

BENTHOS OF THE BIJAGÓS: An illustrated field catalogue for the identification of local macrozoobenthic fauna

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INTRODUCTION

The Bijagós Archipelago hosts large populations of migratory shorebird species, which spend the non-breeding period of their annual cycle in this area. For this reason, it has caught the interest of ecologists and ornithologists studying these birds.

Benthic macroinvertebrates, despite being an important factor in hosting such large concentrations of their predators, have not received as much attention. Although a few studies have been conducted in the Bijagós Archipelago regarding macrozoobenthos, no identification keys, field guides or even species lists have been published.

Following the global declines in shorebird populations worldwide, and particularly the decreasing numbers of shorebirds in the Bijagos, MAVA Foundation funded a consortium of academic, NGOs and governmental institutions to develop the project “Waders of the Bijagos - Securing the ecological integrity of the

Bijagós Archipelago as a key site for waders along the East Atlantic Flyway”. The project aims at improving knowledge on wintering shorebird ecology and their trophic interactions, while supporting conservation efforts towards these species in the archipelago. Within this framework it became apparent that the knowledge gap on macrozoobenthic invertebrates, particularly on the lack of accessible information, was a potential limiting factor for several ecological studies, and this publication is therefore aimed at filling this gap.

Although we expect that publishing this catalogue will promote further ecological studies in the Bijagos, it should be noted that this document is by no means a complete listing of all macrozoobenthos in the archipelago and that it was also produced by and for shorebird researchers, therefore being limited in its scope and capacity to provide the needed information for extensive species identification; in fact some taxa are only described here at a higher level.

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METHODS

Sampling was carried out by foot in six mudflats across three islands: the island of Formosa, in a Marine Community Protected Area (mudflats of Anrumai and Abu); the island of Bubaque, the economic centre of the archipelago, and where human populations are most concentrated (mudflats of Escadinhas, Bijante and Bruce); and in the islet of Adonga, inside Orango National Park (mudflat of Adonga). Mudflats were sampled non-consecutively from the end of the wet season to the end of the dry season (October-April), from January 2018 until April 2020.

Each sample consisted of extracting a core of sediment of 0.01 m², to a maximum depth of 15 to 20 cm (often limited by rocks or shell banks). Core samples were divided in two fractions: the top 5 cm (where smaller individuals are concentrated) was sieved over a 0.5 mm mesh size, and the bottom layer which was sieved over a 1 mm mesh size. All individuals collected were stored in ethanol (70% or 96%), followed by later identification to the lowest taxonomic level possible with a magnifier lens, with the aid of a

stereo microscope and compound microscope for visualization of specific structures. Some polychaetes were died with methyl blue to help identification. Photographic record of the specimens was done by one of the following procedures: 1) live individuals prior to storage on alcohol; 2) after alcohol preservation, and 3) after coloration. The photographic equipment varied from a standard cell phone camera, often mounted on the magnifier lens, to a dino-lite digital microscope and to digital camera specific for macrozoobenthos macro photography.

Identification of specimens was conducted with the support of books, published papers or scientific websites and the identification keys therein (see references section). Taxonomic names followed the most recent classification by WoRMS (World Register of Marine Species; www.marinespecies.org).

MAIN RESULTS

In total 609 sediment cores were collected, corresponding to 9907 individuals, of at least 88 species of macrozoobenthos.



ERRANTIA (POLYCHAETA)

NEREDIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Nereididae

SIMILAR TAXA

Nephtyidae; Pilargidae

IDENTIFICATION FEATURES

Head with a distinct prostomium and peristomium;
Prostomium with two pairs of eyes;
Two antennae and two large biarticulate palps;
Proboscis with a pair of toothed jaws and often numerous chitinous paragnaths or soft papillae;
Peristomial segment apodous, with 4 pairs of tentacular cirri;
The first two parapodia are uniramous, the rest biramous;
Notopodium with a dorsal cirrus and one to three lobes;
Neuropodium with two lobes and a ventral cirrus;
Both spinigers and falcigers are usually present, but simple setae are either absent or very rare.



LEGEND

1. Head with paragnaths
2. Posterior parapod
3. Posterior spiniger
4. Jaws
5. Anterior body (dorsal view)



ERRANTIA (POLYCHAETA)

GLYCERA sp.

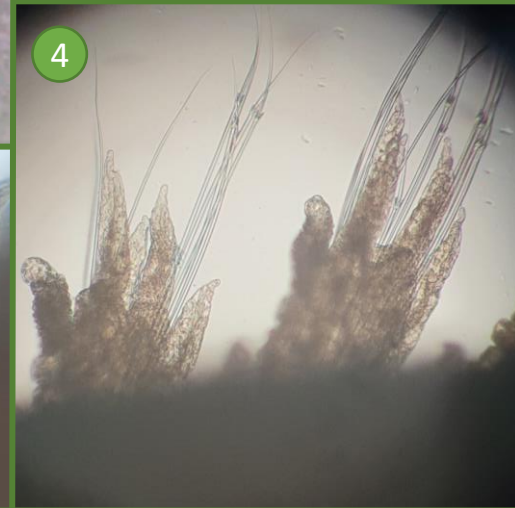
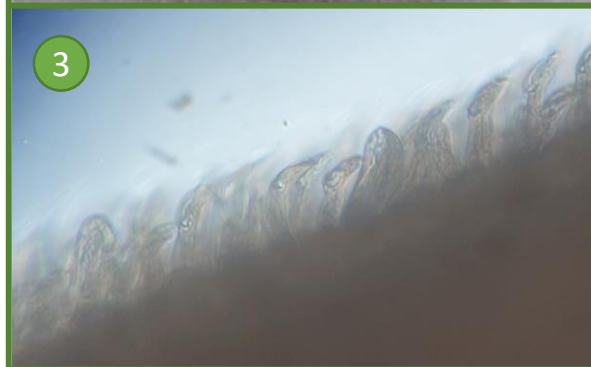
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Glyceridae
Genus: Glycera

SIMILAR TAXA

IDENTIFICATION FEATURES

Small, conical prostomium, superficially ringed,
with four small biannulate antennae;
Long eversible proboscis that
terminates in four black curved jaws in a cross;
Characteristic shape of jaws (ailirons);
No eyes;
Parapodia biramous.



LEGEND

1. Whole body, live specimen
2. Jaws from one specimen
3. Proboscis papillae
4. Parapod
5. Proboscis with the 4 placed jaws
6. Ringed protostomium with the four antennae



ERRANTIA (POLYCHAETA)

GONIADOPSIS sp.

TAXONOMY

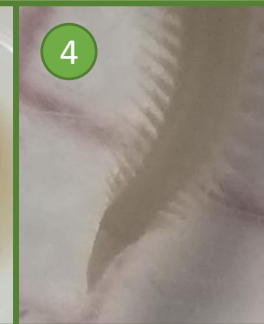
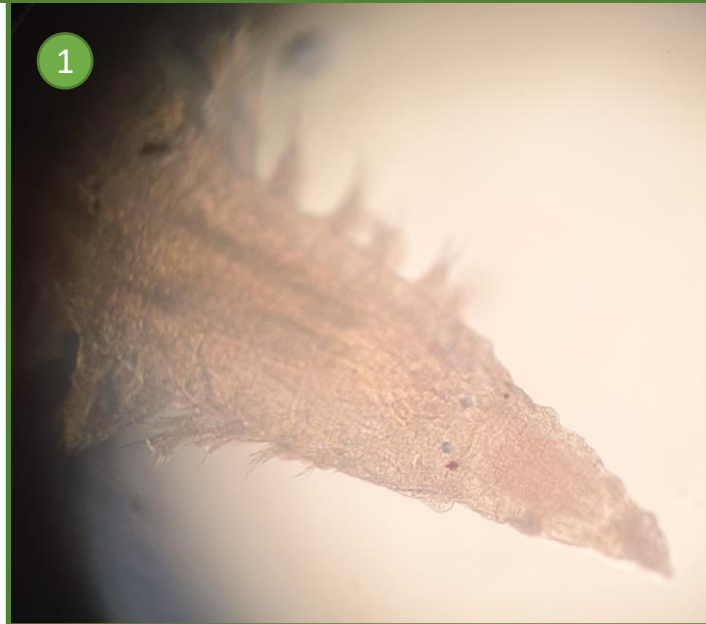
Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Goniadidae
Genus: Goniadopsis

SIMILAR TAXA

Glycera sp.

IDENTIFICATION FEATURES

Looks like a Glycera;
Eyes present;
2 large toothed macrognaths and a few small micrognaths.



LEGEND

1. Head detail, with visible eyes
2. Anterior spinigers
- 3:4. Anterior region
5. Posterior notopodial spines
6. Macro and micrognaths detail



ERRANTIA (POLYCHAETA)

M. SANGUINEA

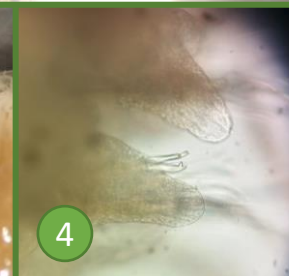
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Order: Eunicida
Family: Eunicidae
Genus: Marphysa
Species: *M. sanguinea*

SIMILAR TAXA

IDENTIFICATION FEATURES

Head well developed with distinct prostomium and peristomium (Eunicidae);
Anterior margin of head bilobed;
Five smooth antennae, almost twice the length of the prostomium;
Muscular pharynx, armed with a ventral pair of mandibles and a dorsal series of toothed maxillary plates (Eunicidae);
Uniramous parapodia (Eunicidae);
Characteristic mandibles, light black/brown.



LEGEND

1. Anterior region and head with antennae detail
2. Jaws
3. Parapods
- 4:5. Chaetae



ERRANTIA (POLYCHAETA)

EUNICE sp.

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Order: Eunicida
Family: Eunicidae
Genus: Eunice

SIMILAR TAXA

IDENTIFICATION FEATURES

Head well developed with distinct prostomium and peristomium (Eunicidae);
One pair of visible eyes;
Muscular pharynx, armed with a ventral pair of mandibles and a dorsal series of toothed maxillary plates (Eunicidae);
Uniramous parapodia (Eunicidae);
Three antennae, without ringed ceratophores.



LEGEND

1. Whole body
2. Anterior region and head detail, with eyes
3. Anterior region, live specimens



ERRANTIA (POLYCHAETA)

DIOPATRA sp.

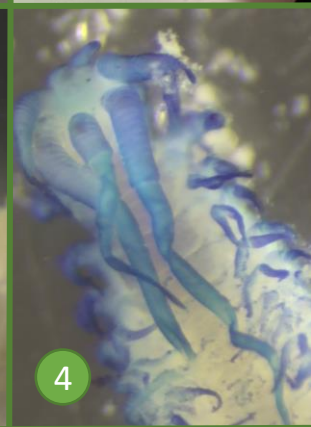
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Order: Eunicida
Family: Onuphidae
Genus: Diopatra

SIMILAR TAXA

IDENTIFICATION FEATURES

Body elongate with numerous segments, with an iridescent cuticle;
Prostomium oval, with two globular ventral palps and two oval frontal palps;
Five antennae, placed in a “circle” in the head;
Strong, muscular proboscis with a jaw apparatus consisting of two mandibles and seven or nine maxillae;
Gills with fairly long filaments;
Acicular setae bidentate;
Pygidium with two long cirri.



LEGEND

1. and 3. Anterior region
2. Chaetae

4. and 6. Anterior region, antennae detail
5. Anterior region, live specimen
7. Jaws



ERRANTIA (POLYCHAETA)

LUMBRINERIDAE

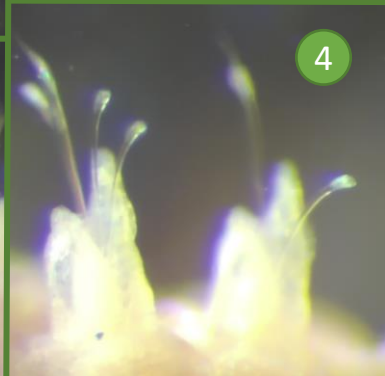
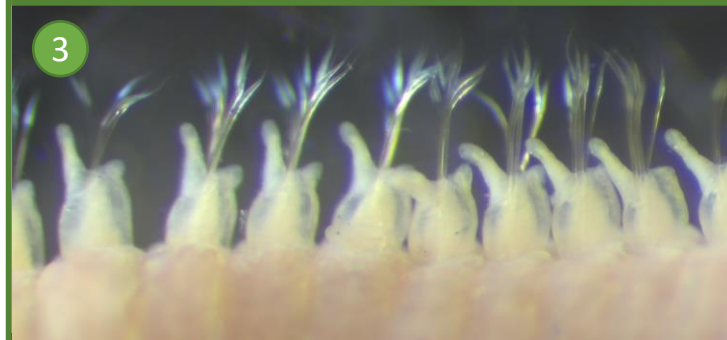
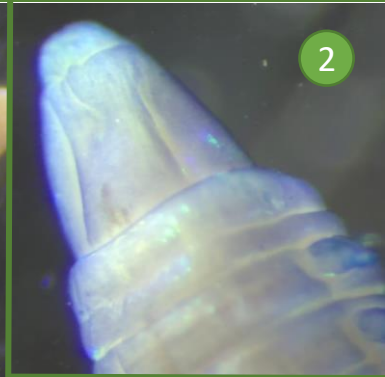
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Order: Eunicida
Family: Lumbrineridae

SIMILAR TAXA

IDENTIFICATION FEATURES

Prostomium conical, without eyes or antennae;
Well developed, very black, mandibles;
Anterior segment without parapodia;
Maxillae can consist of up to five plates;
No gills;
Parapodia with a single presetal lobe and a single postsetal lobe;
Setae with winged capillaries and hooded hooks.



LEGEND

1. Anterior region
2. Head with dorsal slits
3. Anterior parapodial lobes
4. Hooks in chaetae
5. Head, dorsal view
6. Jaws



ERRANTIA (POLYCHAETA)

OENONIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Order: Eunicida
Family: Oenonidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Prostomium bluntly conical;
Eversible proboscis:
There is pair of dorsal sensory pits between
prostomium and peristomium;
Small parapodia:
The first segment (following the peristomium)
has neither parapodia nor chaetae;
Gills absent.



LEGEND

1. Whole body
2. Anterior region detail



ERRANTIA (POLYCHAETA)

SIGAMBRA sp.

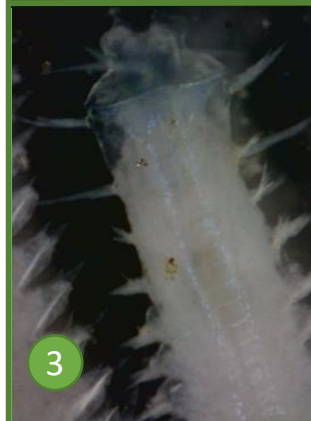
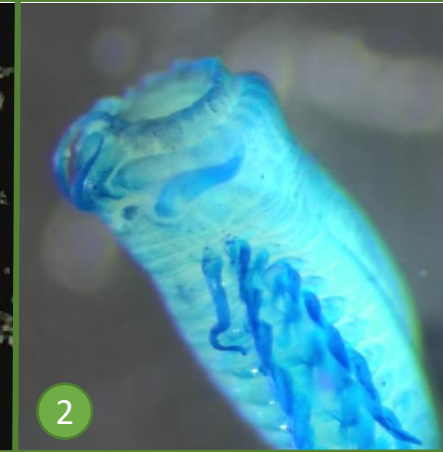
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Pilargidae
Genus: Sigambra

SIMILAR TAXA
Nereididae

IDENTIFICATION FEATURES

Very small, almost invisible eyes;
Prostomium with three antennae, longer than palps;
Palps biarticulate;
Head segment without cirri;
Golden hooks dorsally on the body (very small);
Parapodia biramous.



LEGEND

1. Whole body
2. Anterior region, lateral view
3. Anterior region, dorsal view
4. Hooks
5. and 6. Head detail, dorsal view



ERRANTIA (POLYCHAETA)

PILARGIDAE (MORPHOTYPE)

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Pilargidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Long eversible proboscis;
Simple setae;
No jaws.



LEGEND

1. Anterior region



ERRANTIA (POLYCHAETA)

NEPHTYIDAE

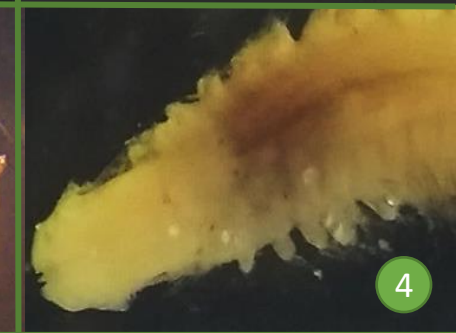
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Nephtyidae

SIMILAR TAXA

IDENTIFICATION FEATURES

One pair of small cefalic eyes, sometimes visible through skin (juveniles);
Large muscular eversible proboscis, with a ring of bilobed terminal papillae;
Peristome with reduced parapodia;
Very characteristic biramous parapodi, with the two rami widely separated.



LEGEND

1. Whole body
2. Head detail
3. Anterior region
4. Head detail, with everted proboscis
5. Head detail



ERRANTIA (POLYCHAETA)

SYLLINAE

TAXONOMY

Kingdom: Animalia

Phylum: Annelida

Class: Polychaeta

Subclass: Errantia

Family: Syllidae

Sub-family: Syllinae

SIMILAR TAXA

IDENTIFICATION FEATURES

Protostomium with a pair of stout unjointed palps;

Presence of articulated antennae;

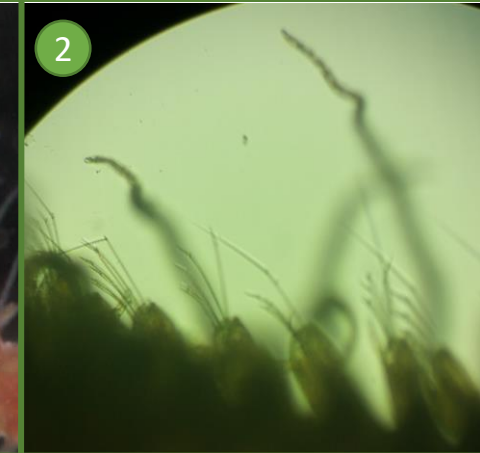
4 eyes present (but hard to see);

Armed pharynx with teeth (very small, hard to see);

Parapodia uniramous;

Articulated long dorsal cirri in mid body, with more than 20 articles;

One long chetae and then increasingly smaller chaetae in the same parapod.



LEGEND

1. Anterior region
2. Chaetae
3. Mid region
4. Anterior region, with head and palps detail
5. Chaetae



ERRANTIA (POLYCHAETA)

LEOCRATES sp.

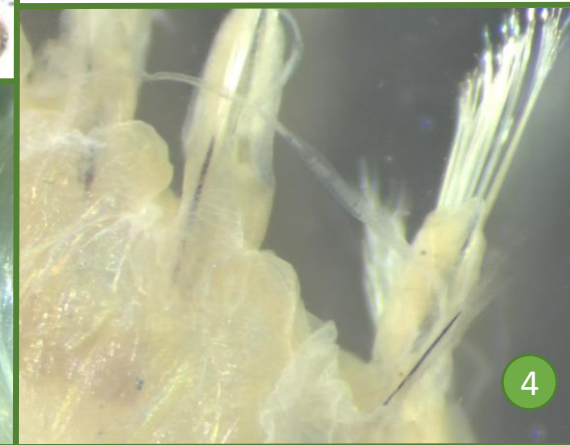
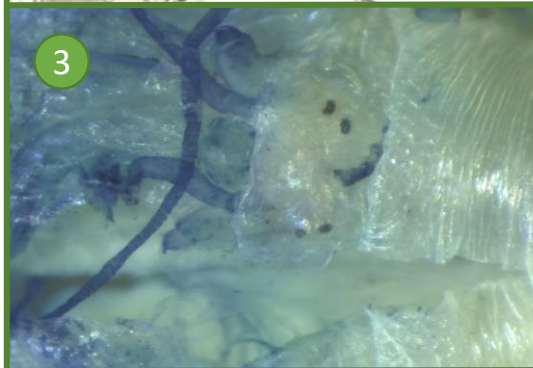
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Hesionidae
Genus: Leocrates

SIMILAR TAXA

IDENTIFICATION FEATURES

2 pairs of small eyes;
Small, clown like head, with cirri on the sides;
Prostomium with a pair of lateral antennae and usually a ventral pair of biarticulated palps;
Proboscis eversible;
Long dorsal cirri (easily broken).



LEGEND

1. Whole body
2. Head detail
3. Head (fragmented) with eye, palp and antennae detail
4. Parapods



ERRANTIA (POLYCHAETA)

AMPHINOMIDAE

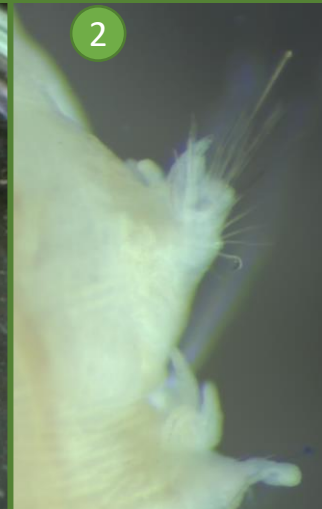
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Errantia
Family: Amphinomidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Prostomium suboval, with three antennae and two similar palps;
Eversible proboscis;
Glass like bristles;
Notopodia with branched gills.



LEGEND

1. Whole body, live specimen
2. Parapods
3. Anterior region, live specimen
4. Anterior region with head detail, dorsal view
5. Anterior region



SEDENTARIA (POLYCHAETA)

LEODAMAS sp.

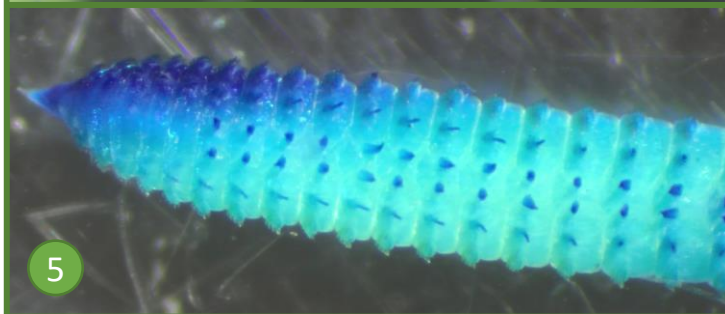
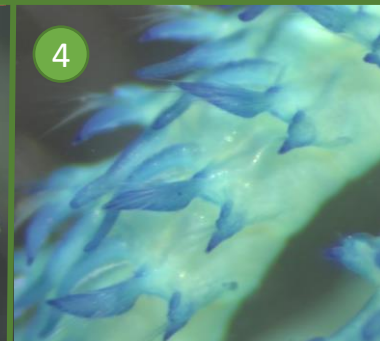
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Orbiniidae
Genus: Leodamas

SIMILAR TAXA

IDENTIFICATION FEATURES

Anterior thoracic region composed of flattened segments and posterior abdominal region of numerous rounded segments (Orbiniidae);
Conical prostomium, no sensory appendages or palps (Orbiniidae);
Proboscis unarmed (Orbiniidae);
Cirriform branchiae between the notopodia, over most of the body (Orbiniidae);
Dorsal cirri (Orbiniidae);
Gills from segment 6;
1 achaetous segment;
21 to 27 thoracic segments;
Hooks smooth, in 4 rows;
Few capillaries.



LEGEND

1. Whole body
2. Anterior region, dorsal view, life specimen
3. Anterior region, lateral view, with visible prostomium

4. Middle segments
5. Anterior end
6. Hook detail



SEDENTARIA (POLYCHAETA)

ORBINIIDAE A (MORPHOTYPE)

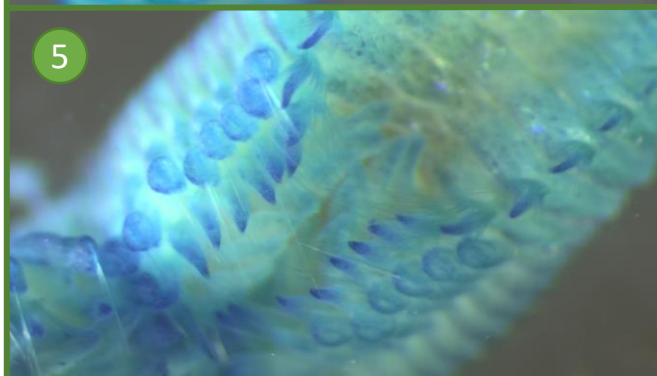
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Orbiniidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Anterior thoracic region composed of flattened segments and posterior abdominal region of numerous rounded segments (Orbiniidae);
Conical prostomium, no sensory appendages or palps (Orbiniidae);
Proboscis unarmed (Orbiniidae);
Cirriform branchiae between the notopodia, over most of the body (Orbiniidae);
Dorsal cirri (Orbiniidae);
16 thoracic segments;
Gills from 17;
Neuropodial hooks in 2 rows;
Abdominal neuropodia bilobed and hooks smooth.



LEGEND

1. Whole body
2. Anterior region, with prostomium detail
- 3:4. Anterior region
5. Gill detail



SEDENTARIA (POLYCHAETA)


ARICIDEA A (MORPHOTYPE)

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Paraonidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Characteristic shape of gills (paraonidae)  ;
Presence of median antennae;
Very long and slender median antennae, reaching segment 4;
Gills start on segment 4;
More than 30 pairs of gills;
Last pairs of gills a bit more elongated and slender than anterior ones;
Modified chaetae are hooks with a short, very fine arista;
Reduced biramous parapodia (Paraonidae).



LEGEND

1. Antennae and gill detail
2. Chaetae detail
3. Anterior region, with gill detail
4. Whole body, broken specimen



SEDENTARIA (POLYCHAETA)


ARICIDEA B (MORPHOTYPE)

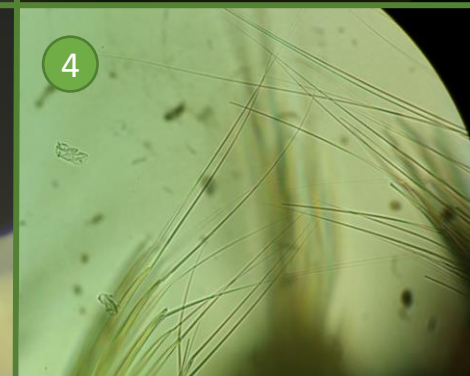
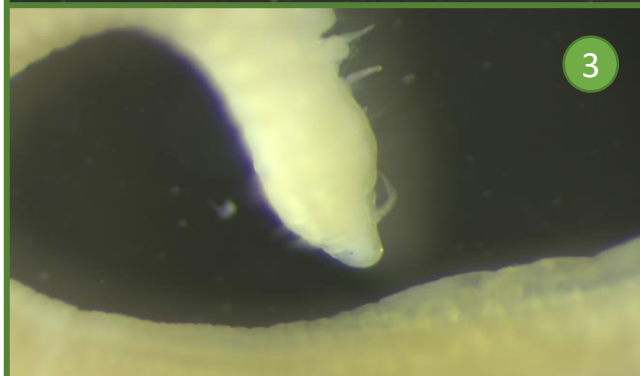
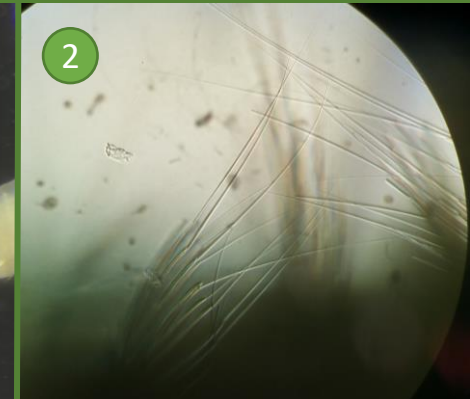
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Paraonidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Characteristic shape of gills (paraonidae)  ;
Presence of median antennae;
Short and thick median antennae, reaching segment 2;
More than 30 pairs of gills;
Gills start on segment 4;
Modified chaetae are spines with a long, thickish arista;
Reduced biramous parapodia (Paraonidae).



LEGEND

1. Anterior region
2. Chaetae detail
3. Head detail, with small antennae visible
- 4:5. Chaetae detail



SEDENTARIA (POLYCHAETA)


PARAONIDAE A (MORPHOTYPE)

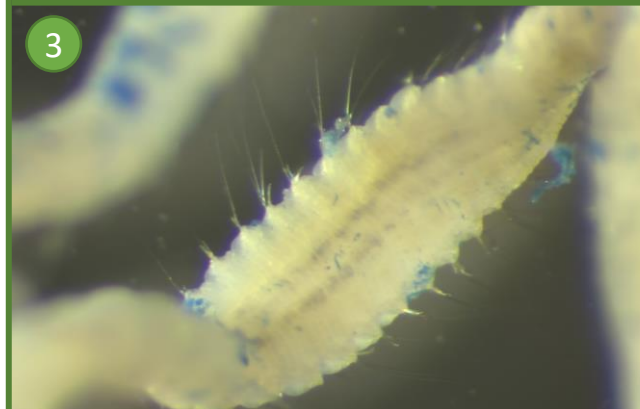
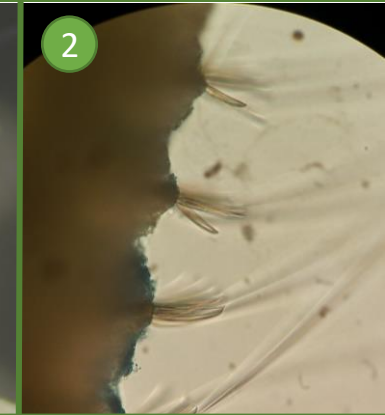
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Paraonidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Characteristic shape of gills (paraonidae) ;
Longer worm than Aricidea-type specimens;
About 20 pairs of gills-long and slim;
Gills start on segment 11;
Reduced biramous parapodia (Paraonidae);
Modified chaetae are in the neuropodia and are simple spines.



LEGEND

1. Whole body, with gill detail
2. Chaetae detail
3. Simple spines detail
4. Anterior region with protostomium



SEDENTARIA (POLYCHAETA)

PRIONOSPIO sp.

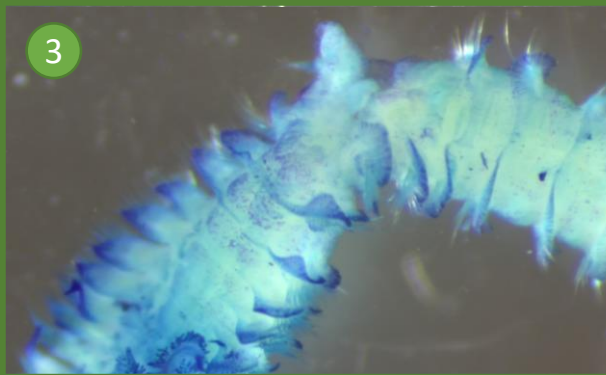
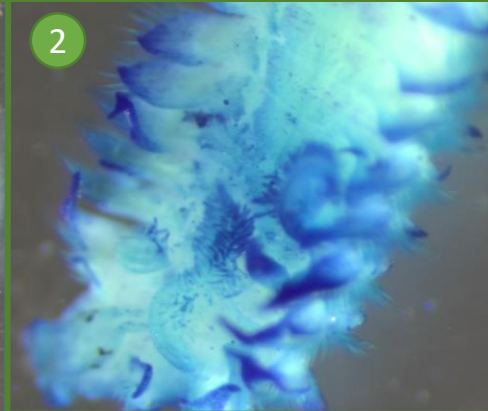
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Spionidae
Genus: Prionospio

SIMILAR TAXA

IDENTIFICATION FEATURES

Very long body;
Body regions not marked except by the shape of the parapodia;
Small prostomium, without antennae;
Presence of 4 eyes;
Two very long, sturdy palps;
Poorly developed proboscis;
Dorsal, flattened gills;
Parapodia are biramous.



LEGEND

1. Whole body
2. Anterior region, focus on head
3. Middle section
4. Anterior region, focus on gills
5. Whole body, with detail of the distinct parapodia shape, and sturdy palps



SEDENTARIA (POLYCHAETA)

STREBLOSOMA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Terebellidae
Genus: Streblosoma

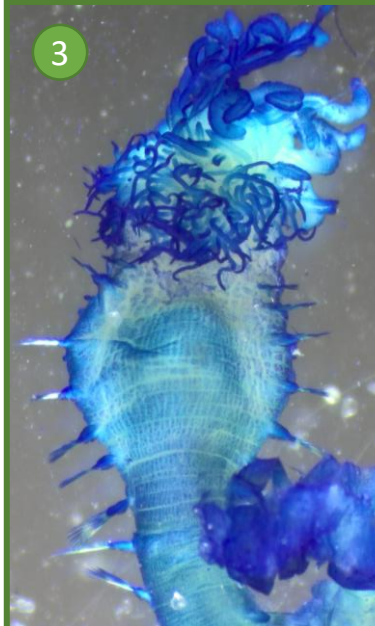
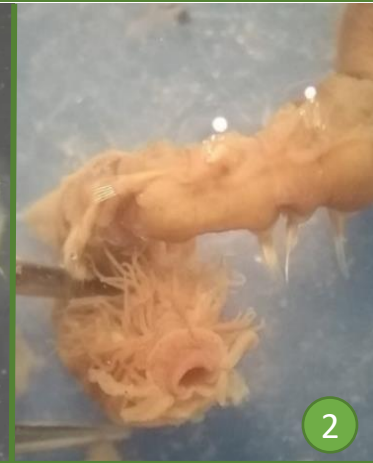
SIMILAR TAXA

IDENTIFICATION FEATURES

Head with numerous grooved tentacles;
With eyespots (hard to see);
Abdomen with numerous segments which lack notopodia and notosctae but have neuropodia and neuropodial uncini;
Tori from 4th chaetiger.

Other found taxa (no pics):

- Notomastus fauveli
- Polycirrus sp



LEGEND

1. Whole body, lateral view
- 2:5. Anterior end, different views, with tentacles, uncini and tori details



SEDENTARIA (POLYCHAETA)

MALDANIDAE A (MORPHOTYPE)

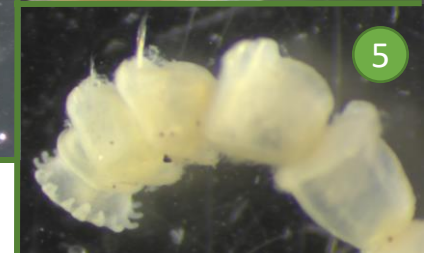
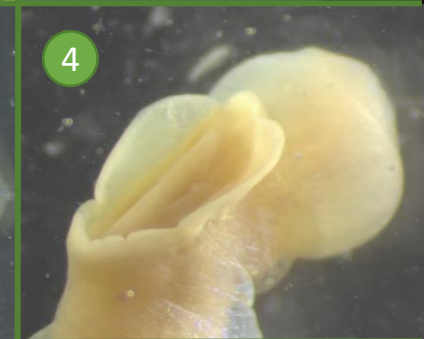
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Maldanidae
Sub-family: Euclymeninae

SIMILAR TAXA

IDENTIFICATION FEATURES

Body cylindrical with small number of greatly elongated segments (Maldanidae);
Mouth ventral with an unarmed but papillose proboscis (Maldanidae);
Well defined cephalic plate;
Palpode presente;
Circular ridge preceding the pygidial ring and funnel;
Parapodia biramous but poorly developed (Maldanidae).



LEGEND

1. Anterior region
2. Anterior and posterior region comparison
3. Whole body
4. Head detail, with cephalic plate
5. Posterior region, with pygidial ring detail
6. Whole body, live specimen



SEDENTARIA (POLYCHAETA)

MALDANIDAE B (MORPHOTYPE)

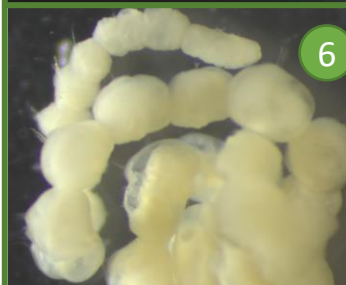
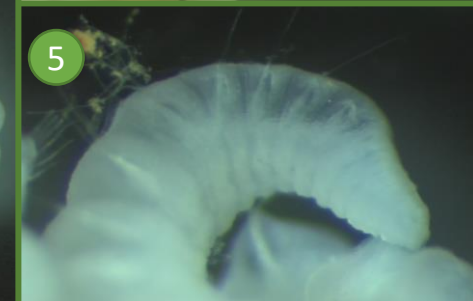
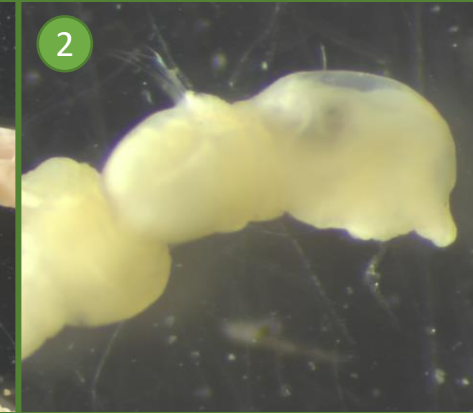
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Maldanidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Body cylindrical with small number of greatly elongated segments (Maldanidae);
Mouth ventral with an unarmed but papillose proboscis (Maldanidae);
Parapodia biramous but poorly developed (Maldanidae);
Cephalic plate absent;
Pygid simple;
Notochaetae with capillaries and spines.



LEGEND

1. Whole body, fragmented
2. Anterior region
3. Anterior and posterior region comparison
4. Anterior region
5. Pygidium detail
6. Body with elongated segments



SEDENTARIA (POLYCHAETA)

PETALOPROCTUS sp.

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Maldanidae
Genus: Petaloproctus

SIMILAR TAXA

IDENTIFICATION FEATURES

Body cylindrical with small number of greatly elongated segments (Maldanidae);
Mouth ventral with an unarmed but papillose proboscis (Maldanidae);
Parapodia biramous but poorly developed (Maldanidae);
Cephalic plate absent;
First 3 neuropodia with reduced number of chaetae;
Long filamentous chaetae present in notopodia;
Anal plate seems to be smooth.



LEGEND

- 1. and 3. Anterior region
- 2. and 4. Posterior region
- 5. Mid body region



SEDENTARIA (POLYCHAETA)

MAGELONA CINCTA

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Magelonidae
Genus: Magelona
Species: *M. cincta*

SIMILAR TAXA

IDENTIFICATION FEATURES

Long body, with a constriction;
Prostomium dorsoventrally flattened - shovelhead worms;
One pair of long, papillated palps, very characteristic of the family (often lost);
Parapodia biramous, with lobes (termed lamellae);
Thorax with nine chaetigers carrying capillary chaetae, abdomen carrying hooded hooks.



LEGEND

1. Anterior region
2. Whole body with both pals
3. Protostomium detail
4. Posterior hooks
5. Anterior region with palps detail



SEDENTARIA (POLYCHAETA)

CIRRIFORMIA sp.

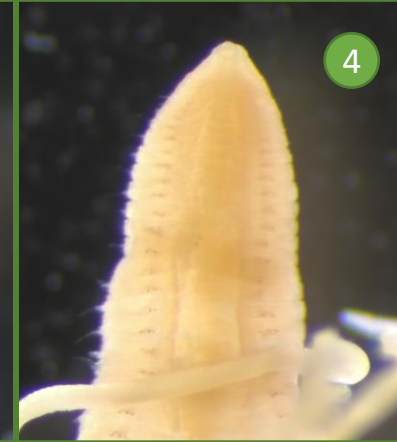
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Cirratulidae
Genus: Cirriformia

SIMILAR TAXA

IDENTIFICATION FEATURES

Prostomium small, without projections (Cirratulidae);
Proboscis unarmed and not evaginable (Cirratulidae);
Long cylindrical branchial filaments above the notopodia of the first segments (Cirratulidae);
Short Worm.



LEGEND

1. Whole body
- 2:3. Anterior region with branchial filament detail
4. Posterior region
5. Anterior and mid region



SEDENTARIA (POLYCHAETA)

KIRKEGAARDIA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Cirratulidae
Genus: Kirkegaardia

SIMILAR TAXA

IDENTIFICATION FEATURES

Prostomium small, without projections (Cirratulidae);
Proboscis unarmed and not evaginable (Cirratulidae);
Long cylindrical branchial filaments above the notopodia of the first segments (Cirratulidae);
Elongated Worm;
Often have an inflated tail.



LEGEND

1. and 3. Whole body
2. Detail of inflated tail
4. Anterior region
5. Posterior capillaries detail



SEDENTARIA (POLYCHAETA)

***CAPITELLA* sp.**

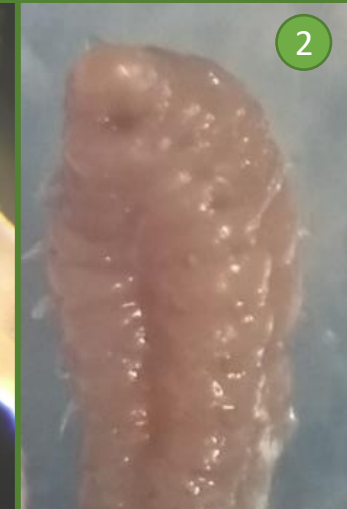
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Capitellidae
Genus: Capitella

SIMILAR TAXA

IDENTIFICATION FEATURES

Body elongated, reddish, rounded in section (Capitellidae);
No clear parapodia (Capitellidae);
Anterior, short and swollen thoracic region and longer abdominal region often with inconspicuous gills (Capitellidae);
Prostomium voluminous, evaginable but unarmed (Capitellidae);
Only 9 thoracic setigers, abdominal segments without branchiae;
Usually 7 or 8 capillaries.



LEGEND

1:3. Anterior region detail



SEDENTARIA (POLYCHAETA)

HETEROMASTUS FILIFORMIS

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Capitellidae
Genus: *Heteromastus*
Species: *H. Filiformis*

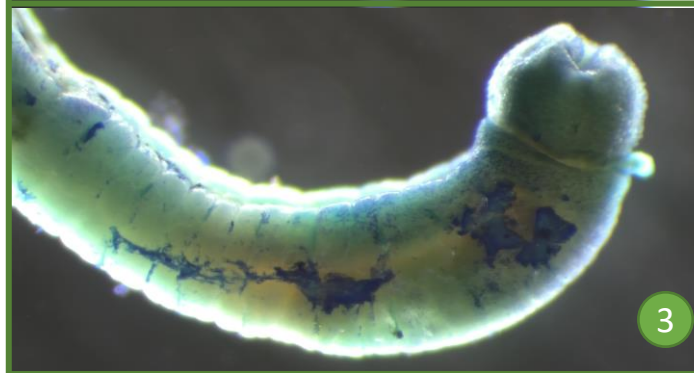
SIMILAR TAXA

IDENTIFICATION FEATURES

Body elongated, reddish, rounded in section (Capitellidae);
No clear parapodia (Capitellidae);
Anterior, short and swollen thoracic region and longer abdominal region often with inconspicuous gills (Capitellidae);
Prostomium voluminous, evaginable but unarmed (Capitellidae);
11 thoracic setigers, 5 capillaries, hooks starts on setiger 6.

OTHER CAPITELLIDAE SP THAT MAY OCCUR:

- *Mediomastus* sp.
- *Notomastus* sp.



LEGEND

- 1:2. Anterior region
3:4. Evaginated proboscis
5. Whole body



SEDENTARIA (POLYCHAETA)

AMANDIA sp.

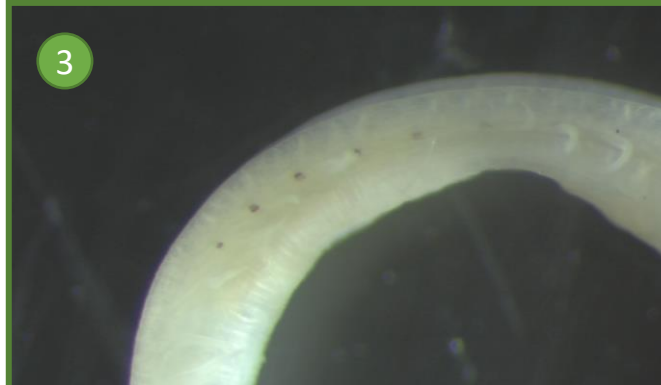
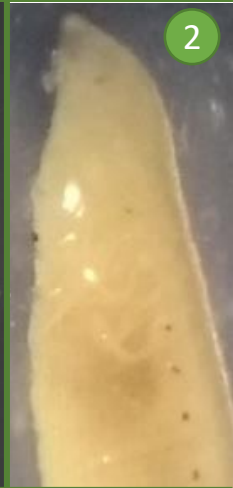
TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Opheliidae
Genus: Amandia

SIMILAR TAXA

IDENTIFICATION FEATURES

Protostomium coneshaped, lacks appendages;
Deep ventral groove present along whole body;
Gills present;
Lateral eyes/eyespot present between parapodia of middle segments.



LEGEND

- 1. Anterior region of broken specimen
- 2:3. Gills and eyes detail
- 4. Ventral groove detail



SEDENTARIA (POLYCHAETA)

SPIOCHAETOPTERUS sp.

TAXONOMY

Kingdom: Animalia

Phylum: Annelida

Class: Polychaeta

Subclass: Sedentaria

Family: Chaetopteridae

Genus: Spiochaetopterus

SIMILAR TAXA

IDENTIFICATION FEATURES

Always inside cheratinous segmented tube.



LEGEND

1. Anterior region with head detail
2. Whole body, inside tube



SEDENTARIA (POLYCHAETA)

ARENICOLIDAE (MORPHOTYPE)

TAXONOMY

Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Arenicolidae

SIMILAR TAXA

IDENTIFICATION FEATURES

Elongated cylindrical body;
Prostomium is small, rounded or conical,
without antennae or palps;
Anterior region without gills;
Mid-region with branching, tufted gills each
inserted dorsal to the notopodium;
Narrower tail region lacking both gills and
chaetae.



LEGEND

- 1.
- 2.
- 3.
- 4.
- 5.



SEDENTARIA (POLYCHAETA)

***SIGALION* sp.**

TAXONOMY

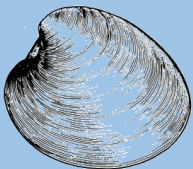
Kingdom: Animalia
Phylum: Annelida
Class: Polychaeta
Subclass: Sedentaria
Family: Sigalionidae
Genus: Sigalion

SIMILAR TAXA

IDENTIFICATION FEATURES

Median antennae absent or very small;
Most neurochaetae compound;
Long falcigers multiarticulated;
Elytral papillae with about 10 lateral pinnules.

NO PICTURES



BIVALVIA

PELECYORA ISOCARDIA

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Veneridae
Genus: Pelecyora
Species: *P. isocardia*

SIMILAR TAXA

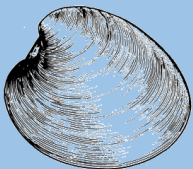
IDENTIFICATION FEATURES

Shell thick and strong;
Round outline: antero-posterior length similar to dorso-ventral length;
Variable in color, from white to purple;
Variable in pattern, from uniformly coloured to stripes and spotted;
Strong hinge;
Three cardinal teeth in each valve;
External ligament;
Heart shaped lunule, very visible;
Pallial line without sinus;
Adductor muscle scars subequal, anterior being the larger.



LEGEND

1:6. Different color morphotypes
7:8. Detail of umbo, hinge and teeth
9. Pallial line and muscle scars



BIVALVIA

LAMYSIA JOUSSEAUMEI

TAXONOMY

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Family: Lucinidae

Genus: Lamysia

Species: *L. jousseaumei*

SIMILAR TAXA

IDENTIFICATION FEATURES

Round shape;

Always white in color;

Thin shell, easily breakable;

Distinct “notch” on the anterior end, just before the hinge;

Hinge line with cardinal and lateral teeth;

Ligament external;

Lunule present;

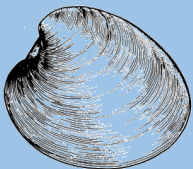
Anterior muscle scar elongated (Lucinidae);

Continuous pallial line without pallial sinus (Lucinidae).



LEGEND

1. Right valve and dorsal view of, with lunule and external ligament detail
2. Inside of shell, muscle scars difficult to observe
3. Detail of umbo, hinge and teeth



BIVALVIA

LAMYLUCINA GAINI

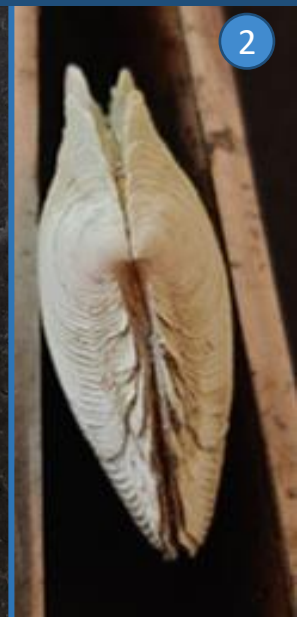
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Lucinidae
Genus: Lamylucina
Species: *L. gaini*

SIMILAR TAXA

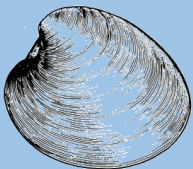
IDENTIFICATION FEATURES

Round shape;
Very distinct altero-posterior sulcus;
Broad lamellae on the anterior end of the sulcus;
Lunule present;
Anterior muscle scar elongated (Lucinidae);
Continuous pallial line without pallial sinus (Lucinidae).



LEGEND

1. Right valve
2. Dorsal view
3. Right valve, with lamellae detail
4. Lateral view



BIVALVIA

KELETISTES sp.

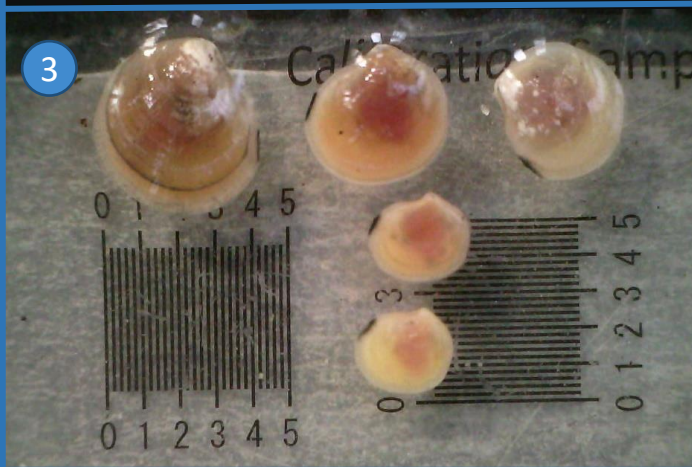
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Lucinidae
Genus: Keletistes

SIMILAR TAXA

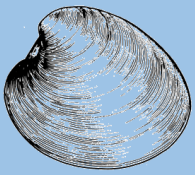
IDENTIFICATION FEATURES

Variable in color, from white to brown;
Distinctive lines on the shell, perpendicular to growth lines;
Black/brown dot on the posterior end;
Internal ligament;
Deep ligament scar;
Anterior muscle scar elongated (Lucinidae);
Continuous pallial line without pallial sinus (Lucinidae).



LEGEND

1. and 2. Right valve of specimens of different coloration
3. Several small specimens
4. Detail of umbo, ligament scar, hinge and teeth



DIVARICELLA CHAVANI

TAXONOMY

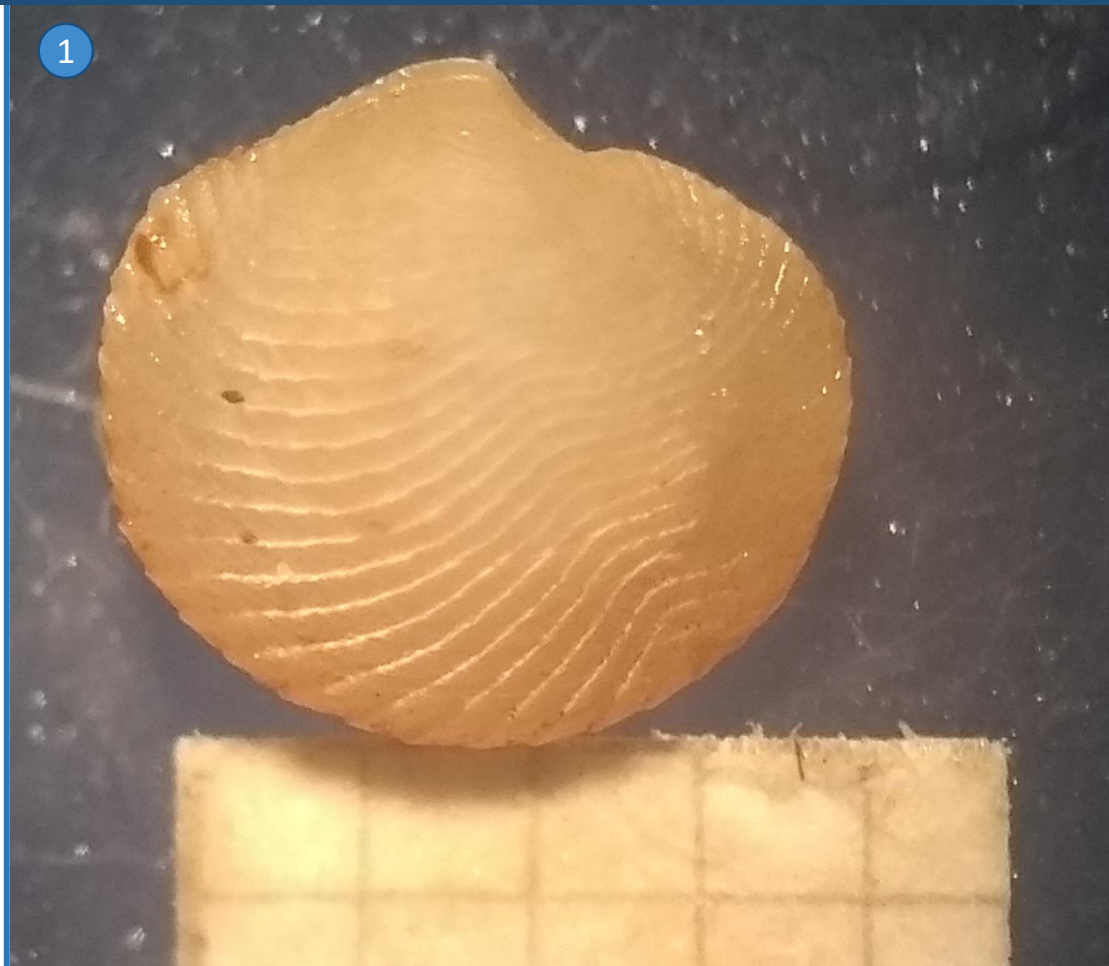
Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Lucinidae
Genus: *Divaricella*
Species: *D. chavani*

SIMILAR TAXA

IDENTIFICATION FEATURES

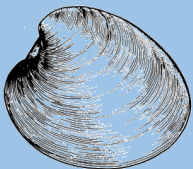
Round in shape;
Divaricate ribs that diverge from the axis
between the umbo and the anterior ventral
margin
Anterior muscle scar elongated (Lucinidae);
Continuous pallial line without pallial sinus
(Lucinidae).

1



LEGEND

1. Right valve with distinctive ribs



BIVALVIA

DIPLODONTA DAUTZENBERGI

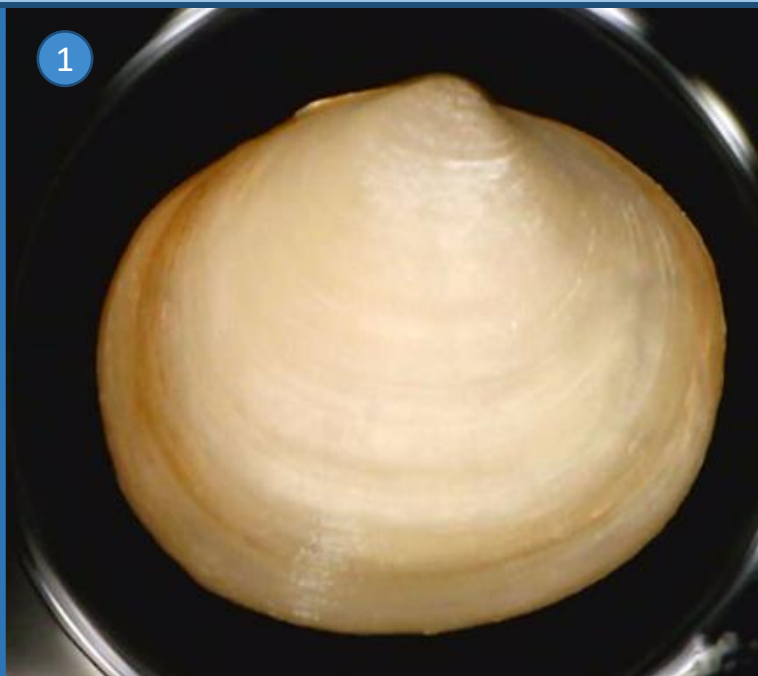
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Ungulinidae
Genus: Diplodonta
Species: *D. dautzenbergi*

SIMILAR TAXA

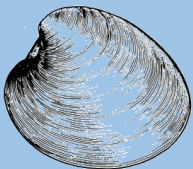
IDENTIFICATION FEATURES

Round shell, longer antero-posterior length than dorso-ventral length;
Thin shell, easily breakable in smaller specimens;
Two cardinal teeth of each valve, one of which is bifid;
Lunule absent;
Anterior muscle scar rounded (Diplodonta).



LEGEND

1. Right valve
2. Detail of umbo, hinge and teeth
3. Inside of shell



BIVALVIA

DIPLODONTA1 sp.

(MORPHOTYPE)

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Ungulinidae
Genus: Diplodonta

SIMILAR TAXA

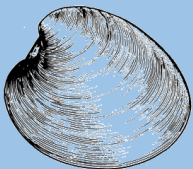
IDENTIFICATION FEATURES

Round shell: antero-posterior length similar to dorso-ventral length;
High shell;
Always white in colour;
Two cardinal teeth of each valve, one of which is bifid;
Lunule absent;
Anterior muscle scar rounded (Diplodonta).



LEGEND

1. Left valve
2. Detail of umbo, hinge and teeth
3. Right valve



BIVALVIA

AUSTROMACOMA NYMPHALIS

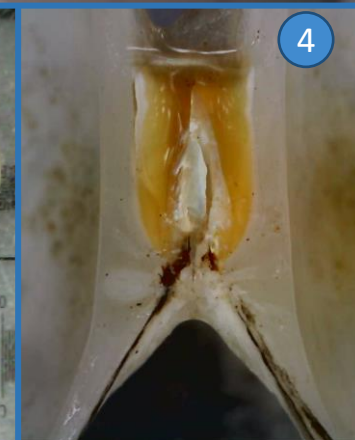
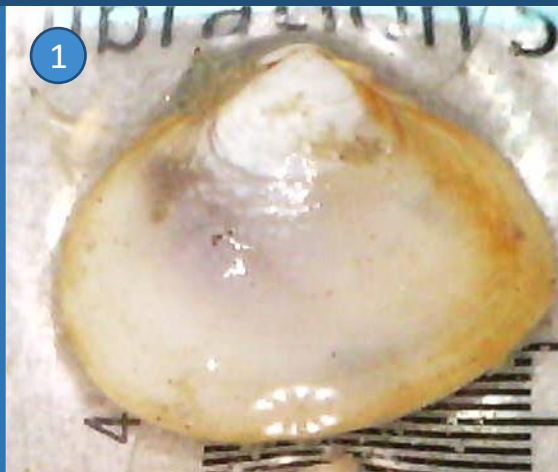
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Tellinidae
Genus: Austromacoma
Species: *A. nymphalis*

SIMILAR TAXA

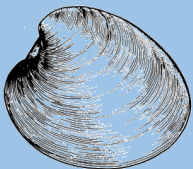
IDENTIFICATION FEATURES

Very thin shell, easily breakable;
Shell gaping;
Inequilateral shell: round anterior margin, but rather straight posterior one;
White color, with brown in the posterior margin;
Pallial line with sinus;
External ligament;
Two cardinal teeth of each valve, one of which is bifid;
Lunule present.



LEGEND

1. Right valve
2. Left valve
3. Several specimens of different sizes, uniform coloration
4. Detail of hinge, teeth, and ligament



BIVALVIA

MOERELLA DISTORTA

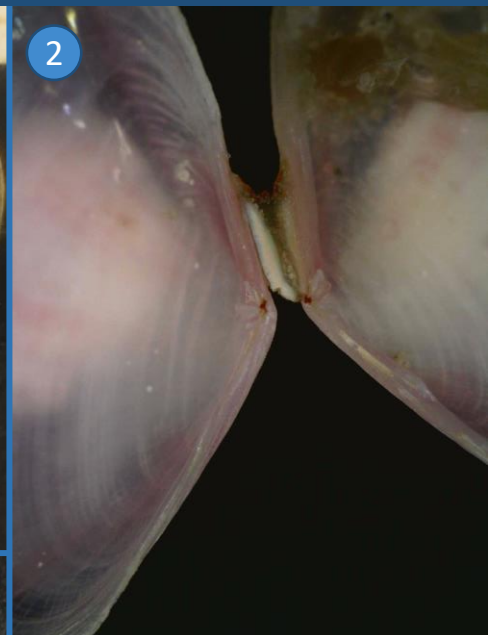
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Tellinidae
Genus: Moerella
Species: *M. distorta*

SIMILAR TAXA

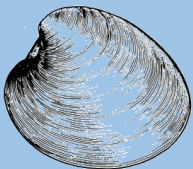
IDENTIFICATION FEATURES

Thin shell, triangular in shape;
Shell gaping;
Often pink colour;
Pallial line with sinus;
External ligament, very visible;
Two cardinal teeth of each valve, one of which is bifid;
Lunule present.



LEGEND

1. Left and right valve, with merged by ligament
2. Detail of umbo, hinge, teeth and ligament
3. Inside of shell



BIVALVIA

SENILIA SENILIS

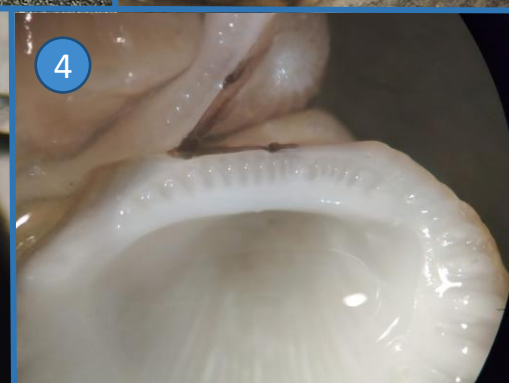
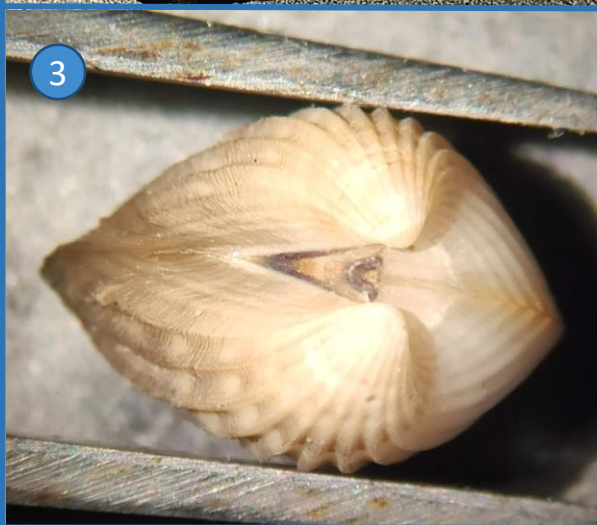
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Arcidae
Genus: *Senilia*
Species: *S. senilis*

SIMILAR TAXA

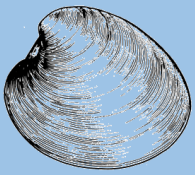
IDENTIFICATION FEATURES

Deep radial ribs;
Distinct shape, large shell breadth;
Circular outline of shell;
Very thick and strong shell, very difficult to break, even in small specimens;
Heterodont teeth.



LEGEND

1. Typical coloration and shape of shell
2. Detail of umbo and hinge line
3. Dorsal view
4. Heterodont teeth



BIVALVIA

ANADARA GEISSEI

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Arcidae
Genus: *Anadara*
Species: *A. geissei*

SIMILAR TAXA

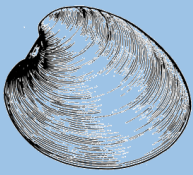
IDENTIFICATION FEATURES

Deep radial ribs;
More rectangular shape of the shell;
Heterodont teeth.



LEGEND

1. Typical shape and coloration of shell



BIVALVIA

ARCOPSIS AFRA

TAXONOMY

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Family: Arcidae

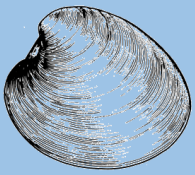
Genus: Arcopsis

Species: *A. afra*

SIMILAR TAXA

NO PICTURES

IDENTIFICATION FEATURES



BIVALVIA

MYSELLA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Lasaeidae
Genus: *Mysella*

SIMILAR TAXA

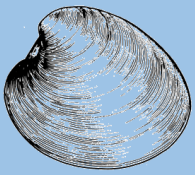
IDENTIFICATION FEATURES

Shell inequilateral;
Hair-like structures near shell margin;
Large teeth.



LEGEND

1. Typical shape and coloration of shell



BIVALVIA

PSEUDOPYTHINA NICKLESI

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Lasaeidae
Genus: Pseudophythina
Species: *P. nicklesi*

SIMILAR TAXA

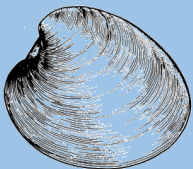
IDENTIFICATION FEATURES

Shell inequilateral;
Hair-like structures near shell margin.



LEGEND

1. Right and left valve
2. Inside of shell



BIVALVIA

TAGELLUS ADANSONII

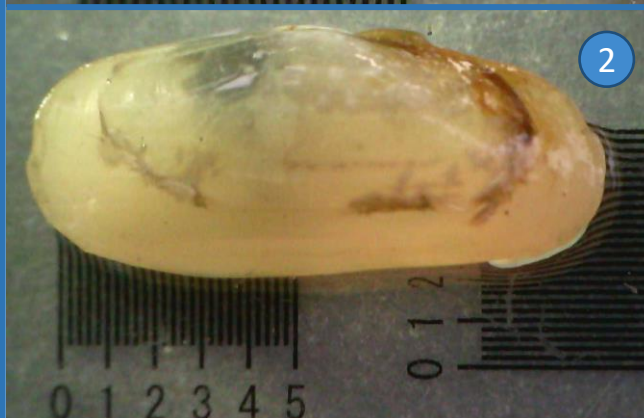
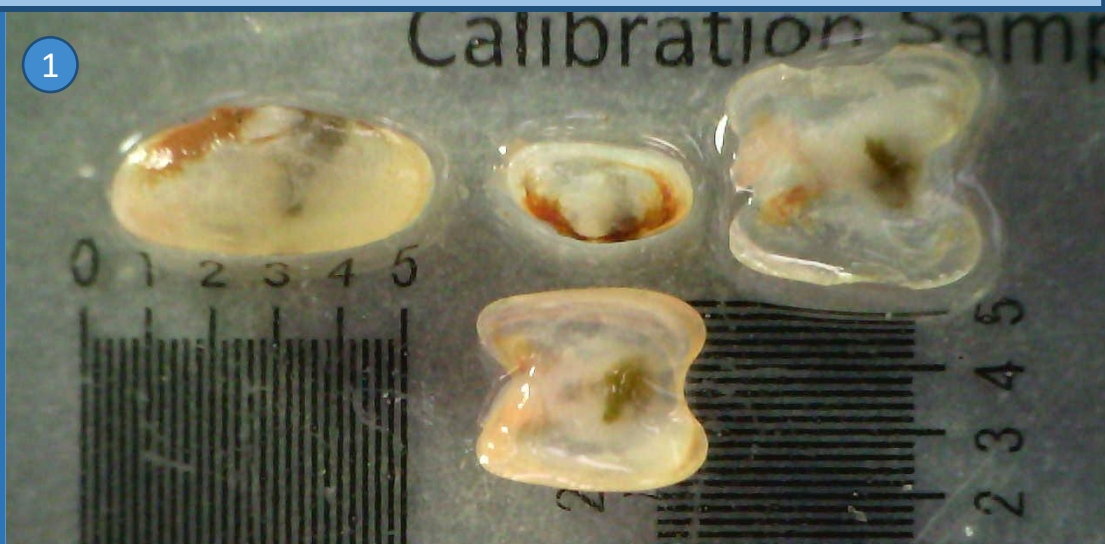
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Solecurtidae
Genus: Tagellus
Species: *T. addansonii*

SIMILAR TAXA

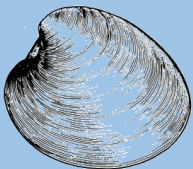
IDENTIFICATION FEATURES

Shell elongate oval;
Very long antero-posterior length (about twice as long as deep);
Thin shell, specially on smaller specimens;
Visible sulcus;
External ligament, very visible;
Gaping anteriorly and posteriorly.



LEGEND

1. Small specimens
2. Left valve, with visible external ligament
3. Left valve, different lighting



BIVALVIA

BIV_NID1

TAXONOMY

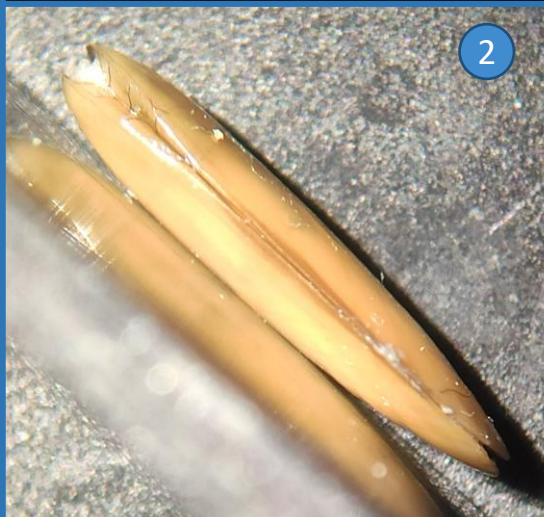
Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia

SIMILAR TAXA

Tagellus adansonii

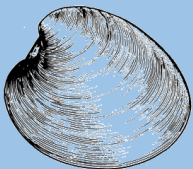
IDENTIFICATION FEATURES

Very long antero-posterior length;
Invisible sulcus;
High shell.



LEGEND

1. Lateral view, distinct shape
2. and 3. dorsal view



BIVALVIA

ARCUATULA *sp.*

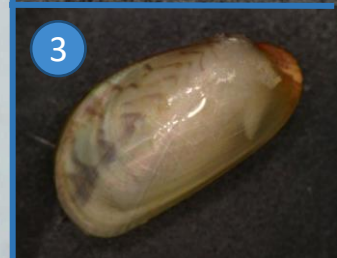
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Mytilidae
Genus: Arcuatula

SIMILAR TAXA

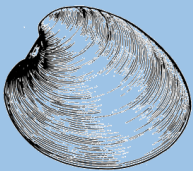
IDENTIFICATION FEATURES

Distinct repetitive stripe pattern;
Mussel shape;
Thin shell, easily breakable.



LEGEND

1: 5. Lateral view, distinct shape and coloration



CUSPIDARIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Cuspidaridae

SIMILAR TAXA

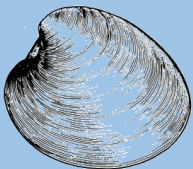
IDENTIFICATION FEATURES

Shell gaping;
Round anterior region, and tubular posterior region;
Thin shell, translucent in small specimens.



LEGEND

1. and 2. Left valve, distinct shape



BIVALVIA

CORBULA CHUDEAUI

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Corbulidae
Genus: Corbula
Species: *C. chudeaui*

SIMILAR TAXA

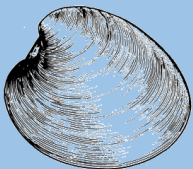
IDENTIFICATION FEATURES

One big valve and one small valve (Corbulidae);
Thin uniform horizontal sulcus, very close together;
Large extension of the posterior end of the right valve;
Usually white or brown in colour.



LEGEND

1. Right and left valve
2. Dorsal view
3. Ventral view
4. Inside of shell
5. Ventral view, different coloration



BIVALVIA

CORBULA LATICOSTATA

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Corbulidae
Genus: Corbula
Species: *C. laticostata*

SIMILAR TAXA

IDENTIFICATION FEATURES

One big valve and one small valve (Corbulidae);
Horizontal sulcus of different depths, the deeper ones very spaced between them;
No extension of the posterior end of the right valve.

1



2



3

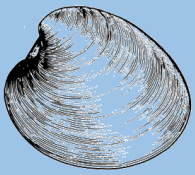


4



LEGEND

1. Right and left valve
2. Right valve
3. Ventral view, notice small valve inside larger valve
4. Inside of shell, with umbo, hinge and teeth detail



BIVALVIA

CORBULA SULCATA

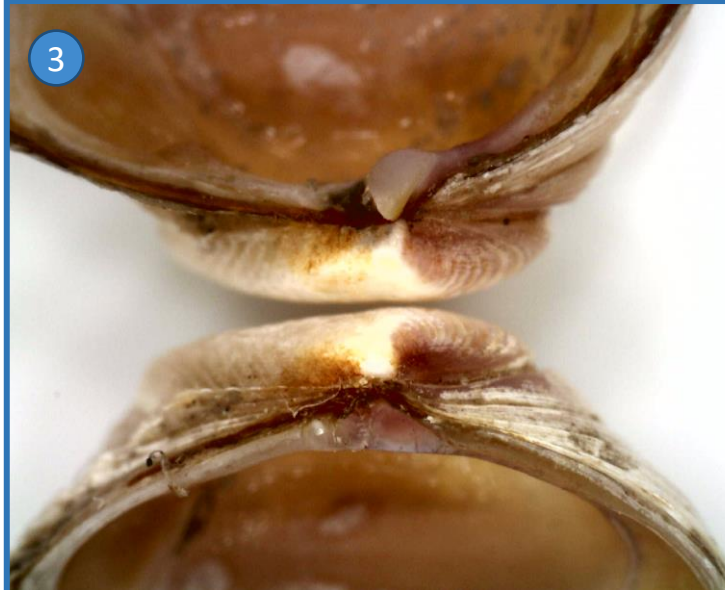
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Corbulidae
Genus: Corbula
Species: *C. sulcata*

SIMILAR TAXA

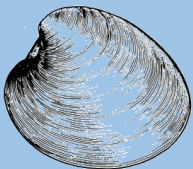
IDENTIFICATION FEATURES

One big valve and one small valve (Corbulidae);
Deeper horizontal sulcus.



LEGEND

- 1. And 2. Right and left valve
- 3. Detail of umbo, hinge and teeth



BIVALVIA

CORBULA CADENATI

TAXONOMY

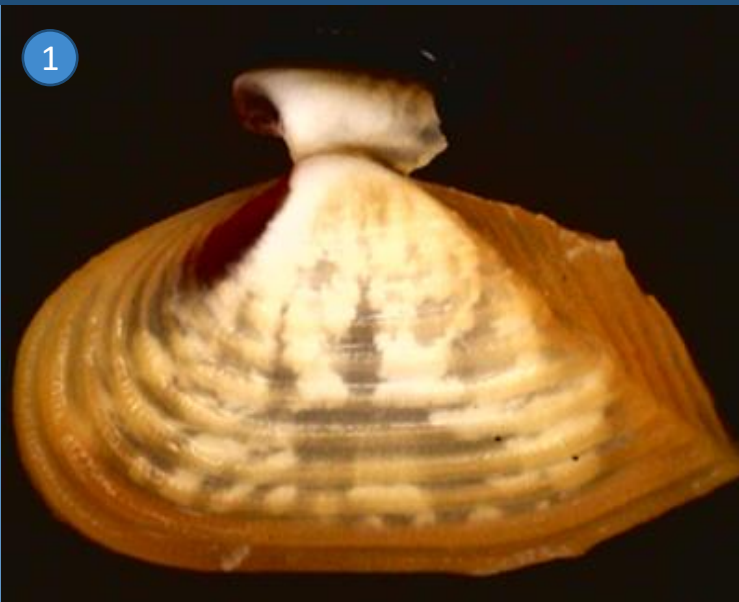
Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Corbulidae
Genus: Corbula
Species: *C. cadenati*

SIMILAR TAXA

IDENTIFICATION FEATURES

One big valve and one small valve (Corbulidae);
Thin uniform horizontal sulcus, very close together;
No extension on the posterior end of the shell;
Clean posterior end, in a straight line.

1



2



4

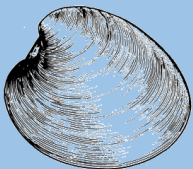


3



LEGEND

1. Left valve
2. Dorso-lateral view
3. Umbo detail
4. Anterior view



BIVALVIA

CRYPTOMYA AFRICANA

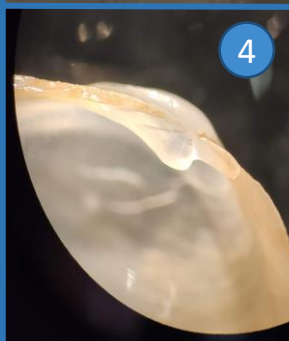
TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia
Family: Myidae
Genus: Cryptomya
Species: *C. africana*

SIMILAR TAXA

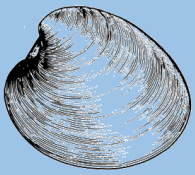
IDENTIFICATION FEATURES

Shell inequilateral;
Characteristic color pattern: reddish in anterior end, white mid section and brown posterior end with algae-like structures;
Spoonlike tooth on only one of the valves.



LEGEND

1. Two specimens of different sizes, but of characteristic shape and color pattern
2. and 3. Right valve
4. Detail of umbo, hinge and teeth
5. Inside of shell



BIVALVIA

BIV_NID2

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Bivalvia

SIMILAR TAXA

IDENTIFICATION FEATURES

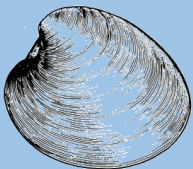
Distinct shape and coloration.

1



LEGEND

1. Distinct shape and coloration



BIVALVIA

BIV_NID3

TAXONOMY

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

SIMILAR TAXA

IDENTIFICATION FEATURES

Distinct shape and coloration.

1



LEGEND

1. Distinct shape and coloration



GASTROPODA

CYLICHNIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Cylichnidae

SIMILAR TAXA

Bulla sp; *Haminoea* sp.

IDENTIFICATION FEATURES

Very thin shell, easily breakable;
Square shape, not round as *Bulla* sp.
Brown periostracum (horny layer of the shell);
Animal with black spots on the body.

1



2



LEGEND

1. Ventral view, with aperture detail
2. Dorsal view, with black spots on body detail



GASTROPODA

BULLA sp.

TAXONOMY

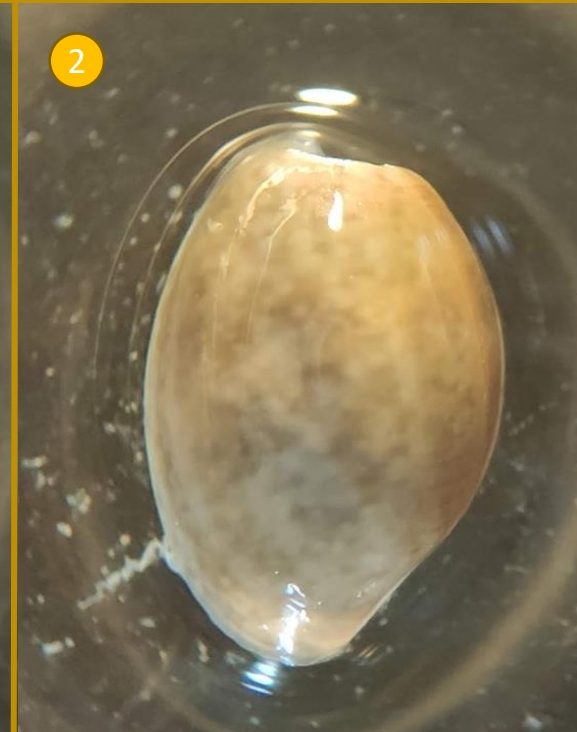
Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Bullidae
Genus: Bulla

SIMILAR TAXA

Cylichnidae (see picture
3 for comparison);
Prunum sp

IDENTIFICATION FEATURES

Thin shell;
Rounder than Cylichnidae.



LEGEND

1. Ventral view with aperture detail
2. Dorsal view
3. Cylichnidae (on the left) compared to Bulla sp. (on the right)



GASTROPODA

PRUNUM sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Marginellidae
Genus: Prunum

SIMILAR TAXA

Hydrobiidae; Bulla sp

IDENTIFICATION FEATURES

Thick shell, very hard to break, even in small specimens;
Usually coloured shell;
Pyramid shape.



LEGEND

1. Ventral view, of larger and smaller specimens



GASTROPODA

HAMINOEA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Haminoeidae
Genus: Haminoea

SIMILAR TAXA

Cylichnidae; Hydrobiidae

IDENTIFICATION FEATURES

Very thin shell, easily breakable;
Very round format;
Translucid colour;
Body of specimen often out of the shell.

1



2



LEGEND

1. Dorso-lateral view, with body of specimen out of shell
2. Dorsal view.



GASTROPODA

HYDROBIIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Hydrobiidae

SIMILAR TAXA

Haminoea; Hyala sp.

IDENTIFICATION FEATURES

Small antero-posterior length;
Only 3 whorls on shell;
Large strong opening.

1



LEGEND

1. Dorsal view, with aperture detail



GASTROPODA

HYALA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Rissoidae
Genus: Hyala

SIMILAR TAXA

IDENTIFICATION FEATURES

Large antero-posterior length;
Around 5 whorls;
Often with reddish colour.



LEGEND

1. Ventral view
2. Ventral view, specimen with reddish colour



GASTROPODA

CERITHIDEA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Potamididae
Genus: Cerithidea

SIMILAR TAXA

Pugilina morio

IDENTIFICATION FEATURES

Very thick shell, hard to break;
Round spikes covering the shell all around.



LEGEND

1. Specimens with broken aperture region



GASTROPODA

PUGILINA MORIO

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Melongenidae
Genus: *Pugilina*
Species: *P. morio*

SIMILAR TAXA

IDENTIFICATION FEATURES

Very thick shell;
Often found near/on mangroves.

NO PICTURES



GASTROPODA

TURBONILLA *sp.*

TAXONOMY

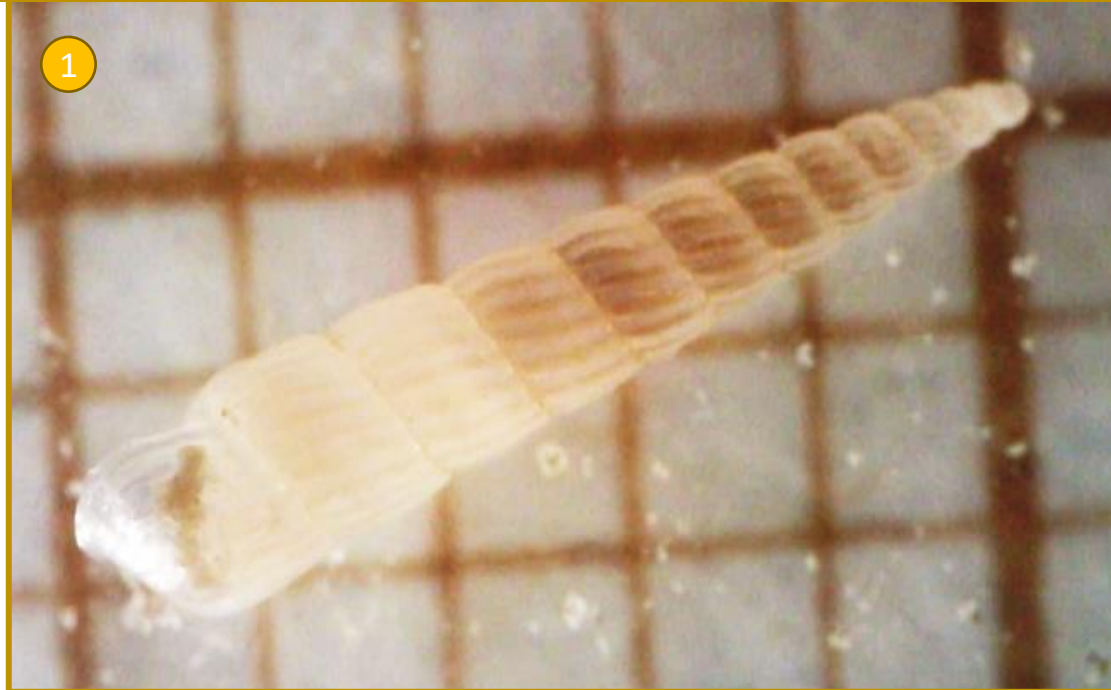
Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Pyramidellidae
Genus: Turbonilla

SIMILAR TAXA

Turritella sp; Terebridae

IDENTIFICATION FEATURES

Very long and slender;
More than 10 whorls;
Deep antero-posterior grooves within each ring
of the shell: spiral bands.



LEGEND

1. Dorsal view



GASTROPODA

TURRITELLA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Turritellidae
Genus: Turritella

SIMILAR TAXA

Turbonilla sp; Terebridae

IDENTIFICATION FEATURES

Often pinkish colour near aperture;
Around 8-9 whorls.



LEGEND

1. Lateral view, specimen with pinkish colour



GASTROPODA

TEREBRIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Terebridae

SIMILAR TAXA

Turbonilla sp; *Turritella* sp

IDENTIFICATION FEATURES

Very thick shell;
Deep longitudinal curved grooves within whorls, changing the curvature side between whorls.



LEGEND

1. and 2. Ventral view, with aperture detail



GASTROPODA

SOLARIELLA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Tornidae
Genus: Solariella

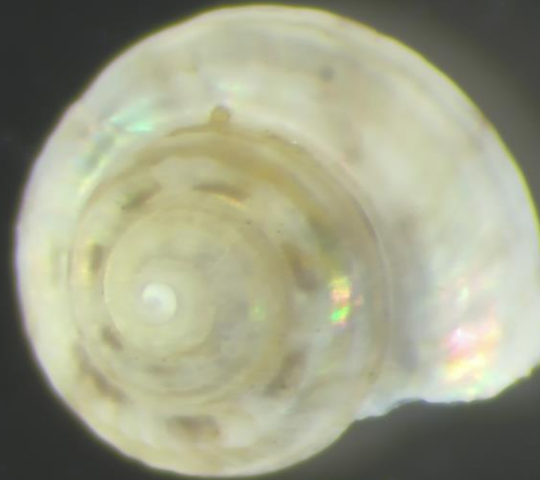
SIMILAR TAXA

Skeneidae; Cochliolepis

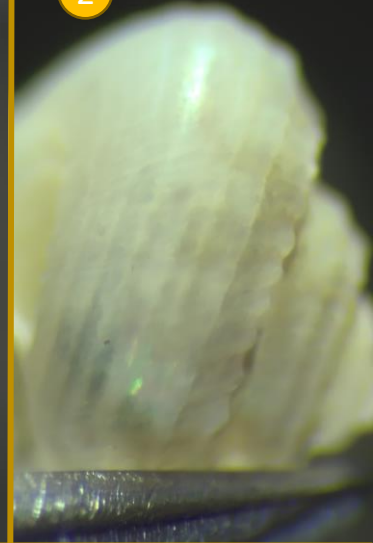
IDENTIFICATION FEATURES

Very thick shell;
Shiny colour;
High spire.

1



2



3



LEGEND

1. Right side view
2. Wovls detail
3. Left side view with aperture detail



GASTROPODA

SKENEIDAE (MORPHOTYPE)

TAXONOMY

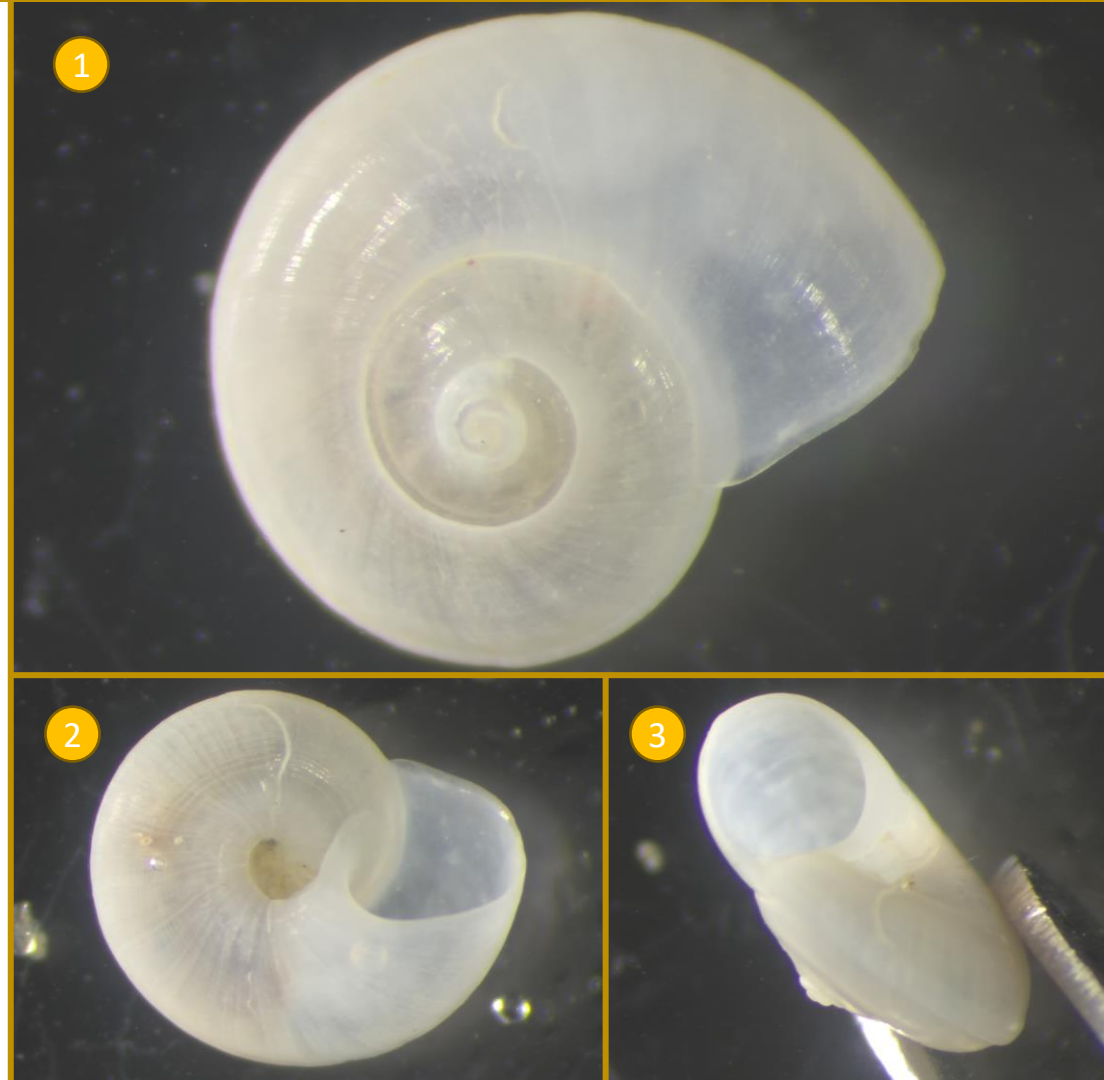
Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Tornidae

SIMILAR TAXA

Cochliolepsis sp;
Solariella sp

IDENTIFICATION FEATURES

Thin shell, translucent;
Shallow spire;
White in colour.



LEGEND

1. Right side view
2. Left side view
3. Aperture detail



GASTROPODA

COCHLIOLEPIS sp.

TAXONOMY

Kingdom: Animalia
Phylum: Mollusca
Class: Gastropoda
Family: Tornidae
Genus: Cochliolepis

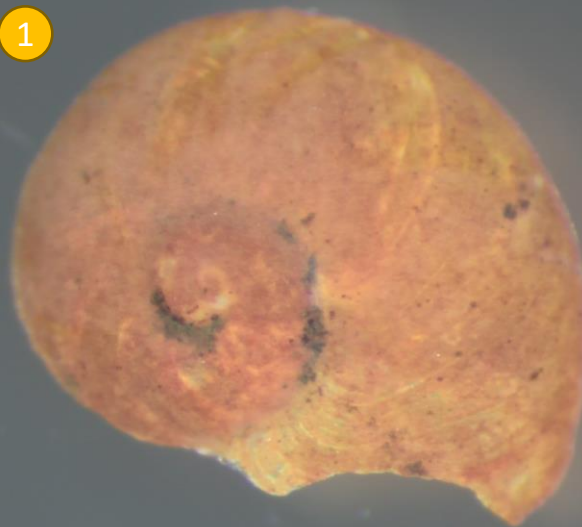
SIMILAR TAXA

Skeneidae; Solariella sp.

IDENTIFICATION FEATURES

Fossil appearance;
Often brown or yellowish colour;
Flattened shell;
Less than 3 whorls.

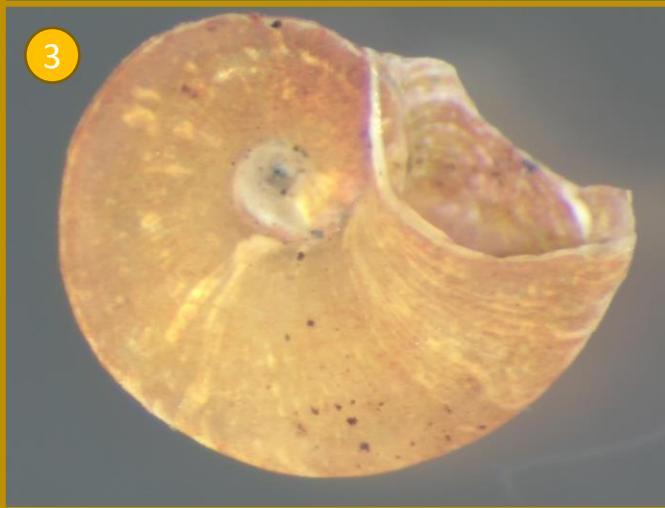
1



2

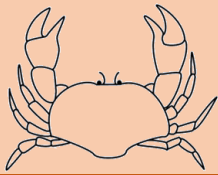


3



LEGEND

1. Right side view, partly broken
2. Left side view, partly broken
3. Two specimens, one with broken lip



MALACOSTRACA

AFRUCA TANGERI

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Ocypodidae
Genus: Afruca
Species: *A. tangeri*

SIMILAR TAXA

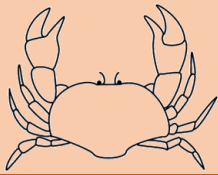
IDENTIFICATION FEATURES

Rectangular carapace shape;
Smooth anterior carapace edge;
Deep eye groove;
Males have one very big pincer.



LEGEND

- 1. Whole body
- 2. Pincer detail



MALACOSTRACA

PACHYGRAPSUS GRACILIS

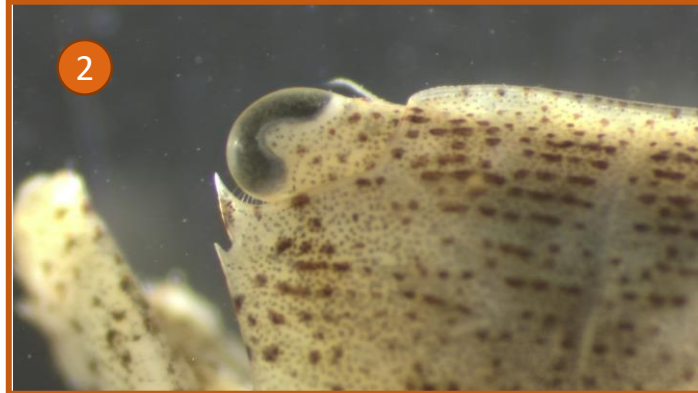
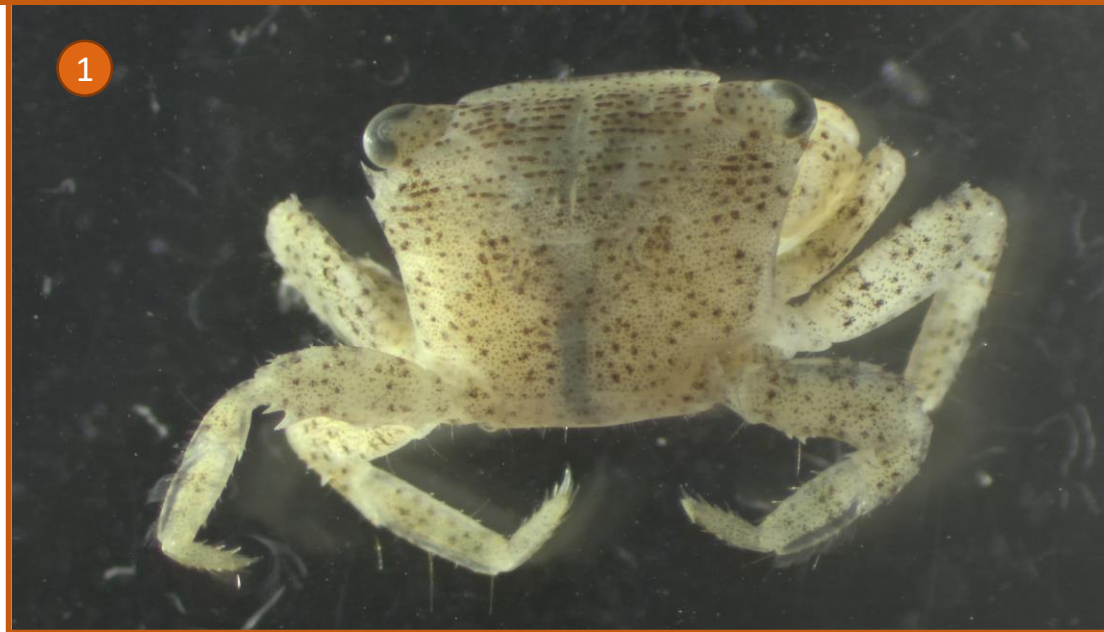
TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Grapsidae
Genus: *Pachygrapsus*
Species: *P. gracilis*

SIMILAR TAXA

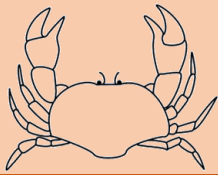
IDENTIFICATION FEATURES

Square carapace;
Small chelipeds.



LEGEND

1. Whole body
2. Frontal margin and tooth behind exorbita angle



MALACOSTRACA

MENIPPE NODIFRONS

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Menippidae
Genus: Menippe
Species: *M. nodifrons*

SIMILAR TAXA

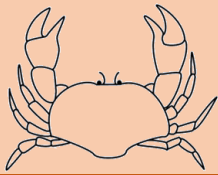
IDENTIFICATION FEATURES

Strong chelipeds;
Triangular carapace shape;
Dactyl and end of propodus black.



LEGEND

1. Whole body dorsal view



MALACOSTRACA

PANOPEUS AFRICANUS

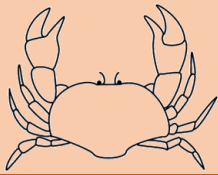
TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Panopeidae
Genus: Panopeus
Species: *P. africanus*

SIMILAR TAXA

IDENTIFICATION FEATURES

NO PICTURES



MALACOSTRACA

CALLINECTES MARGINATUS

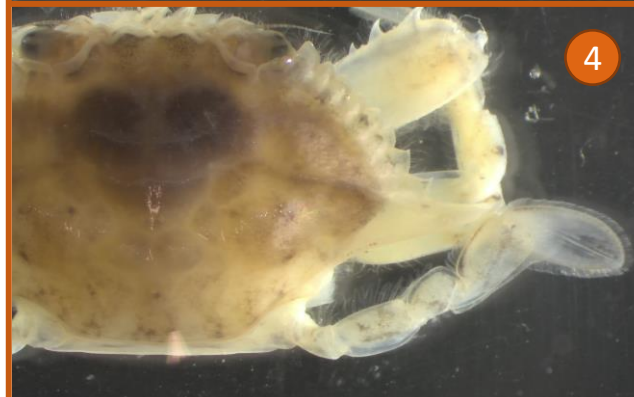
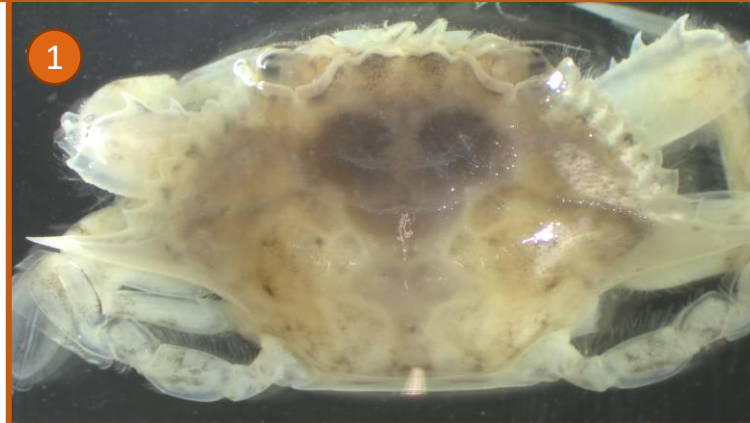
TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Portunidae
Genus: Callinectes
Species: *C. marginatus*

SIMILAR TAXA

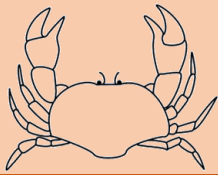
IDENTIFICATION FEATURES

Elongated carapace;
Presence of lateral spines;
Antero-lateral teeth;
Distinct pattern on carapace;
Swimming legs.



LEGEND

1. Whole body
2. Gnathopod (broken)
3. Anterior region detail
4. Swimming leg
5. Pincer detail



MALACOSTRACA

PINNOTHERIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Pinnotheridae

SIMILAR TAXA

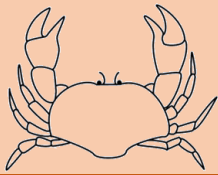
IDENTIFICATION FEATURES

Semi-circle carapace shape;
No teeth on carapace;
Very small chelipeds and eyes.



LEGEND

1. Whole body dorsal view
2. Whole body dorsal view with scale



MALACOSTRACA

PORCELLANIDAE

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Porcellanidae

SIMILAR TAXA

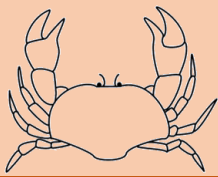
IDENTIFICATION FEATURES

Round carapace shape;
Two large mouthparts to filter water;
Long legs.



LEGEND

1. Whole body dorsal view (some legs lost after manipulations)



MALACOSTRACA

BALSSCALLICHIRUS BALSSI

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Family: Callianassidae
Genus: Balsscallichirus
Species: *B. balsii*

SIMILAR TAXA

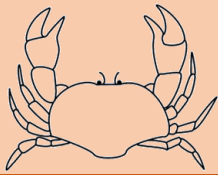
IDENTIFICATION FEATURES

One pair of large black eyes;
Always white or yellowish in color;
Look like small white lobsters;
Male has well developed cheliped.



LEGEND

1. Dorsal view of male specimen
2. Lateral view of female with eggs



MALACOSTRACA

APSEUDOMORPHA

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Tanaidacea
Suborder: Apseudomorpha

SIMILAR TAXA

IDENTIFICATION FEATURES

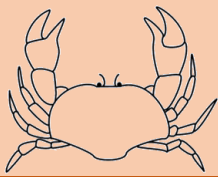
Rectangular body shape;
No visible eyes;
One pair of thick but short antennae;
Developed chelipeds;
Body segments with clear edges.



LEGEND

1. Whole body ventral view
2. Whole body dorsal view
3:4. Cheliped detail

5. Dorsal view of anterior end
6. Dorsal view of posterior end



MALACOSTRACA

ANTHURIDAE

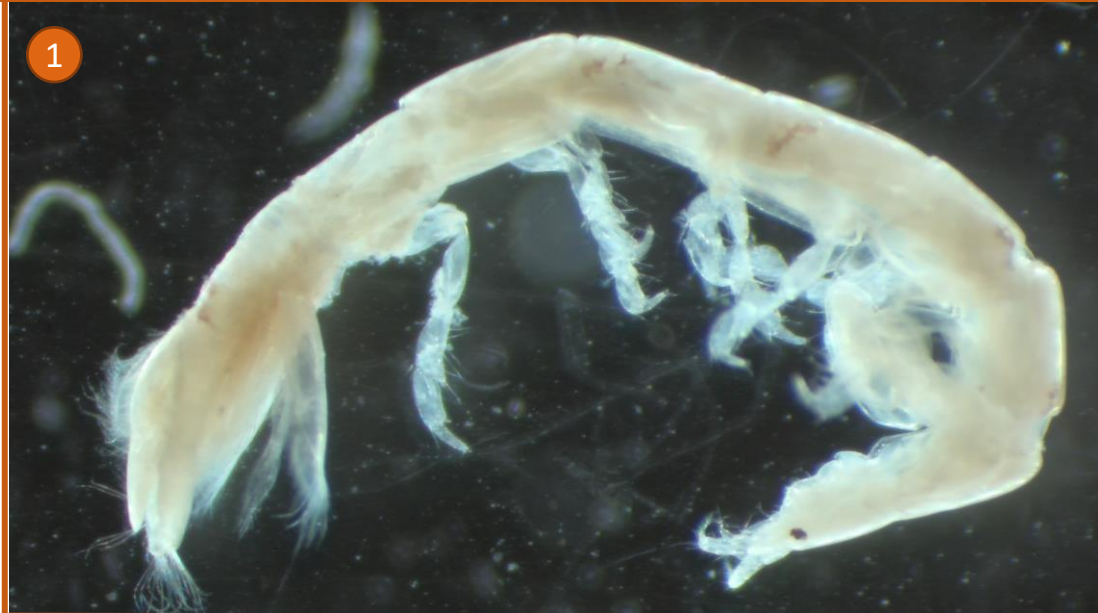
TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Isopoda
Family: Anthuridae

SIMILAR TAXA

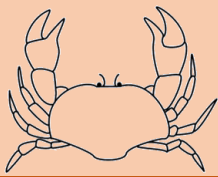
IDENTIFICATION FEATURES

Very long, slender specimens;
One black or small black eyes;
Body segments are relatively large, very distinct;
Long rectangular head segment;
Large black claws, rarely lost during manipulation.



LEGEND

1. Lateral view of whole body
2. Anterior end
3. Claw detail
4. Posterior end



MALACOSTRACA

CIROLANIDAE

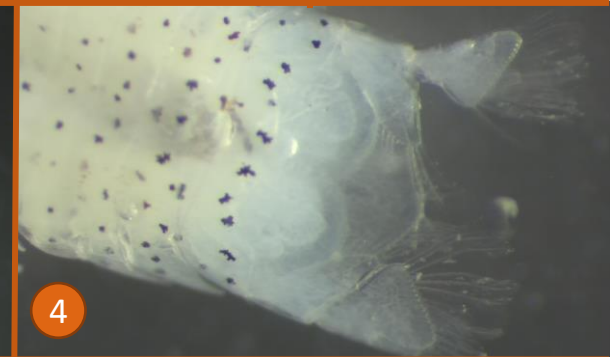
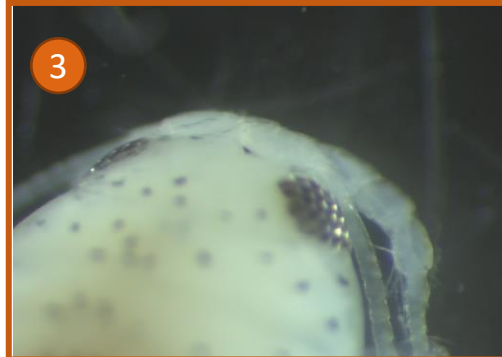
TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Isopoda
Family: Cirolanidae

SIMILAR TAXA

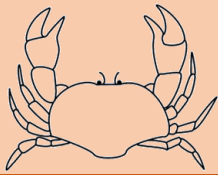
IDENTIFICATION FEATURES

Flattened dorsally;
Round outline;
One pair of large black flylike eyes;
Thin antennae;
Colour dots along the body;
Small legs.



LEGEND

1. Whole body dorsal view
2. Whole body ventral view
3. Head with eye detail
4. Posterior end and telson detail



MALACOSTRACA

AMPHIPODA1 (MORPHOTYPE)

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Amphipoda

SIMILAR TAXA

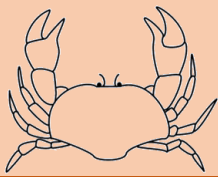
IDENTIFICATION FEATURES

Flattened laterally (Amphipoda);
Large antero-posterior length;
One pair of red eyes.



LEGEND

1. Lateral view of whole body
2. Different lighting



MALACOSTRACA

AMPELISCA sp.

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Amphipoda
Family: Ampeliscidae
Genus: Ampelisca

SIMILAR TAXA

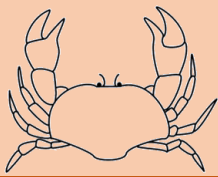
IDENTIFICATION FEATURES

Flattened laterally (Amphipoda);
No visible eyes;
Always uniform white colour.



LEGEND

1:2. Lateral view of whole body
3. Leg detail
3. Head and antennae detail
4. Several specimens varying in size



MALACOSTRACA

AMPHIPODA2 (MORPHOTYPE)

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Amphipoda

SIMILAR TAXA

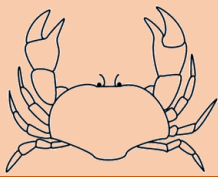
IDENTIFICATION FEATURES

Flattened laterally (Amphipoda);
Very short antero-posterior length;
Very small, almost invisible eyes (one pair);
Long legs, almost size of antero-posterior length.



LEGEND

1:2. Lateral view of whole body



MALACOSTRACA

***GRANDIDIERELLA* sp.**

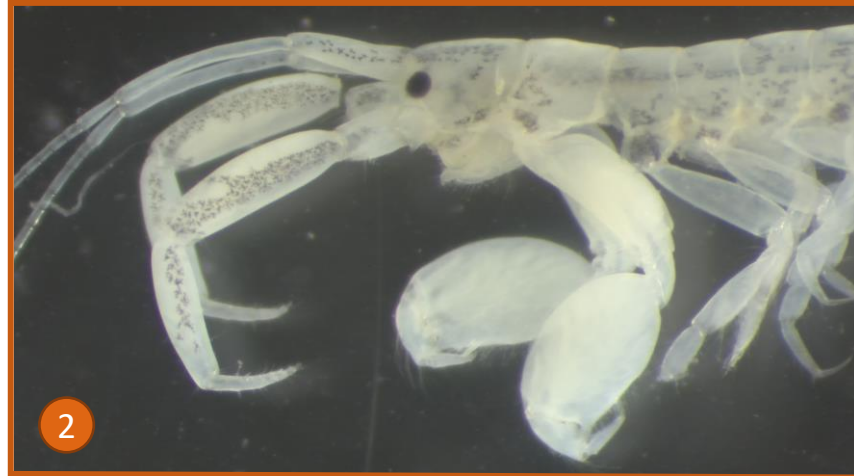
TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Amphipoda
Family: Aoridae
Genus: Grandidierella

SIMILAR TAXA

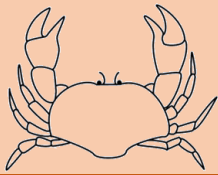
IDENTIFICATION FEATURES

Flattened laterally (Amphipoda);
One pair of black eyes;
First antennae pair longer than the second (Aoridae):
One pair of strong, thick antennae;
Gnathopods highly developed on male;
Antennae has no accessory flagellum and uropod 3 is uniramous (Grandidierella).



LEGEND

1. Male (above) and female (below) specimens
2. Detail of antennae and gnathopod of male



MALACOSTRACA

CUMACEA

TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Cumacea

SIMILAR TAXA

IDENTIFICATION FEATURES

Distinct body shape;
Long tail and compact body;
Identification only to order level.



LEGEND

1. Whole body

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REFERENCES

1. African Register of Marine Species (<http://marinespecies.org/afremas/aphia.php?p=taxdetails&id=129594>), accessed on 10-10-2022
2. Ardevini R, Cossignani T. (2004). West African Sea Shells (including Azores, Madeira and Canari Is.). L'informatore Piceno, Ancona.
3. Barnich R. (2011). Identification of scale worms in British and Irish waters. NMBAQC 2010 taxonomic workshop, Dove Marine Laboratory. 52 pp.
4. Blake JA. (2017). Polychaeta Orbiniidae from Antarctica, the Southern Ocean, the Abyssal Pacific Ocean, and off South America. Zootaxa. 4218(1): 1-145.
5. Boggemann M. (2002). Revision of the Glyceridae Grube 1850 (Annelida: Polychaeta). Abh. senckenberg. naturforsch. Ges. 555: 1-249.
6. Boggemann M. (2005). Revision of the Goniadidae (Annelida, Polychaeta). Goecke & Evers, Keltern-Weiler, Germany. pp. 1-354.
7. Bruce NL, Soares AG. (1996). Taxonomy and ecology of sandy beach Eurydice (Crustacea, Isopoda, Cirolanidae) from the West coast of South Africa. Cahiers de Biologie Marine. 37: 77-98.
8. Budaeva N, Auchald K. (2011). Phylogeny of the Diopatra generic complex with a revision of Paradiopatra Ehlers, 1887 (Polychaeta: Onuphidae). Zoological Journal of the Linnean Society. 163(2), 319-436.
9. Coelho AP, Henriques M, Rocha AD, Paulino J, Schaars LK, Ramos C, de Barros AR, Catry T, Granadeiro JP, Piersma T, Alves JA. (2022). Spatial and seasonal variation in macrozoobenthic density, biomass and community composition in a major tropical intertidal area, the Bijagós Archipelago, West-Africa. In prep.
10. Day JH. (1967). A monograph on the Polychaeta of Southern Africa. Part 1. Errantia. British Museum (Natural History), London. pp. 1-458.
11. Day JH. (1967). A monograph on the Polychaeta of Southern Africa. Part 2. Sedentaria. British Museum (Natural History), London. pp. 459-842.
12. De Assis JE, Alonso C, Christoffersen ML. (2007). A catalogue and taxonomic keys of the Subfamily Nicomachinae (Polychaeta Maldanidae) of the world. Zootaxa. 1657: 41-55.
13. Drumm DT, Heard RW. (2011). Systematic revision of the family Kalliapseudidae (Crustacea: Tanaidacea). Zootaxa. 3142: 1-172.

BENTHOS OF THE BIJAGÓS: An illustrated field catalogue for the identification of local macrozoobenthic fauna

REFERENCES

14. Fauchald K. The polychaete worms, Definitions and Keys to the Orders, Families and Genera. Sci Ser. 1977;28. doi:10.1007/s00296-005-0048-5
15. Fiege D, Böggemann M. (1999). *Ancistrosyllis fiononii*, a new species of Pilargidae from the North Sea, with a key and synoptic table of characters for all species of the genus *Ancistrosyllis* McIntosh 1879 (Annelida, Polychaeta, Pilargidae). *Senckenbergiana Biologica*. 78(1): 135-140.
16. Fransen C. (2016). Shrimps and Prawns. In: Carpenter KE and De Angelis N. The living marine resources of the Eastern Central Atlantic. Volume 1: Introduction, crustaceans, chitons, and cephalopods. FAO Species Identification Guide for Fishery Purposes, Rome, FAO. pp. 37-196.
17. Garwood PR. (2007). Family Maldanidae - A guide to species in waters around the British Isles. NMBAQC 2006 taxonomic workshop, Dove Marine Laboratory. 30p.
18. Gutu M. (2006). New Apseudomorph Taxa (Crustacea, Tanaidacea) of the World Ocean. Curtea Veche, Bucharest, Romania.
19. Holthe T. (1986). Polychaeta Terebellomorpha. *Marine Invertebrates of Scandinavia*. 7: 1-192.
20. Jarvis, S. (2011). Hesionidae (Grube, 1850) - a provisional guide to the identification of the British species. 10pp.
21. Jirkov IA, Leontovitch, MK. (2013). Identification keys for Terebellomorpha (Polychaeta) of the eastern Atlantic and the North Polar basin. *Invertebrate Zoology*. 10 (2): 217 - 243.
22. Keable SJ. (2006). Taxonomic revision of *Natatolana* (Crustacea: Isopoda: Cirolanidae). *Records of the Australian Museum* 58(2): 133-244.
23. Lincoln RJ. (1979). British marine Amphipoda: Gammaridea. British Museum (Natural History). 658 pp.
24. Manning RB, Holthuis LB. (1981). West african brachyuran crabs (Crustacea: Decapoda). Smithsonian Institution Press. Vol. 306, pp. 1-379.
25. Marine Species Identification Portal (<http://species-identification.org/>), accessed on 10-10-2022
26. Moreira J, Parapar J. (2002). Redescription of *Sigambra tentaculata* and re-establishment of *S. Parva* (Polychaeta, Pilargidae) based upon type material. *Cahiers de Biologie Marine* 43(2): 99-109.

BENTHOS OF THE BIJAGÓS: An illustrated field catalogue for the identification of local macrozoobenthic fauna

REFERENCES

27. Mortimer K, Kimberley M, Esther J, Susana P, João G. (2020). A further review of European Magelonidae (Annelida), including descriptions of *Magelona equilamellae* and *Magelona filiformis*. *Zootaxa*. 4767(1): 89-114.
28. Mortimer K, Mackie A. (2009). Magelonidae (Polychaeta) from Hong Kong, China, with discussions on related species and redescriptions of three species. *Zoosymposia*. 2: 179-199.
29. Muñoz I, García-Isarch E, Sobrino I, Burgos C, Funny R, González-Porto M. (2012). Distribution, abundance and assemblages of decapod crustaceans in waters off Guinea-Bissau (north-west Africa). *Journal of the Marine Biological Association of the United Kingdom*, vol. 92 issue 3, p. 475-494.
30. Myers AA. (1970). Taxonomic studies on the genus *Grandidierella* Coutiere (Crustacea, Amphipoda) with a description of *G. dentimera* sp. Nov. *Bulletin of Marine Science*, 20, pp. 135-147.
31. Naylor E, Brandt A. (2015). Intertidal Marine Isopods. *Synopses of the British Fauna (New Series)*, No. 3. Field Studies Council, for The Linnean Society of London.
32. Oug E. (2012). Guide to identification of Lumbrineridae (Polychaeta) in north east Atlantic waters v.3.2. NMBAQC 2010 taxonomic workshop, Dove Marine Laboratory. pp. 1-31.
33. Parapar J, Alós C, Núñez J, Moreira J, López E, Aguirrezabalaga F, Besteiro C, Martínez A. (2012). Annelida Polychaeta III. In: Ramos MA et al. *Fauna Ibérica* vol. 36. Museo Nacional de Ciencias Naturales, CSIC, Madrid: 272-283.
34. Parapar J, Moreira J. (2015). Six new species of the genus *Armandia* Filippi, 1861 (Polychaeta, Opheliidae) from Lizard Island (Great Barrier Reef, Australia). *Zootaxa*. 4019(1): 577-603.
35. Paxton H. (1986). Generic revision and relationships of the family Onuphidae (Annelida: Polychaeta). *Records of the Australian Museum*. 38(1): 1-74.
36. Paxton H. (2016). A new species of *Diopatra* (Annelida: Onuphidae) from Namibia, southwestern Africa. *Marine Biodiversity*.

BENTHOS OF THE BIJAGÓS: An illustrated field catalogue for the identification of local macrozoobenthic fauna

REFERENCES

38. Robles R, Schubart CD, Conde JE, Carmona-Suárez C, Alvarez F, Villalobos JL, Felder DL. (2007). "Molecular phylogeny of the American Callinectes Stimpson, 1860 (Brachyura: Portunidae), based on two partial mitochondrial genes". *Marine Biology*. 150 (6): 1265–1274.
39. Salazar-Vallejo SI, Rizzo AE, de León-González, JA, Brauco KM. (2019). Four new Caribbean Sigambra species (Annelida, Pilargidae), and clarifications of three other Sigambra species. *ZooKeys*. 893: 21-50.
40. Smaldon G. (1979). British coastal shrimps and prawns: keys and notes for the identification of the species. *Synopses of the British fauna (new series)*, 15. Academic Press: London, UK. ISBN 0-12-649250-6. 126 pp.
41. Strelzov VE. (1979). Polychaete worms of the Family Paraonidae Cerruti, 1909 (Polychaeta, Sedentaria). New Delhi, Amerind Publishing Co., for The Smithsonian Institution & The National Science Foundation. pp. 212.
42. Sun Y. (2018). A new species of Leodamas Kinberg, 1866 (Polychaeta: Orbiniidae) from the Yellow Sea and the East China Sea. *Acta Oceanol. Sin.* Vol. 37, No. 10, pp. 130-135
43. Von Cosel R. Taxonomy of tropical West African bivalves. VI. Remarks on Lucinidae (Mollusca, Bivalvia), with description of six new genera and eight new species. *Zoosystema*. 2006;28: 805–851.
44. Wang Z, Qiu JW, Salazar-Vallejo SI. (2018). Redescription of Leocrates chinensis Kinberg, 1866 (Annelida, Hesionidae). *Zoological Studies*. 57(5): 1-11
45. Worsfold, Tim (2009). Progress on the identification of Cirratulidae in British and Irish waters through the NMBAQC scheme: 1996-2009. Unicomarine Ltd.