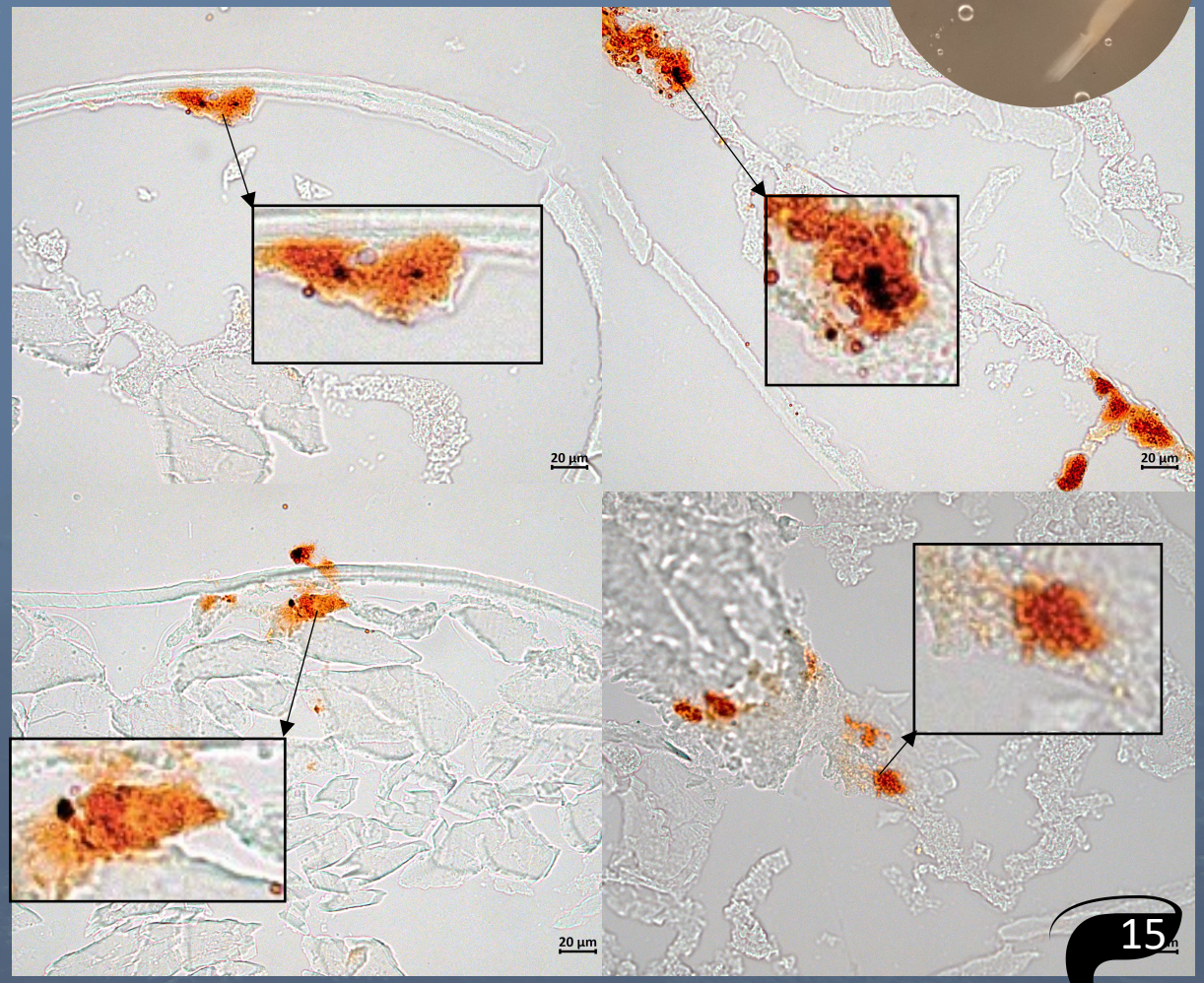


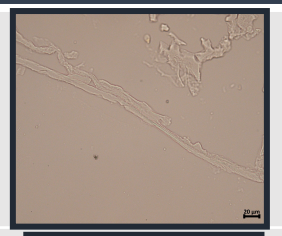
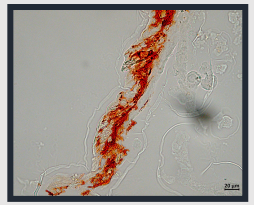
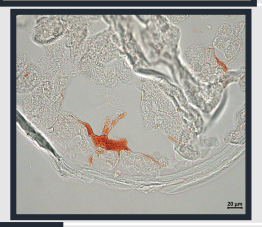
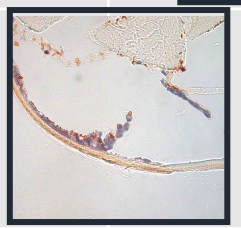
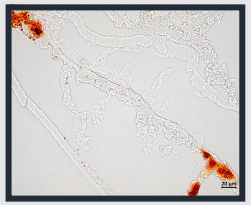
Histological analysis



Diminution of 24%

Host separation syndrom



Species	Isolation	Conditioning	Effet of the olfactory environment	Colored chromatophore	Transparent chromatophore
Z. soror	✓	✓	✗		
S. stimpsoni	✓	✗	✓		
A. indicus	✓	✗	✓		
T. holthuisi	✓	✗	✓		

What's next ?

FRIA project

FRIA project

- Carotenoids extraction
- Histological analyis
- Color change monitoring

- Carotenoids extraction
- Color change monitoring
- TEM analysis
- Stabe isotope analysis

Madagascar

- Color change monitoring
- Transcriptomic analysis
- TEM analysis

- Color change monitoring
- TEM analysis

- Carotenoids extraction
- Color change monitoring
- TEM analysis

French Polynesia

Thank you / Misaotra bestaka / Mauruuru roa

A. Lourtie

G. Caulier

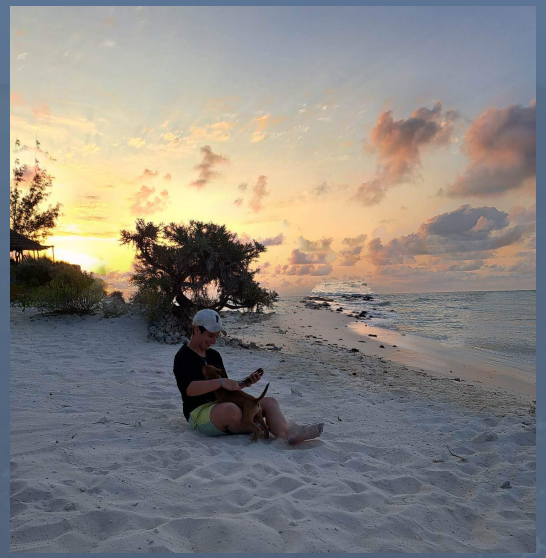
G.Engels

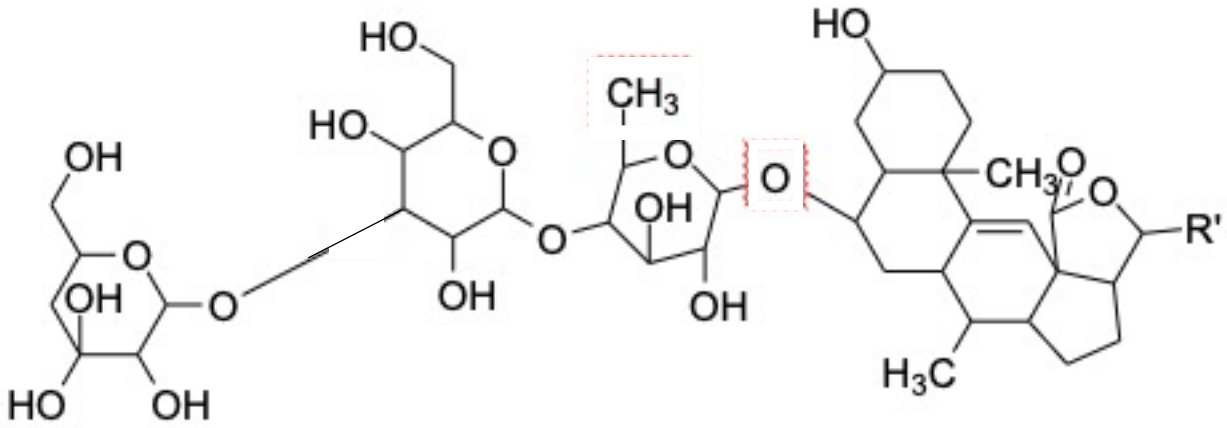
E. Duthoo

D. Nonclercq

Histology lab

A. Frau




HO
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