FIELD GUIDE TO THE

OFFSHORE MARINE INVERTEBRATES

OF SOUTH AFRICA
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South Africa is a maritime nation benefiting from its three surrounding ocean ecosystems and has an internationally recognised, proud legacy of excellence in marine science. Its geographical position at the southern tip of Africa not only serves as a gateway to the Southern Ocean, but is also a major factor driving the high levels of marine biodiversity and endemism found here. Internationally, South Africa is ranked as having the third highest number of marine species per unit area within its exclusive economic zone, creating an appealing research arena.

South Africa’s Blue Economy vision for a stronger and sustainable ocean economy depends on the strength of its scientific foundation. Correct identification of marine taxa is a fundamental requirement for long-term monitoring. Such monitoring enables scientists to detect changes in marine biota. In turn, understanding these changes in marine biota contributes to effective science-based management of our marine ecosystems.

The Department of Science and Technology has a Global Change Grand Challenge (GCGC) and a Marine and Antarctic Research Strategy (MARS). Fundamental to both of these is an understanding of the role of biodiversity in maintaining ecosystem functionality and the impact of global change on marine ecosystems. Taxonomic knowledge is limited for deep-water species. This restricts our capacity to understand deep-water ecosystems and hence assess potential impacts and plan for effective protection of these systems. The lack of knowledge of deep-water species and ecosystems is a global phenomenon (Costello et al., 2010) and reflects the technological and capacity challenges of sampling deep ocean biota. In South Africa, Griffiths et al. (2010) reported that 83% of all benthic invertebrate marine samples were collected from water shallower than 100 m and only 2% from water deeper than 1 000 m, despite the large extent of habitats in deeper water. Offshore marine invertebrates have been identified as one of the most neglected groups of organisms in terms of taxonomic knowledge in South Africa (Gibbons et al., 1999).

The South African Environmental Observation Network (SAEON) is an emerging national facility within the National Research Foundation, funded by the Department of Science and Technology. In 2011, the Egagasini Node of SAEON pioneered the implementation of a long-term, offshore invertebrate monitoring programme. This has been in collaboration with the Department of Agriculture, Forestry and Fisheries (DAFF), the Department of Environmental Affairs (DEA) and the South African National Biodiversity Institute (SANBI). Invertebrate monitoring is carried out during the annual demersal fish abundance surveys conducted by DAFF. The surveys span South Africa’s continental shelf between 30 m and 1 000 m from the mouth of the Orange River to Port Alfred.

Over the past seven years, this dedicated team of researchers has been able to collate the invertebrate information collected during these surveys to produce the first ‘Field Guide to the Offshore Marine Invertebrates of South Africa’.

This is a photograph-based field identification guide. It enables researchers, fishery observers and fishers to readily recognise and identify up to 409 offshore invertebrate species or classify unknown species into one of 12 phyla. The information gathered informs research towards quantifying and assessing ecosystem
impacts, leading to the implementation of sustainable management practices in the demersal trawl sector. The research supports international and local interests, which include fisheries eco-certification through the Marine Stewardship Council hake trawl certification, participation in a global trawl impact assessment, and national ecosystem classification.

The rich photographic display of deep-sea species is also being used for education outreach and aims to generate broader public engagement and awareness of our ocean environment. This field guide, complemented by the extensive training of students, interns and emerging researchers, is an important contributor in addressing the gap in offshore invertebrate knowledge in South Africa. The information gathered supports the long-term monitoring and data availability of marine invertebrates and advances taxonomy and biogeographic research. Moreover, the information contributes to the description, mapping, assessment and thus, the improved management, of marine ecosystems.

The field guide is a significant milestone in the description and mapping of South Africa’s deep-water invertebrate biodiversity. In the process of developing this guide, 21 new species have been discovered. The data collected will establish marine system indicators for improved ecosystem modelling and change prediction efforts, as prioritised in the Marine and Antarctic Research Strategy (MARS): Ecosystem, biodiversity and bio-discovery. The expertise of many South African marine scientists and their collaboration with international partners is contributing to an improved and empowered South African marine science.

Many new distribution records are being detected and these are making marine taxonomy and bio-discovery research in South Africa very appealing to the international sector. Although these discoveries are a testament to the limited state of knowledge prior to implementation of this monitoring programme, they indicate the potential for further discoveries in South Africa’s rich ocean environment.

‘This field guide, complemented by the extensive training of students, interns and emerging researchers, is an important contributor in addressing the gap in offshore invertebrate knowledge in South Africa.’

Naledi Pandor
Minister of Science and Technology from May 2015 until February 2018.

References:
Long-term environmental monitoring is important to enable an improved understanding of how changing conditions affect marine environments. Without rigorous data from the past, we are unable to detect, quantify or adapt to changes in the environment now, or into the future. Offshore benthic ecosystems of South Africa’s Exclusive Economic Zone have, in the past, been poorly studied and local taxonomic knowledge of offshore invertebrates has been considered sparse. Marine invertebrates are one of the most poorly studied groups of taxa across all known environments. However, since 2007, marine invertebrates have been increasingly retained and identified in research demersal trawl surveys, culminating in a formal monitoring initiative led by the South African Environmental Observation Network (SAEON) and established in 2011. This has enabled a rapid increase in local knowledge and understanding of offshore invertebrate taxonomy and laid a foundation for the classification, description and mapping of benthic ecosystems.

This Field Guide to the Offshore Marine Invertebrates of South Africa aims to assist identification of commonly occurring invertebrate epifauna retained in research and commercial trawl nets.

The majority of trawled invertebrates in South Africa belong to one of twelve phyla. Their accurate identification often requires specialist taxonomic expertise. This field identification guide has been developed to improve accuracy of South African invertebrate identifications while at sea, minimising the volume of specimens retained and brought back to land for further identification. It was developed with expert input from local and international taxonomists as reflected in the authorship of chapters.

The guide was originally developed to be used in collaboration with offshore researchers from the Department of Agriculture, Forestry and Fisheries (DAFF) during their routine annual demersal research trawl surveys, however, the information is also relevant to many other experts. Biodiversity scientists, students, fisheries observers, environmental impact practitioners, spatial planners, those conducting ecosystem assessments, climate change analysts and marine researchers are likely to use this guide.

Over 400 benthic invertebrate epifauna occurring in South Africa’s offshore region (> 20 m to 1000 m) are included in the guide. Due to the nature of research trawl sampling, species depicted in this guide are currently spatially limited to the DAFF demersal survey area, which extends from the South African-Namibian border to ± 27°East (just beyond Port Alfred – see Figure 1).

Although descriptions provided have been compiled or checked by expert taxonomists, errors may inevitably occur. We welcome corrections, where possible, and any new information to be shared with the authors to improve the guide content over time. Please email such information to Lara Atkinson (Lara@saeon.ac.za) and Kerry Sink (K.Sink@sanbi.org.za). This guide does not replace formal taxonomic descriptions, monographs or manuscripts, which remain the best sources of detailed information about taxa.
Figure 1. Map of South Africa showing key locations and features relevant to this invertebrate identification guide.
STRUCTURE OF THE GUIDE

The first section of the guide provides an overview of the phyla and general group codes to be used if specimens cannot be identified to a more specific classification level (Phyla Overview). The Phyla Overview provides key distinguishing features for each phylum, with representative images of typical species (pages 11-22).

The Table of Taxa (pages 24-36) lists all taxa included in this guide with authority and page numbers. Species in the Table and the individual identification pages are arranged from less advanced (sponges) to more advanced (echinoderms and chordates) taxa. The phyla pages are colour-coded for ease of navigation. The order of species pages presented may not necessarily follow strict phylogenetic relationships, but are presented based on superficial similarity to enable better comparisons during field identification. Information provided in individual species pages highlights key features to distinguish new specimens from others that may appear similar. Although some prior biological knowledge is beneficial, specialist terminology is avoided where possible. Where specialist terminology is necessary, attempts are made to explain the term – either in brackets or by labelling features on an image. Each individual identification page contains the following information:

- Standard taxonomic hierarchy of the organism (following the World Register of Marine Species www.marinespecies.org)
- Scientific and common name(s)
- Six-letter FishBoard code (FB code) unique within the Department of Agriculture, Forestry and Fisheries database system
- Image(s) (photographs and sometimes a line diagram with scale bar)
- Occurrence record map (showing occurrence of species recorded during research surveys or from museum records)
- Distinguishing features (as reported in taxonomic work with emphasis on local experience and look-alike taxa)
- Colour (as observed in freshly collected specimens)
- Size (based on measurements on deck with reference to literature)
- Distribution (reported from literature and occurrence records)
- Depth (reported from literature and occurrence records)
- Similar species (similar local taxa as determined from experience)
- References (main references used in compiling species page)

Species that may be indicators of Vulnerable Marine Ecosystems (VME) are labelled on relevant species pages with the term “Potential VME”, as defined by FAO (2009).

INSTRUCTIONS FOR COLLECTION AND PRESERVATION AT SEA

Only species that can be readily identified using macro-features (i.e. visible to the naked eye) can be identified using this guide. Species that require detailed microscopic examination are grouped and presented at a higher taxonomic level, and possibly flagged for specimens to be retained for more accurate identification in laboratories. If a specimen cannot confidently be identified to family, genus or species level using the individual identification pages, the most appropriate general group code (pages 11-22) should be used to record the specimen abundance and biomass, and the specimen should be photographed and preserved appropriately for further identification.

Specimens or subsamples should be retained under the following circumstances:

- The specimen does not resemble any species portrayed in the guide.
- Identification beyond phylum level is uncertain.
- The specimen has been caught beyond the given distribution and/or depth range.
- Specimens have been specifically requested in survey sailing orders.
- The species is identified as an indicator species for potential Vulnerable Marine Ecosystems and was caught in appreciable quantities.

If specimens or samples are retained for further identification, they should be photographed and preserved following the protocols provided.

PHOTOGRAPHS

Photographs in this guide
Photographs in the guide are not consistently scaled and a scale bar with approximate measurements indicates relative size for photos. During final desktop processing of each photograph, a scale bar of constant length was embedded in most photos throughout the guide. For each photo the size represented by the scale bar (shown in mm) was calculated by using a ruler included in the original photo or by using information on the average known size of the species concerned. For Cephalopoda, 100, 50 or 10 mm scale bars were included.

Photographing specimens at sea
Photographs of fresh specimens at sea are invaluable and a requirement for barcoded specimens to contribute to international databases.

These photographing guidelines are derived from the BOLD Systems Photography Guide (www.boldsystems.org):

- Good natural light is preferable, but if necessary use a flash to ensure specimen is in focus.
- Background should be a plain, non-reflective colour of contrast: black, white or grey non-reflective surface is ideal.
- Include a measurement scale to provide a size reference. A ruler placed in the bottom of the frame is ideal.
- Ensure camera is on high resolution/high quality setting.
- Jpeg images are preferred, but RAW images can be converted to .jpeg if RAW images are required for taxonomic work.
- The specimen should be centred in the image frame.
- Photos should be taken as close-up to the specimen as possible (but still in focus), leaving a small gap/border around the edges.
- Take at least three replicate photos from each angle of the specimen (dorsal/top, ventral/bottom and lateral/side).

Specimen orientation should be standardised from different angles as follows, where applicable:

<table>
<thead>
<tr>
<th>Dorsal</th>
<th>Ventral</th>
<th>Lateral</th>
</tr>
</thead>
<tbody>
<tr>
<td>The anterior (front) of the specimen should be facing the top of the image frame (except for brachiopods).</td>
<td>The anterior (front) of the specimen should be facing the top of the image frame (except for brachiopods).</td>
<td>The anterior of the specimen should be facing the left side of the image frame.</td>
</tr>
<tr>
<td>The specimen should be face-down, with the dorsal aspect of the head visible.</td>
<td>The specimen should be face-up, with the ventral aspect of the head visible.</td>
<td>The specimen should be oriented with the feet/ventral surface towards the bottom of the image.</td>
</tr>
</tbody>
</table>
RESEARCHERS – COLLECTION AND PRESERVATION

Specimens should be photographed and notes captured on their colouration prior to preservation (see page 7). If chemicals (formalin or ethanol) are available, follow instructions for the relevant animal groups as described below or in detail on the individual phylum introduction pages. If no chemicals are available, freeze specimens in a plastic bag with sufficient seawater to cover the animal.

Ensure a waterproof label is included in each bag with the following information captured in pencil (preferably 2H lead): Cruise number, Station number, Longitude, Latitude, Date, Depth, Researcher’s name, FishBoard code.

Specimens should have a 5:1 volume of liquid to prevent overcrowding. Liquid (preservative) volume must be at least 5 to 10 times that of the animal because water released from the animal will dilute the preservative.

Specimens required for barcoding or DNA analysis must either be frozen or preserved in 96% ethanol, which must be changed after the initial 24 hours. Where preservation by means of formalin is required, use 5-10% buffered formalin (10% formalin = 4% formaldehyde solution).

For large specimens, a syringe or knife should be used to help the fixative or preservative to penetrate the body tissue.

OBSERVERS – COLLECTION AND PRESERVATION

Specimens for freezing (e.g. sponges, bryozoans, crustaceans):
Place specimens in a sufficiently large plastic bag (5:1 liquid volume:specimen), separating the groups or species as far as possible. Place in freezer as soon as possible.

Ensure a waterproof label is included in each bag with the following information captured in pencil (preferably 2H lead): Cruise number, Station number, Longitude, Latitude, Date, Depth, Observer’s name, FishBoard code. If a subsample is being retained, please state “Subsample” and provide the total estimated weight caught.

Dead shells are not to be retained or recorded unless specifically requested by taxonomists.

Specimens for drying (e.g. corals, hydrocorals):
Place specimens in a secure container, preferably without a lid to enable good air circulation to dry the specimen as rapidly as possible.

Ensure a waterproof label is firmly tied to each specimen with the following information captured in pencil (preferably 2H lead): Cruise number, Station number, Longitude, Latitude, Date, Depth, Observer’s name, FishBoard code. If a subsample is being retained, please state “Subsample” and provide the total estimated weight caught.

Store specimens in a well-ventilated but secure location on the vessel, turning the specimen over every few days. Seawater spray or rainwater should be avoided.

Liaise with the Observer Programme manager for the final delivery location of all retained invertebrate specimens.
PRESERVATION PER PHYLA

This section provides simplified information on how best to preserve specimens retained for each phylum. More details are provided in individual phyla sections and should be further consulted.

**Porifera and Bryozoa**  
*pages 39 and 228*
Freeze unknown specimens with labels. Phyla can be grouped per trawl.

**Cnidaria – anemones, sea pens, soft corals**  
*pages 66-67*
Preserve a piece in 96% ethanol (for genetic study), then relax the animal in menthol crystals, thereafter preserve in ethanol. Change ethanol after 24 hours. Fix remaining part of specimen in 5-10% formalin, ensuring fixative penetrates tissue. See individual groups for details.

**Cnidaria – scleractinians, sea fans, hard corals, hydrocorals**  
*pages 66-67*
Preserve a piece in 96% ethanol (for genetic study). Dry or preserve remaining colony pieces in ethanol. Change ethanol after 24 hours.

**Annelida and Sipunculida**  
*pages 122 and 118*
Relax in menthol crystals, then fix in either 10% formalin (annelids) or 5% formalin (sipunculids). Specimens for genetic studies should be preserved in 96% ethanol immediately (no menthol crystals), changing ethanol after 24 hours.

**Mollusca – sea slugs, sea slugs, chitons**  
*page 251*
Shelled specimens for morphological studies can be frozen whole as rapidly as possible. Specimens for genetic studies should be placed in 96% ethanol with the shell cracked to enable preservation of soft body tissue. If specimen is large, a small (± 25x25 mm) piece of the foot can be excised and placed into 96% ethanol, ensuring the appropriate label is included to link the tissue back to the whole preserved animal.

Sea slugs (shell-less) should be relaxed in menthol crystals prior to preservation in 96% ethanol or fixing in 4% formalin.

**Mollusca – octopus and squid**  
*pages 321-391*
Fix whole animal in 10% formalin. Essential to inject formalin into body cavity. Can be stored in 96% ethanol later.

**Arthropoda**  
*page 134*
Freeze unknown specimens as rapidly as possible in individual bags with sufficient seawater to cover the specimen. Ensure a label is included in the bag.

**Echinodermata**  
*page 395*
Preserve in 96% ethanol. Large specimens can be dried, with a portion of the specimen being preserved in 96% ethanol before drying for genetic studies.

**Chordata**  
*page 478*
Relax in menthol crystals, and then slowly add 5-10% formalin to solution without disturbing the animal. Specimens (or pieces) for genetic studies should not be relaxed, but preserved in 96% ethanol immediately.

**Hemichordata**  
*page 492*
Specimens should be frozen with a label.
This project was funded by the Department of Science and Technology through SAEON grants, top-up funding from the Global Change Programmes (for publication costs) and the SANBI SeaKeys Project funded through the NRF Foundational Biodiversity Information Programme. The Department of Agriculture, Forestry and Fisheries Offshore Research provided in-kind seagoing support. In addition to authors, Lauren Abrahams, Rob Cooper, Jock Currie, Jethan D’Hotman, Leila Nefdt, Hannah Raven, Safiyya Sedick, Lieze Swart, Prideel Majiedt and Grant van der Heever provided assistance with data and image collection, verification and collation. Taxonomic support was provided by Peter Ng Kee Lin, Raphael Lemaitre, Enrique Macpherson, Tomo Komai, Bella Galil, Philippe Bouchet, Stephen Cairns and Gary Williams. Andrew Skowno, Mapale Matlala and Tsamaelo Malebu from SANBI generated the maps. Jessica Eggers, Hannah Raven, Safiyya Sedick, Shirley Parker-Nance and Linda Davis provided the line diagrams, unless sourced from cited publications. Tracey Fairweather from DAFF verified and allocated the DAFF FishBoard codes. We also thank the DAFF Demersal Research team, especially Deon Durholtz and Director of Resources Research, Kim Prochazka, for supporting the programme. Dianne Tracey from NIWA Taihoro Nukurangi, New Zealand, is thanked for sharing her experience and inspiration on this project.


We are deeply indebted to Mitzi du Plessis and Elke Momberg from Malachite Marketing and Media for their professionalism, attention to detail and willingness to conduct additional work to compensate for our inexperience. We appreciate their efforts and experience in making this guide, not just fit for purpose, but also beautiful and inspirational. Thank you.
PHYL A O V ERV IE W
### Phylum Porifera (Sponges)  
See page 37

**General code for unknown Porifera species:**  
*Sponge*

- No distinct body parts.
- Variable body form: massive, ovoid, fans, tubular, encrusting.
- May be stalked.
- Texture may be spongy, slimy, stony or prickly.
- May be brightly coloured.
- May be confused with colonial ascidians but zooids (singular animals) not present in sponges.

### Phylum Cnidaria (Anemones, Corals, Hydroids and Jellyfish)  
See page 65

**Order: Alcyonacea (soft corals and sea fans)**  
See page 69

**General code for unknown soft coral:**  
**Alcyon**

**General code for unknown sea fan:**  
**Seafan**

- Soft corals have diverse body forms but have no internal skeleton.
- Distinct colonial or solitary polyps with eight tentacles (difficult to see when retracted).
- Sea fans form fan-shaped colonies and have a firm but flexible horny skeleton.

**Order: Pennatulacea (sea pens)**  
See page 75

**General code for unknown sea pen:**  
**Pennat**

- Elongated colonies of polyps with eight tentacles (often not visible).
- Soft, root-like peduncle and firmer stem.
- Whip-like, feather-like or sausage-shaped.
- May be slimy.

**Order: Actinaria (anemones)**  
See page 81

**General code for unknown anemone:**  
**Anemon**

- Cup-shaped polyp.
- No hard skeleton.
- Radial symmetry.
- Tentacles present.
- Column smooth or slightly ridged.
- Texture smooth to slightly granular/corrugated.
- Sometimes slimy.
<table>
<thead>
<tr>
<th>Phylum Cnidaria (Anemones, Corals, Hydroids and Jellyfish)</th>
<th>See page 65</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Order: Scleractinia (corals)</strong></td>
<td>See page 89</td>
</tr>
<tr>
<td><strong>General code for unknown reef-building coral:</strong></td>
<td><em>Caryo1</em></td>
</tr>
<tr>
<td><strong>General code for other unknown coral:</strong></td>
<td><em>Coral</em></td>
</tr>
<tr>
<td></td>
<td><img src="image1" alt="Image" /> <img src="image2" alt="Image" /> <img src="image3" alt="Image" /> <img src="image4" alt="Image" /></td>
</tr>
</tbody>
</table>
|                                                          | • Hard, pale or brown, calcareous skeleton.  
|                                                          | • Soft tissue present when live, usually pale, bright yellow or orange.  
|                                                          | • Reef-building coral may appear as large, dense matrices of hard tubes.  
|                                                          | • Some colonies unbranched.  
|                                                          | • May be folded (clam-like).  |

<table>
<thead>
<tr>
<th><strong>Order: Anthoathecata (hydrocorals)</strong></th>
<th>See page 98</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General code for unknown Stylasteridae:</strong></td>
<td><em>Stylas</em></td>
</tr>
<tr>
<td></td>
<td><img src="image5" alt="Image" /> <img src="image6" alt="Image" /> <img src="image7" alt="Image" /> <img src="image8" alt="Image" /></td>
</tr>
</tbody>
</table>
|                                                          | • Brittle, hard, calcareous, often finely branching colonies.  
|                                                          | • Fan- or tree-shaped.  
|                                                          | • Texture may be glass-like.  
|                                                          | • Inflexible and breaks easily.  
|                                                          | • Often bright white but bright pink, purple or brown colonies common.  |

<table>
<thead>
<tr>
<th><strong>Class: Hydrozoa (hydroids)</strong></th>
<th>See page 103</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General code for unknown hydroids:</strong></td>
<td><em>Hydrod</em></td>
</tr>
<tr>
<td></td>
<td><img src="image9" alt="Image" /> <img src="image10" alt="Image" /> <img src="image11" alt="Image" /> <img src="image12" alt="Image" /></td>
</tr>
</tbody>
</table>
|                                                          | • Fine, branching, tree-, fern-, feather- or bush-like sessile colonies.  
|                                                          | • More flexible than sea fans.  
|                                                          | • Polyps and tentacles seldom visible, may be confused with sea fans (sea fan polyps have eight tentacles when visible).  
|                                                          | • May have a woody base or axis.  |

<table>
<thead>
<tr>
<th><strong>Class: Hydrozoa and Scyphozoa (jellyfish)</strong></th>
<th>See page 104</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General code for unknown jellyfish:</strong></td>
<td><em>Jelly</em></td>
</tr>
<tr>
<td></td>
<td><img src="image13" alt="Image" /> <img src="image14" alt="Image" /> <img src="image15" alt="Image" /> <img src="image16" alt="Image" /></td>
</tr>
</tbody>
</table>
|                                                          | • Gelatinous, soft texture.  
|                                                          | • Often slimy.  
|                                                          | • Radial body plan.  
<p>|                                                          | • Disc-, saucer- or dome-shaped bell with tentacles.  |</p>
<table>
<thead>
<tr>
<th>Phylum Sipuncula (Peanut Worms)</th>
<th>See page 119</th>
</tr>
</thead>
<tbody>
<tr>
<td>General code for all peanut worms:</td>
<td>Sipunc</td>
</tr>
<tr>
<td>- Smooth, unsegmented worm-like animals.</td>
<td></td>
</tr>
<tr>
<td>- Elongated to oval shape, with anterior tubular process (introvert).</td>
<td></td>
</tr>
<tr>
<td>- Bilateral symmetry.</td>
<td></td>
</tr>
<tr>
<td>- Tough body wall with no bristles or tube feet.</td>
<td></td>
</tr>
<tr>
<td>- May have sediment particles attached.</td>
<td></td>
</tr>
<tr>
<td>- Tentacles seldom visible and not feathery.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phylum Annelida (Segmented Worms)</th>
<th>See page 121</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class: Polychaeta (bristle worms)</td>
<td>See page 124</td>
</tr>
<tr>
<td>General code for unknown Polychaetes:</td>
<td>PolW</td>
</tr>
<tr>
<td>- Segmented worms with distinct head.</td>
<td></td>
</tr>
<tr>
<td>- Fleshy leg-like lobes (parapodia) on each segment bearing bristles.</td>
<td></td>
</tr>
<tr>
<td>- Worm tubes may appear as calcareous, horny or parchment-like (never jelly-like, see phylum Hemichordata).</td>
<td></td>
</tr>
<tr>
<td>- Worms may be visible if tubes broken open.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phylum Arthropoda</th>
<th>See page 133</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subphylum: Chelicerata</td>
<td></td>
</tr>
<tr>
<td>Class: Pycnogonida (sea spiders)</td>
<td>See page 137</td>
</tr>
<tr>
<td>- Usually four pairs of long, jointed walking legs but species with five or six pairs may occur.</td>
<td></td>
</tr>
<tr>
<td>- Body usually very small with tiny conical abdomen.</td>
<td></td>
</tr>
<tr>
<td>- Tiny appendages on head (palps and sometimes chelifores).</td>
<td></td>
</tr>
<tr>
<td>- Feeding tube usually visible.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subphylum: Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>General code for unknown crustacean:</td>
</tr>
<tr>
<td>Class: Ostracoda (seed shrimps)</td>
</tr>
<tr>
<td>- Small, body enclosed in an oval or round, bivalved carapace.</td>
</tr>
<tr>
<td>- Carapace hinged along centre of the back.</td>
</tr>
<tr>
<td>- Tiny projecting limbs may be visible.</td>
</tr>
</tbody>
</table>
### Phylum Arthropoda

#### Subphylum: Crustacea

<table>
<thead>
<tr>
<th>General code for unknown crustacean:</th>
<th>Crust</th>
</tr>
</thead>
</table>

#### Class: Hexanauplia (barnacles)

<table>
<thead>
<tr>
<th>General code for unknown barnacle:</th>
<th>Barnic</th>
</tr>
</thead>
</table>

- Modified crustaceans with body usually enclosed within calcareous shell plates.
- No eyes evident.
- May be stalked, sessile or parasitic.
- Usually conical or bivalve-like, seldom round.
- Legs sometimes evident as long, hairy cirri.

#### Order: Stomatopoda (mantis shrimps)

<table>
<thead>
<tr>
<th>See page 142</th>
</tr>
</thead>
</table>

- Five pairs of jointed legs, second pair developed into large claw resembling those of a praying mantis.
- Large, stalked, sophisticated eyes.
- Long abdomen with swimming pleopods.
- Armoured tail fan with central telson and one pair of uropods.

#### Order: Isopoda

<table>
<thead>
<tr>
<th>See page 144</th>
</tr>
</thead>
</table>

- Small crustaceans with dorso-ventrally flattened body.
- Seven pairs of similar jointed legs.
- Eyes not stalked.
- Tail fan with central telson and uropods either side.

#### Order: Amphipoda

<table>
<thead>
<tr>
<th>See page 145</th>
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</table>

- Small crustaceans with body laterally compressed (sideways).
- Seven pairs of jointed legs, first two pairs usually have claws, remaining five not clawed.
- Eyes not stalked.
- Six pairs of abdominal appendages (three pleopods for swimming, three uropods) and a telson.

#### Order: Decapoda Suborder: Pleocyemata (lobsters)

<table>
<thead>
<tr>
<th>See page 146</th>
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- Larger crustaceans with ten (five pairs) jointed walking legs.
- Stalked, clearly visible eyes.
- Well-developed tail fan (telson and uropods).
- In rock lobsters (Infraorder: Achelata) all walking legs end in simple tips (i.e. no claws).
- Rock lobsters have spiny carapace.
- Cape lobster with two well-developed pincers and smooth carapace.
- Slipper lobster has modified, broad, flattened antennae.
<table>
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<th>Phylum Arthropoda</th>
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<tbody>
<tr>
<td>Subphylum: Crustacea</td>
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<tr>
<td><strong>Order: Decapoda (shrimps and prawns)</strong></td>
<td>See page 152</td>
</tr>
<tr>
<td>General code for unknown penaid shrimp/prawn:</td>
<td>Penaid</td>
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<tr>
<td>Penaid (swimming prawns):</td>
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<tr>
<td>• Small crustaceans adapted to swimming.</td>
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<tr>
<td>• Sides of the second abdominal segment overlap only third segment.</td>
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<tr>
<td>• Last abdominal segment usually keeled.</td>
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<tr>
<td>• First three pairs of walking legs end in claws.</td>
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<tr>
<td>General code for unknown carid shrimp/prawn:</td>
<td>Carid</td>
</tr>
<tr>
<td>Carid (benthic prawns):</td>
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<tr>
<td>• Small crustaceans adapted to living on the seabed.</td>
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<tr>
<td>• Sides of the second abdominal segment overlap those of first and third segment.</td>
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<tr>
<td>• Last abdominal segment usually smooth (no keel).</td>
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<tr>
<td>• Third walking legs do not have claws.</td>
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<tr>
<td>• Abdomen usually with bend/hump.</td>
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<tr>
<td><strong>Order: Decapoda Infraorder: Anomura (hermit crabs)</strong></td>
<td>See page 176</td>
</tr>
<tr>
<td>General code for unknown hermit crab:</td>
<td>Hcrab</td>
</tr>
<tr>
<td>• Decapods (five pairs of jointed legs) that live within shell, colonial anemone or zooanthid.</td>
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<tr>
<td>• First pair of legs with claws (called chelipeds), left and right often unequal in size.</td>
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<tr>
<td>• Fourth and fifth pair of legs reduced and adapted to hold onto shell (usually not visible when in shell).</td>
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<tr>
<td>• Soft pleon (abdomen) modified and twisted to fit in shell.</td>
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<tr>
<td><strong>Order: Decapoda Infraorder: Anomura (stone crabs)</strong></td>
<td>See page 187</td>
</tr>
<tr>
<td>General code for unknown stone crab:</td>
<td>Lithod</td>
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<tr>
<td>• Large decapods with five pairs of jointed legs, but fourth and fifth are greatly modified and flexed under carapace.</td>
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<tr>
<td>• First pair of legs with claws (called chelipeds), right usually slightly larger.</td>
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<tr>
<td>• Round to pear-shaped carapace with spines of variable length.</td>
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<tr>
<td><strong>Order: Decapoda Infraorder: Brachyura (true crabs)</strong></td>
<td>See page 190</td>
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<tr>
<td>General code for unknown crab:</td>
<td>Crab</td>
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<tr>
<td>• Five pairs of jointed legs with first pair clawed (i.e. with nippers called chelipeds).</td>
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<tr>
<td>• Abdomen tucked beneath thorax.</td>
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<tr>
<td>• Fifth leg may be modified to hold sponge on carapace or into swimming paddles.</td>
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<tr>
<td>• No tail fan.</td>
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</table>
### Phylum Bryozoa (Moss Animals)

See page 227

**General code for unknown bryozoan:** Bryzoa

- Variable body form: encrusting, coral-like, mossy, seaweed-like or bushy colonies.
- Colonies of minute animals (<1 mm) enclosed in a skeleton crowned with filter-feeding tentacles (lophophore) invisible to the naked eye.
- Lightly to heavily calcified.
- Heavily calcified Bryozoans difficult to distinguish from Stylasterine corals (Cnidarians), but latter have tiny but visible star-shaped or circular dots where polyps emerge.
- Variable texture: hard and brittle to sandpapery, crusty or rubbery, seldom slimy.
- May form strappy, branching fronds.
- Some appear as scrolled or twisted, may be lacy (with many ‘holes’).

### Phylum Brachiopoda (Lamp Shells)

See page 245

**General code for unknown brachiopod:** BraPod

- Two-valved shell, unequal in size, hinged dorso-ventrally (bivalves are laterally hinged).
- Ventral (bottom) valve usually larger.
- Short stalk (pedicle) protrudes from gap at base of valves.
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<th>Phylum Mollusca</th>
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<tbody>
<tr>
<td><strong>Class: Gastropoda (sea snails, slugs, limpets, nudibranchs)</strong></td>
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<tr>
<td><strong>General code for unknown gastropod:</strong></td>
<td>Snail</td>
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<tr>
<td><strong>General code for unknown nudibranch:</strong></td>
<td>Nudibr</td>
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</tbody>
</table>

- Soft-bodied animals with well-developed head, tentacles and foot.
- Usually have a shell which may be greatly reduced, internal or absent.
- Sea slugs and nudibranchs have no or greatly reduced shells. Gills may be visible on side or back.
- Most gastropods have a single, usually spiralled shell and foot.
- May have an operculum that seals the shell when animal withdraws.
- Inside of shell often made of mother-of-pearl.

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<tr>
<th>Class: Bivalves (mussels, clams, scallops and oysters)</th>
<th>See page 308</th>
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<tr>
<td><strong>General code for unknown bivalve (incl. mussels):</strong></td>
<td>Muss</td>
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</table>

- Defined by two lateral shells (lampshells [Brachiopoda] enclose dorso-ventrally).
- Shell valves hinged together.

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<tr>
<th>Class: Polyplacophora (chitons)</th>
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</table>

- Eight articulating dorsal plates and surrounding fleshy girdle.
- Girdle may be hairy or spiny.
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<tr>
<th>Phylum Mollusca</th>
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<td><strong>Class: Cephalopoda (cuttlefish, squids, octopods)</strong></td>
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<tr>
<td>General code for unknown cephalopod:</td>
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<td>General code for unknown cuttlefish:</td>
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<td>General code for unknown squid:</td>
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<td>General code for unknown octopod:</td>
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- Advanced molluscs with merged head and foot, which is divided into eight arms.
- Shell internal, reduced or absent in some.
- Octopus and argonauts have eight arms with sessile suckers.
- Squid have eight arms and two tentacles with suckers and/or hooks.
- Cuttlefish have eight arms and two tentacles with suckers. Tentacles can be retracted into pockets and may not be readily visible.
- Mouth with parrot-like beak.
### Phylum Echinodermata

See page 393

### Class: Asteroidea (starfish)

See page 398

**General code for unknown starfish:** *StarFs*

- Radially symmetrical.
- Spiny skin which may appear as smooth, granular or slimy.
- No obvious head, thorax or abdomen.
- Star- or pentagon-shaped, flattened with five or more stout arms.
- Arms wider at base and usually merge imperceptibly with central disc.
- Brisingids have a distinct central disc and are often confused with brittle stars.
- Underside of each arm has an open central groove with a row(s) of tube feet.
- Mouth on underside (actinal).

### Class: Crinoidea (feather stars or sea lilies)

See page 438

**General code for unknown feather star:** *Crinoi*

- Delicate Echinoderms with several (often more than 10) slender, feathery arms.
- Tiny round body from the underside of which emerge claw-like appendages (feather star) or a longer stalk (sea lily) for attachment.

### Class: Echinoidea (sea urchins)

See page 439

**General code for unknown sea urchin:** *Urchin*

- Spherical, disc-like (flattened) or heart-shaped.
- Encased in a fragile calcium carbonate test.
- Arms absent and body usually covered with protective spines.
- Tiny, defensive, stalked pincers (pedicellaria) dispersed on test.
- Five double rows of tube feet run down the sides of the test.
- Spines smaller and flattened in sand dollars and heart urchins.
Class: Ophiuroidea (basket and brittle stars)  |  See page 451
---|---
General code for unknown brittle star:  |  Ophiur
- Central disc with five or more distinct (sharply demarcated) arms.
- Arms long, slender, less tapering than in starfish, often with spines.
- Basket star arms branched.
- Brittle star arms unbranched.
- Arms lack the open, central groove on actinal side with emerging tube feet characteristic of starfish.

Class: Holothuroidea (sea cucumbers)  |  See page 469
---|---
General code for unknown sea cucumber:  |  Cumber
- Elongate and sausage-shaped.
- Firm due to calcified endoskeleton.
- Five rows of tube feet reflect the radial symmetry characteristic of this phylum.
- 10-20 retractable feeding tentacles surround the mouth.
- Tentacles can be feathery, finger- , mop- or tree-like.
- Skin with spicules and texture ranging from smooth and slimy to fairly firm to scaly.
### Phylum Chordata

**See page 477**

### Class: Ascidiacea (sea squirts)

**See page 481**

**General code for unknown ascidian:** Asidan

- Attached solitary or colonial animals, often resembling sponges but are incompressible.
- Body wall (tunic) usually tough, sometimes leathery, sometimes slimy, but always firm.
- Larger, solitary forms are barrel-shaped with two siphons.
- Colonial forms made up of regularly or irregularly arranged zooids (singular animals) embedded in a gelatinous but firm test.

### Class: Thaliacea (salps)

**See page 489**

- Planktonic, free-living ascidians.
- Texture firm to gelatinous, sometimes slimy or rough.
- Pale colour, often translucent.
- Lack tentacles.
- Siphons at opposite ends of body.

### Phylum Hemichordata (graptolites)

**See page 491**

- Most often described as worm-like, but the only species in this guide (*Cephalodiscus gilchristi*) resembles a gelatinous but spiky network of branching collagenous tubes.
- May resemble polychaetes in parchment-like tubes, but polychaetes lack the prickliness and jelly-like texture of this graptolite.
-Tiny zooids within tubes (coenecium) invisible to the naked eye.
# Table of Taxa in Field Guide

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### Annelida

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### Arthropoda

#### (Chelicerata) Pycnogonida

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#### (Crustacea) Ostracoda

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#### (Crustacea) Hexanauplia

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#### Malacostraca Stomatopoda

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### Hemichordata

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<td>Latreille, 1810</td>
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**PHYLUM: PORIFERA**

**Authors**

Toufiek Samaai¹, Robyn Payne², Seshnee Maduray¹, and Liesl Janson¹

**Citation**


¹ Department of Environmental Affairs: Branch Oceans and Coasts
² Department of Biodiversity and Conservation Biology, University of the Western Cape
Sponges are sessile aquatic organisms, considered to be amongst the first and simplest metazoans. They comprise a highly successful and variable group, inhabiting both marine and freshwater habitats. Their success is closely linked to their varied reproductive strategies (sexual and asexual), extensive regenerative abilities and the adaptability of their simple body organisation, which consists of specialised cells that are not organised into tissues or organs.

Sponges are made up of an intricate system of chambers interconnected by canals, which are lined with flattened cells (pinacocytes) that also form the outside ‘skin’ of the sponge. These chambers are lined with flagella-bearing cells (choanocytes) that generate a unidirectional water current, enabling the sponge to draw in ambient water through small inhalant pores (ostia) and filter out microscopic food particles. Filtered water is then expelled through fewer, larger exhalant openings (oscules). A collagenous matrix (the mesohyl) fills the space between the canals and chambers, harbouring other mobile cells, supporting fibres and inorganic structures of the skeleton. The latter may include spicules composed of either calcium carbonate or silica, which are present in many species. Spicules come in an array of forms, with observations of their type, shape, combination and arrangement enabling the identification of a specimen. Without this information, sponges can be very difficult to identify, with individuals often demonstrating morphological plasticity according to environmental conditions.

Sponges are of great ecological, commercial and evolutionary importance. As a competitive component of marine benthic communities, they serve as a food source for other organisms, as well as a biological habitat and host for associated species. They also enable bentho-pelagic coupling and primary production through microbial symbionts. Furthermore, sponges may act as bioeroders and environmental quality indicators. From an anthropogenic point of view, sponges played an important role in ancient society, and continue to do so today. In the past, sponges were used as household items, for personal hygiene, for the relief of pain, for treating disease, and in art. More recently, interest in sponges is largely due to their production of novel chemical compounds, which may have potential biomedical and anti-fouling applications. In addition, their skeletal structures have instigated further interest due to their unique optical and mechanical properties, which may enable future manufacturing of advanced materials.

Globally, there are around 8 500 extant sponge species, with the vast majority (83%) belonging to the class Demospongiae. South Africa has recorded 347 sponge species, comprising around 4% of sponge diversity worldwide. However, local taxonomic knowledge of this phylum is largely incomplete.

**Classification**

The phylum Porifera has four classes, namely the Calcarea, Demospongiae, Hexactinellida and Homoscleromorpha.

**Class Calcarea**

Exclusively marine, calcareous sponges predominantly inhabit shallow tropical waters. They are often small and delicate, with thin coalescent tubes or a vase-like form. The majority are white or cream, but may also be pink, red or yellow. Calcium carbonate spicules are present, with limited variation in spicule morphology. This class is not addressed further within this guide.

**Class Demospongiae**

Comprises the largest and most diverse group, inhabiting both marine and freshwater environments. Huge variety in both form and colour. Siliceous spicules present and/or skeleton of spongine fibres or fibrillar collagen.

**Class Hexactinellida**

Also known as glass sponges; exclusively marine and largely restricted to both hard and soft substrates in deeper environments (beyond 400 m). Dull colouration and variable body form, but never encrusting. Some species have large, conspicuous, hair-like spicules visible to the naked eye. Siliceous six-rayed spicules present, with highly diverse spicule morphologies. Often long-lived and fragile, they are particularly susceptible to disturbance.

**Class Homoscleromorpha**

Small group of marine sponges inhabiting predominantly shallow environments, often...
Phylum: Porifera

found in dark or semi-dark ecosystems (e.g. caves). Encrusting or lobate with a smooth surface, often small and delicate. Small siliceous spicules present, but lacking a well-organised skeleton. This class is not addressed further within this guide.

Collection and preservation

Note: Sponge spicules and mucus may be harmful to humans, causing abrasions or severe dermatitis. Sponges may be fragile and often demonstrate dramatic post-collection (and preservation) changes in both form and colouration (e.g. lose colour in ethanol). Thus, taking clear photographs (with a scale bar) and documenting observations shortly after collection is essential.

The following information should be recorded for each specimen retained:
• Locality
• Depth
• Collector(s)
• Method of collection
• Habitat/substrate type
• Date
• Size
• Colour – record immediately after removal from sea
• Surface ornamentation (ridges, stalks, etc.)
• Distribution and shape of surface pores (ostia) and oscules
• Texture/consistency
• Mucus
• Smell
• Associated fauna

Other observations used to aid sponge identification:

Specimens should be frozen (somewhat fixes colour; below -10°C) or stored in 80–90% ethanol solution.

References


Phylum: Porifera

Basic Poriferan body plan

- Oscule
- Pinacocyte
- Other Cells (e.g. Amoebocytes)
- Spicule
- Choanocyte
- Porocyte
- Ostium / Pore
- Spongocoel
- Mesohyl
**Haliclona (Haliclona) anonyma (HalAno)**

**Phylum:** Porifera  
**Class:** Demospongiae  
**Subclass:** Heteroscleromorpha  
**Order:** Haplosclerida  
**Family:** Chalinidae  
**Genus:** Haliclona (Haliclona)  
**Species:** anonyma  
**Common name:** Tubular fan sponge

**Distinguishing features**  
Upright stalked form with coalescent (fused) tubular branches that terminate in rounded ends with slightly raised conspicuous oscules; surface smooth to slightly rough with small ostia (<1 mm); firm and tough.

**Colour**  
Light to dark brown.

**Size**  
Length up to 150 mm, width 70 mm.

**Distribution**  
South African endemic. West and South Coasts of South Africa; 17–144 m depth.

**Similar species**  
None.

**References**  

**Haliclona submonilifera (HalSub)**

**Phylum:** Porifera  
**Class:** Demospongiae  
**Subclass:** Heteroscleromorpha  
**Order:** Haplosclerida  
**Family:** Chalinidae  
**Genus:** Haliclona  
**Species:** submonilifera  
**Common name:** Bubble bead sponge

**Distinguishing features**
Upright stalked form with somewhat dichotomous branches that have numerous swellings and constrictions, terminating in rounded ends with distinct oscules, which may also occur along the branches on rounded elevations; surface velvety; very compressible, flexible and easily torn.

**Colour**
Straw yellow.

**Size**
Typical length 130 mm, width 70 mm.

**Distribution**
West Coast of South Africa. Recorded from ± 245 m depth.

**Similar species**
None.

**References**
**Hamacantha (Vomerula) esperioides (HamEsp)**

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**Distinguishing features**
Flattened, cavernous, bushy form; surface rough with conspicuous easily-detached translucent membrane overlying fibrous projections; texture tough and coarsely fibrous, very compressible.

**Colour**
Dirty pale yellow to beige.

**Size**
Length up to 250 mm, width 150 mm.

**Distribution**
West and South Coasts of South Africa, South America (Rio de la Plata); 17-1 110 m depth.

**Similar species**
None.

**References**


**Inflatella belli (Goose)**

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**Distinguishing features**
Semi-spherical to ovoid form; surface covered with long trumpet-shaped protrusions; tough and leathery, soft pulpy interior.

**Colour**
Green to yellow-brown.

**Size**
Width up to 50 mm.

**Distribution**
West and South Coasts of South Africa, Namibia, Antarctic and Subantarctic regions; 18–450 m depth. All specimens to be retained for further research.

**Similar species**
None.

**References**

Phylum:  Porifera

**Fibulia ramosa (FibRam)**

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**Distinguishing features**

Upright, with somewhat fused columnar branches which may become curved or twisted; surface sandpapery, with small cone-shaped protrusions; firm, tough and leathery.

**Colour**

Pale orange-brown.

**Size**

Typical length 60 mm, width up to 40 mm.

**Distribution**

West and South Coasts of South Africa, Prince Edward Islands; 91–287 m depth.

**Similar species**

None.

**References**


**Phorbas pustulosus** *(PhoPus)*

**Phylum:** Porifera  
**Class:** Demospongiae  
**Subclass:** Heteroscleromorpha  
**Order:** Poecilosclerida  
**Family:** Hymedesmiidae  
**Genus:** Phorbas  
**Species:** pustulosus  
**Common name:** Baseball glove sponge

**Distinguishing features**  
Upright hand-shaped form with irregular branches; surface slightly rough and covered in bumps (pustules); firm and tough.

**Colour**  
Pale dirty peach.

**Size**  
Length up to 130 mm, width 200 mm.

**Distribution**  
West and South Coasts of South Africa, Patagonian Shelf; 43–128 m depth.

**Similar species**  
None.

**References**  

**Latrunculia (Latrunculia) biformis (LatBif)**

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**Distinguishing features**
Semi-spherical to ovoid form; surface covered in conical, volcano-shaped oscules and flattened disk-like projections; firm and tough.

**Colour**
Chocolate brown.

**Size**
Length up to 90 mm, width 80 mm.

**Distribution**
West and South Coasts of South Africa, South America (Río de la Plata), Antarctic and Subantarctic regions; 18–1 080 m depth.

**Similar species**
None.

**References**


**Antho (Acarnia) prima (AntPri)**

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<td>Orange fan sponge</td>
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**Distinguishing features**
Upright, stalked with a convoluted fan form; surface fuzzy; breaks easily; slimy mucus may be present.

**Colour**
Pale peach to dirty orange.

**Size**
Length up to 160 mm, width (top) 130 mm.

**Distribution**
South Coast of South Africa, New Zealand; 57–164 m depth.

**Similar species**
None.

**References**

**Phylum:** Porifera

**Clathria (Clathria) pachystyla (ClaPac)**

- **Phylum:** Porifera
- **Class:** Demospongiae
- **Subclass:** Heteroscleromorpha
- **Order:** Poecilosclerida
- **Family:** Microcionidae
- **Genus:** Clathria (Clathria)
- **Species:** pachystyla
- **Common name:** Orange finger sponge

**Distinguishing features**
Upright, stalked, somewhat fan-shaped form with fused branches arising from flat blades; semi-compressible and tears with some force.

**Colour**
Bright orange.

**Size**
Length up to 170 mm.

**Distribution**
South African endemic. South Coast of South Africa; recorded from ± 62 m depth.

**Similar species**
Clathria (Thalysias) lissoclada.

**References**
Phylum: Porifera

Clathria (Thalysias) lissoclada (ClaLis)

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**Distinguishing features**
Upright, stalked form with fused, somewhat flat branches arising from semi-triangular blades; surface smooth, with numerous random oscules and possibly polyp-like invertebrate epifauna; semi-compressible and tough.

**Colour**
Orange to pink.

**Size**
Length up to 180 mm, width 80 mm.

**Distribution**
South Coast of South Africa, Falklands; 16–77 m depth.

**Similar species**
Clathria (Clathria) pachystyla.

**References**

**Echinoclathria dichotoma (EchDic)**

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**Distinguishing features**
Upright, stalked form with thick (often dichotomous) cylindrical, round-ended branches; surface fuzzy with small circular ostia (<1 mm); firm and tough, slimy mucus may be present.

**Colour**
Pale dirty orange.

**Size**
Length up to 150 mm, width (top) 100 mm.

**Distribution**
South African endemic. West and South Coasts of South Africa; 15–69 m depth.

**Similar species**
None.

**References**

**Distinguishing features**
Semi-spherical to ovoid form, with large internal spaces; surface rough; very compressible and fibrous.

**Colour**
Pale yellow to off-white.

**Size**
Length up to 200 mm, width 120 mm.

**Distribution**
West and South Coasts of South Africa, Namibia; 75–351 m depth.

**Similar species**
None.

**References**

**Ectyonopsis pluridentata** (EctPlu)

**Phylum:** Porifera  
**Class:** Demospongiae  
**Subclass:** Heteroscleromorpha  
**Order:** Poecilosclerida  
**Family:** Myxillidae  
**Genus:** Ectyonopsis  
**Species:** pluridentata  
**Common name:** Fused branch sponge

**Distinguishing features**
Upright, with a thick cluster of fused branches arising from an indistinct base; surface rough with uniform circular ostia (<1 mm) throughout; firm but compressible, breaks easily.

**Colour**
Beige to dark rusty brown (after freezing).

**Size**
Length up to 130 mm, width 160 mm.

**Distribution**
South African endemic. West and South Coasts of South Africa; 79–201 m depth.

**Similar species**
*Ectyonopsis flabellata*, which superficially appears less folded and more in a single plane, however spicule examination is needed to distinguish accurately.

**References**
Polymastia bouryesnaultae (Polyma)

### Phylum:
Porifera

### Class:
Demospongiae

### Subclass:
Heteroscleromorpha

### Order:
Polymastiida

### Family:
Polymastiidae

### Genus:
Polymastia

### Species:
bouryesnaultae

### Common name:
Knobbly sponge

#### Distinguishing features
Thickly encrusting to semi-spherical form; surface fuzzy and covered with numerous smooth, tapering, teat-shaped projections (papillae); firm and tough.

#### Colour
Brown base with pale yellow to light brown papillae.

#### Size
Length up to 50 mm, width 40 mm.

#### Distribution
West and South Coasts of South Africa, Namibia; 18–70 m depth.

#### Similar species
None.

#### References
**Potential VME**

**Suberites dandelenae (Suber)**

**Phylum:** Porifera  
**Class:** Demospongiae  
**Subclass:** Heteroscleromorpha  
**Order:** Suberitida  
**Family:** Suberitidae  
**Genus:** Suberites  
**Species:** dandelenae  
**Common name:** Amorphous solid sponge

---

**Distinguishing features**  
Massive, with rounded lobes; surface smooth with a distinct oscule (10–20 mm) on the apical end of each lobe; soft and breaks easily.

**Colour**  
Pale yellow.

**Size**  
Length up to 400 mm.

**Distribution**  
West Coast of South Africa (dense colonies), Namibia; 80–500 m depth.

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**Similar species**  
Several other *Suberites* species occur. Spicule examination required for further identification.

**References**  
Phylum: Porifera

**Suberites sp. (SubHer)**

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<tr>
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<td>Hermit encrusting sponge</td>
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**Distinguishing features**
Semi-spherical to somewhat amorphous and thickly encrusting on the hermit crab *Pagurus liochele*; velvety smooth with a few messy-edged oscules (2–11 mm) distributed randomly on upper surface, smooth-edged crab aperture (15 mm) on lower surface; firm and tough.

**Colour**
Beige, with dark grey to black splotches (mottled).

**Size**
Typical length 70–90 mm, width 50 mm.

**Distribution**
South Coast of South Africa; recorded from ± 35 m depth.

**Similar species**
Sponge appears similar to other *Suberites* species, however this species is specific to encrusting the hermit crab *Pagurus liochele*. Formal taxonomic description under way.

**References**
**Tethya sp. 1 (Teth1)**

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<td>Tethya</td>
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<tr>
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<td>sp. 1</td>
</tr>
<tr>
<td>Common name:</td>
<td>Hedgehog sponge</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Semi-spherical form; surface rough and prickly with elongate projections (tubercles); firm and tough.

**Colour**
Dirty brown.

**Size**
Typical length 50 mm, width 30 mm.

**Distribution**
South Coast of South Africa; generally shallower than 200 m.

**Similar species**
*Tethya aurantium* and *Tethya* sp. 2, but *Tethya* sp. 1 has elongated projections/tubercles giving it a ‘hedgehog’-like appearance.

**References**
**Tethya sp. 2 (Teth2)**

<table>
<thead>
<tr>
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<tr>
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</table>

**Distinguishing features**
Semi-spherical form; surface rough with semi-elongate projections (tubercles); firm and tough.

**Colour**
Yellow to beige.

**Size**
± 50-60 mm diameter.

**Distribution**
West Coast of South Africa; recorded from ± 357 m depth.

**Similar species**
*Tethya aurantium*, Tethya sp. 1, but *Tethya sp. 2* has semi-elongated projections/tubercles that are longer than *Tethya aurantium* and shorter than *Tethya sp. 1*.

**References**
### Phylum: Porifera

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<tr>
<td>Species</td>
<td>cf. agulhana</td>
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<td>Globular sponge</td>
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</tbody>
</table>

### Stelletta cf. agulhana (SteAng)

**Distinguishing features**
Massive semi-spherical form; surface covered in large bumps which may fuse to form ridges, prickly to the touch; firm and tough.

**Colour**
Off-white.

**Size**
Length up to 130 mm, width 90 mm.

**Distribution**
South African endemic. West, South and East Coasts of South Africa; 2–164 m depth.

**Similar species**
*Tethya* spp., however *Stelletta cf. agulhana* is more globular, larger in size and has large bumps.

### References
Penares sphaera (PenSph)

Phylum: Porifera  
Class: Demospongiae  
Subclass: Heteroscleromorpha  
Order: Tetractinellida  
Family: Geodidae  
Genus: Penares  
Species: sphaera  
Common name: Crater sponge

**Distinguishing features**
Thickly encrusting, with mollusc endofauna and invertebrate epifauna; surface looks smooth, but rough to the touch, semi-circular white-edged oscules (up to 3 mm) abundant; texture firm and crunchy, but tears easily.

**Colour**
Pale peach to light grey.

**Size**
Length up to 110 mm, width 90 mm.

**Distribution**
West, South and East Coasts of South Africa; 107–500 m depth.

**Similar species**
None.

**References**


**Tetilla capillosa (TetCap)**

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</table>

**Distinguishing features**

Hemispherical to ovoid form, flattened at the base; surface fuzzy, covered completely by outward-projecting spicules (up to 4 mm), single circular oscule present (4–6 mm); firm and tough.

**Colour**

Brown to grey-green.

**Size**

Typical width 60 mm.

**Distribution**

South African endemic. West and South Coasts of South Africa; 227–476 m depth.

**Similar species**

*Tetilla casula*, which has a flat base and is dome-shaped. Projecting spicules of *T. capillosa* are soft and fuzzy, hence commonly called “furry”. *T. capillosa* has a single oscule slightly offset from centre, while *T. casula* has a cluster of oscules at the apex centre.

**References**


Tetilla casula (TetCas)

Phylum: Porifera
Class: Demospongiae
Subclass: Heteroscleromorpha
Order: Tetractinellida
Family: Tetillidae
Genus: Tetilla
Species: casula
Common name: Volcano sponge

Distinguishing features
Hemispherical to dome-like form, flat spicule-fringed circular base; surface furry, covered by outward-projecting spicules, somewhat raised semi-spherical oscules (1–2 mm) clustered on apex; dense and tough.

Colour
Pale yellow to light green-grey.

Size
Base up to 50 mm, height 30 mm.

Distribution
South Coast of South Africa; 4–77 m depth.

Similar species
Tetilla capillosa, however T. casula has a more distinctly flattened base and dome-shape with softer spicules. T. capillosa has a single oscule slightly offset from centre, while T. casula has a cluster of oscules at the apex centre.

References


**Trachycladus spinispirulifer (TruSpi)**

**Phylum:** Porifera  
**Class:** Demospongiae  
**Subclass:** Heteroscleromorpha  
**Order:** Trachycladida  
**Family:** Trachycladidae  
**Genus:** Trachycladus  
**Species:** spinispirulifer  
**Common name:** Encrusting solid sponge

**Distinguishing features**
Thickly encrusting amorphous to semi-spherical form; surface somewhat ridged, largely smooth with unevenly distributed rough patches; firm and corky.

**Colour**
Red to orange. Pale yellow when preserved.

**Size**
Typical length 70 mm, width up to 60 mm.

**Distribution**
West and South Coasts of South Africa, Namibia, Vema Seamount, Halmahera, Australia, New Zealand; 8–351 m depth.

**Similar species**
*Suberites* spp., however *T. spinispirulifer* tends to be encrusting and has rough patches on surface.

**References**


**Phylum:** Porifera

**Potential VME**

**Rossella cf. antarctica (RosAnt)**

- **Phylum:** Porifera
- **Class:** Hexactinellida
- **Subclass:** Hexasterophora
- **Order:** Lyssacinosida
- **Family:** Rossellidae
- **Genus:** Rossella
- **Species:** cf. antarctica
- **Common name:** Glass sponge

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**Distinguishing features**

Upright, semi-spherical to ovoid form, somewhat tubular with single deep oscule on apex; surface prickly with long hair-like spicules protruding > 30 mm; semi-compressible.

**Colour**

Off-white to grey.

**Size**

Length up to 300 mm, width 150 mm.

**Distribution**

West and South Coasts of South Africa, South America, New Zealand, Antarctic and Subantarctic region; 8–2 000 m depth.

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**Similar species**

None.

**References**


PHYLUM: CNIDARIA

Author(s)
Kerry Sink¹, Mark Gibbons², Megan Laird³, and Lara Atkinson⁴

Citation

¹ South African National Biodiversity Institute, Marine Programme, Cape Town
² University of the Western Cape, Department of Biodiversity and Conservation Biology
³ Anchor Environmental Consultants (Pty) Ltd
⁴ South African Environmental Observation Network, Egegasini Node, Cape Town
Cnidarians are polymorphic (more than one adult form) and typically occur in one of two basic forms, namely the sessile upright polyp and the free-swimming bell-like medusa. Both polyps and medusae are radially symmetrical and do not have defined heads. Their body regions are defined as oral (near the mouth) or aboral (further from the mouth). Polyps (anemones, corals, zoanthids) have their mouths located at the top and medusae (jellyfish) have their mouths below. A distinguishing feature of the phylum is the presence of cnidocytes (nematocysts), specialised cells in the tentacles, used for prey capture.

Most cnidaria have fringes of tentacles surrounding, or near to, their mouth. The mesoglea of polyps is usually thin and soft, but in mobile medusae may be thick and springy enabling contraction and a swimming movement by means of “jet propulsion”. Reproduction is both asexual (polyp stages) and sexual and often involves a complex life cycle with a number of forms and stages. Spawning can be determined by environmental factors such as water temperature changes and light cycles (sunrise, sunset or moon phases).

Many cnidarians occur in shallow water, especially those with symbiotic algae, however most species occur in deep water and low temperatures where feeding takes place by predation, filtering or absorption. Reef building cnidarians include shallow and deep forms and these provide habitats of high biodiversity and nursery areas for fish. Anthropogenic activities such as fisheries (including trawling impacts or damage from demersal longlines or traps), mining, pollution and global climate change are considered key pressures on such habitats. Cnidarians are a diverse group of animals with more than 16,000 described species. Recent South African species checklists have elevated the known number of marine cnidarians from 842 species in 2010 to more than 950 in 2018. In South Africa, deep-water cnidarians are less studied than their shallow-water counterparts and are a current research focus with new work underway on scleractinia and octocorals. Three main classes of Cnidaria are addressed in this guide: Anthozoa, Hydrozoa and Scyphozoa. A sub-phylum of parasitic cnidaria, Myxozoa, were discovered in 2007, but are not addressed further in this guide. Staurozoa (stalked jellyfish) and Cubozoa (box jellyfish) are also excluded from this guide.

Class Anthozoa

Anthozoans include all cnidarians that do not have a medusa stage in their life cycle including anemones, hard corals and soft corals. Eggs released after fertilisation develop into free-swimming planula larvae that may attach to a surface to develop into a new polyp and then, if appropriate, colony. They feed by means of capturing prey with their tentacles and any contact triggers the release of stinging nematocysts from within the cnidocytes, paralysing prey. Prey is consumed in the digestive cavity via secreted digestive enzymes. The Anthozoan class can further be divided into two subclasses namely Hexacorallia, which includes important coral reef builders such as stony corals, sea anemones and zoanthids; and Octocorallia, comprising sea pens, soft corals and blue corals.

Collection and preservation

Soft-bodied corals, anemones and sea pens can be preserved in 4-10% formalin (the larger the specimen, the higher the concentration) and in 96% ethanol for molecular studies. Sclerites are eroded by formalin, so this is not recommended for octocorals unless fixation is just for a short period. Anemones should be relaxed in a menthol crystal solution before fixing in formalin. Sea fans and bamboo coral should be preserved in 96% ethanol (never in formalin). Ethanol should be changed with decreasing frequency.

Subclass Hexocorallia (hard-bodied stony coral) specimens should be preserved in 70% ethanol (never in formalin!) and a small piece in 96% ethanol for molecular studies. These specimens can be relaxed in a menthol crystal solution before fixing in formalin. Sea fans and bamboo coral should be preserved in 96% ethanol (never in formalin), Ethanol should be changed with decreasing frequency.

Black corals (Order Antipatharia of subclass Hexocorallia) are not included in the guide currently, but may be encountered and recognised by their dark spiny or sandpaperly skeletons. These can be preserved in 96% ethanol and if specimen is large, part of the colony can be dried. Photograph before preservation.
Class Hydrozoa

Found in almost any marine environment and a few freshwater systems, hydrozoans can be solitary or colonial. Hydroid polyps are sessile benthic hydrozoans bearing specialised gonophores that may release free-swimming medusae. Hydroids often resemble plants having a tree- or fan-like appearance and can be soft, feathery and flexible (hydroids) or hard and brittle (stylasterid hydrozoans). Individual hydroid polyps are usually tiny, though colonies can be big and long-lived. Hydrozoans vary in feeding methods: some trap zooplankton, others filter suspended particles or have symbiotic relationships. Some hydrozoans may sting while stylasterid hydrozoans are valuable in providing structure-forming habitat.

Collection and preservation

Hard, brittle hydrozoan specimens (i.e. stylasterid hydrozoans) should be preserved in 96% ethanol. If the specimen is large, then most of the hydrocoral can be dried, with smaller portions placed in 96% ethanol for molecular studies. The colony should be photographed in good light and weighed before it is broken up for preservation.

All other soft, flexible hydrozoan specimens (hydroids) can be placed in 5-10% formalin with a small portion in 96% ethanol. These specimens can be relaxed by slowly adding a concentrated solution of MgCl₂ or menthol crystals until specimens are unresponsive to touch, then transferred to formalin.

Class Scyphozoa

Adult scyphozoa, also known as jellyfish, are free-living, solitary planktonic medusa that are produced by minute, benthic polyps. During the medusa stage, scyphozoans consume a variety of crustaceans and fish which are captured by the nematocytes on their tentacles and/or oral arms. Jellyfish drift through the water relying upon ocean currents for successful distribution, while being aided by ‘jet propulsion’ via the contraction of circular and radial muscles that push the water out from below the “bell”. Scyphozoans can range in size from 20–400 mm, with larger exceptions growing up to two metres. Jellyfish are found in all the world's oceans and over a broad depth range. In high numbers, these organisms can impact global economies by affecting fishing efforts due to mass blooms leading to low fish catches. They can also damage fishing equipment, clog the filters of marine industrial plants and impact tourism.

Collection and preservation

The entire specimen can be preserved in 5-10% formalin with a small portion in 96% ethanol for molecular studies.

References


Phylum: Cnidaria

Pennatulacea (sea pen) body plan

Photographs showing acontia (white, threadlike defence organs) which are a key distinguishing feature of some species of anemones.

Scyphozoa (jellyfish) body plan

Diagram adapted from Cornelius, 1997, with permission.
**Eleutherobia variabile (EleVar)**

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<tr>
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<tbody>
<tr>
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<td>variabile</td>
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<tr>
<td>Common name:</td>
<td>Mushroom soft coral</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Colonial soft coral with leathery, swollen, mushroom-shaped head, bearing numerous polyps. The head is clearly distinct from the smooth barren stalk. Sometimes attaching to sponges and shells.

**Colour**
Variable colouring ranging from orange, pale orange, tan, pink, red, yellow or white. Sometimes bicoloured or mottled.

**Size**
Maximum colony height 70 mm (Williams, 1986). Expanded polyps reach 12 mm.

**Distribution**
South African endemic. West and South Coasts of South Africa; 13–470 m depth range.

**Similar species**
*Parasphaerasciera* have monomorphic polyps and can be digitate or lobate. *Anthomastus* have far fewer and much larger polyps and arise from a longer stalk.

**References**


Identification of specimens confirmed by Prof. Phil Alderslade, June 2015.
Phylum: Cnidaria

**Gersemia liltvedi (EunThy)**

| Phylum: | Cnidaria |
| Class: | Anthozoa | Subclass: Octocorallia |
| Order: | Alcyonacea |
| Suborder: | Alcyoniina |
| Family: | Nephtheidae |
| Genus: | Gersemia |
| Species: | liltvedi |
| Common name: | Stalked cauliflower soft coral |

**Distinguishing features**
Colonies erect, cauliflower-like in form, arising from one main base from which several stems may arise. Polyps relatively congested at ends of short, narrow terminal branches (observed more readily in wet preserved specimens). Polyps non-retractile with calyces, supporting bundles of polyps, and polyp crowns absent.

**Colour**
Variable. Colonies usually pale beige, white to pink or orange.

**Size**
Colonies reported to range between 56 and 110 mm.

**Distribution**
South African endemic. Known from the South Coast of South Africa. This is a temperate genus without zooxanthellae occurring in the 20-2 000 m depth range.

**Similar species**
*Eunephthya* species (four in South Africa) generally smaller, have branches of equal width (as opposed to a range of thicker to thinner branches of *Gersemia liltvedi*). The genera *Capnella* and *Litophyton* are warm-water species that have zooxanthellae. *Anthomastus giganteus* has a more leathery stalk with fewer colonies at terminal branches, longer, far larger polyps and a bright red or white stem.

**References**


Identification confirmed by Prof. Phil Alderslade, June 2015.
**Anthomastus giganteus (AntGig)**

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<td>Gigantic soft coral</td>
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**Distinguishing features**
Large, fleshy, erect polyps arising from one elongate stalk. Polyps of one type (autozoids) being very large and emergent (may not retract) on stalks. Disc-like base often attached to hard substrate or debris.

**Colour**
Pink to orange or red stem with paler (beige, white or pinkish) terminal polyps. May occur as entirely white colony.

**Size**
Maximum size 150 mm.

**Distribution**
South and West Coasts. One of the deepest occurring soft corals, recorded to 450 m in South Africa.

**Similar species**
*Eleutherobia* is mushroom-shaped and has many more, smaller polyps. *Eunephthya* and *Gersemmia* spp. have smaller polyps and colonies are more tree- or cauliflower-like.

**References**

Identification confirmed by Prof. Phil Alderslade, June 2015.
Potential VME

*Melithaea* spp. (Melith)

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<th>Cnidaria</th>
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<td>Colourful sea fan</td>
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**Distinguishing features**

Sea fans with cylindrical or slightly flattened stem and many dichotomous branches. The skeleton is composed of gorgonin (a horn-like protein) and scerites and is stiff but flexible and not brittle. *Melithaea* spp. branch in one plane, have nodes but no calyces. Polyps monomorphic (1 type), small, retractile and with eight tentacles, seldom visible to the naked eye. Identification of this group is challenging, with the genera *Wrightella*, *Melithea* and others requiring microscopic sclerite examination.

**Colour**

Variable and often vivid; commonly white, red, orange, pink or yellow.

**Size**

Usually between 50 and 500 mm.

**Distribution**

West and South Coasts of South Africa, Indo-Pacific; high diversity across a broad depth range.

**Similar species**

Sea fans can be confused with hydroids, bamboo corals or black corals. The stem is woodier than the darker pricklier stem of black corals. Hydroids are usually brown, grey or yellow, lack the bright colour of sea fans and their stem is usually woodier than that of live sea fans. Bamboo corals have white, brittle, calcareous skeletons.

**References**

Potential VME

Thouarella spp. (ThoSpp)

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<th>Cnidaria</th>
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<tr>
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<td>Common name</td>
<td>Bottlebrush sea fan</td>
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</table>

**Distinguishing features**

Bottlebrush-shaped colonies not flattened in one plane. Stiff central rod with many polyp-bearing branches arising from a single main stem. Branching is profuse, pinnate and multi-planar. Polyps can be seen with the naked eye. Large scales present on sides of polyps giving colony a slightly stiff texture, but these are not visible with the naked eye. Frequently has associates including scale worms, brittlestars, fish eggs and larvae.

**Colour**

Most commonly observed in yellow, pale cream or a very pale pink.

**Size**

Variable. Polyps usually 1 to 1.5 mm in length, with colonies reaching 300 mm in length.

**Distribution**

West and South Coasts of South Africa; at 100-900 m depth range.

**Similar species**

Hydroids or black corals may be confused with Thouarella. Within the octocorals, other Primnoid sea fans may also resemble Thouarella. Thouarella brucei, T. clavata and T. hicksoni (endemic) recorded in South Africa. Although termed the “bottlebrush” genus, Thouarella spp. have a range of branching forms, similar to several other genera, resulting in specimens being frequently misidentified. Hydroids or black corals may also be confused with Thouarella.

**References**


Potential VME

**Bamboo coral (Bamboo)**

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<td>-</td>
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<tr>
<td>Common name:</td>
<td>Bamboo coral</td>
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</table>

**Distinguishing features**

Hollow, calcified, inflexible and segmented axes composed of nodes of horn and solid internodes of non-spicular calcium carbonate; giving 'bamboo-like' appearance. Tree-like with fine fragile branches. Specimens brittle, handle with care. Three genera reported from South Africa, *Keratoisis* species branch from the calcareous nodes and *Acanella* branches from horny internodes. *Chathamisis* is the third genus reported from South Africa. *Skeleton* surface is smooth (not porous or sand papery as in stylasterine or noble corals). Global taxonomic work underway on this group and further work needed in South Africa.

**Colour**

Polyps are highly variable in colour. Rust-coloured, orange, pink and white colonies noted; when flesh is scraped away the skeleton is revealed with white internodes with brown joints (nodes).

**Size**

Colonies usually ranging between 50 and 300 mm in height; larger in-situ.

**Distribution**

Cosmopolitan, reported from West and South Coasts of South Africa; 200-4 850 m depth range.

**Similar species**

Could be confused with other sea fans if in small pieces. Bamboo corals break more easily than other sea fans. Bamboo corals are finer than hydrocorals (stylasterine corals) and have a smooth skeleton texture. Tissue is easily scraped from the colony revealing a white, smooth, calcareous skeleton. Parisididae (suborder Scleraxonia) are easily confused with bamboo corals but not yet recorded in South Africa. Please retain specimens.

**References**


**Anthoptilum grandiflorum** (Virgil)

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</table>

**Distinguishing features**

Large, whip-like central stem (calcareous rod/rachis), sometimes protruding from the top of specimens. Tentacled polyps in short, oblique rows, united at base, forming five to ten polyps per row. Polyps fused into small ‘leaves’, arranged in two opposing lateral rows on central stem. Base of stem (peduncle) inflated to assist rooting in soft sediment. Peduncle stout and robust, not more than 1/5th total colony length.

**Colour**

Variable; orange to pink or brown, but also bright red.

**Size**

Variable; colonies mostly up to 600 m in height, but can reach in excess of 1 m.

**Distribution**

Cosmopolitan, West Coast of South Africa; at 200-2 500 m depth range.

**Similar species**

None.

**References**

Phylum: Cnidaria

**Umbellula lindahli** (UmbLin)

<table>
<thead>
<tr>
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<th>Cnidaria</th>
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</thead>
<tbody>
<tr>
<td>Class</td>
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<tr>
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<tr>
<td>Genus</td>
<td>Umbellula</td>
</tr>
<tr>
<td>Species</td>
<td>lindahli</td>
</tr>
<tr>
<td>Common name</td>
<td>Umbrella sea pen</td>
</tr>
</tbody>
</table>

Distinguishing features
Polyps arranged in cluster at end of long, thin stalk (rachis), giving umbrella-like appearance. Thin (1-2 mm width) rachis conspicuously quadrangular in transverse section. Terminally clustered, slender polyps have eight to ten autozooids, each 20-30 mm in length. Sclerites (requiring microscopic examination) are absent.

**Colour**
Pale pink to orange in colour.

**Size**
250 to 300 mm in length. Reportedly can reach up to more than 1 m in length.

Distribution
Cosmopolitan (490-2,963 m). Recorded on West and South Coasts of South Africa.

**Similar species**
*Umbellula thompsoni* (10 autozooids of 10-15 mm length) and other species may be present in South Africa. Please retain potential new records.

**References**

**Phylum:** Cnidaria

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### *Halipteris africana* (Virgul)

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<td><em>africana</em></td>
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<tr>
<td>Common name:</td>
<td>Whip sea pen</td>
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</tbody>
</table>

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**Distinguishing features**
Whip-like colony. Peduncle (lower section without polyps including the end bulb) stout with stiff internal axis that is rounded to rounded-quadrangular. Polyps arranged in numerous oblique rows (up to three to seven per row, usually four to six).

**Colour**
Pale orange, yellow to white rachis with deep purple to red-brown polyps.

**Size**
Approximately 10-15 mm wide. Length 200-1 550 mm. Peduncle length usually about 200 mm.

**Distribution**
West and South Coasts of South Africa. Reported from the Atlantic Coast of Africa between 400-700 m.

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**Similar species**
*Virgularia* species from South Africa are generally shorter with flesher polyps and are more common in shallower water. There are other unidentified *Halipteris* species known from South Africa.

**Reference**
Phylum: Cnidaria

Actinoptilum molle (ActMol)

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<td>Species:</td>
<td>molle</td>
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<tr>
<td>Common name:</td>
<td>Radial sea pen</td>
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</tbody>
</table>

**Distinguishing features**

Cylindrical, plump and sausage-shaped colony. Densely clustered polyps project along approximately three quarters of body. Radial symmetry of the rachis, which tapers gradually to a rounded apex. Polyps distributed evenly on all sides, often forming longitudinal rows. Thick peduncle, tapering gradually, usually 1/5th to 1/3rd total colony length.

**Colour**

Highly variable; white, yellow, red, orange, pink to purple and brown. The peduncle varies between yellow, white, pinkish or brownish.

**Size**

Up to 240 mm, but most in the range from 60 to 80 mm in length.

**Distribution**

Southern African endemic. Cape Columbine to Inhaca Island (Mozambique). Known depth range 12-333 m.

**Similar species**

Cavernularia spp., but polyps distributed over more of body and polyps usually retracted on deck. Compared to Veretillum spp., A. molle has a radially symmetrical rachis.

**References**


**Cavernularia spp. (SeaPen)**

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<td>Species:</td>
<td>spp.</td>
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<td>Small sea pen</td>
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</tbody>
</table>

**Distinguishing features**
Colony is club-shaped with radial symmetry, may be cylindrical and club-shaped (clavate) or capitate (forming a head). Densely clustered polyps on approximately half of body evenly distributed on all sides. Thick peduncle tapering gradually to rounded apex. Peduncle slightly swollen near the junction with the rachis.

**Colour**
Pale orange, cream to white or grey.

**Size**
20-70 mm in length.

**Distribution**
West Coast of South Africa.

**Similar species**
Actinoptilum molle, but Cavernularia spp. has polyps projecting along only half of the body whereas A. molle has polyps over about three quarters of the colony.

**Reference**
**Cerianthid spp. (Cerran)**

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<td>Burrowing anemone</td>
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</table>

**Distinguishing features**
Cerianthids have a crown of two whorls of different sized tentacles. The outer whorl consists of large, long tentacles that are used for food capture and defence. The smaller, shorter, inner tentacles are held more erect. Cerianthids are also called ‘tube-dwelling anemones’ because they live in long tubes buried in soft sediment, with only their tentacles exposed on the seabed surface. They readily withdraw their tentacles deep inside the tube on the slightest level of disturbance and are therefore not often captured in a trawl net.

**Colour**
Variable.

**Size**
Up to 30 cm in diameter when tentacles are expanded.

**Distribution**
West and South Coasts of South Africa.

**Similar species**
Further burrowing anemones likely to be present. Additional collections and work on cerianthids needed in South Africa.

**References**

**Bolocera kerguelensis (Anemo2)**

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<td>Common name:</td>
<td>Blush/Coral anemone</td>
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</table>

**Distinguishing features**
Soft, smooth body wall that does not retain shape well out of water. Usually covered in slime. Up to 160 long tentacles, usually somewhat retracted on deck but still visible. Tentacles are often shed (released from the oral disc when disturbed) and this is diagnostic (also known as the tentacle-shedding anemone). Dark pink in colour, with smooth column which becomes horizontally wrinkled in the preserved state.

**Colour**
Variable but usually dark pink, orange to brown. Colour uniform with tentacles and body colour similar.

**Size**
Up to 100 mm height but small individuals are common. Preserved diameter of column 30-35 mm.

**Distribution**
West and South Coasts of South Africa; 81-750 m. Common.

**Similar species**
Actinostola capensis, but A. capensis is more rigid with a tougher body wall.

**References**

Phylum: Cnidaria

Actinauge granulata (ActRic)

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<td>White anemone</td>
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</tbody>
</table>

Distinguishing features
Tough, leathery body wall, cylindrical in shape with warty projections or ridges, often covered with fine sediment. Usually with 96 tentacles, mostly or completely retracted when on deck, but will emerge when placed in seawater and relaxed.

Colour
White exterior body walls, often covered with fine sediment. Maroon or red/brown mouth.

Size
Large, 100 mm height. Diameter of column up to 60 mm.

Distribution
West and South Coasts of South Africa.

Similar species
None known.

References

**Distinguishing features**
Fairly toughened body wall, smooth and slimy. Tentacles always well retracted on deck but occur on two distinct lobes. Between 96 and 140 short pointed tentacles arranged in two or three cycles close to the margin.

**Colour**
Pale pink to white, or cloudy grey on outside body wall, with mottled maroon/brown colouration patterns. Deep maroon colour tentacles visible inside of two lobes.

**Size**
Up to 100 mm height. Pedal disc 25-85 mm.

**Distribution**
Mainly West Coast of South Africa (recorded once on South Coast). Recently reported for the first time in South Africa based on Department of Agriculture, Forestry and Fisheries (DAFF) collections. Known depth 128-866 m.

**Similar species**
*Actinostola capensis*, but *A. capensis* is brighter pink in colour and does not have mottled colouration on body wall or maroon tentacles, is less slimy and does not have the two distinct lobes on which tentacles are held.

**References**

**Actinostola capensis (Anem01)**

<table>
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<td>Common name:</td>
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</tbody>
</table>

**Distinguishing features**

Large anemone with fairly toughened body wall, pink to orange in colour with many (up to 450) short tentacles. When contracted, tentacles not completely covered by column. Cup-shaped with the base narrower than mouth, which may form lobes. **Secretes watery slime.** Distinct sucker-type foot/disc. Acontia (threadlike defence organs) absent in this genus.

**Colour**

Pink to pale orange, often described as flesh or rose coloured. Tentacles darker than body wall.

**Size**

Up to 150 mm height. Oral disc 40-155 mm. Pedal disc 35-75 mm.

**Distribution**

South African endemic. West and South Coasts of South Africa, abundant species. 81-1,005 m depth.

**Similar species**

*Bolocera kerguelensis*, but *B. kerguelensis* has much softer body wall and does not retain shape well out of water.

**References**


**Anthosactis capensis (AntCap)**

<table>
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<th>Cnidaria</th>
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<tbody>
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<td>Class:</td>
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<td>Small cup/Rose anemone</td>
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</table>

**Distinguishing features**
Small, firm anemone, pale body with dusky red/pink tentacles. Acontia absent. Base narrower than oral disc. Short tentacles, with outer tentacles slightly shorter than inner tentacles.

**Colour**
Pale cloudy grey to light pink/purple body; tentacles a burnt orange colour.

**Size**
Live height 25 mm, base 10 mm, oral disc 40 mm.

**Distribution**
South African endemic. West and South Coasts of South Africa.

**Similar species**
Distinguishable from *Amphianthus capensis* and *Isophellia algoaensis* due to lack of acontia. Broad, cup-shaped oral disc distinguishable from that of *Actinostola capensis* and *Halcurias capensis*.

**References**

**Isophellia algoaensis** (IsoAlg)

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Cnidaria</th>
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</thead>
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<tr>
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<td>Rugby ball anemone</td>
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</table>

**Distinguishing features**

Small, solid, oval-shaped anemone. Often has **visible pale bands running longitudinally** along length of body wall. Up to 96 short tentacles with inner tentacles longer than outer. **Acontia (threadlike defence organs) present**. Can have sediment particles sticking to base where buried in sand and may invaginate at base when removed from substrate (giving tapered rugby-ball shape at both ends).

**Colour**

Pale pink to orange with white/lighter bands visible. Sometimes translucent. Tentacles orange.

**Size**

Up to 40 mm in height.

**Distribution**

West Coast, Hondeklip Bay to South Coast, East London; depth range of 14 - 1240 m reported. More common on West Coast of South Africa.

**Similar species**

Like *Amphianthus capensis*, this species has acontia (threadlike defence organs), but the column is divided into two sections: a scapus and a scapulus.

**References**


**Amphianthus capensis** (AmpCap)

**Phylum:** Cnidaria  
**Class:** Anthozoa  
**Subclass:** Hexacorallia  
**Order:** Actiniaria  
**Family:** Hormathiidae  
**Genus:** Amphianthus  
**Species:** capensis  
**Common name:** Rock/Volcano/Splitting anemone

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**Distinguishing features**  
Short, squat, pale anemone with up to 110 small, thin tentacles that are bright red/orange/pink. Often attach to stones or other hard objects. Wide adherent pedal disk also allows this species to attach to octocorals. Acontia (white defensive threads) present that may be triggered when disturbed. Note bumps (mesogleal papillae) along oral margin.

**Colour**  
Pale orange/pink with bright red/orange tentacles. Colour diagnostic.

**Size**  
Up to 30 mm width by 30 mm height. Pedal disc diameter 25 mm.

**Distribution**  
West Coast, Port Nolloth to South Coast, Port Elizabeth; reported from 12-623 m depth. One record from Sodwana (12 m), South Africa, may be misidentified. Also reported from Alaska.

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**Similar species**  
Distinguishable from *Actinostola capensis* and *Anthosactis capensis* by presence of acontia. *Isophellia algoaensis* also has acontia but is distinctly more elongated and has visible longitudinal bands on the column.

**References**  

**Halcurias capensis (HalCap)**

**Phylum:** Cnidaria  
**Class:** Anthozoa  
**Subclass:** Hexacorallia  
**Order:** Actiniaria  
**Family:** Halcuriidae  
**Genus:** Halcurias  
**Species:** capensis  
**Common name:** Ridged anemone

**Distinguishing features**
Body pale and firm, 30-68 bright orange and fairly short tentacles, rarely withdrawn into the body. Column stout and smooth, with distinguishing longitudinal ridges running the length of the column (not always evident in live specimens). Lacks acontia.

**Colour**
Pale body, often yellow, bright orange to red tentacles and oral disc.

**Size**
Height 10-25 mm. Preserved pedal disk 3-22 mm.

**Distribution**
West and South Coasts of South Africa. Known from depths of 25-329 m. Endemic.

**Similar species**
*Anthosactis capensis* which is broader, has a cup-shaped oral disc and lacks ridges. Unlike *Actinostola capensis*, *Halcurias capensis* does not release slime.

**Reference**
**Potential VME**

**Lophelia pertusa (LopPer)**

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<tr>
<td>Common name:</td>
<td>Reef-building cold water coral</td>
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</table>

**Distinguishing features**
Solid calcified branching skeleton, forming three-dimensional colonies or matrices. Skeleton calcareous, hard and brittle, giving glassy appearance. Each branch bearing terminal coral polyp with a single (unequal monostomaeous) budding giving an “r” shape rather than a “v” shape.

**Colour**
Variable; yellow, orange to pink or white when live, dead colonies being white, pinkish or brownish.

**Size**
Variable; colony height of 10 m reported.

**Distribution**
Semi-cosmopolitan, at 39-2775 m depth range.

**Similar species**
*Solenosmilia* has equal budding with branching in a “v” shape whereas *Lophelia* branches are unequal (more of an “r” shape). *Lophelia* lacks the coenosteal bridges (small hollow tubes joining adjacent corallites) present in *Goniocorella*, which also has extratentactacular budding (new polyps added to the oral disc outside the ring of tentacles). *Lophelia* colonies often heavy and more robust than either *Goniocorella* or *Solenosmilia*, but conditions influence growth form. Several species may grow together in coral thickets.

**References**
**Phylum:** Cnidaria

**Potential VME**

<table>
<thead>
<tr>
<th><strong>Solenosmilia cf. variabilis (Solen)</strong></th>
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<tr>
<td><strong>Common name:</strong></td>
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**Distinguishing features**
Large bushy colonies, equal three-dimensional branching, with dichotomous (dividing in two) branching of terminal polyp cups in a ‘V’ shape or approximately equal-sized branches. Intra-tentacular branching (i.e. new polyps added to the oral disc within the ring of tentacles). Texture of corallum smooth or costate (ridged). Septa (longitudinal partitions or plates within corallite) arranged normally (i.e. never bend and fuse into a Pourtalès plan).

**Colour**
Pink to beige (live), brownish white when dead.

**Size**
Reef-building species. Can form dense thickets standing tens of metres off seabed. More than a ton has been trawled on occasions.

**Distribution**
Semi-cosmopolitan, South Coast of South Africa; at 220-2 165 m depth range.

**Similar species**
*Lophelia*, which also branches from within the tentacle ring, but branches are unequal (leading to more “r” than “v” shaped branches), the corallums have only one mouth in *Lophelia*. *Goniocorella dumosa* has extratentacular branching and at right angles. *Solenosmilia* has thicker branches and lacks tubular bridges. Several species may grow together in coral thickets.

**References**
**Potential VME**

**Goniocorella dumosa (Gonio)**

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<td>Common name</td>
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**Distinguishing features**

Small, highly branched, bushy colonies, with adjacent branches often linked with hollow tubular bridges (circled in red). Branching is extratentacular (i.e. new polyps are added to the oral disc outside the ring of tentacles). Polyps tend to branch at right angles and branching is apart from any calice (i.e. the branches divide further away from calices than in other thicket-forming taxa).

**Colour**

Brownish; white in museum collections.

**Size**

May form very dense large thickets.

**Distribution**

In South Africa reported from between 86 and 760 m on the South Coast and from KwaZulu-Natal. Also known from New Zealand, Indonesia and Korea (88-1 488 m).

**Similar species**

*Solenosmilia* and *Lophelia* are generally thicker, both have intra-tentacular branching (branching at or close to calices) and lack small tubular bridges. *Solenosmilia* and *Lophelia* colonies are heavier.

**References**


Phylum: Cnidaria

**Caryophyllidae tusk (Caro)**

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<td>Caryophyllia / Trochocyathus</td>
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<tr>
<td>Species:</td>
<td>spp.</td>
</tr>
<tr>
<td>Common name:</td>
<td>Small solitary tusk (conical) corals</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Small cup, with twisted, pointed (ceratoid) base, ending with flat, cylindrical top. Concentric radially arranged septa in oral cavity and central portion (columella) composed of a series of twisted lamellae (fasicular) in Caryophyllia. Always solitary with indication of a firm attachment point. Corallum often curved. Caryophyllia (Caryophyllia) (left) has a set of twisted plates in the centre (i.e. fasicular), whereas Trochocyathus has a papillose centre (i.e. series of rods).

**Colour**
White or beige, with tint of orange or pink at base.

**Size**
From 10 to 40 mm wide, up to 50 mm high.

**Distribution**
Cosmopolitan; West and South Coasts of South Africa. More common in deep water (> 300 m).

**Similar species**
Other small solitary cup corals such as Conotrochus (Caryophyllidae, also with a fasicular columella) lack a firm attachment point. Identification requires careful examination of septa. Sphenotrochus (Family Turbinoliidae) are usually smaller, with a rounded base and seem to be seldom collected on routine demersal trawl surveys. They have a corallum composed of plates rather than rods. Other small solitary cup corals do not have a pointed base; Balanophyllia also has septa that bend and fuse (Pourtalès plan). Javania (Flabellidae) has a reinforced pedicel (area just above base).

**References**

Kitahara MV, Cairns SD and Miller DJ. 2010. Monophyletic origin of Caryophyllia (Scleractinia, Caryophyllidae), with descriptions of six new species. Systematics and Biodiversity, 8(1), pp. 91-118.
**Cup coral (Caryo2)**

**Phylum:** Cnidaria  
**Class:** Anthozoa (Subclass: Hexacorallia)  
**Order:** Scleractinia  
**Family:** Various  
**Genera:** Desmophyllum, Caryophyllia, Balanophyllia, Rhizosmilia, Rhizopsammia and others  
**Common name:** Cup corals

---

**Distinguishing features**

Cup corals of variable size and shape (usually between 15 mm and 150 mm length) from cylindrical, oval to serpentine. These corals may occur in clumps and it may be challenging to determine whether solitary or colonial and to genus level on deck. *Desmophyllum* are large solitary cup corals with a calice that is elliptical in shape, septa that are never fused and no columella. These corals may fuse at the base giving the impression of colonial corals. *Rhizosmilia* are colonial corals that branch from a stolon (often with massive pedicel) and they have a columella. *Rhizopsammia* colonies are connected by stolons but may appear solitary. Like *Balanophyllia*, they have some fusing of septa (Pourtales plan). *Javania* spp. have a very smooth texture of the coral wall (theca).

**Similar species**

*Rhizotronchus* has rootlets (and the columella is absent/rudimentary). Individual corallites of *Rhizopsammia compacta* (i.e. broken off from the other colonies or substrate) cannot be distinguished from *Balanophyllia*. *Rhizopsammia* has a sandpapery corallum. Tusk corals are smaller, usually curved, have a clear attachment point and with a columella (centre) that is composed of a group of rods (papilllose) in *Trochocyanthus* and a set of twisted plates (fascicular) in *Carophyllia (Carophyllia)*.

**References**


*Balanophyllia capensis* photographed from specimen USNM91776 provided by the Smithsonian National Museum of Natural History.

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**Colour**

White.

**Size**

Up to 200 mm in diameter.

**Distribution**

West and South Coasts of South Africa, extending into very deep water. Semi-cosmopolitan.
**Distinguishing features**

Small bushy colonies, formed by extra-tentacular budding (branching away from any calyx and at close to right angles) from a common short base. Polyps fleshy with slimy tissue. The genera *Cladopsammia* and *Eguchipsammia* have colonies with septa arranged in a Pourtalès plan (septa bend and fuse). They are difficult to distinguish on deck but *Eguchipsammia* has a longer base and does not attach firmly to substrate. Current taxonomic work on this family is underway in South Africa. The more distinct ridging on the corallum and the branching at right angles may or may not be distinguishing features of *Cladopsammia*.

**Colour**

Orange or yellow, but may occur in other colours.

**Size**

Small colonies of 50-100 mm in South Africa. These taxa are not reef-forming but can comprise coral gardens (i.e dense cover).

**Distribution**

Only known from the South Coast of South Africa, Indo-Pacific and Atlantic; at 0-470 m depth range.

**Similar species**

*Tubastrea* spp. have normally arranged rather than fused septa and are usually from shallower water (<110m). *Dendrophyllia* spp. also have septa arranged in a Pourtalès plan and have multiple successive generations of budding that form an erect colony (arborescent or tree-like rather than bushy) or thicket-forming. A pale pink *Dendrophyllia* has been observed and collected from South Coast. Please retain.

**Reference**

**Enallopsammia rostrata (Enallo)**

**Phylum:** Cnidaria  
**Class:** Anthozoa  
**Subclass:** Hexacorallia  
**Order:** Scleractinia  
**Family:** Dendrophyllidae  
**Genus:** Enallopsammia  
**Species:** rostrata  
**Common name:** Zigzag coral

**Distinguishing features**
Colonial, arborescent (tree-like growth) coral with extra-tentacular branching which occurs below the calice. Large calices on one side of the colony and normally arranged septa (i.e. do not bend and fuse to form Pourtalés plan). Texture of septa and theca (skeletal walls of corallites) rough.

**Colour**
Observed live in yellow or white.

**Size**
Total colony height of more than 400 mm observed in situ.

**Distribution**
South Coast of South Africa, deeper than 110 m. Globally 110-2 165 m. Also found in New Zealand.

**Similar species**
Similar to other small Dendrophyllidae species like Cladopsammia and Eguchipsammia, but readily distinguished by zigzag structure.

**References**

Deep Daisy Coral (Tubas)

**Phylum:** Cnidaria  
**Class:** Anthozoa  
**Subclass:** Hexacorallia  
**Order:** Scleractinia  
**Family:** Unidentified  
**Genus:** Unidentified  
**Species:** spp.  
**Common name:** Deep daisy coral

**Distinguishing features**  
Colonial coral with corallites arising from a common base. This species superficially resembles *Coenocyathus* (Family Carophyllidae), other genera in the Family Rhizangiidae (but axial edges of some septa should be finely dentate) or even *Tubastrea* (Dendrophyllidae), but further work is underway to identify this coral.

**Colour**  
Skeleton white, pinkish or brownish. Polyps red, yellow, orange. Colour of polyps not distinguishing feature.

**Size**  
Colonies.

**Distribution**  
South Coast of South Africa. Deeper than 110 m.

**Similar species**  
*Tubastrea* known only from less than 110 m.

**Reference**  
**Distinguishing features**
Solitary, hard, laterally compressed (folded in half) cup giving purse-like appearance. Septa alternate between large and small in the calice (cup), giving jagged edges. Growth ridges evident along external wall. Has no obvious pedicel (stem) or base to attach to any substrate. Columella (central column that can be a plate, set of rods or folded membranes) rudimentary or absent.

**Colour**
Light calcareous skeleton with reddish brown to maroon corallum colour distinguishing *F. messum* from *F. lowekeyesi*.

**Size**
Variable; but individual corals up to 50 mm.

**Distribution**
Reported from West Coast of South Africa. Recorded from 385 to more than 1 000 m elsewhere.

**Similar species**
Other solitary cup corals, but *Flabellum* spp. appear to be folded laterally and have jagged edges. *F. pavoninum* and *F. lowekeyesi* are also present in South Africa. *Truncatoflabellum* species are usually smaller (<30 mm diameter), with smoother edges. Please retain similar taxa.

**References**

**Stylaster nobilis (Allopo)**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Class:</td>
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<td>Subclass:</td>
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<td>Anthoathecata Suborder: Filifera</td>
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<td>Stylaster</td>
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<tr>
<td>Species:</td>
<td>nobilis</td>
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<tr>
<td>Common name:</td>
<td>Noble coral</td>
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</tbody>
</table>

**Distinguishing features**

Hard, calcium carbonate skeleton with thick, robust main stem and sparse, thinner secondary dichotomous branches. Main and secondary stems branch in any direction, forming a multidimensional complex. Branch tips blunt and pale. Many tiny, star-shaped pores (these house tiny polyps) are often visible on the main stem. *Stylaster nobilis* is considerably more robust with thicker branches than other stylasterine hydrocorals.

**Distribution**

South African endemic. Reported from St Helena Bay to the Eastern Cape from 3-174 m.

**Similar species**

Some bryozoans appear similar looking, but stylasterine hydrocorals tend to have a more distinct thicker main stem (especially this distinct species) and be more glass-like in texture. Many Stylasterids are macroscopically similar and difficult to distinguish to genus or species level. Other Stylaster species branch more finely, sometimes in one plane. *Stylaster nobilis* does not have branching in only one plane as for *Errina* spp.

**Reference**

**Phylum:** Cnidaria

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**Stylaster spp. (Stylas)**

<table>
<thead>
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<tbody>
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<td>Class:</td>
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<td>Stylaster</td>
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<tr>
<td>Species:</td>
<td>spp.</td>
</tr>
<tr>
<td>Common name:</td>
<td>Fine branching hydrocoral</td>
</tr>
</tbody>
</table>

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**Distinguishing features**

Smaller, fine-grained, uniplanar colonies with sparser branching compared with *Errina* and *Errinopsis* spp., but more branching than *S. nobilis*. One (not multiple) attachment to the substrate (may not be visible in trawled specimens) and without anastomosis (branches re-joining to create a lattice). *Stylaster subviolacea* and *S. griseus* have blunt tips. *S. subviolacea* has more prominent and raised cyclosystems (pores) and a coarser texture than *S. nobilis*. *S. bithalamus* is white and the branch tips are less blunt as branches continue to divide more finely (sympodial). *S. amphiheloides* is more delicate with finer tips, although even more delicate species occur.

**Size**

This group of species is of moderate to small size. *S. griseus* is of moderate size, with the largest colony reported to be 70 mm x 60 mm.

**Distribution**

*S. subviolacea* is known from 22-88 m on the West and South Coasts; *S. griseus* 80-155 m on the South Coast and *S. bithalamus* from the West and South Coasts (11-155 m). *S. amphiheloides* is known from 155-1 000 m, with most specimens from deeper than 500 m. All endemic to South Africa.

**Similar species**

*Errina* and *Errinopsis* are highly branched. The genera *Conopora*, *Crypthelia* and *Stenohelia* also occur in South Africa. Microscopic examination is needed to confirm identification. Please dry and retain other stylasterids.

**References**

**Phylum: Cnidaria**

**Potential VME**

**Errina spp. (Errina)**

<table>
<thead>
<tr>
<th>Phylum:</th>
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<tbody>
<tr>
<td>Class:</td>
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<td>Subclass:</td>
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<td>Genus:</td>
<td><em>Errina</em> cf.</td>
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<tr>
<td>Species:</td>
<td>spp.</td>
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<tr>
<td>Common name</td>
<td>Red hydrocoral</td>
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</tbody>
</table>

**Distinguishing features**

Hard, calcium carbonate skeleton with thick, robust main stem supporting many thinner secondary branches that do not join. May have multiple attachments to substrate. Branching occurs in one plane only and branches do not fuse. Many tiny pores that house polyps may be visible on the main stem. No commensal polychaetes reported for *E. capensis* although barnacles commonly attached.

**Colour**

Photographed specimen deep pink to red. *E. capensis* is described as orange with white tips.

**Size**

Colonies collected of 300 mm, but trawled specimens are likely to be in smaller pieces.

**Distribution**

The species depicted here was trawled from 103 m on the South Coast of South Africa. *Errina* spp. are globally distributed from 10 m to up to 1 800 m. *E. capensis* is known from the South Coast, 40-174 m.

**Similar species**

*Errina* spp. are finely branched in only one plane, but does not have anastomosis (i.e. branches do not rejoin as in *Errinopsis* spp.). Many Stylasterids are macroscopically similar and difficult to distinguish to genus or species level. Some bryozoans may appear similar looking but *Stylaster* and *Errina* spp. have a distinct thick main stem and are more glass-like in texture. Some Scleractinia and Stylasterids are similar in texture but no calyces (coral cups housing individual polyps) are visible to the naked eye on *Stylaster* or *Errina* spp.

**References**


**Potential VME**

**Errinopsis cf. spp. (Errin)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Cnidaria</th>
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</thead>
<tbody>
<tr>
<td>Class:</td>
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<td>Family:</td>
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<td>Genus:</td>
<td><em>Errinopsis cf.</em></td>
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<tr>
<td>Species:</td>
<td>spp.</td>
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<tr>
<td>Common name:</td>
<td>Fenestrate hydrocoral</td>
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</table>

**Distinguishing features**

Fine, brittle calcium carbonate colonies that are uniplanar to bushy. Branching fenestrate (highly anastomatic, i.e. branches join into a fine, highly connected lattice or mesh) with multiple attachments to substrate. Rough texture with spiny coenosteum (surface) on close inspection. Microscopic examination needed to confirm identification of hydrocorals.

**Colour**

White or cream.

**Size**

Colony fragments of about 200 x 100 mm and larger specimens observed *in-situ* (> 330 m).

**Distribution**

A rarely reported genus with two known species occurring in South Africa and sub-Antarctic America. In South Africa, *E. fenestrata* known only from near East London (174-250 m). *E. reticulatum* not yet reported in South Africa, although this may be the taxa illustrated above.

**Similar species**

*Stylaster* spp. and *Errina* spp. have less branching and lack anastomosis (branches do not fuse to make a lattice or highly connected network).

**Reference**

Potential VME

**Inferiolabiata cf. spp. (Inferi)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Cnidaria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
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<td>Genus:</td>
<td>Inferiolabiata cf.</td>
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<tr>
<td>Species:</td>
<td>spp.</td>
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<tr>
<td>Common name:</td>
<td>Spiny lace coral</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Hard, robust calcium carbonate skeleton with thick, robust main stem and slightly thinner secondary branches. May have polychaete associations. Colonies usually white, although dark brown colony has been collected. Very rough, spiny texture distinguishes this species from the other stylasterine corals commonly collected in South Africa.

**Colour**

White, grey or chocolate brown.

**Size**

Reported size of 50 mm, but a broken colony of more than 200 mm was collected and larger specimens observed *in-situ*.

**Distribution**

South Coast. *I. lowei* and *I. spinosa* both reported from depths of less than 155 m. Both known from elsewhere in southern hemisphere.

**Similar species**

*Styaster* species do not have a spiny texture. Robust, very hard, almost cylindrical branches. Many stylasterids are macroscopically similar and difficult to distinguish to genus or species level. *Lepidopora* spp. have a similar surface texture.

**Reference**

**Hydroid spp. (Hydrod)**

<table>
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<tr>
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<tbody>
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<td>Class:</td>
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<td>Genus:</td>
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<tr>
<td>Species:</td>
<td>-</td>
</tr>
<tr>
<td>Common name:</td>
<td>Hydroid</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Fine branching “tree-like” bushy structure; individual polyps not clearly visible (unlike gorgonian polyps), appearing as fine ‘hairs’, fern-like or feathery. The base is often fused to form a “root-like” structure. Difficult to identify to genus or species level without detailed microscope examination. Some species produce larger polyps that appear similar to small anemones. Hydroids are usually more flexible than gorgonians.

**Colour**
Variable; usually brown to white or pale yellow.

**Size**
Highly variable.

**Distribution**
Widely distributed within South Africa’s Exclusive Economic Zone.

**Similar species**
Often confused with small specimens of black corals, whose tissue is usually more slimy (and skeleton sandpapery), and seafans, which are usually more rigid (except for that of the woody hydroid), are often brightly coloured or white and have distinct polyps.

**Reference**
**Aequorea spp. (AeqSpp)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Cnidaria</th>
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<tbody>
<tr>
<td>Class:</td>
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<td>Aequoreideae</td>
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<tr>
<td>Common name:</td>
<td>Mag jellyfish</td>
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</tbody>
</table>

**Distinguishing features**

The bell is saucer-shaped, transparent and centrally thickened; frequently damaged on capture with margin broken off, leaving only the central “magnifying lens”. When collected whole, a network of uniformly distributed radial canals extend outwards from edge of “lens” to margin. Radial canals are uniform and do not start on the centre portion of disc. Possesses numerous fine marginal tentacles.

**Size**

Up to 200 mm in diameter.

**Distribution**

Worldwide, particularly common in the Benguela region, West Coast of South Africa.

**Similar species**

*Zygocana vegans*, from which it can be distinguished by its larger size, thicker bell and by the fact that the radial canals are uniform and do not start at disc centre. NOTE: there are many species of *Aequorea* present in the region that are difficult to separate from each other unless in pristine condition.

**References**


Zygocanna vagans (ZygVeg)

**Phylum:** Cnidaria

**Class:** Hydrozoa

**Subclass:** Hydroidolina

**Order:** Leptothecata

**Family:** Aequoreidae

**Genus:** Zygocanna

**Species:** vagans

**Common name:** Warty jellyfish

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**Distinguishing features**

Bell is saucer-shaped, transparent and slightly thickened centrally; frequently damaged on capture. Under-surface of bell with radial bands of papillae (illustrated left). When collected whole, a network of irregularly fusing radial canals extend outwards from centre of “lens” to margin. Possesses numerous fine marginal tentacles.

**Size**

Up to 70 mm in diameter.

**Distribution**

Worldwide; common in the Benguela ecosystem, West and South Coasts of South Africa.

**Similar species**

*Aequorea* spp., from which it can be distinguished by smaller size, thinner bell, radially distributed papillae on subumbrella, and irregularly fusing network of radial canals that originate from centre of lens.

**References**


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Figure reproduced from Pagès et al., 1992, with permission.
Phylum: Cnidaria

**Drymonema spp. (Drymon)**

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<tr>
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<tbody>
<tr>
<td>Class:</td>
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<td>Drymonematidae</td>
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<tr>
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<tr>
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<td>Pink meany jellyfish</td>
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</tbody>
</table>

**Distinguishing features**
Relatively thick, flattened dome-shaped bell with patterned branching canals visible (often purple or pink), but not originating from the centre of the bell. Tentacles arise from a broad annular (ring-like) band toward the centre of the subumbrella. Pendulous gonads hang below the subumbrella in complexly folded eversions (turned outwards) of the subumbrellar wall, and the stomach forms over 100 radiate pouches at the bell margin. Rhopalia (small sensory structures) occur in deep subumbrellar niches about a third of the bell radius from the margin toward the mouth.

**Distribution**
North and South Atlantic Oceans, Mediterranean Sea. Uncommon along the West Coast of South Africa, but does occur.

**Similar species**
*Thysanostoma* spp. where the branching canals originate at the centre of the bell.

**References**

### Chrysaora fulgida (ChrFul)

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<td>Class:</td>
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<td>Benguela compass jellyfish</td>
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</table>

**Distinguishing features**

Compass jelly; rose pink to orange brown in base colour, with 16 darker radiating triangles on upper surface; bell thick. Four long oral arms; spiralled basally, orange/brown in colour. The bell margin is scalloped into 32 lightly pigmented lappets. Possesses 24 delicate, maroon-coloured marginal tentacles (eight persistent). Juveniles are rose-pink in colour, without prominent marks but with eight thin, maroon marginal tentacles.

**Size**

Can be up to 800 mm in diameter, weighing 20 kg, but usually smaller than this.

**Distribution**

Regional endemic: common off Namibia (especially so) and the West Coast of South Africa to the Agulhas Bank, South Coast.

**Similar species**

*Chrysaora africana* and *C. agulhensis*, from which it can be distinguished by colour, and tentacle number and form. Juvenile *C. fulgida* could be confused with *Pelagia noctiluca* but latter with rough bell and pronounced pink gonads.

**References**


**Phylum**: Cnidaria

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**Chrysaora africana** *(ChrAfr)*

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<tr>
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</table>

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**Distinguishing features**

Compass jelly: **transparent/white in base colour**, with **16 darker purple** radiating triangles on upper surface; pattern variable. The bell margin is scalloped into 48 (generally purple) lappets. Four long oral arms, white in colour. Individuals possess 40 persistent, ribbon-like marginal tentacles that are purple in colour. Juveniles have similar colour markings to adults.

**Size**

Up to 400 mm diameter.

**Distribution**

Uncommon off South Africa but more common off Namibia: range extends up the West Coast of Africa to the Gulf of Guinea.

---

**Similar species**

*Chrysaora fulgida* and *C. agulhensis*, from which it can be distinguished by colour, and tentacle number and form.

**Reference**


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Not yet recorded in South Africa, but known to occur in the broader region.
**Chrysaora agulhensis** *(ChrAgu)*

<table>
<thead>
<tr>
<th><strong>Phylum:</strong></th>
<th>Cnidaria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class:</strong></td>
<td>Scyphozoa</td>
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<tr>
<td><strong>Subclass:</strong></td>
<td>Discomedusae</td>
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<tr>
<td><strong>Order:</strong></td>
<td>Semaeostomeae</td>
</tr>
<tr>
<td><strong>Family:</strong></td>
<td>Pelagiidae</td>
</tr>
<tr>
<td><strong>Genus:</strong></td>
<td>Chrysaora</td>
</tr>
<tr>
<td><strong>Species:</strong></td>
<td>agulhensis</td>
</tr>
<tr>
<td><strong>Common name:</strong></td>
<td>Agulhas Bank compass jellyfish</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Compass jelly: **transparent/white in base colour** with 16 **faintly darker brown/purple** radiating triangles on the upper surface; variable in pattern; centre of bell clear; with numerous white spots. Four long, semi-spiralled oral arms, uniformly white in colour in smaller specimens, but base may be red/brown in larger individuals. The bell margin is scalloped into 32 strongly pigmented purple/brown lappets. Animals possess 24 persistent, robust, ribbon-like marginal tentacles (expanded at base) that are white in colour. Juveniles resemble adults in colouration.

**Size**

Up to 400 mm diameter.

**Distribution**

Endemic, commonly occurring from Table Bay (West Coast) to Port Elizabeth (South Coast).

**Similar species**

*Chrysaora fulgida* and *C. africana*, from which it can be distinguished by colour, and tentacle number and form.

**Reference**

Ras V. 2017. Towards an unravelling of the taxonomy of *Chrysaora* (Scyphozoa; Semaeostomeae; Pelagiidae) from around South Africa. Unpublished MSc Thesis, University of the Western Cape.
Phylum: Cnidaria

**Pelagia noctiluca (PelNoc)**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Details</th>
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<tbody>
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<tr>
<td><strong>Species:</strong></td>
<td>noctiluca</td>
</tr>
<tr>
<td><strong>Common name:</strong></td>
<td>Pink stripe jellyfish/Pink stinger</td>
</tr>
</tbody>
</table>

**Distinguishing features**
The bell is translucent, tinged slightly pink, and covered with fine warts. The bell margin has four short, translucent oral arms. Animals possess eight long, persistent pink tentacles. **Gonads form four crescents in bell centre; clearly visible and pink in colour.** Painful sting; exercise caution.

**Size**
Up to 150 mm in bell diameter.

**Distribution**
Worldwide; common off the West and South Coasts of South Africa.

**Similar species**
Juvenile *Chrysaora fulgida*, from which it can be distinguished by presence of gonads (pink), short oral arms and warty bell.

**References**

**Cephea sp. (CepBlu)**

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<thead>
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<tbody>
<tr>
<td>Class:</td>
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<tr>
<td>Species:</td>
<td>sp.</td>
</tr>
<tr>
<td>Common name:</td>
<td>Blue crown jellyfish</td>
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</tbody>
</table>

**Distinguishing features**
Bell thick, blue/purple in colour, with noticeable knobs or warts at centre resembling a crown. No marginal tentacles. Oral arms with long, thin filaments at terminal end. This species not yet encountered in trawl surveys but is likely to be.

**Size**
Up to 500 mm diameter.

**Distribution**
Uncommonly reported along the East and South East Coasts of South Africa, between Sodwana Bay and Mossel Bay, Indo-Pacific region.

**Similar species**
None.

**Reference**
**Eupilema inexpectata** (EupIne)

<table>
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</thead>
<tbody>
<tr>
<td>Class:</td>
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<td>Species:</td>
<td>inexpectata</td>
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<tr>
<td>Common name:</td>
<td>Root mouthed jellyfish</td>
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</table>

**Distinguishing features**
Thick dome-shaped bell; opaque and white in colour, often with a slightly blue tinge. The upper surface of bell has a granular texture. Animals lack marginal tentacles. Animals have eight relatively **stiff**, **short** (less than bell diameter in length) white oral arms that are fused for more than half their length. The oral arms lack “frills” and appendages terminally and have an epaulette basally.

**Size**
Up to 400 mm in diameter.

**Distribution**
Endemic to the Southwestern Cape; predominantly nearshore; uncommon.

**Similar species**
*Rhizostoma* spp., from which it can be distinguished by the relatively short, **stiff oral arms** that lack terminal appendages or frills.

**Reference**
Rhizostoma spp. (Rhizo)

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<tr>
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<td>spp.</td>
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<td>Barrel jellyfish</td>
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</table>

**Distinguishing features**
Thick dome-shaped bell; opaque and white in colour, often with a slightly blue tinge. The upper surface of bell has a granular texture. Margin of bell scalloped, with between 64 and 80 marginal lappets. Lack marginal tentacles, but have eight oral arms that are fused basally for less than half their length. Oral arms are not stiff and possess "frills" (indicated above) and a club-shaped appendage terminally (indicated above), which may be lost on capture; "frilly" epaulets present basally.

**Size**
Up to 900 mm in diameter.

**Distribution**
Widespread in cool temperate waters of the Atlantic Ocean. Particularly common along the South Coast, but can be found anywhere around South Africa.

**Similar species**
There are two species of *Rhizostoma* around South Africa (*R. pulmo* and *R. luteum*), that can be distinguished by the number of marginal lappets and the nature of the terminal appendage. Distinguished from *Eupilema inexpectata* by the relatively long, flexible “frilly” oral arms that possess terminal appendages.

**References**
Phylum: Cnidaria

**Thysanostoma spp. (Thyan)**

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<td>Species:</td>
<td>spp.</td>
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<td>Common name:</td>
<td>Purple branching canal jellyfish</td>
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</table>

**Distinguishing features**
Relatively thick, dome-shaped bell; of variable colour but with pattern of branching canals visible. Upper surface of bell has a finely granular texture. Margin of bell scalloped, with up to 64 marginal lappets. Lack marginal tentacles, but have eight long, thin oral arms that are not fused basally. The oral arms lack conspicuous clubs or filaments along their length, but may have a small appendage terminally.

**Size**
Up to 250 mm in diameter.

**Distribution**
An Indo-Pacific genus found in subtropical and warm temperate waters. Uncommon along the coast of South Africa.

**Similar species**
Drymonema spp. also have pattern of branching canals visible on the bell, however Thysanostoma spp. have canals originating from the centre of the bell.

**Reference**
**Periphylla periphylla (PerPer)**

<table>
<thead>
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<td><strong>Genus:</strong></td>
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<tr>
<td><strong>Species:</strong></td>
<td>periphylla</td>
</tr>
<tr>
<td><strong>Common name:</strong></td>
<td>Purple helmet jellyfish</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Bell conical or dome-shaped, with a *coronal groove* situated around midline; mesoglea (jelly substance) thick, transparent. Stomach and sinuses deep red/purple in colour. Sixteen lappets at bell margin and 12 rigid tentacles, arranged as four groups of three. Four marginal sense organs. Bioluminescent.

**Size**

Up to 350 mm in diameter.

**Distribution**

Circumglobal. Generally deep-water species; uncommon.

**Similar species**

None – monospecific genus.

**References**


Stylasterine lace corals from the outer shelf in the Proposed Amathole Offshore Marine Protected Areas constitute Vulnerable Marine Ecosystems that are easily damaged by activities impacting the seabed. Photo credit: ACEP Imida Project

Visual surveys of the seabed using a tow camera have recently provided the first images of deep cold water coral habitats in South Africa. These lace and stony corals form part of a feature known as Secret Reef at 340 m off Knysna. Photo credit: ACEP Deep Secrets Project
PHYLUM: SIPUNCULA

Authors

Lara Atkinson

Citation


1 South African Environmental Observation Network, Egagasini Node, Cape Town
Peanut worms (Sipunculids) can be described as smooth, unsegmented marine worms mostly found buried in sediment due to their burrowing habits. Some are known to burrow into solid rock or discarded shells, which are used as shelters. These worms feed on detritus and sand as they burrow, processing the edible content. Sipunculid worms are typically less than 10 cm in length, however some have been known to reach several times that length. The body is divided into a trunk and introvert, the latter being muscular and can be evaginated or retracted. The introvert terminates in a crown of tentacles surrounding the mouth. Reproduction can be both sexual (external fertilisation) and asexual (transverse fission).

**Collection and preservation**
Specimens should be preserved in 5% formalin and 96% ethanol for molecular studies. Menthol crystals can be used to relax the specimen for several hours until unresponsive to touch. The specimen can then be kept in fresh water for one hour before preservation.

**References**


**Phylum: Sipuncula**

**Sipuncula (Sipunc)**

**Peanut worms**

Most Sipuncula worms require detailed microscopic examination of body parts to identify beyond Phylum level. For the purposes of this guide, Sipuncula are identified at a Phylum level.

<table>
<thead>
<tr>
<th>Class:</th>
<th>Phascolosomatidea</th>
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</thead>
<tbody>
<tr>
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<td>• Family Aspidosiphonidae</td>
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<table>
<thead>
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<th>Class:</th>
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<tbody>
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<td><strong>Order:</strong></td>
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<tr>
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<td>• Family Golfingiida</td>
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<td></td>
<td>• Family Phascolionidae</td>
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<tr>
<td></td>
<td>• Family Themistidae</td>
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<tr>
<td></td>
<td>• Family Sipunculidae</td>
</tr>
</tbody>
</table>

**Common name:** Peanut worm

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**Distinguishing features**

Sipunculid worms (Peanut worms) are unsegmented marine worms that show bilateral symmetry. Mouth located at anterior end of tubular ‘introvert’ (retractable proboscis). Between 18-24 ciliated tentacles surround mouth for feeding (seldom everted on capture). Introvert is usually retracted into body wall, giving them a peanut shape. Generally firm body texture, often covered with sediment particles.

All such species are to be recorded as Peanut worms, FishBoard code ‘Sipunc’.

**Colour**

Variable, often covered with sediment.

**Size**

Variable, but generally not greater than 100 mm in length.

**Distribution**

West and South Coasts of South Africa. Global distribution.

**References**


Phylum: Sipuncula

Rich benthic communities in the proposed Childs Bank Marine Protected Area on the West Coast of South Africa. Photo credit: Charles von der Meden, SAEON and SANBI

Bristle worms (Chloeia inermis), red spotted crab (Mursia cristiata) and mollusc (Amalda bullioides) in the highly productive sandy habitat on the outer continental shelf, West Coast of South Africa. Photo credit: Charles von der Meden, SAEON and SANBI
**Phylum: Annelida**

**Authors**

Natasha Karenyi\(^1\) and Lara Atkinson\(^2\)

**Citation**


---

\(^1\) University of Cape Town, Centre for Statistics, Environment and Conservation, Department of Biological Sciences
\(^2\) South African Environmental Observation Network, Egagasini Node, Cape Town
Polychaetes are segmented worms that are easily identifiable by their fleshy lobes projecting from each segment called parapodia (‘feet’). The parapodia bear many bristles (chaetae) that are used for movement, hence their common name of bristle worms. Important diagnostic features when identifying polychaetes include the head, mouth parts, parapodia and chaetae.

More than 17 000 annelid species have been described, with approximately 800 polychaete species recorded in South Africa.

These organisms are robust and occur in highly variable conditions including extreme habitats such as hydrothermal vents and the deepest parts of the ocean. Polychaetes can range in length from less than ten millimetres to nearly three metres and can occur in numerous colours (even iridescent or luminescent).

Polychaetes are highly adaptable and can create or influence habitat structure by burrowing or building tubes, which often provide attachment for many other species. Many tube worms are sedentary and filter feed by means of specialised cilia. They are short-lived, having annual, or shorter, life spans, however, their tubes and the habitat they create can be long-lived. Polychaetes provide an important source of food for many deep-sea predators including fish.

Collection and preservation
Polychaete specimens should be placed in 10% buffered formalin for 24 hours before preserving in 96% ethanol. For genetic or molecular studies, specimens should be placed directly in 96% ethanol, which should be changed after 24 hours. If necessary, specimens can be relaxed using 7% MgCl₂ solution or sparkling water (over several hours) and then transferred to 10-30% ethanol before preservation to allow the proboscis to expand.

Specimens should be handled with care. Fine-tip steel forceps should be used to place specimens into containers to avoid damage to the soft diagnostic features.

References
Annelid (polychaete) general body plan (General FB code PolW):

Family: Nereidae
Genus: Nereis
External features anterior end

Family: Aphroditidae

Phylum: Annelida
Phylum: Annelida

**Chloeia inermis (Euphr1)**

| Phylum: | Annelida               |
| Class:  | Polychaeta             |
| Subclass: | Errantia             |
| Order:  | Amphinomida           |
| Family: | Amphinomidae          |
| Genus:  | Chloeia               |
| Species: | inermis               |
| Common name: | Bristle worm          |

**Distinguishing features**

Body fairly fleshy and firm, dorso-ventrally flattened and broadly oval. Long, pale yellow chaetae (bristles) along outer ventral edge, with shorter chaetae along mid-latero dorsal surface. Smooth segmented ventral side (± 30 segments). Mouth parts may extrude in a bulbous type 'head'. Branched gill pairs (branchiae) visible from segment four in mid-dorsal region (red in colour). Bristles can break off into hands/fingers and be slightly irritating, but not poisonous or dangerous. Large catches of this species sometimes occur.

**Colour**

Pale pink to dark brown with yellow bristles. Protruding mouth parts red in colour.

**Size**

Up to 60 mm in length.

**Distribution**

West and South Coasts of South Africa.

**Similar species**

Several large bristle worms occur in South African waters. *Chloeia* genus fairly distinct as described. *C. inermis* has no distinct colour pattern on the dorsal surface.

**Reference**

**Hyalinoecia tubicola (QuilWm)**

<table>
<thead>
<tr>
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<th>Annelida</th>
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<tbody>
<tr>
<td>Class:</td>
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<td>tubicola</td>
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<tr>
<td>Common name:</td>
<td>Quill worm</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Quill worms live inside inflexible straw-like tubes, frequently caught in research trawls. Long, thin body shape with numerous rectangular segments. Three long antennae visible on head. Parapodia (feet) clearly visible, with fine chaetae (bristles) projecting.

**NOTE:** Even if only empty tubes are present, this species must still be recorded with a note explaining that only empty tubes were present under FishBoard code ‘PolTub’.

**Colour**
Pale pink to brown, with iridescent sheen.

**Size**
Can be up to 120 mm in length, but segments often break apart.

**Distribution**
West Coast of South Africa as far as Cape Agulhas in south.

**Similar species**
None – straw-like tubes are distinctive.

**Reference**
**Aphrodita alta (AphrSp)**

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<thead>
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<td>alta</td>
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<tr>
<td>Common name:</td>
<td>Sea mouse</td>
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</tbody>
</table>

**Distinguishing features**

Large polychaete species with firm, solid, fleshy texture. Body oval, arched dorsally, tapering posteriorly, with 35-45 segments bearing 15 pairs of scales (elytra). Usually curls into a circular or semi-circular shape. Dorsal surface covered with many plates and fine hairs. Strong, stout bristles projecting along margin of dorsal and ventral surfaces. Dorsal surface brown and often coated in fine mud. Ventral surface pale pinkish-white colour.

**Colour**

Dorsal surface brown (muddy), ventral surface pale pink.

**Size**

Up to 60 mm in length.

**Distribution**

Mostly West Coast, but can occur along South Coast.

**Similar species**

*Euphione elisabethae*, but *Aphrodita alta* scales not as rigid and body is more oval-shaped.

**Reference**

**Laetmonice benthaliana (Aphro2)**

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<thead>
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<tbody>
<tr>
<td>Class:</td>
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<td>benthaliana</td>
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<tr>
<td>Common name:</td>
<td>Naked scale worm</td>
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</table>

**Distinguishing features**

Oval-bodied polychaete with very thin, transparent scales covering the dorsal surface. Stout bristle encased in each parapodia (foot), with long filamentous yellow chaetae (bristles) projecting along dorso-lateral edge. Ventral surface clearly segmented, pale yellow in colour. Body fleshy, flexible and soft.

**Colour**

Pale pink, brown to yellow in colour.

**Size**

40–60 mm in length.

**Distribution**

West and South Coasts, mostly in deeper waters along shelf edge.

**Similar species**

Similar to scale worm *Euphione elisabethae*, but scales of *Laetmonice benthaliana* have no tubercles and are soft and transparent.

**Reference**

Euphione elisabethae (Aphro1)

**Phylum:** Annelida  
**Class:** Polychaeta  
**Subclass:** Errantia  
**Order:** Phyllodocida  
**Family:** Aphroditidae  
**Genus:** Euphione  
**Species:** elisabethae  
**Common name:** Scale worm

**Distinguishing features**  
Ventrally flattened species, with very clearly defined scales along dorsal surface that completely cover the stoutly bristled parapodia (feet). Scales have small tubercles covering their surface. Ventral surface soft and segmented. Head, tentacles and mouth parts clearly visible.

**Colour**  
Pale brown on dorsal surface and pink to white on ventral surface.

**Size**  
Up to 70 mm in length.

**Distribution**  
South African endemic. West and South Coasts of South Africa.

**Similar species**  
Laetmonice benthaliana looks similar, but does not have tubercles on dorsal scales.

**Reference**  
### Phylum: Annelida

#### Macellicephala mirabilis (MacMir)

| Phylum: | Annelida |
| Class:  | Polychaeta |
| Subclass: | Errantia |
| Order: | Phyllodocidae |
| Family: | Polynoidae |
| Genus: | Macellicephala |
| Species: | mirabilis |
| Common name: | Purple scale worm |

#### Distinguishing features

Body short (18 segments). Extending from the head is a very long middle antenna ending in a bulb. Although this is a scale worm, the scales are deciduous, therefore not always present. First few parapodia projecting forward.

#### Colour

Body purple, with lighter edges to the parapodia and antenna.

#### Size

Up to 30 mm in length.

#### Distribution

Recorded from the West Coast of South Africa. Further distribution uncertain.

#### Similar species

Several large scale worms occur in South African waters. The *Macellicephala* genus is fairly distinct due to its colour and deciduous scales.

#### Reference

**Filograna implexa** (Fillmp)

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<tr>
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<td><strong>Common name:</strong></td>
<td>Coral worm/Lacy tubeworm</td>
</tr>
</tbody>
</table>

**Distinguishing features**
The key characteristic of *Filograna implexa* is its intricate tube structure (photos). Tiny worm, grows 4-5 mm in length and 0.5 mm diameter, usually withdraws into the tube matrix on disturbance. Known for forming three-dimensional colonies up to 300 mm in size on reefs, bryozoans, corals, shells and even on sand substrate. Singular, unbranched tubes made of calcium carbonate, fused to form three-dimensional structure providing microhabitat for many other small marine species.

**Size**
Tube structures can reach 300 mm or larger. Worms 5 x 0.5 mm (seldom seen once disturbed).

**Distribution**
West and South Coasts of South Africa.

**Similar species**
None.

**Reference**
**Polychaete (PolW)**

- **Phylum:** Annelida
- **Class:** Polychaeta

ALL other long, thin bristle/segmented worms can be captured under this category.

**Common name:** Polychaete worms

**Distinguishing features**

Polychaetes are segmented bristle worms. They are usually long and thin (but can have oval body shapes), with numerous body segments and fine bristles projecting from many small parapodia (legs). They are identified from several complex features on their head and mouth, which requires microscopic examination. For the purposes of this guide, all long, thin polychaete worms that do not match the previous descriptions can be grouped under the Polychaete sp. FishBoard code ‘PolW’.

**Colour**

Varied.

**Size**

Varied, but usually no more than 150 mm in length and 5 mm in width.
**Polychaete tubes (PolTub)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Annelida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
<td>Polychaeta</td>
</tr>
<tr>
<td>Common name:</td>
<td>Polychaete tubes (only)</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Various types of polychaete tubes may be captured in the trawl net. These can include fine, tube-like structures, hard straw-like tubes, parchment-like tubes or thicker skin-like tubes, often covered in mud. Frequently polychaetes may not be visibly present inside these tubes. Please still record the presence of Polychaete tubes and weight using the code PolTub.

**Colour**

Light brown, mud colour.

**Size**

Varied.
PHYLUM: ARTHROPODA

Authors

Charles Griffiths¹, Jannes Landschoff¹ and Lara Atkinson²

Citation


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Phylum: **Arthropoda**

Sub-phyla Crustacea and Chelicerata

Crabs, prawns, lobsters, barnacles, mantis shrimps, isopods, pycnogonids, etc.

The Phylum Arthropoda includes all animals which have an external skeleton (exoskeleton), a segmented body, and jointed appendages. It is by far the most diverse of all phyla, incorporating over 80% of all described species. The Phylum is divided into five Sub-phyla, as follows:

- **Sub-phylum Trilobitomorpha:** Trilobites (extinct).
- **Sub-phylum Chelicerata:** Spiders and horseshoe crabs, of which only the Class Pycnogonida is briefly considered in this guide.
- **Sub-phylum Myriopoda:** Centipedes and millipedes, entirely terrestrial, so not covered in this guide.
- **Sub-phylum Hexapoda:** Insects and their allies, primarily terrestrial or freshwater, almost completely absent from marine habitats and not covered in this guide.
- **Sub-phylum Crustacea:** Crabs, prawns, etc., the main group considered within this guide.

**Sub-phylum Crustacea**

Crustaceans are characterised by having a segmented body, a chitinous exoskeleton, paired jointed limbs and two pairs of antennae. They include such well-known groups as crabs, prawns, hermit crabs, lobsters and barnacles. Most are free-living and aquatic, but some are terrestrial (e.g. woodlice), parasitic (e.g. some barnacles and isopods), or sedentary (barnacles). There are about 67 000 known species globally and over 2 300 marine species have been described from South African waters, with many more remaining undescribed.

The major subgroups considered here are the following:

- **Class Ostracoda:** Small, body enclosed in an oval or round bivalved carapace. Planktonic or benthic in both marine and freshwater. About 45 marine species are known from South Africa.
- **Class Hexanauplia:** This recently recognised group includes both the more familiar Subclass Copepoda (copepods: small but very abundant and diverse planktonic or benthic animals, about 430 South African marine species, not covered in this guide) and the Infraclass Cirripedia (barnacles; 86 South African species), which have become sessile, have reduced body parts and are usually encased by calcareous plates.
- **Class Malacostraca:** The largest class and divided among many orders, of which the following are addressed in this guide:
  - **Order Stomatopoda:** Mantis shrimps (35 species known in the region).
  - **Order Tanaidacea:** Tanaids (19 species known in the region).
  - **Order Isopoda:** Isopods (over 300 species known in the region).
  - **Order Amphipoda:** Amphipods (over 450 species known in the region).
  - **Order Decapoda:** Prawns, lobsters, hermit crabs, crabs, etc., which include most of the larger-bodied Crustacea and form the majority of species addressed in this guide. Over 750 species are recorded from South Africa.

The order of species pages presented in this guide may not necessarily follow strict phylogenetic relationships, but are presented based on superficial similarity to enable better comparisons during field identification.

**Collection and preservation**

In the field, or on board a vessel, crustaceans are best preserved by freezing specimens in individual plastic bags with labels. Specimens should be packaged with protection padding and in hard plastic containers to protect them from breakage. This is best done by packing small groups of samples into larger jars, rigid cardboard boxes, buckets with lids, or crates. Alternatively, specimens can be frozen in a jar or container filled with seawater.

Samples can also be preserved in 70% ethanol, but as colour can be important for identification and quickly fades in alcohol, specimens that might be of taxonomic significance should first be photographed to record their natural colours. Include the specimen label and, if possible, a scale bar in photographs, which are best taken against a plain black or white background.
References


Prawn external anatomy terminology

- Carapace
- Pleon
- Pereopods
- Pleopods
- Uropod
- Gastric region
- Cardiac region
- Antennule
- Flagella
- Rostrum
- Post-orbital spine
- Dorsal crest
- Telson
- Tail fan
- 1-6 pleonal segments
Phylum: Arthropoda

Crab (Brachyura) external anatomy terminology

Hermit crab external anatomy terminology
**Pycnogonid spp. (Pycnog)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subphylum:</td>
<td>Chelicerata</td>
</tr>
<tr>
<td>Class:</td>
<td>Pycnogonida</td>
</tr>
<tr>
<td>Order:</td>
<td>Pantopoda</td>
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<tr>
<td>Suborder:</td>
<td>-</td>
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<tr>
<td>Family:</td>
<td>Various</td>
</tr>
<tr>
<td>Genus:</td>
<td>‘Pycnogonid’</td>
</tr>
<tr>
<td>Species:</td>
<td>-</td>
</tr>
<tr>
<td>Common name:</td>
<td>Sea spiders</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Pycnogonids (sea spiders) have small bodies with long, spider-like legs. Most have four pairs of jointed walking legs, although some species are known to have five or six pairs of legs. Body form consists of a cephalon and a trunk which has four body segments, each segment bearing a pair of legs. The cephalon bears a proboscis, a pair of chelifores, a pair of palps and a pair of ovigerous legs (ovigers). Ovigers are a feature unique to Pycnogonida.

Offshore South African pycnogonids from Iziko Museum, identified by David Staples, are classified into three families: *Pallenopsidae*, *Callipallenidae*, and *Nymphonidae*. However, for purposes of research trawl surveys, all pycnogonids are grouped together under the FishBoard code ‘Pycnog’.

**Colour**

Variable, but usually orange, yellow or red.

**Size**

Variable. From a few millimetres up to 140 mm in diameter (in South Africa).

**Distribution**

Ubiquitous in benthic habitats.

**Similar species**

Unlikely to be confused with any other group, except perhaps Inachidae spider crab species, which have five pairs of slender, long legs.

**References**


**Ostracods (Ostra)**

- **Phylum:** Arthropoda
- **Subphylum:** Crustacea
- **Class:** Ostracoda
- **Order:** Various
- **Suborder:** -
- **Family:** Various
- **Genus:** ‘Ostracod’
- **Species:** -
- **Common name:** Ostracods

### Distinguishing features

Small crustaceans, body completely enclosed in bivalved carapace, hence common name ‘mussel shrimps’ or ‘seed shrimps’. Usually round or oval in outline, most are smooth, but some extravagantly ridged or spiked. Some have conspicuous antennal notch (Order Myodocopa, shown here). Swim using elongate antennae. Can be planktonic or benthic and have various feeding habits, including carnivores, grazers, scavengers and filter-feeders.

### Distribution

Ubiquitous in benthic and pelagic habitats.

### Similar species

South African benthic marine ostracods are poorly known and in urgent need of revision.

### Colour

Usually white to yellow, sometimes pink/orange organs visible through carapace.

### Size

Up to 15 mm diameter, mostly much smaller (<5 mm).
**Stalked barnacles (BarSta)**

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</thead>
<tbody>
<tr>
<td>Subphylum:</td>
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<tr>
<td>Class:</td>
<td>Hexanauplia</td>
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<td>Order:</td>
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<td>-</td>
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<tr>
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<tr>
<td>Genus:</td>
<td>‘Stalked barnacles’</td>
</tr>
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<td>Species:</td>
<td>-</td>
</tr>
<tr>
<td>Common name:</td>
<td>Stalked barnacles</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Diverse group of barnacles, most commonly encountered attached to floating objects (‘Goose barnacles’), but in benthic habitats also often found attached to rocks, crustaceans, corals, hydroids, polychaete tubes, etc. Filter-feeding appendages project from laterally-flattened body, which is enclosed in shiny shell plates (plates rarely reduced or even absent in ectoparasitic species). Body characteristically borne on flexible stalk attached to substratum. Stalk may be short or long, and either bare, or armoured with small plates.

**Colour**

Usually white.

**Size**

Typically 2-50 mm tall.

**Distribution**

Entire region, surface to abyssal depths.

**Similar species**

The two species shown (Verum porcellanum, left, and Poecilasma kaempferi, right) both attach to crabs and are fairly well known, but many other species occur in the region, most of them known only from one or a few specimens.

**References**


Distinguishing features
Diverse and familiar group of ‘typical’ barnacles, with body completely enclosed in a conical ring of four to eight shell plates. Live permanently attached to rocks, corals, sponges and other benthic substrata (no stalk). Filter-feed using setose appendages projecting from an opening at distal end of shell.

Colour
Usually white to pink.

Size
Typically 2-50 mm tall.

Distribution
Entire region, surface to abyssal depths.

Similar species
Stalked barnacles (previous page), but sessile barnacles are not elevated off the substratum on a fleshy stalk. Several species of sessile barnacles occur in deeper benthic samples, either attached to rocks, shells, crabs, etc., or embedded in sponges or in the tissue of gorgonians or corals. Little is known about these species and specimens are rare and valuable.

References

Parasitic barnacles (BarPar)

**Phylum:** Arthropoda

**Subphylum:** Crustacea

**Class:** Hexanauplia

**Order:** Rhizocephala (Superorder)

**Family:** Various

**Genus:** ‘Parasitic barnacles’

**Species:** -

**Common name:** Parasitic barnacles

**Distinguishing features**
Bizarre group of barnacles that parasitise and castrate various species of decapod crustaceans. Body has lost all resemblance to ‘normal’ barnacle and consists of a root-like ‘interna’ penetrating host’s body and an ‘externa’, a bulb-like reproductive body projecting from abdomen or thorax of host. In different species the externa can be a single grape-like structure, or comprise multiple lobes (as shown here on the hermit crab *Parapagurus bouvieri*) or ‘clubs’. Most species are host-specific.

**Colour**
Usually white or transparent.

**Size**
Externa typically 5-20 mm across.

**Distribution**
Whole region, on various crustacean hosts.

**Similar species**
Only six species recorded from South Africa, three of them still to be described and most known only from a single specimen, so without doubt many other species await discovery.

**References**
**Pterygosquilla capensis** (Mantis)

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Stomatopoda  
**Suborder:** Unipeltata  
**Family:** Squillidae  
**Genus:** Pterygosquilla  
**Species:** capensis  
**Common name:** Cape mantis shrimp

### Distinguishing features
Easily recognised by enlarged spearing raptorial claw, which has six to eight teeth and a sharp dactyl. Carapace with central saddle, telson with central keel and six large marginal teeth. The only abundant offshore benthic stomatopod on the West Coast, although several other species are found on the South and East Coasts. Can occur in high densities.

### Colour
Mostly pale yellow to brown, but can have blue colouration with red and yellow trim in tail portion.

### Size
Up to 180 mm in length, but usually smaller.

### Distribution
Widespread species. Namibia to southern KwaZulu-Natal.

### Similar species
None on West Coast, several on South and East Coasts.

### References

**Tanaids (Tanaid)**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phylum:</strong></td>
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<tr>
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<tr>
<td><strong>Genus:</strong></td>
<td>'Tanaids'</td>
</tr>
<tr>
<td><strong>Species:</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Common name:</strong></td>
<td>Tanaids</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Small, cylindrical crustaceans with unstalked eyes. First two thoracic segments fused to head and covered with short carapace, the other six segments remaining separated. First pair of legs bear distinctive strong claws. Filamentous uropods project beyond back end of body. About 20 species occur in region.

**Colour**
Usually white.

**Size**
Can reach 20 mm (as Carpopseudes austroafricanus, depicted), but normally much smaller.

**Distribution**
Widespread, in most habitats, especially among sponges, ascidians, etc.

**Similar species**
Can be confused with isopods and amphipods, but differ in form of claws, uropods and in that the carapace covers first thoracic segments (these being separated in other groups).

**References**
No guide to offshore benthic species, but for coastal forms see:
**Isopods (Isopod)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
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</thead>
<tbody>
<tr>
<td>Subphylum:</td>
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</tr>
<tr>
<td>Order:</td>
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<td>-</td>
</tr>
<tr>
<td>Family:</td>
<td>Various</td>
</tr>
<tr>
<td>Genus:</td>
<td>‘Isopods’</td>
</tr>
<tr>
<td>Species:</td>
<td>-</td>
</tr>
<tr>
<td>Common name:</td>
<td>Isopods</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Smallish crustaceans, usually with dorso-ventrally flattened bodies, rarely tubular in shape. Two pairs of antennae of very variable length, one pair of unstalked eyes (often large), seven thoracic segments, each with a pair of pereopods (rarely clawed). Over 300 species in the region, with diverse shapes and habits. Some occur as external or as gill and mouth parasites of fish.

**Colour**
Variable, most commonly whitish or brown.

**Size**
Up to 50 mm, but usually smaller (typically 5-20 mm).

**Distribution**
Widespread in all habitats.

**Similar species**
Potentially confused with amphipods, which are characteristically laterally flattened.

**Reference**
**Amphipods (Amph)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subphylum:</td>
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</tr>
<tr>
<td>Family:</td>
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</tr>
<tr>
<td>Genus:</td>
<td>‘Amphipods’</td>
</tr>
<tr>
<td>Species:</td>
<td>-</td>
</tr>
<tr>
<td>Common name:</td>
<td>Amphipods</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Diverse group of small crustaceans, most easily recognised by their laterally compressed bodies. Also characterised by having two pairs of antennae, unstalked eyes, prominent side plates and seven pairs of pereopods, the first two often modified to form conspicuous 'claws'. Over 300 species occur in the region, occupying almost all habitats and with diverse feeding habits. Abundant in sediments (e.g. *Ampelisca* spp. left), and on reefs, where commonly associated with sponges, seaweeds, ascidians, etc. (e.g. *Amaryllis macropthalma*, right).

**Size**
Small, most species 5-20 mm.

**Distribution**
Ubiquitous, from shore to deep ocean in all habitats.

**Similar species**
Potentially confused with isopods, which are characteristically dorso-ventrally flattened.

**Reference**
**Jasus lalandii (JasLal)**

<table>
<thead>
<tr>
<th><strong>Phylum:</strong></th>
<th>Arthropoda</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subphylum:</strong></td>
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<td><strong>Class:</strong></td>
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</tr>
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<td><strong>Family:</strong></td>
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</tr>
<tr>
<td><strong>Genus:</strong></td>
<td>Jasus</td>
</tr>
<tr>
<td><strong>Species:</strong></td>
<td>lalandii</td>
</tr>
<tr>
<td><strong>Common name:</strong></td>
<td>West Coast rock lobster</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Carapace with flattened squamous (scale-like) tubercles of various sizes, each pointed with a fringe of setae around the base. Two large spines and a small central rostrum between the eyes. Abdominal segments fringed with setae, the penultimate transverse row better developed than the others, so that a more or less conspicuous groove is formed between it and the hindmost row. Phyllosoma larva transparent and free floating, with flat, leaflike body and long spindly legs.

**Colour**

Reddish brown, often with purplish or violet tints, especially on tail fan, under surface dull yellow, flagellum of antennae often with pale bands.

**Size**

Maximum total body length 460 mm, carapace length up to 180 mm.

**Distribution**

Southern African endemic. Restricted to southern Africa from Northern Namibia to Algoa Bay.

**Similar species**

*Palinurus gilchristi* has banded orange-and-white legs and overall is more orange in colour than *J. lalandii*.

**References**


Phylum: Arthropoda

Distinguishing features
Colour orange with white bands on legs and antennae. Frontal margin of carapace with 4-6 teeth, outer dorsal processes far apart, splayed outward. Abdominal segments 2-5 with two equally long, deep, hairy grooves on either side of the median keel. The median keel connects the anterior and posterior transverse grooves forming an H-shaped sculpturing.

Colour
Orange or reddish, banded with yellow white on abdomen, antennae and legs, pale marks on abdomen mostly at sides and oblique.

Size
Between 150-310 mm in length.

Distribution
South African endemic. South Coast of South Africa.

Similar species
P. delagoae, which has larger frontal horns, but fewer spines on anterior carapace. Longitudinal groove absent on abdominal segment in P. delagoae (next page).

References
Phylum: Arthropoda

**Palinurus delagoae (PalDel)**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Subphylum:</td>
<td>Crustacea</td>
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</tr>
<tr>
<td>Common name:</td>
<td>Natal spiny/Deep-sea lobster</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Reddish-mauve colour distinctive, large frontal ‘horns’ on carapace widely splayed, carapace less spinose anteriorly, the groups of setae around bases of spines less well-developed, anteriorly almost obsolete. No longitudinal groove on either side of the median keel on abdominal segment 2-5. Anterior groove on abdominal segment 2-5 shorter and less distinct than posterior groove and grooves not linked. Little to no hair on abdomen.

**Colour**
Reddish mauve with irregular ivory white patches, legs and antennae red and white banded.

**Size**
Up to 400 mm in length.

**Distribution**
Southern African endemic. South and East coasts of South Africa, mainly caught between 100-300 m.

**Similar species**
P. gilchristi which has more distinct H-shaped abdominal segment grooves.

**References**


**Projasus parkeri** (ProPar)

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subphylum:</td>
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<tr>
<td>Common name:</td>
<td>Cape jagged lobster</td>
</tr>
</tbody>
</table>

**Distinguishing features**  
Highly distinctive, carapace smooth, except for marked submedian and lateral longitudinal series of large spines on either side. Abdomen smooth, a median keel on segments 1-5 and a few spines on segment 6.

**Colour**  
Orange or orange-red; flagella of 1st antenna, 5th and 6th joints of legs and membranous part of tail-fan pale in colour.

**Size**  
Up to 150 mm in length.

**Distribution**  
South Coast near East London.

**Similar species**  
Unmistakable. Previously called *Jasus parkeri*.

**References**  

**Scyllarides elisabethae** (ScyLar)

<table>
<thead>
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<th>Phylum:</th>
<th>Arthropoda</th>
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</thead>
<tbody>
<tr>
<td>Subphylum:</td>
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<tr>
<td>Common name:</td>
<td>Shovel-nosed/Slipper lobster</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Unmistakable, due to flattened body and short, broad and flattened antennae (used to shovel through sediment). Pereopods distinctively banded vermillion. Antero-lateral corner of carapace sharply produced forwards.

**Colour**
Dull brown, with a rough texture and orange pattern.

**Size**
Up to 250 mm in length.

**Distribution**
South Coast, Agulhas Bank to Mozambique.

**Similar species**
None in the survey region.

**References**


**Homarinus capensis (HomCap)**

<table>
<thead>
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<th>Phylum:</th>
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<tr>
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<tr>
<td>Genus:</td>
<td>Homarinus</td>
</tr>
<tr>
<td>Species:</td>
<td>capensis</td>
</tr>
<tr>
<td>Common name:</td>
<td>Cape lobster/Pygmy lobster</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Resembles a small North Atlantic clawed lobster. Carapace smooth with slight granulation; rostrum short, dorso-ventrally flattened with five to ten small lateral serrations. First three pairs of legs with chelae, those of first pair the largest and subequal. Pereopods 2 and 3 with much smaller chelae. Abdomen elongate and straight, surface slightly pitted, uropods broadly rounded, telson as broad as long, both thickly fringed by setae.

**Colour**
Reddish or reddish-yellow, laterally with longitudinal orange and white stripes.

**Size**
Length up to 100 mm.

**Distribution**
Dassen Island to Eastern Cape, endemic.

**Similar species**
Could be confused with *Metanephrops mozambicus* and *Nephropsis* spp. (not included in this guide), but these have a strongly toothed dorsal ridge along carapace and more slender chelae, and occur in more tropical waters off KwaZulu-Natal.

**References**


Not yet recorded during demersal surveys, but known to occur in the region.
Phylum: Arthropoda

Aristaeomorpha foliacea (ArsFol)

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<tr>
<td>Subphylum:</td>
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<tr>
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<tr>
<td>Common name:</td>
<td>Giant/Royal red prawn</td>
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Distinguishing features

Carapace slightly keeled anteriorly. Females with several small teeth on long rostrum, but males with much shorter rostrum. Marked network of lateral ridges on carapace. Chelae on first and third pereopods well developed, eyestalk with tubercle, no postorbital spine.

Colour

Deep red-orange. Carapace darker red than abdominal segments. Can be paler red in smaller individuals.

Size

Up to 220 mm total length.

Distribution

Southern Namibia to South Coast of South Africa – demersal species on sandy and muddy bottoms on continental slope at 300-500 m. Widespread in Atlantic and Indo-Pacific and extensively exploited.

Similar species

Aristeus varidens, which have three distinct dorsal teeth on rostrum (females) and no teeth on ventral margin.

References


**Aristaeopsis edwardsiana (Plesed)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Suborder:** Dendrobranchiata  
**Family:** Aristeidae  
**Genus:** Aristaeopsis  
**Species:** edwardsiana  
**Common name:** Scarlet shrimp

**Distinguishing features**  
Carapace with dorsal keel extending 70% of carapace length. Rostrum elongate in females and juveniles, shorter in males, with three dorsal and no ventral teeth. Distinct keels on sides of carapace. Abdominal segments dorsally keeled. Pleopods remarkably elongate; first three pairs exceeding length of walking legs.

**Colour**  
Variable, ranging from deep crimson to orange.

**Size**  
Up to 230 mm total length.

**Distribution**  
Throughout southern Africa and widespread in Atlantic and Indo-Pacific.

**Similar species**  
None.

**References**  


### Aristeus varidens (ArsVar)

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<td>Striped red prawn</td>
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#### Distinguishing features
Males and females have different rostrums. Males have a smaller and shorter rostrum and can have a small 4th tooth. Females have three distinct teeth on dorsal edge near base of rostrum, with a smooth long rostral spine (can curve upwards) and no teeth on ventral margin of spine. Carapace slightly keeled.

#### Colour
Deep red-orange ranging to paler pink in colour in smaller individuals (100 mm).

#### Size
Total length up to 200 mm in females and 120 mm in males.

#### Distribution
West Coast of South Africa and Namibia. Adults at 400–600 m depth, young at 300 m depth on muddy bottoms. Caught mostly at night, suggesting they burrow into substratum by day.

#### Similar species
*Aristaeomorpha foliacea*, which have teeth on ventral edge of rostrum spine and base of rostrum is more ‘leaf-shaped’.

#### References
**Gennadas spp. (Gennad)**

**Phylum:** Arthropoda

**Subphylum:** Crustacea

**Class:** Malacostraca

**Order:** Decapoda

**Suborder:** Dendrobranchiata

**Family:** Benthesicymidae

**Genus:** Gennadas

**Species:** spp.

**Common name:** Small single-spine shrimp

**Distinguishing features**
Deep red in colour, legs especially dark red; black markings on the ventral edge of the abdomen where the pleopods attach. Pale uropods. Carapace with crest anteriorly, extending forward into a short spine-like rostrum.

**Colour**
Deep red to black in parts.

**Size**
Total length ± 50 mm, carapace 15 mm.

**Distribution**
West Coast of South Africa.

**Similar species**
Thirteen closely related species occur in southern African waters.

**References**


Distinguishing features
Carapace with branching lateral keels. Rostrum short, flattened and compact, reaching just past the eye, with 11 dorsal teeth, no ventral teeth, but many fine hairs on ventral surface. Mandibles with elongate scythe-like incisor processes. Pereopods short. Ovaries with unspawned eggs visible through carapace when present.

Colour
Pale pink to white, with distinct red to pink bands across tail. Thorax often has darker pink/purple colouration where internal organs are visible.

Size
Up to 170 mm in length.

Distribution
West and South Coasts of South Africa and Namibia. Pelagic species, occurring at depths below 550 m.

Similar species
*Hymenopenaeus triarthus*, which has a much more pronounced, enlarged leaf-shaped rostrum.

References

**Haliporoides triarthrus** (HalTri)

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Suborder:** Dendrobranchiata  
**Family:** Solenoceridae  
**Genus:** Haliporoides  
**Species:** triarthrus  
**Common name:** Serrated leaf rostrum prawn

**Distinguishing features**  
Easily recognised by large, flattened, curved and serrated leaf-like rostrum with 10 spines on dorsal edge and two spines on ventral edge, no post-rostral keel. Both flagella of antenna 1 much longer than length of animal. Flagellum of antenna 2 also very long. Fourth to sixth abdominal segments keeled, each keel ending in a short spine.

**Colour**  
Pale pink.

**Size**  
Up to 150 mm in length.

**Distribution**  
West and South Coasts of South Africa.

**Similar species**  
None.

**References**  

Phylum: Arthropoda

**Solenocera africana (SolAfr)**

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<td>Common name:</td>
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<tr>
<td></td>
<td>Orange-back prawn</td>
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</tbody>
</table>

**Distinguishing features**

Carapace with marked orbital and postorbital spine (just behind eye) and long cervical groove on side. Rostrum short, with seven dorsal spines, none below. Antennal flagella united to form a respiratory tube. Distinguished by bright orange colour along dorsal thorax and tail. Immature individuals between 50-100 m and adults occur in depths of 300 m or more. On sandy and muddy seabeds. Mainly active at night; feed on polychaetes, small crustaceans and molluscs.

**Colour**

Golden orange with brighter band along dorsal edge; can also be paler in colour.

**Size**

Up to 140 mm total length.

**Distribution**

West Coast of South Africa through to KwaZulu-Natal, 50-450 m, in sand and mud seabeds.

**Similar species**

One of six species from this genus in the region.

**References**


**Sergia spp. (Srgia)**

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<td>Common name:</td>
<td>Scarlet prawn</td>
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</tbody>
</table>

**Distinguishing features**

Rostrum much reduced, upturned and short, not even reaching eyestalks, with tiny posterior spine. First abdominal segment overlaps second. Ventrally flattened. Anterior part of carapace not elongated beyond insertion of mouth appendages. First pair of pereopods not chelate, second and third pereopods with minute chelae.

**Colour**

Dark red, with carapace deepening in red to black.

**Size**

Up to 125 mm length.

**Distribution**

Predominantly West Coast, but can occur along South Coast of South Africa.

**Similar species**

One of some 18 similar species occurring in the region.

**References**


**Merhippolyte agulhasensis (MerAgu)**

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<tr>
<td>Common name:</td>
<td>Banded-leg red shrimp</td>
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</table>

### Distinguishing features
Rostrum distinctly serrated on the ventral edge and curves sharply upwards. Five rostral teeth dorsally and five evenly-spaced teeth below. Characteristic red-and-white banded pereopods.

### Colour
Red bands across tail, red-and-white legs, green eggs in females. Male rostrum’s colour changes from white to red.

### Size
Male up to 85 mm, female up to 70 mm body length.

### Distribution
West and South Coasts of South Africa.

### Similar species
*M. calmani* has only three dorsal teeth on rostrum and ventral teeth grouped at base of rostrum.

### Reference
### Parapontophilus gracilis (ParaGG)

- **Phylum:** Arthropoda
- **Subphylum:** Crustacea
- **Class:** Malacostraca
- **Order:** Decapoda
- **Infraorder:** Caridea
- **Family:** Crangonidae
- **Genus:** Parapontophilus
- **Species:** gracilis
- **Common name:** Orange striped tail/Golden-eye shrimp

#### Distinguishing features
Very small species. Rostrum with short spine not reaching beyond eye, two spines along dorsal margin. Eye glows golden in light. Two spines laterally along carapace. Tail appears banded with mottled pattern. Second pereopod has modified cheliped with expanded hand, palm with strong spine at base. Third pereopod small and slender, remaining pereopods much longer.

#### Colour
Orange-and-white banded, ventral side appears whitish, dorsally orange, with golden eyes.

#### Size
Average 46-50 mm body length.

#### Distribution
Global distribution, including West Coast of South Africa.

#### Similar species
None.

#### References

**Phylum: Arthropoda**

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**Philocheras sculptus (PonAff)**

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<td>Common name:</td>
<td>Sculpted prawn</td>
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</tbody>
</table>

**Distinguishing features**
Carapace with median keel bearing four forward-directed teeth and several smaller keels on lateral margins. Rostrum curved downwards and apically divided into two points when viewed from above. Abdominal segments with dorsal ridges.

**Colour**
Mottled brown and blue when alive, becoming red when preserved.

**Size**
Small, body length up to 20 mm.

**Distribution**
South Coast, Algoa Bay to East Coast, Durban.

**Similar species**
None.

**Reference**
**Glyphocrangon spp. (Glypho)**

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<td>Subphylum:</td>
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<tr>
<td>Common name:</td>
<td>Armoured shrimps</td>
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</table>

**Distinguishing features**

Robust, rigidly calcified and armoured shrimps of which 10 regional species are described. Rostrum well-developed, dorsally flattened, with upturned tip, laterally spinose, proportionately longer in young than in adult. Carapace strongly sculptured with longitudinal ridges and keel. Abdomen usually sculptured, the segments firmly interlocked. Telson strong, spine-like and pointed, quadrangular in cross section. Eyestalks short, eyes large.

**Colour**

Red.

**Size**

Large; body length up to 110 mm.

**Distribution**

Widespread distribution, including the West and South Coasts of South Africa. Tropical *Glyphocrangon* spp. occur in northern KwaZulu-Natal.

**Similar species**

None.

**References**


**Nematocarcinus longirostris** (NemLon)

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<tr>
<td>Common name:</td>
<td>Long-rostrum prawn</td>
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### Distinguishing features
Rostrum thin, lance-like, longer than rest of carapace, dorsally with many small spines, ventrally with four to six distal spines, setose proximally. Lateral keel extending along ± half of carapace. Antennae very long. Third to sixth pereopods extremely long, chelate and with fine hairs at tips. Telson with two distinct spines on end and several small dorso-lateral spinules.

### Colour
Deep red.

### Size
Body length up to 130 mm.

### Distribution
West Coast (> 400 m) of South Africa.

### Similar species
Similar to *Nematocarcinus sigmoideus* and there is controversy as to which is the correct name for the South African population. Emmerson (2016) lists *N. longirostris* as a synonym under *N. symoideus* (p. 185), but indicates in his text (p. 182) that both species may occur in South African waters.

**References**


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**Image description:**

- **Nematocarcinus longirostris**
- **Observation data only**
- **Map showing distribution**
- **Illustrations of Nematocarcinus longirostris**
**Acanthephyra pelagica (AcaPel)**

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<td><strong>Species:</strong></td>
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<tr>
<td><strong>Common name:</strong></td>
<td>Red pelagic prawn</td>
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</table>

**Distinguishing features**
Rostrum more than half the length of carapace; seven to nine distinct spines on dorsal margins and five spines on ventral margins. Between 7-11 pairs of lateral spines on telson. Abdominal segments with dorsal keel and posterior spine on segments 3 to 6. No keels present on carapace.

**Colour**
Deep red.

**Size**
Up to 25 mm carapace length (excluding rostrum). Pleon (abdomen) ± 60 mm length.

**Distribution**
West and South Coasts (> 400 m) of South Africa.

**Similar species**
*Oplophorus novaeezeelandiae*, but *A. pelagica* has distinct spines on lateral edge of telson. South African specimens may be *A. sica* (see Emmerson 2016, Vol 1, p. 146).

**References**

**Notostomus elegans (NotWes)**

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<td>Species:</td>
<td>elegans</td>
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<tr>
<td>Common name:</td>
<td>Dark red double-keeled prawn</td>
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</table>

**Distinguishing features**

Cephalothorax expanded, rostrum curved, strongly serrated on both dorsal and ventral margins, serrations extending along front part of carapace. Distinct lateral carapace keels running along length of carapace. Abdominal segments 3 to 6 with distinct dorsal keels terminating in sharp posterior teeth.

**Colour**

Dark red to black.

**Size**

60–80 mm total length.

**Distribution**

West Coast (> 400 m) of South Africa.

**Similar species**

Acanthephyra pelagica and Oplophorus novae-zeelandiae, but distinguished by expanded cephalothorax, many teeth on rostum and lateral ridges on carapace.

**References**


Oplophorus novaezeelandiae (OplNov)

**Phylum:** Arthropoda
**Subphylum:** Crustacea
**Class:** Malacostraca
**Order:** Decapoda
**Infraorder:** Caridea
**Family:** Oplophoridae
**Genus:** Oplophorus
**Species:** novaezeelandiae
**Common name:** Keeled flattened red prawn

**Distinguishing features**
Laterally-flattened prawn with distinct spine on third abdominal segment. Rostrum approximately same length as carapace, with six dorsal spines close to the base and three to four ventral spines. No visible telson spines, but three tiny projections at tip of telson. No spinose appendage. Outer margin of scaphocerite (flattened appendage near mouth) smooth, no barb on inner margin. Two short lateral keels along sides of carapace below eyes.

**Colour**
Deep red.

**Size**
60–100 mm total length.

**Distribution**
West Coast (> 400 m) of South Africa.

**Similar species**
Acanthephyra pelagica, but O. novaezeelandiae does not have lateral spines on telson.

**References**
### Heterocarpus laevigatus (HetLae)

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<td>laevigatus</td>
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<tr>
<td>Common name:</td>
<td>Smooth nylon shrimp</td>
</tr>
</tbody>
</table>

#### Distinguishing features
Distinctive appearance with swollen cephalothorax, marked dorsal keel cut into about five teeth, plus two marked lateral keels, the lower produced into a sharp spine anteriorly. Carapace pitted. Rostrum elongate and curved strongly upwards, one tooth at the base above eye, rest of dorsal margin smooth, ventral margin with 10 teeth. Abdominal segments not keeled.

#### Colour
Orange-red.

#### Size
110-130 mm total length.

#### Distribution
South and West Coasts of South Africa, widespread in Indo-Pacific and off West Africa and Brazil.

#### Similar species
None.

**References**


**Plesionika martia (PleMar)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Caridea  
**Family:** Pandalidae  
**Genus:** Plesionika  
**Species:** martia  
**Common name:** Common golden shrimp

### Distinguishing features

Very long, straight rostrum with dorsal rostral teeth only near base of rostrum, no teeth on ventral margin. Most commonly caught prawn species on West Coast.

### Colour

Orange to pink in colour.

### Size

Average 80–100 mm total length.

### Distribution

West and South Coasts of South Africa.

### Similar species

One of 14 species from this genus in the region, these being distinguished mostly by numbers and arrangement of teeth on rostrum.

### Reference

Phylum: Arthropoda

**Glyphus marsupialis** (GlyMar)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Phylum</td>
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<tr>
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</tr>
<tr>
<td>Species</td>
<td><em>marsupialis</em></td>
</tr>
<tr>
<td>Common name</td>
<td>Kangaroo shrimp</td>
</tr>
</tbody>
</table>

**Distinguishing features**


**Colour**

Dark red.

**Size**

Up to 160 mm total length.

**Distribution**

West and South Coasts of South Africa. Widely distributed in Pacific, Indian and (less so) Atlantic Oceans, benthic on sandy seabeds at 500-1100 m.

**Similar species**

None.

**References**

**Pasiphaea sp. 1 (Pasiph)**

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<thead>
<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Species:</td>
<td>sp. 1</td>
</tr>
<tr>
<td>Common name:</td>
<td>Glass shrimp</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Small, translucent shrimp with orange trim along dorsal and ventral carapace varying in coverage, telson, antennae and tips of chelipeds. First and second pair of pereopods chelate.

**Colour**
Translucent to white, with orange colouration on edges of claws, tail and carapace, which can cover much of the body.

**Size**
Up to 90 mm body length, but usually smaller (30 mm).

**Distribution**
West and South Coasts of South Africa.

**Similar species**
There are nine species of this genus reported from southern African waters. All are delicate shrimps with rostrum reduced or absent and first two pairs of pereopods chelate, with characteristic comb-like hairs on finger.

**References**

**Pasiphaea sp. 2 (Pasip2)**

<table>
<thead>
<tr>
<th><strong>Phylum:</strong></th>
<th>Arthropoda</th>
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</thead>
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<td><strong>Subphylum:</strong></td>
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<tr>
<td><strong>Species:</strong></td>
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<td><strong>Common name:</strong></td>
<td>Ventrally flattened shrimp</td>
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**Phylum: Arthropoda**

<table>
<thead>
<tr>
<th><strong>Distinguishing features</strong></th>
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</thead>
<tbody>
<tr>
<td>Ventrally flattened, very short triangle rostrum with tiny dorsal spine. Large, well-developed fine chelae on first and second pereopods. Abdominal segment two overlaps with segment one. Considerably larger and more ventrally flattened than <em>Pasiphaea</em> sp. 1.</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Colour</strong></th>
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</thead>
<tbody>
<tr>
<td>Often red thorax with white tail. Can have orange-red colouration around edges, or be completely white, or completely red to orange.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Size</strong></th>
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</thead>
<tbody>
<tr>
<td>Average 160 mm total length including rostrum.</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Distribution</strong></th>
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</thead>
<tbody>
<tr>
<td>West and South Coasts of South Africa.</td>
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<table>
<thead>
<tr>
<th><strong>Similar species</strong></th>
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<tbody>
<tr>
<td>There are nine species of this genus reported from Southern African waters. All are delicate shrimps with rostrum reduced or absent and first two pairs of pereopods chelate, with characteristic comb-like hairs on finger. Larger and more ventrally flattened than <em>Pasiphaea</em> sp. 1.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>References</strong></th>
</tr>
</thead>
</table>

**Calocaris barnardi**

**Phylum:** Arthropoda  

**Subphylum:** Crustacea  

**Class:** Malacostraca  

**Order:** Decapoda  

**Infraorder:** Axiidea  

**Family:** Axiidae  

**Genus:** Calocaris  

**Species:** barnardi  

**Common name:** Snapper shrimp

---

**Distinguishing features**

Resembles a sand-prawn in overall appearance. Carapace with short, horizontal, pointed rostrum lacking marginal teeth distally, but with lateral edges upturned, and with untoothed medial keel. Rostrum at base with four teeth on either side. First two pairs of pereopods chelate, the first pair much larger and more robust. Abdomen elongate and lacking ornamentation; exopod of uropod with keel. Telson longer than broad, strongly setose (with bristles) along margin, apex broadly rounded.

**Colour**

Bright to pale orange.

**Size**

Average 80 mm total length, including claw.

---

**Distribution**

Namibia to West Coast of South Africa.

**Similar species**

None.

**References**


**Stereomastis sculpta (SteScu)**

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<tbody>
<tr>
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<tr>
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<tr>
<td>Infraorder: Polychelida</td>
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<tr>
<td>Family: Polychelidae</td>
</tr>
<tr>
<td>Genus: Stereomastis</td>
</tr>
<tr>
<td>Species: sculpta</td>
</tr>
<tr>
<td>Common name: Deep-sea blind lobster/Sea cockroach</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Unusual, heavily sculptured, blind, widespread deep-sea crustacean. Carapace with median keel, lateral keels and transverse median ridge, all produced into sharp spines. Abdominal segments 1 to 5 with keels forming large forwardly-directed spines, increasing in size from first to fourth segment. Slender, elongate claws held forwards.

**Colour**
Mostly pink with darker patches on telson, but can also be nearly all white with red patches on telson and parapodia tips.

**Size**
Up to 130 mm body length.

**Distribution**
Predominantly West Coast of South Africa.

**Similar species**
*Polycheles typhlops* has similar body shape, but is orange red and lacks spines on medial keel of carapace.

**References**


**Munida benguela (Muninc)**

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<tr>
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<th>Arthropoda</th>
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<td>Species:</td>
<td>benguela</td>
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<tr>
<td>Common name:</td>
<td>Striped squat lobster</td>
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</tbody>
</table>

**Distinguishing features**
Small lobster-type crustacean. Tail often folded underneath abdomen. Carapace and abdominal segments with transverse ridges. Distinctly striped pattern on thorax. Chelipeds (claws) as long as thorax and abdomen combined.

**Colour**
Orange-and-white striped pattern, tail white.

**Size**
50-60 mm in total length.

**Distribution**
Namibia to KwaZulu-Natal, South Africa.

**Similar species**
There are 12 similar species of this genus in regional waters.

**Reference**
**Dardanus arrosor (PagAro)**

- **Phylum:** Arthropoda
- **Subphylum:** Crustacea
- **Class:** Malacostraca
- **Order:** Decapoda
- **Infraorder:** Anomura
- **Family:** Diogenidae
- **Genus:** Dardanus
- **Species:** arrosor
- **Common name:** Striated hermit crab

**Distinguishing features**
Unmistakable, with transverse, scaly striations on chelae and pereopods. Left cheliped larger than right one.

**Colour**
Orange to brown, eyestalks orange with two red bands.

**Size**
Can grow to a large shield length of 75 mm, total length 250 mm. One of the largest South African hermit crabs.

**Distribution**
All along South African coasts, common on South Coast shelf region, from 30-290 m.

**Similar species**
Several other species of the genus *Dardanus* known from South Africa have similarly-coloured eyestalks and same general appearance of chelipeds, but lack the scaly striae on surface of chelae and pereopods.

**References**

**Paguristes sp. (PaguSp)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Anomura  
**Family:** Diogenidae  
**Genus:** Paguristes  
**Species:** sp.  
**Common name:** Agulhas bank hermit

**Distinguishing features**  
Left chela slightly larger. Chelae and pereopods with corneous tips and irregularly covered with prominent tubercles, which end in a brown, corneous spine. Not heavily covered with hairs.

**Colour**  
Orange, with green eyes. Tubercles on pereopods and chelae pinkish-white.

**Size**  
Up to 9 mm shield length, total length 100 mm.

**Distribution**  
South African endemic. Agulhas Bank, South Coast of South Africa, 87-126 m.

**Similar species**  
Potentially confused with other orange hermit crabs like *Sympagurus dimorphus*, but members of *Paguristes* have relatively short, similarly-sized chelipeds.

**References**  
Species currently being described.
**Anapagurus hendersoni** (AnaHen)

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<tr>
<td>Species:</td>
<td>hendersoni</td>
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<tr>
<td>Common name:</td>
<td>Blue-lined hermit crab</td>
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</table>

**Distinguishing features**
Enlarged right cheliped; dorsal surface of chela with small tubercles and high, spinose ridge proximally; carpus long and with row of small spines mesially. Left cheliped very slender, palm of chela (weak) and carpus with longitudinal double row of spines dorsally. Best identifiable by colouration.

**Colour**
Two colour morphs exist in South African waters having one of two background colourations – either cream or brownish with the same colour patterns. Shield orange to brown in both forms, corneas of eyes dark greenish to yellow-turquoise. Characteristic features are the translucent blue longitudinal stripes on the ventral margin of the propodi of the pereopods, and a maroon dot on the mesioventral (inner side) of each chela; the right a large dot and left a smaller dot (not visible in frontal view, sometimes less pronounced in the cream colour morph).

**Size**
Up to 40 mm total length.

**Distribution**
South African endemic. West Coast of South Africa to KwaZulu-Natal, 9-226 m.

**Similar species**
Goreopagurus poorei, but *A. hendersoni* has distinct colour markings (blue stripes and maroon dot).

**Reference**
**Pagurus cuanensis (PagCua)**

<table>
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<th>Phylum:</th>
<th>Arthropoda</th>
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</thead>
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<tr>
<td>Subphylum:</td>
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<tr>
<td>Species:</td>
<td>cuanensis</td>
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<tr>
<td>Common name:</td>
<td>Hairy hermit crab</td>
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</table>

**Distinguishing features**
Right chela distinctively larger than left. Chelae and pereopods heavily covered with setae (hairs), usually concealing the armature. Palm of right hand with three to four rows of medium to strong spines, of which the median row is usually the strongest.

**Colour**
Pereopods and chelae brown, completely covered with earth-coloured setae. Merus of chelipeds (see line diagram p. 136) reddish, sprinkled with whitish spots. Eyestalks yellow to orange. Second antennae reddish-brown with white rings. Offshore specimens duller in colour than inshore (False Bay) individuals; often in old and overgrown shells.

**Size**
Up to 8 mm shield length, total length 50 mm.

**Distribution**
Reported from Vema Seamount (Namibian West Coast), False Bay, Cape St. Blaize, Mossel Bay, Durban and KwaZulu-Natal to 130 m. Common on Agulhas Bank.

**Similar species**
*Pagurus liochele*, but *P. cuanensis* distinguished by strongly spined and very hairy chelae and does not have blue colouration of *P. liochele*. At least six other specimens of the genus occur in the region. *Propagurus deprofundis* occurs in greater depths.

**Reference**
**Phylum**: Arthropoda

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### Pagurus liochele (PagLio)

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<td>liochele</td>
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<td>Common name:</td>
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**Distinguishing features**
Right chela distinctively larger than left. Palm of right hand with row of blunt spines on dorsomesial margin and surface covered with low blue tubercles. Stronger row of white-blue tubercles adjacent to cutting edge of fixed finger. **Colour diagnostic.** Specimens from South Coast trawls mostly in shells occupying cavities in an undescribed species of Suberites sponge (see picture).

**Colour**
Eyestalks orange at base with distal half characteristically cobalt-blue. Dark purple chelipeds covered with cobalt-blue tubercles. Propodi of pereopods with cobalt-blue ring distally, dactyls with reddish longitudinal stripes. Second antennae red with white rings.

**Size**
Up to 7 mm shield length, total length 40 mm.

**Distribution**
Southern African endemic. Orange River to Transkei, South Africa, littoral to 110 m. Sometimes caught in inshore trawls.

**Similar species**
*Pagurus cuanensis*, however *P. liochele* is distinctive with blue colouration on eyestalks and propodi of walking legs. At least six other species of the genus occur in the region.

**References**

Propagurus deprofundis (ProDep)

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<th>Arthropoda</th>
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<tbody>
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<td>Genus:</td>
<td>Propagurus</td>
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<tr>
<td>Species:</td>
<td>deprofundis</td>
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<tr>
<td>Common name:</td>
<td>Orange keeled hermit</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Chelae uniformly orange and spiny, right larger than left. Palm covered with six irregular rows of spines, accompanied by long and stiff setae. Carpus with irregular row of strong spines on dorso-mesial margin. Mesial face of propodus of second pereopod with longitudinal keel (see pictures).

**Colour**
Pereopods, eyestalks and shield bright orange, corneas of eyes black. Tips of dactyls and fingers corneous and black.

**Size**
Up to 9.3 mm shield length, total length 80 mm.

**Distribution**
South Coast of South Africa. Single individuals occasionally caught in deep trawls along Agulhas Shelf. Elsewhere recorded from 200-915 m and found in variety of gastropod shells.

**Similar species**
Potentially confused with the parapagurid species Sympagurus, Parapagurus and Paragiopagurus, which can also be orange, but longitudinal keel on second walking legs and spiny chelae of *P. deprofundis* are distinctive. *Pagurus cuanenis* occurs in shallower waters.

**Reference**
**Phylum**: Arthropoda

---

**Goreopagurus poorei** (Goreo)

- **Phylum**: Arthropoda
- **Subphylum**: Crustacea
- **Class**: Malacostraca
- **Order**: Decapoda
- **Infraorder**: Anomura
- **Family**: Paguridae
- **Genus**: Goreopagurus
- **Species**: poorei
- **Common name**: Broad-clawed hermit crab

---

**Distinguishing features**

Immediately identifiable by very uniquely shaped, large right cheliped (even larger in males, as depicted), with carpus dorsoventrally flattened and produced to the sides, flared, with sharp spines around the inner margin. Chela long and elongated, not bearing any spines. Left cheliped slender. Eyestalks short and stout, about half the length of shield.

**Colour**

General background colouration orange. Shield light orange, fading to white medially and near rostrum. Eyestalks mottled orange and white, distally white near black corneas. Chelipeds mostly orange with pale orange chela and fingers. Pereopods with weakly-defined orange stripe on lateral and mesial faces.

**Size**

Up to 60 mm in total length.

---

**Distribution**

Along edge of Agulhas shelf, South Africa, 334-622 m.

**Similar species**

Could be confused with *Anapagurus hendersoni*, which has a similar appearance, but *G. poorei* occurs much deeper and has a light orange colouration with black eyes. *G. poorei* co-occurs with *Propagurus deprofundis*, but is easily distinguishable from the latter by the smooth claw.

**References**


Paragiopagurus atkinsonae (ParAtk)

<table>
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<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
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</thead>
<tbody>
<tr>
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<td>Genus:</td>
<td>Paragiopagurus</td>
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<tr>
<td>Species:</td>
<td>atkinsonae</td>
</tr>
<tr>
<td>Common name:</td>
<td>Green-eyed hermit</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Very similar to *S. dimorphus*, but smaller, with same dimorphism: large right cheliped in males, in females shorter and chela rounded to oval shape. Without any obvious distinguishing characters, but overall appearance different to *S. dimorphus*. Pereopods longer and more slender, eyes shorter. Right cheliped not very setose. Inhabits same colonial anemone as *S. dimorphus*. Not recorded from gastropod shells. Distinctive colouration.

**Colour**

More uniformly orange than *S. dimorphus*. Chelipeds orange, with white tubercules or spines. Segments of pereopods commonly with dorsal white spots (see arrows). Eyes usually green and eyestalks with orange pattern dorsally, not forming clear, continuous orange-red stripe, as in *S. dimorphus*.

**Size**

Shield length < 10 mm; total length up to 50 mm.

**Distribution**

South African endemic. Localised area on the West Coast of South Africa, not reported from South Coast. Known from depths 199-277 m.

**Similar species**

*Sympagurus dimorphus* and *Parapagurus bouvieri*, but distinctive colouration and green eyes of *P. atkinsonae* are distinguishing characters. Adults half the size of fully-grown *S. dimorphus* or *P. bouvieri*.

**Reference**

Parapagurus andreui (ParAnd)

**Phylum:** Arthropoda

**Subphylum:** Crustacea

**Class:** Malacostraca

**Order:** Decapoda

**Infraorder:** Anomura

**Family:** Parapaguridae

**Genus:** Parapagurus

**Species:** andreui

**Common name:** Sun-anemone hermit

---

**Distinguishing features**

Right cheliped very large (missing in photographed specimen), and both chelipeds densely setose. Shield about as broad as long and usually well calcified. Eyestalks less than half the length of shield. Very few morphological features for identification on deck, but colour might be characteristic. Known to occupy zooanthids that have > 10 polyps arranged in a circle around the lower margin of the shell. However, a few other species might occupy the same type of zooanthid.

**Colour**

In South Africa only known from photographed specimen. Shield and bases of cephalic appendage (antennae and eyestalks) white-washed orange to mouldy white. Chelipeds appear yellowish due to heavy setation, walking legs brownish orange, colour intensified in dactyls.

**Size**

Between 100-120 mm total length.

**Distribution**

West Coast of South Africa; 731 m.

**Similar species**

*Parapagurus bouvieri*, but *P. andreui* has well-calcified legs and even more densely setose chelipeds. It also occupies a different type of zooanthid.

**Reference**

**Parapagurus bouvieri (ParPil)**

<table>
<thead>
<tr>
<th>Taxonomic Level</th>
<th>Description</th>
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</thead>
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<tr>
<td>Species:</td>
<td>bouvieri</td>
</tr>
<tr>
<td>Common name:</td>
<td>Hairy-clawed hermit crab</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Both left and right cheliped densely setose, right cheliped much longer. Weakly calcified lateral faces of meri of second and third pereopods diagnostic. Exclusively inhabit pseudoshells of a single species of colonial zooanthid, which form a smooth, slimy, pinkish cloak. Zoanthid polyps arranged around bottom margin of pseudoshell (unlike evenly-distributed polyps of the epizoanthid colonising *Sympagurus dimorphus* and *Paragiopagurus atkinsonae*).

**Colour**

Adult with conspicuous white band along dorsal and ventral margins of pereopods. Ventral faces of pereopods orange. Chelae often with orange-pink fingertips. Some specimens have pale orange or yellow pereopods without distinctive colour patterns.

**Size**

Up to 15 mm shield length, overall size up to 100 mm.

**Distribution**

Southern African endemic. Namibia to Cape St Francis, South Africa, 63-814 m (preferred depth range 400-499 m).

**Similar species**

*Sympagurus dimorphus*, but *P. bouvieri* chelipeds extensively covered with hair. *Parapagurus andreui*, but *P. bouvieri* has weakly calcified lateral faces of meri of pereopods.

**References**


**Sympagurus dimorphus (ParDim)**

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<td>Subphylum:</td>
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**Distinguishing features**

Right cheliped much larger than left. Right one sexually dimorphic (two forms), massively enlarged in male where it cannot be retracted into shell. Carpus with dorsal row of spines. Most, but not all, individuals inhabit ‘pseudoshells’ made of epizoanthids (colonial anemones). Pseudoshell coarse in texture (gritty) and light brown; > 10 orange nodules (polyps) of different sizes unevenly distributed over entire surface.

**Colour**

Colour variable orange-red. Chelipeds from pale orange to almost bright red, but with cream spines or tubercles. Propodus and carpus of pereopods usually with longitudinal white stripes; sometimes entirely white. Meri of chelipeds and pereopods white with orange-red patches. Eyestalks dorsally with orange-red longitudinal stripe.

**Size**

Up to 30 mm shield length; overall size up to 100 mm.

**Distribution**

Southern African endemic. Namibia to Plettenberg Bay, South Africa, 30-814 m (preferred depth range 200-249 m).

**Similar species**

Paragiopagurus atkinsonae and Parapagurus bouvieri, but *S. dimorphus* has distinctly coloured pereopods.

**References**


**Lithodes ferox (LitFer)**

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### Distinguishing features
Three major pairs of pereopods visible (remaining two greatly reduced and hidden), plus chelipeds. Carapace rounded, becoming more triangular and pointed anteriorly, both gastric and cardiac regions of carapace with four prominent square-patterned spines. Rostrum strongly produced and bifid (rarely simple), with a pair of dorsal spines on corneal level. Right cheliped slightly larger, and larger in males. Chelipeds and pereopods with variously sized, strong spines.

### Colour
Bright red to pale pink or orange in colour, with reddened dactyls of pereopods.

### Size
Up to 65-70 mm carapace width; pereopods up to 170 mm long.

### Distribution
West and South Coasts of South Africa.

### Similar species
*Neolithodes asperrimus*, but *L. ferox* is considerably smaller and has a long projecting double-pronged two-spined rostrum.

### References

**Distinguishing features**

Three pairs of pereopods visible (remaining two greatly reduced and hidden), plus chelipeds. Carapace with large and small spines, upper surface thickly sprinkled with small, sharp granules; gastric region of carapace with four central prominent spines in shape of a square and one additional lateral spine on each side, one single smaller spine in centre of square; cardiac area with four prominent square-patterned spines. Rostrum with one simple upward slanting spine and two dorsal spines near base. Chelipeds and pereopods thickly covered with sharp granules, more so in females than in males.

**Colour**

Orange.

**Size**

Large; carapace width up to 200 mm; pereopods up to 500 mm long.

**Distribution**

West Coast of South Africa and northwards to Mauritania.

**Similar species**

*Neolithodes capensis* and *Lithodes ferox*, but this species can be differentiated by the prickly pereopods and the different spine patterns. In lithodids the length of the spinulation is highly variable depending on age.

**References**


**Neolithodes capensis** (NeoCap)

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Anomura  
**Family:** Lithodidae  
**Genus:** Neolithodes  
**Species:** capensis  
**Common name:** Cape stone crab

**Distinguishing features**
Three pairs of pereopods visible (remaining two greatly reduced and hidden), plus chelipeds. Carapace with scattered small spines amongst larger ones. Gastric region of carapace with six prominent, hexagonally-arranged spines, cardiac region with two pairs of spines, followed by a single median one. Chelipeds and pereopods with surface somewhat smooth, scattered small and larger spines.

**Colour**
Deep brick red.

**Size**
Large; carapace up to 200 mm wide; pereopods up to 500 mm long.

**Distribution**
Endemic. West Coast of South Africa.

**Similar species**
*Lithodes ferox* and *Neolithodes asperrimus*, but *N. capensis* lacks the distinct double-pronged projecting rostrum of *L. ferox* and the heavily prickly legs of *N. asperrimus*.

**Reference**
**Vitjazmaia latidactyla** (VitJaz)

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Inachidae  
**Genus:** Vitjazmaia  
**Species:** latidactyla  
**Common name:** Horned eyestalk deep-water crab

### Distinguishing features
Carapace nearly round, covered with small spines and numerous regular spinules, all curved anteriorly. Rostrum long, with long rostral spine and a pair of pseudo-rostral spines. Pseudo-rostral spines with two small spines at base of each. One very strong, long spine outside each eye, and one above each eye. Cluster of spiniform horns (2-5) visible on the eye stalk. Five pairs (chelipeds included) of very long and flat pereopods. Walking legs with surfaces covered with small, sharp spinules. Second pair of pereopods with long, sharp spines. Males with stronger and heavier tapered pincers.

### Colour
Pale orange to peach, with darker spicules on carapace. Dactyls darker in colour.

### Size
Up to 150 mm carapace width.

### Distribution
West and South Coasts of South Africa, common in New Zealand and some West Indian Ocean regions.

### Similar species
Closely related to *Platymaia turbynei*; not to be confused with the lithodid crabs *Neolithodes* spp. and *Lithodes ferox*, which only have four instead of five fully developed pereopods (chelipeds included).

### References

**Platymaia turbynei (PlaTur)**

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<td>Common name:</td>
<td>Three-spined spider crab</td>
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**Distinguishing features**

Carapace rounded in shape, length slightly greater than width, surface with several small acute spines. Rostrum trispinose, with one major spine projecting forward, markedly overarching the anterior margin of carapace. Inner margin of orbit without spine. Buccal cavity with blunt denticulate tooth at outer angle. Chelipeds elongate in males. Pereopods very long and slender, second and third pereopods with long and medium-long spines, respectively, dactyls and propodi of fourth and fifth pereopods with fringes of long, fine setae along ventral margins.

**Similar species**

The only species of the genus recorded in South Africa, but *Platymaia alcocki* occurs in the Indian Ocean to Mozambique. It differs from *P. turbynei* by having a narrower and smoother carapace and dense hairs on the chelipeds. *Platymaia longimana* is reported from Namibia.

**References**


**Colour**

Pink, pale orange to salmon pink; legs with very broad orange bands.

**Size**

Carapace width up to 45 mm.

**Distribution**

West and South Coasts of South Africa, Eastern Cape and KwaZulu-Natal, 200-960 m.
**Achaeopsis spinulosa (AchSpi)**

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<td>Species:</td>
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<td>Common name:</td>
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**Distinguishing features**

Carapace pear-shaped, broad posteriorly, tapering strongly anteriorly. Two short, stubby rostral spines extend to end of peduncle (base) apex of antennae 2. Spines slightly divergent and widely separated proximally. Strong, erect median spine on gastric region, stronger spine on cardiac region, smaller tubercle or spine on antero-lateral portion of gastric region. Total of eight spines clearly visible on dorsal carapace, similar to *D. thomsoni*. No visible spines at apex of fourth joint of second to fifth pereopods. Pereopods very long and slender, chelipeds rounded, bulbous.

**Size**

Up to 20 mm carapace width.

**Distribution**

West and South Coasts of South Africa. Widely distributed in Atlantic and Indian Oceans, usually occurring shallower than *D. thomsoni*.

**Similar species**

*Rochinia hertwigi* (flattened tubercles), *Macropodia falcifera* (more pronounced dorsal spines) and *Dorhynchus thomsoni* (longer rostral spines).

**Reference**

**Dorhynchus thomsoni (AchTho)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Inachidae  
**Genus:** Dorhynchus  
**Species:** thomsoni  
**Common name:** Long-spined spider crab

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### Distinguishing features

Carapace pear-shaped with strong, erect median spine on gastric region and stronger spine on cardiac region. Smaller spines on antero-lateral portion of gastric region. Total of eight spines on carapace, distinct, but not as pronounced as those of *Macropodia falcifera*, which has only four dorsal spines. Two rostral spines, slightly divergent distally, but close together, longer than *Achaeopsis spinulosa*. Rostral spines extend distinctly beyond peduncle (base) apex of antennae 2. Chelipeds more slender than *A. spinulosa* and rostral spines longer and closer together. Pereopods very long, with dorsodistal spine on merus of second to fifth pair (see red circles, distinguishes between *D. thomsoni* and *A. spinulosa*).

### Size

Up to 20 mm carapace width.

### Distribution

Predominantly West Coast, but do occur on South Coast of South Africa. Widely distributed in Atlantic and Indian Oceans, usually deeper than *A. spinulosa*.

### Similar species

*Rochinia hertwigi* (flattened tubercles), *Macropodia falcifera* (more pronounced dorsal spines) and *Achaeopsis spinulosa* (shorter rostral spines).

### Reference

**Macropodia falcifera (MacFal)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Inachidae  
**Genus:** Macropodia  
**Species:** falcifera  
**Common name:** Cape long-rostrum spider crab

**Distinguishing features**  
Carapace with single long erect spine in gastric region and on cardiac region, with two smaller spines on each dorso-lateral edge. Long, elongated rostrum of two sharp appressed (close together) spines, extending well beyond end of antennal peduncle (base), usually to end of flagellum of antennae 2. Eyes on long stalks, situated at distal end of extended carapace. Apex of merus of pereopods has either three, two or one small spine(s) – not to be confused with *D. thomsoni*, which has a single spine.

**Colours**  
Pale orange to pink or red, often with darker red speckled chelipeds.

**Size**  
Carapace up to 15 mm width.

**Distribution**  
Widespread, West and South Coasts of South Africa, although predominantly South Coast.

**Similar species**  
*Rochinia hertwigi* (flattened tubercles), *Dorhynchus thomsoni*, *Achaeopsis spinulosa* and *Macropodia formosa*.

**References**  

**Macropodia formosa (MacFor)**

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<td>formosa</td>
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<td>Common name:</td>
<td>Cape long-legged spider crab</td>
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</table>

**Distinguishing features**

Carapace pear-shaped, with single long erect spine in gastric region and another on cardiac region, plus two smaller spines on each dorso-lateral edge. Rostrum short, not extending beyond end of peduncle (base). Spines present on basal joints of antenna. **Apex of merus of pereopods has either three, two or one small spine(s) present** – not to be confused with *D. thomsoni*, which has a single spine.

**Colour**

Pale orange to pink or red, often with darker red speckled chelipeds.

**Size**

Carapace up to 20 mm wide.

**Distribution**

South African endemic. Widespread, predominantly South Coast of South Africa to Mozambique.

**Similar species**

*Rochinia hertwigi*, *Dorhynchus thomsoni*, *Achaeopsis spinulosa* and *Macropodia falcifera*.

**Reference**

**Latreillia metanesa (LatMet)**

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<td>Candycane crab</td>
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</table>

**Distinguishing features**

Very distinctive, with small, pear-shaped carapace bearing dorsal knobs. Rostrum triangular and consisting of three long spikes, one projecting medially forward and two laterally. Eyes disproportionately large and borne on extremely elongate eyestalks that are composed of two parts, a proximal slender section and a second much stouter section. Long spindly pereopods appear out of proportion to fragile body.

**Colour**

Carapace pale pink to red or orange. Pereopods vividly striped in red and white.

**Size**

Carapace up to 15 mm length; legs up to 150 mm.

**Distribution**

Pacific to Mozambique, Madagascar and South Africa.

**Similar species**

Unmistakable – *L. valde* (not depicted) also occurs in the region and has similar striped legs, but a round carapace.

**Reference**

**Phylum:** Arthropoda

**Maja cornuta (MamCap)**

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</table>

### Distinguishing features
Carapace pear-shaped, behind the post-ocular tooth four large marginal teeth, followed by one small submarginal tooth on hind part of branchial region, in the middle line three prominent spines on gastric region, rest of surface with smaller scattered spines, a pair of short spines on hind margin. Cheliped with granules on merus and carpus, fingers gaping at base in full-grown males. Body often camouflaged with attached animals. Previously called *Maja capensis*.

### Colour
Yellow brown to orange-red or carmine.

### Size
Up to 100-150 mm carapace width.

### Distribution
South Coast of South Africa, from False Bay to Durban; 10-60 m depth.

### Similar species
None.

### References

**Pyromaia tuberculata (PyrSpp)**

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<td>Common name: Tuberculate pear crab</td>
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**Distinguishing features**
Carapace pear-shaped and convex, with four large tubercles, one anteriorly central and three larger ones posteriorly, each covered in small knobbly projections. Rostrum pointed, curved spine behind eye. Chelae inflated in male (shown), much more slender in female. Pereopods slender and elongate, with long dactyls.

**Colour**
Off-white with light brown mottled areas.

**Size**
Carapace width up to 15-20 mm.

**Distribution**
Native range is Pacific North America. Potentially introduced species to South Africa.

**Similar species**
Superficially similar to Rochinia hertwigi, Dorhynchus thomsoni, Achaeopsis spinulosa and Macropodia falcifera, but distinguished by inflated tubercles.

**Reference**
**Rochinia hertwigi (ScyHer)**

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**Distinguishing features**
Carapace with several distinctive flat-topped projecting tubercles. Male (left) with larger chelipeds than female (right). Carapace pear-shaped, produced anteriorly into distinctive rostrum composed of two slender, long, tapering spines, separated at their bases. Flat-topped tubercles often not well-developed, or hidden by bulbous swellings in posterior lateral regions. Chelipeds and pereopods long and slender.

**Colour**
Pale orange – frequently covered in mud, hydroids and tunicates, etc.

**Size**
Male length up to 63 mm, female up to 43 mm.

**Distribution**
West and South Coasts of South Africa.

**Similar species**
Unmistakable with the flat-topped tubercles and long tapering rostral spines. Larger and more robust than *Dorhynchus thomsoni*, *Achaeopsis spinulosa* and *Macropodia falcifera*.

**Reference**
**Exodromidia spinosissima** (ExoBic)

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**Distinguishing features**
Carapace roundly elongate, with two prominent, divergent spiniform processes projecting from front of carapace. Chelipeds long with strong chelae. Last two pereopods modified to be “carrier” legs folded behind carapace. Covered with short stiff hairs, longer bristles towards edges of carapace, chelipeds and pereopods. Chelipeds larger in males than females.

**Colour**
Marbled orange to brick-red with white.

**Size**
Up to 18 mm carapace diameter, 20 mm length.

**Distribution**
Endemic. West Coast of South Africa to Agulhas Bank.

**Similar species**
Similar to *Exodromidia spinosa*, but with longer chelipeds and pronounced anterior spines on carapace, and also less common.

**Reference**
**Exodromidia spinosa (ExoSpi)**

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<td>Species:</td>
<td>spinosa</td>
</tr>
<tr>
<td>Common name:</td>
<td>Furry baboon crab</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Rounded crab, especially when chelipeds are held close to body. Often covered in mud and sand and looks like a stone. Carapace convex, mottled orange to red, covered with fine short hairs and with scattered small, conical tubercles dorsally. Frontal lobes large and triangular. Lateral margin with three distinct teeth. Male chelipeds much larger and longer than female; female chelipeds often tucked under carapace. Last two pairs of pereopods reduced and folded behind carapace, occasionally used to carry sponges or ascidians.

**Colour**
Bright orange/brick-red, mottled with white. Tips of chelipeds white.

**Size**
Male carapace width up to 34-35 mm, female 22-25 mm.

**Distribution**
Southern African endemic. Mainly West Coast of South Africa.

**Similar species**
*Exodromidia spinissima*, which has longer, more pronounced spine-like frontal lobes. Often occurs together with *Rochinia hertwigi* and *Dorhynchus thomsoni*. Sometimes associated with *Suberites* sp. sponge pieces held onto dorsal carapace.

**References**

Dromidia aegibotus (DroPer)

Distinguishing features
Fairly large, furry crab with domed carapace; four teeth on either side of front margin of carapace. Body and pereopods covered with dense brown coating of short hairs. Last two pairs of pereopods shortened and bent back over carapace, may carry sponge.

Colour
Red with brown, mud-covered hairy layer.

Size
Carapace up to 80-90 mm wide.

Distribution
Endemic. South Coast of South Africa.

Similar species
Dromidia hirsutissima, but D. aegibotus is larger, and has shorter, stiff hairs.

Reference
Dromidia hirsutissima (DroHir)

Phylum: Arthropoda
Subphylum: Crustacea
Class: Malacostraca
Order: Decapoda
Infraorder: Brachyura
Family: Dromiidae
Genus: Dromidia
Species: hirsutissima
Common name: Shaggy sponge crab

Distinguishing features
Body covered with short, stiff pile and long, dense, fibrous and shaggy brown or yellow hairs. Carapace broader than long, with several teeth on front margin and one on lateral margin. Fifth pereopods not markedly shorter in length than fourth, but more slender and folded back over carapace. Typically carry a cloak of sponge or ascidian over carapace (photo on right).

Colour
Muddy brown, orange or yellow. Tips of chelipeds white.

Size
Up to 55 mm carapace width.

Distribution
Endemic. West and South Coasts of South Africa.

Similar species
Exodromidia spp., but claws of D. hirsutissima folded close to mouth parts, more compact body shape and considerably longer, denser hairs.

Reference
**Speodromia platyarthrodes (SpePla)**

<table>
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<tr>
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<td><strong>Common name:</strong></td>
<td>Boxer/Muscle crab</td>
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</tbody>
</table>

### Distinguishing features
Upper surface of carapace inflated into three large humps, surface studded with minute sessile, scale-like setae; frontal margin with rounded projection. Undersurface of carapace bearing unusual deep cavity thought to be associated with respiration; closed anteriorly by cheliped and posteriorly by pereopods 2-4.

### Colour
Orange mottled with paler areas.

### Size
Up to 38 mm carapace width.

### Distribution
Endemic. South Coast of South Africa.

### Similar species
None.

### Reference
**Phylum: Arthropoda**

**Pseudodromia rotunda (PsuRot)**

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<tr>
<td><strong>Species:</strong></td>
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<tr>
<td><strong>Common name:</strong></td>
<td>Rounded sponge crab</td>
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</tbody>
</table>

**Distinguishing features**

Characterised by rounded, strongly convex carapace and unusually elongate last pair of pereopods folded upwards to hold ascidian cloak. **Two upper frontal teeth are slightly divergent, allowing the lower median tooth to be seen in dorsal view.**

**Colour**

Crab inside ascidian is pale orange to peach in colour.

**Size**

Up to 40 mm carapace width.

**Distribution**

Saldanha to Southern Mozambique, predominantly South Coast of South Africa.

**Similar species**

*Pseudodromidia latens*, but distinguished by divergent frontal teeth, and lower median tooth visible in dorsal view.

**References**


**Phylum: Arthropoda**

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**Pseudodromia spp. (Psddrm)**

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<td>Species:</td>
<td>spp.</td>
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<tr>
<td>Common name:</td>
<td>Cloaked ascidian crab</td>
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</tbody>
</table>

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**Distinguishing features**
Crab almost fully enclosed by ascidian growing on dorsal carapace. Tips of chelipeds usually red and white in colour.

**Colour**
Diverse range of colour, shapes and texture of ascidian coating the dorsal carapace. Crab usually muddy brown but pale orange, crimson or rose red when cleaned and abdomen more or less mottled or speckled.

**Size**
Usually between 20-40 mm carapace width.

---

**Distribution**
Predominantly South Coast of South Africa.

**Similar species**
*Pseudomidia rotunda*, which is distinct in the form of frontal teeth and lower medial tooth.

**Reference**
**Homola barbata (HomBar)**

<table>
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<th>Feature</th>
<th>Description</th>
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<td><strong>Common name:</strong></td>
<td>Periscope eye crab</td>
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</tbody>
</table>

**Distinguishing features**
Carapace squarish, longer than wide, prominent spines covering frontal portion of dorsal carapace, with two lateral spines projecting from front corners. Covered in short, fine orange hairs. Eyestalks long and eyes large. Last pereopods modified to fold back over carapace and often carries sponge over back. Often covered in mud.

**Colour**
Orange with paler speckles.

**Size**
Usually between 16-28 mm carapace width (male), and 22 mm carapace length (ovigerous female).

**Distribution**
South Coast of South Africa; depth 10-679 m.

**Similar species**
*Miersiograpsus kingsleyi*, but *H. barbata* is larger and has distinct spines on frontal portion of dorsal carapace.

**Reference**
**Nautilocorystes ocellatus (NauOce)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Thiiidae  
**Genus:** Nautilocorystes  
**Species:** ocellatus  
**Common name:** Ringed porcelain crab

**Distinguishing features**

Easily recognised by the unusual elongated carapace with its rounded front armed with four sharp teeth on either side. Antennae elongated and held together by interlocking hairs to form a tube, down which water is drawn while the crab is buried in the sand.

**Colour**

Light brown-orange, with thin reddish-brown lines forming four circular patches on carapace.

**Size**

Up to 34 mm length in males (28 mm in females) and 24-38 mm width.

**Distribution**

South Coast of South Africa and South-West Africa northward to Angola and off the Congo; depths 0-82 m. Burrows in sand.

**Similar species**

None.

**References**


**Miersiograpsus kingsleyi (LitKin)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Plagusiidae  
**Genus:** Miersiograpsus  
**Species:** kingsleyi  
**Common name:** Orange hairy sponge crab

---

**Distinguishing features**

- Small crab often co-occurring with sponges. Carapace square, front margin bilobed from dorsal view, distinct tooth outside eye and another on side of carapace. Eyestalks covered in fine hairs. Pereopods covered in bristly hairs, chelae strong, lower margin of merus serrated.

**Colour**

- Pale orange to yellowish, with pale amber hairs.

**Size**

- Carapace width no more than 15 mm.

**Distribution**

- West Coast of South Africa to KwaZulu-Natal.

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**Similar species**

*Homola barbata* has a more elongated, rectangular carapace and spines on carapace.

**References**

**Neopilumnoplax heterochir** (Dyspan)

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Mathildellidae  
**Genus:** Neopilumnoplax  
**Species:** heterochir  
**Common name:** Smooth choc-tip crab/ Smooth dark fingered crab

**Distinguishing features**
Relatively smooth orange-golden to brown carapace with well-defined epibranchial ridges (ridge on mid-lateral dorsal carapace). Frontal margin (rostrum) straight, with three fairly large lateral teeth behind eyes, second two pronounced and curved. Chelipeds subequal, left side slightly larger, upper surface granulate, claw fingers dark brown or black. Row of knobs along upper edge of pereopods.

**Colour**
Golden brown to orange, with brown to black fingertips of cheliped. Pereopods orange with pale white bands.

**Size**
Up to 35-40 mm carapace width.

**Distribution**
West and South Coasts of South Africa, extending to East London. Reported from 137-710 m.

**Similar species**
*Monodaeus* spp. are much more granular with knobs and ridges on carapace.

**References**

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 289-290 (Fig. 54 as *Pilumnoplax heterochir*).
**Monodaeus sp. (Xanthi)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Xanthidae  
**Genus:** Monodaeus  
**Species:** sp.  
**Common name:** Furrowed brow choc-tip crab

**Distinguishing features**
Carapace orange- to red-speckled, nodular and marked with distinct grooves running back from anterior edge. *Four blunt spines* projecting from lateral edge to just before eye, posterior spines have white tips. Rostrum square with no projections. Pereopods hairy and frequently coated in mud. Chelae subequal, ends of finger and hand black.

**Colour**
Orange-red-brown speckled, with paler portions of body, fingers black.

**Size**
Usually ± 40 mm diameter carapace width.

**Distribution**
West and South Coasts of South Africa, extending into West Africa.

**Similar species**
*Neopilumnoplax heterochir* has a much smoother carapace.

**Reference**
Phylum: Arthropoda

**Chaceon chuni (ChaChu)**

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<td><strong>Subphylum:</strong></td>
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<tr>
<td><strong>Species:</strong></td>
<td>chuni</td>
</tr>
<tr>
<td><strong>Common name:</strong></td>
<td>Red crab</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Large orange crab, sometimes with black mottled carapace. Carapace quadrangular, smooth, lateral margin with five teeth on each side of eye, second and fourth smaller. Pereopods long and unmodified. Dactyls of fifth pereopod laterally flattened (from sides). Commonly caught in trawl nets in large numbers (> 100).

**Colour**
Bright orange, sometimes with black mottled colouration.

**Size**
Average 80 mm width, 68 mm length. Maximum recorded: 138 mm width, 122 mm length.

**Distribution**
West and South Coasts of South Africa between 300-1400 m depth.

**Similar species**
Chaceon macphersoni and Chaceon maritae, however these are paler than *C. chuni*, which is generally smaller in size, has a smoother carapace and flattened dactyl of fifth pereopod.

**Reference**
**Chaceon macphersoni** (ChaMac)

<table>
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<tr>
<th>Phylum:</th>
<th>Arthropoda</th>
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</thead>
<tbody>
<tr>
<td>Subphylum:</td>
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<tr>
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<tr>
<td>Genus:</td>
<td>Chaceon</td>
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<tr>
<td>Species:</td>
<td>macphersoni</td>
</tr>
<tr>
<td>Common name:</td>
<td>White-leg crab</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Large crab, often co-occurring with *Chaceon chuni* in trawl catches. Clearly distinguished by the white pereopods with orange tips and orange blotches of shading on carapace. Carapace is granular in texture and has characteristic markings. Lateral margin with five teeth on each side of eye, second and fourth smaller. Tips of pereopods are dorso-ventrally flattened (from top to bottom).

**Colour**

White pereopods with orange tips and orange shading on carapace, no orange tips on chelae.

**Size**

Average 80 mm carapace width (on average larger than *C. chuni*), but recorded up to 150 mm carapace width.

**Distribution**

Southern African endemic. West and South Coasts of South Africa; 250-900 m depth.

**Similar species**

*Chaceon chuni* and *Chaceon maritae*, but distinguished by very white pereopods, orange dactyl tips and granulated carapace.

**References**


**Phylum:** Arthropoda

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**Chaceon maritae** *(Nrcrb)*

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<td>Species:</td>
<td>maritae</td>
</tr>
<tr>
<td>Common name:</td>
<td>Northern/Deep-sea red crab</td>
</tr>
</tbody>
</table>

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**Distinguishing features**

Similar in appearance to other *Chaceon* species, having five teeth on each side of eye, second and fourth smaller or obsolete. **Tips of pereopods are dorso-ventrally flattened** (from top to bottom). Carapace can be granulated in frontal portion.

**Colour**

Pale orange to yellow.

**Size**

Average carapace width 95 mm, reported up to 131 mm.

**Distribution**

From Agulhas Bank along Atlantic coast into North-West Africa forming part of an important fishery; between 100 and 900+ m depth.

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**Similar species**

*Chaceon chuni* and *C. macphersoni*, but *C. maritae* has dorso-ventrally flattened dactyls of pereopods and different colouration to *C. macphersoni*.

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**References**


**Macropipus australis** (MacAus)

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<tr>
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<tr>
<td>Common name:</td>
<td>Painted swimming crab</td>
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</table>

**Distinguishing features**
Carapace with three frontal and four sharp lateral spines, and one lateral spine projecting horizontally. Has distinct symmetrical white markings against deep red colouration, giving a painted appearance. Fifth pair of pereopods modified as swimming paddles.

**Colour**
Brick red to maroon colouration with white markings.

**Size**
Average 60-70 mm carapace width.

**Distribution**
West Coast of South Africa extending northwards to Namibia and Angola.

**Similar species**
*Bathynectes piperitus*, which has a notably larger, longer lateral spine and colouration not as contrasting.

**Reference**
Phylum: Arthropoda

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**Ovalipes iridescens (Ovalri)**

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**Distinguishing features**
Carapace with three sharp teeth between eyes, broad orbital notch and then five lateral teeth to side, dorsal surface finely granulated except two paler oval membranous areas posteriorly. Chelipeds two to five distinct spines on upper surface. Last pair of pereopods modified for swimming.

**Colour**
Red markings on paler yellowish background, chelae white-tipped. Iridescent, particularly on chelipeds and carapace.

**Size**
Up to 80 mm carapace width.

**Distribution**
South and East Coasts of South Africa, to eastern Pacific.

**Similar species**
*Ovalipes trimaculatus*, but easily distinguished by colour.

**Reference**
**Ovalipes trimaculatus** (Tssc)

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<tr>
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<tr>
<td>Common name:</td>
<td>Three-spot swimming crab</td>
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**Distinguishing features**
Carapace pink, finely granulate, front with four teeth between eyes, a tooth on upper orbital margin and four strong teeth on antero-lateral margin behind outer orbital tooth, three distinctive red marks – a central curved mark and two dots on posterior corners. Last pair of pereopods modified for swimming. Formerly known as *Ovalipes punctatus*.

**Colour**
Creamy grey or pale buff, speckled with reddish dots, a median crescentric red mark and an oval red spot near each postero-lateral corner.

**Size**
Up to 80-100 mm carapace width.

**Distribution**
West and South Coasts of South Africa (and widespread around Southern Hemisphere).

**Similar species**
*Ovalipes iridescens*, but *O. trimaculatus* has distinctive three-spot marking.

**References**

**Bathynectes piperitus (BatPip)**

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<td>Red and white legged swimming crab</td>
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</table>

**Distinguishing features**

Carapace oval, with scalloped ridge running horizontally across centre. Four rounded projections across front of carapace. Four spines on anterior margin of each side, then one very elongated and pointed spine projecting from each side. Fifth pair of pereopods modified as swimming paddles.

**Colour**

Orange carapace with distinct red and white banded legs.

**Size**

Carapace width between 15-86 mm (including lateral spine).

**Distribution**

West Coast of South Africa; 200-628 m depths.

**Similar species**

Macropipus australis, but *B. piperitus* has larger, more distinct lateral projecting spines and red and white banded legs.

**References**


**Charybdis smithii (ChaSmi)**

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<td>Brachyura</td>
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<tr>
<td>Family:</td>
<td>Portunidae</td>
</tr>
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<td>Genus:</td>
<td>Charybdis</td>
</tr>
<tr>
<td>Species:</td>
<td>smithii</td>
</tr>
<tr>
<td>Common name:</td>
<td>Smith’s swimming crab</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Carapace smooth, front edge with four pairs of short teeth, sides with four broad, peg-like marginal teeth and a single pointed tooth. Outstretched chelipeds easily double carapace width. Chelipeds with five to six longitudinal rows of tubercles.

**Colour**
Mottled reddish-brown.

**Size**
Up to 120 mm carapace width.

**Distribution**
South and East Coasts of South Africa, aggregate in upper 150 m layer, sometimes in large densities where they can be important prey for epipelagic predators.

**Similar species**
None.

**References**

**Atelecyclus rotundatus (AteRot)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Atelecyclidae  
**Genus:** Atelecyclus  
**Species:** rotundatus  
**Common name:** Round sand crab/Old man’s face crab

**Distinguishing features**
Carapace rounded, surface granular, thickly setose (with bristles) around margins and anteriorly around mouthparts; tridentate between eyes, lateral margin with about 10 serrate teeth. Chelipeds equal, large and powerful, held closely up against front of body, strongly setose dorsally. Chela with horizontal lines of granules, fingers darker. Pereopods short, setose around margins and granular.

**Colour**
Pinkish brown, chela with darker fingers.

**Size**
Carapace width up to 30 mm.

**Distribution**
West Coast, Saldanha Bay to South Coast of South Africa, Port Elizabeth and widespread through North and South Atlantic.

**Similar species**
None.

**References**

Mursia cristiata (MurCri)

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<td>Red spotted/Masked crab</td>
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</table>

**Distinguishing features**
Carapace roughly oval, pale orange with bright red tubercles. Front lateral edges of carapace crenulate, with about 10 small teeth, followed by a much larger, sharp spine projecting laterally. Chelipeds broad and strongly spinose, mostly held close to the mouth, hence the name 'masked' crab.

**Colour**
Pale orange with red tubercles.

**Size**
Carapace width up to 40 mm.

**Distribution**
West and South Coasts of South Africa, extending to Durban.

**Similar species**
*Calappa hepatica*, found from Durban northwards – mottled green box crab with strong dorsal ridge on nippers.

**References**


**Goneplax clevai (GonAng)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Goneplacidae  
**Genus:** Goneplax  
**Species:** clevai  
**Common name:** Angular/Waveline crab

**Distinguishing features**
Smooth, quadrangular carapace, wider than long and with two strong forward-directed lateral teeth. Colour pattern distinctive, marked with distinct scalloped line approximately midway across carapace. Front portion of carapace darker brown, rear half lighter brown. Pereopods long, male has much longer chelipeds than female (female depicted). Previously known as *Gonoplax rhomboides*, but South African material described as distinct new species by Guinot and Castro (2007).

**Colour**
Red and orange – darker red patterned line across carapace, posterior part of carapace and pereopods paler.

**Size**
Usually between 30-50 mm carapace width.

**Distribution**
West Coast of South Africa to KwaZulu-Natal.

**Similar species**
None.

**References**

**Carcinoplax longimanus (CarLon)**

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<td>longimanus</td>
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<td>Common name:</td>
<td>Long-arm pebble crab</td>
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**Distinguishing features**

Carapace rounded, smooth, antero-lateral margin with two slight knobs behind outer orbital tooth. Chelipeds vary in length with gender and age, but extremely elongate in adult males (see photo). Palm with a distinct rounded tubercle on inner surface.

**Colour**

Buff or pale salmon.

**Size**

Usually between 50-60 mm carapace width.

**Distribution**

South Coast of South Africa, extending up East Coast into Mozambique.

**Similar species**

None.

**References**


**Afrophila punctata (AfrPun)**

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<td>Pebble crab</td>
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</table>

**Distinguishing features**
Carapace oval and swollen, surface finely granulate. Eyes small. Pereopods short and weak. Chelae robust, equal and elongate, especially in males. Previously known as *Philyra punctata*.

**Colour**
Off-white.

**Size**
Carapace width up to 16 mm in female, 21 mm in male.

**Distribution**
Saldanha to Algoa Bay, South Africa.

**Similar species**
*Eballa tuberculosa* is smaller with a more diamond-shaped and granular carapace; *Carcinoplax longimanus* has more slender arms and is more pink.

**References**

**Ebalia tuberculosa (EbaTub)**

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<tr>
<td>Species:</td>
<td>tuberculosa</td>
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<tr>
<td>Common name:</td>
<td>Speckled orange crab</td>
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</table>

**Distinguishing features**

Very small species. Carapace rounded-quadrangular with pair of tiny projections on posterior lateral edges. Carapace with distinctive fine red to orange speckles over entire surface, extending in patches onto legs and claws. Chelae elongate, merus cylindrical in cross section, chelipeds with powerful chelae.

**Colour**

Mottled orange to white.

**Size**

Carapace width between 5-15 mm.

**Distribution**

West, South and East Coasts of South Africa.

**Similar species**

Afrophila punctata, which has a smoother, circular carapace.

**Reference**

**Tanaoa pustulosus (TanSpp)**

**Phylum:** Arthropoda  
**Subphylum:** Crustacea  
**Class:** Malacostraca  
**Order:** Decapoda  
**Infraorder:** Brachyura  
**Family:** Leucosiidae  
**Genus:** Tanaoa  
**Species:** pustulosus  
**Common name:** Tail spike crab

**Distinguishing features**
Carapace rounded in dorsal view, surface covered in fine granules. Two small triangular projections above eyes and five small, evenly spaced granular projections around lateral margin of carapace. Posterior margin with one pair of larger tubercles ventrally, above which lies a distinctive sharply pointed and upturned spike. Chelae elongate with narrow claw.

**Colour**
Orange to red.

**Size**
Carapace width usually about 34 mm in adults.

**Distribution**
Indo-Pacific, recently recorded in South Africa, South Coast.

**Similar species**
None.

**Reference**
PHYLUM: BRYOZOA

Authors

Wayne Florence¹ and Lara Atkinson²

Citation


¹ Iziko Museums of South Africa, Cape Town
² South African Environmental Observation Network, Egagasini Node, Cape Town
Bryozoans are sessile, colonial animals that may be found in most marine habitats, with a few freshwater species.

Commonly referred to as “moss animals” or “false lace-corals”, bryozoans are, by nature of their diverse colony morphologies, often mistaken for more primitive taxa such as seaweeds, sponges or corals. Colonies can differ in size and form, ranging between calcified coral-like masses of twisted plates or encrusting sheets, lightly calcified fans and bushes, or gelatinous bushy masses. Each colony is comprised of small functional zooids that are less than 1 mm in length. Zooids vary in function and structure. Autozooids are specialised for feeding the colony, avicularia may defend the colony and gonozooids play a role in reproduction. It is the ultra-structural character of these zooids that is critically diagnostic for bryozoan identification and, as a consequence, colony morphology alone is largely unreliable for species-level determination.

There are approximately 5 000 known species of bryozoans. The latest South African checklist reports 288 species in South Africa. The marine species are classified in the orders Cyclostomatida, Ctenostomatida and Cheilostomatida. In the very basic sense the orders can be distinguished as follows:

**Order Cyclostomatida**
Colonies may be encrusting or erect with zooids that are commonly long and tubular. Reproductive swellings known as gonozooids are common.

**Order Ctenostomatida**
Colonies may be encrusting or erect with zooids that are simple and zooidal walls that are calcified, flexible or rigid.

**Collection and preservation**
Shortly after collection, specimens should be photographed with an appropriate scale/ruler captured in the photograph.

The following information should be recorded:
- Colony growth form – and whether whole or fragmented
- General surface information
- Consistency
- Size (dimensions)
- Colour – in situ/freshly collected
- Substrate type and attachment
- Associated biota

Bryozoan specimens can be frozen or placed in 70% ethanol for storage and 96% ethanol for molecular studies. In the case of larger colonies, a piece can be collected with the complete colony being photographed.

**References**

**Hornera erugata (HorEru)**

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<tr>
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<tbody>
<tr>
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<td>Hornera</td>
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<tr>
<td>Species:</td>
<td>erugata</td>
</tr>
<tr>
<td>Common name</td>
<td>Brittle tree bryozoan</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Erect, delicately calcified and branching. Forms curved tree-like branches with secondary branches emanating from a central tubular main branch. Tubular zooids protrude from the frontal surface (usually facing away from substratum), while the basal surface is smooth in this species. Commonly epizoic on other bryozoans and hard substrata.

**Colour**

Off-white.

**Size**

Branches may be 50-100 mm in length.

**Distribution**

Endemic. Occur at depths of 35-90 m on the West, South and East Coasts of South Africa.

**Similar species**

*H. americana* (West Coast) and *H. pluraramusii* (South Coast) appear similar, but can only be distinguished by examining fine details.

**Reference**

**Alcyonidium rhomboidale (AlcSpp)**

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<tr>
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<tbody>
<tr>
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<td>Alcyonidium</td>
</tr>
<tr>
<td>Species:</td>
<td>rhomboidale</td>
</tr>
<tr>
<td>Common name:</td>
<td>Rubbery bryozoan</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Erect or semi-erect, flexible, fleshy/gelatinous mass of lobes. Zooids can be found on both sides of the lobes and have a rhomboid shape.

**Colour**
Yellow to brown.

**Size**
Colony may be 150 mm in diameter.

**Distribution**
Endemic. West Coast from north of Cape Columbine to the South Coast, Agulhas Bank. From 5 m to 400 m depth.

**Similar species**
*Alcyonidium chondroides* is not as robust, with thinner, strappy, translucent fronds.

**Reference**
Flustramorpha marginata (Bryzo3)

**Phylum:** Bryozoa  
**Class:** Gymnolaemata  
**Order:** Cheilostomatida  
**Family:** Microporellidae  
**Genus:** Flustramorpha  
**Species:** marginata  
**Common name:** Green strappy-tree bryozoan

---

**Distinguishing features**
Erect, forming lightly calcified, flexible, narrow, strappy fronds that branch dichotomously. Margins and internodes on the face of the fronds are thickened, attached to substrate by a holdfast.

**Colour**
Blue-green.

**Size**
Branches may be 50-100 mm in length.

**Distribution**
Endemic. West Coast from False Bay to South Coast, Algoa Bay in South Africa. From 29 m to 450 m depth.

**Similar species**
*F. angusta* and *Securiflustra securifrons* may appear similar, but *F. marginata* is distinguished by its blue-green colour.

**References**
**Flustramorpha angusta (FluAng)**

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<tr>
<td>Family:</td>
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<td>Species:</td>
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<tr>
<td>Common name:</td>
<td>Fragile strappy-tree bryozoan</td>
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</table>

**Distinguishing features**

Similar to *F. marginata*: erect, forming lightly calcified, flexible, narrow, strappy fronds that branch dichotomously. However, this species is less robust and cream to light brown in colour. Margins and internodes on the face of the fronds are thickened, attached to substrate by a holdfast.

**Colour**

Cream to light brown.

**Size**

Branches may be 50-100 mm in length.

**Distribution**

Endemic. West Coast of South Africa to northern KwaZulu-Natal from 17 m to 780 m depth.

**Similar species**

*F. marginata* and *Securiflustra securifrons* may appear similar, but *F. angusta* is distinguished by being more fragile, with thickened margins and its cream-brown colour.

**References**

**Securiflustra sp. 1 (SecPap)**

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<tr>
<td>Genus</td>
<td>Securiflustra</td>
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<tr>
<td>Species</td>
<td>sp. 1</td>
</tr>
<tr>
<td>Common name</td>
<td>Paper tree bryozoan</td>
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**Distinguishing features**

Erect, forming lightly calcified, flexible, narrow, strappy fronds that branch dichotomously, having paper-thin blades that are yellow to brown in colour. Attach to substrate by a holdfast.

**Colour**

Yellow to brown.

**Size**

Branches may be 50–100 mm in length.

**Distribution**

Recorded from the South Coast of South Africa at a depth of 72 m but may have greater depth range. The South African specimens appear to be consistent with the genus *Securiflustra*, which is reported to be endemic to Europe. Taxonomy of this species is uncertain and specimens must be retained.

**Similar species**

Similar in appearance to *Flustramorpha* species. *F. marginata* and *F. angusta* may appear similar, but *Securiflustra* is distinguished by paper-thin blades with no marginal thickening and its yellow colour. *F. marginata* is blue-green and *F. angusta* is cream to light brown.

**References**

### Menipea triseriata (MenTri)

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<td>Species:</td>
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</tr>
<tr>
<td>Common name:</td>
<td>Spiral bush bryozoan</td>
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</tbody>
</table>

#### Distinguishing features
Erect form, lightly calcified tree-like colony that may or may not have thin branches arranged in a spiral whorl-like pattern.

#### Colour
Yellow to pale orange.

#### Size
Branches may be 50-100 mm in length.

#### Distribution
Endemic. West, South and East Coasts of South Africa from shallow subtidal to 287 m depth.

#### Similar species
*Menipea ornata* is a similar species (not depicted in this guide) with broader branches and is more robust. Specimens should be retained.

#### References
**Menipea crispa (MenCri)**

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<td>Common name:</td>
<td>Claw-like bryozoan</td>
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</table>

**Distinguishing features**
Erect form, lightly calcified tree-like colony, easily recognisable by its inward-curving branches and yellow to brown colour.

**Colour**
Tan to brown.

**Size**
Branches may be 50-100 mm in length.

**Distribution**
Endemic. West, South and East Coasts of South Africa from shallow subtidal to 400 m depth.

**Similar species**
*M. ornata, M. triseriata* and *M. marionensis*, but *M. crispa* is distinguished by inward-curving branches.

**References**
**Menipea marionensis** (MenSpp)

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<tr>
<td>Common name:</td>
<td>Spiral tree bryozoan</td>
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### Distinguishing features
Erect form, distinctly tree-like colony that is more delicate than other *Menipea* species, having finer spirally arranged branches. Colour is tan to cream or white.

### Colour
Tan to pale white.

### Size
Branches may be 50-100 mm in length.

### Distribution
Endemic. Found in waters of the West Coast of South Africa to just south of East London. Depth range from 55 to 400 m.

### Similar species
*M. triseriata, M. ornata* and *M. crispa* similar, but *M. marionensis* has finer branching and a distinctly tree-like shape.

### References
**Onchoporella buskii (OncBus)**

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<td>Species:</td>
<td>buskii</td>
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<tr>
<td>Common name:</td>
<td>Elastic band bryozoan</td>
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**Distinguishing features**
Erect, forming flexible and very lightly calcified fronds that are strap-like and translucent. Zooids are convex, giving the branches a **scaly appearance** on one side of branches only.

**Colour**
Fronds translucent to tan.

**Size**
Colony may be 100-150 mm in diameter.

**Distribution**
West and South Coasts of South Africa, Namibia to Port Elizabeth from shallow subtidal to 400 m depth.

**Similar species**
*Alcyonidium chondroides*, which is more **gelatinous** and **rubbery** in texture.

**References**
**Turbicellepora valligera (TurVal)**

<table>
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<td>Species</td>
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<tr>
<td>Common name</td>
<td>False stag-horn bryozoan</td>
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</table>

**Distinguishing features**
Erect, but originates from an encrusting base which develops into tapered cylindrical branches that are heavily calcified and branch dichotomously. Resembles stag-horn coral.

**Colour**
Off-white to light orange, but sometimes with a green tinge.

**Size**
Branches may be 50-100 mm in length.

**Distribution**
Endemic. West Coast, Port Nolloth to the East Coast of South Africa. Depth range from 2 to 278 m.

**Similar species**
Can be distinguished from *Adeonella* spp. by its cylindrical branches. *Adeonella* have flattened strap-like branches.

**References**
**Adeonella spp. (Adeon)**

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<thead>
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<tbody>
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<td><strong>Common name:</strong></td>
<td>Sabre bryozoan</td>
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</table>

**Potential VME**

**Distinguishing features**
Erect, brittle, forming calcified, flattened, strap-like colonies that branch dichotomously. Branches may fuse to form coral-like structures. Zooids are large enough to be visible on both sides of straps. Often mistaken for *Stylaster* hydrozoans. Not flexible and has sandpapery texture.

**Colour**
Mainly white, but some species may be tan to light brown in colour.

**Size**
Colonies may be anything from 50-200 mm in length.

**Distribution**
Most species endemic to South Africa. Found in waters of the West, South and East Coasts of South Africa. Depth range from shallow subtidal to 880m.

**Similar species**
Species of this genus are weakly characterised and difficult to identify beyond the generic level; even when using zooidal characters.

**References**
Phylum: Bryozoa

**Laminopora jellyae (LamJel)**

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**Distinguishing features**

Erect or encrusting, forming large twisted masses of fused, heavily calcified plates that resemble plated corals.

**Colour**

Dark to light brown in colour, sometimes with a greenish tinge.

**Size**

Colonies may be 100-300 mm in diameter.

**Distribution**

Endemic. West Coast, False Bay to East London. Depth range from 15 to 147 m.

**Similar species**

No obvious similar species known.

**References**

Phylum: Bryozoa

Chaperiopsis multifida (ChaMul)

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**Distinguishing features**
Erect, but originates from an encrusting base which develops into a series of folded erect plates. Zooids are found on both sides. Colony appears furry on the surface because of several branched spines that cover zooids.

**Colour**
Dark red to maroon or dusky pink.

**Size**
Colonies may be 100-150 mm in diameter.

**Distribution**
Endemic to South Africa. West Coast of South Africa to East Coast, Durban from shallow subtidal to 375 m.

**Similar species**
Laminopora jellyae also form folded, erect plates but these are smooth in texture compared to those of C. multifida, which are “furry” and more textured.

**References**
Phylum: Bryozoa

Potential VME

Aspidostoma sp. 1 (Asp1)

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<td>sp. 1</td>
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<td>Pore-plated bryozoan</td>
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</table>

Distinguishing features
Erect colonies, forming plates sometimes with perforations that are irregular in shape and size. Some specimens may not have perforations. Zooids can be seen on both sides of plates. Usually collected as fragments.

Colour
Deep red to maroon.

Size
Fragmentary; intact colony size unknown.

Distribution
South Coast, Agulhas Bank, South Africa from 90 to 780 m.

Similar species
Aspidostoma livida is deep blue in colour and plates have large perforations irregular in shape.

References
**Potential VME**

**Phidoloporidae spp. (Lace)**

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<td>Honeycomb false lace coral</td>
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</table>

**Distinguishing features**

Erect, forming coral-like mass with folded plates that are often regularly perforated, giving the colony a honeycomb appearance.

**Colour**

Off-white or cream to orange.

**Size**

Colonies may be 50–200 mm in diameter.

**Distribution**

Found between depths of 2–775 m on the West, South and East Coasts of South Africa.

**Similar species**

There are many genera and species in the family Phidoloporidae that have the characteristic honeycomb-plated morphology that is coral-like. *Reteporella lata* (depicted left) is cream in colour with robust perforated plates. *Schizoretepora tessellata* (depicted right) is orange in colour and may or may not have pores, which appear to be a plastic feature related to environmental pressures.

**References**

One of the interesting species from outer shelf habitats on the South Coast is the hemichordate *Cephalodiscus gilchristi* (the spiky network of gelatinous tubes in centre of photo) which has produced the most effective compound ever tested against cancer. Other visible invertebrates include seafans, cup corals and bottlebrush soft corals (*Thouarella* sp.). Photo credit: ACEP Deep Secrets Project.

Bryozoan lace corals, like other habitat forming invertebrates, provide biogenic habitat for fish. Photo credit: ACEP Surrogacy Project.
Phylum: Brachiopoda

Authors
Lara Atkinson¹ and Norton Hiller²

Citation

¹ South African Environmental Observation Network, Egagasini Node, Cape Town
² Canterbury Museum, Christchurch, New Zealand
Brachiopods are exclusively marine, sessile invertebrates ranging in size from 1-100 mm in length. They consist of two unequal hard valves (shells) enclosing the soft tissues dorso-ventrally instead of laterally, as in bivalves.

Brachiopods are a relatively minor group in modern oceans but occupy a wide range of habitats, from intertidal rocky shorelines to abyssal depths, with the majority of species occurring on continental shelves. They are distributed from equatorial to polar waters, and may be locally abundant. Most species avoid areas with strong currents and waves and prefer to live in habitats such as rocky overhangs, caves, crevices and in deep waters (i.e. cold with low light). Globally, approximately 391 species of brachiopods are known with about 30 species (15 endemic) reported in South Africa.

Most live epifaunally, attached by a fleshy stalk (or pedicle), which exits the shell through a foramen in the larger ventral valve, to a hard substrate, such as rock or other shells. Some forms actually cement one valve to the hard substrate, while others are adapted to live on a soft sea floor and are essentially free-living. One unusual form lives in a burrow (not addressed further in this guide).

Like bivalve molluscs, brachiopods have two shells, or valves, that enclose and protect the soft body tissues. In a relatively large mantle cavity, the feeding organ (the lophophore) uses ciliated tentacles to filter food from sea water. The lophophore and the mantle also play a vital role in absorbing oxygen and eliminating carbon dioxide. Most brachiopods possess a shell composed of calcium carbonate but some forms have a shell made of calcium phosphate.

In the articulated brachiopods (rhynchonelliforms), the two valves are hinged at the posterior end. Teeth in the ventral valve fit into sockets in the dorsal valve and the valves are opened and closed using two sets of muscles (diductors and adductors respectively) to allow feeding to take place. In the inarticulated brachiopods (linguliforms and craniiforms), the valves do not have a hinge mechanism and are opened and closed by a complex system of muscles.

Although brachiopods were once thought to be unimportant prey items, there is a growing body of evidence to suggest they may be preyed upon by a range of predators, including crustaceans, echinoderms, gastropods and fish. Many specimens show holes drilled in the shell by predators and/or parasites. However, there is debate as to whether brachiopods were the preferred, or intended prey in observed instances.

References


**Distinguishing features**

Small rounded sub-pentagonal to sub-quadrate shells with length and width about equal. Ventral valve (shell) slightly deeper than dorsal valve. Anterior commissure (line along which the valves meet, viewed from the anterior) gently sulcate (i.e. with a broad U-shaped deflection). Relatively large pedicle opening bounded laterally by small, flat, triangular inter-areas. Fine concentric growth lines and 24-33 rounded radial ribs visible exteriorly from the 5-mm growth stage.

**Colour**

Usually pinkish or reddish but may be white or cream, sometimes with red margins.

**Size**

Usually not more than 15 mm in length.

**Distribution**

West, South and East Coasts of South Africa.

**Similar species**

Looks most like the shallower water form *Kraussina rubra* (Pallas, 1766) but this can be distinguished by its larger size and coarser ribbing. Specimens frequently have the posterior end abraded by close attachment to a rocky substrate resulting in enlargement of the pedicle opening.

**References**


**Xenobrochus sp. (Xenobr)**

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<tr>
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<td>Smooth Lamp shell</td>
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</table>

**Distinguishing features**
Small, elongate oval, strongly biconvex shells. Ventral valve (shell) deeper than dorsal valve. Anterior commissure (line along which the valves meet, viewed from the anterior) straight (rectimarginate). Pedicle opening small, sub-circular. Shell surface smooth except for fine concentric growth lines. Shell material very thin.

**Colour**
White.

**Size**
Usually around 11 or 12 mm in length.

**Distribution**
West, South and East coasts of South Africa.

**Similar species**
The small size and smooth shell readily distinguishes this species from most others known in South African waters apart from others in the genus. Specimen shown in photograph on this page most likely *Xenobrochus agulhasensis*. *Gryphus capensis* Jackson, 1952 (not shown in this guide) is superficially similar but differs in the form of the internal structures of the dorsal valve.

**References**


**Authors**

Dai Herbert¹, Georgina Jones² and Lara Atkinson³

**Citation**


¹ University of KwaZulu-Natal, School of Life Sciences, Pietermaritzburg, South Africa
² Southern Underwater Research Group, Kommetjie, Cape Town
³ South African Environmental Observation Network, Egagasini Node, Cape Town
Molluscs are one of the most diverse invertebrate
groups with more than 100,000 described species
and approximately 3,154 marine species recorded in
South Africa. Organisms belonging to this phylum
are highly diverse but can be identified by several
commonly shared traits, including a mantle, the
presence of a radula, the configuration of the
nervous system and usually the presence of a shell
that encases the mollusc’s soft body for protection.
The mantle plays an important role in respiration and
excretion, while also creating the shell by secreting
calcium and conchiolin. The radula or rasping
tongue acts as the primary feeding organ, and is used
by both herbivorous and carnivorous species for
ingesting food. Along with the main characteristics
of molluscs, the presence of a foot should also be
noted. This is adapted for numerous locomotive
purposes such as burrowing into sediment, gliding
or swimming (nudibranchs), attachment to hard
surfaces (limpets) and directing jet propulsion
(cephalopods). Reproduction varies among classes
and fertilisation may be external or internal. In
marine species the sexes are usually separate, but
some, such as the nudibranchs, are hermaphrodite,
with both male and female sex organs. All molluscs
produce eggs and these can hatch as free-swimming
planktonic larvae or there may be no pelagic phase
and the young hatch as miniature crawling adults.
Molluscs act as an important source of food for many
marine fish and mammals as well as for humans, and
play a critical economic role in many countries. They
also act as bio-indicators that can be used to monitor
the health of the aquatic environment.

Molluscs can be divided into five principal classes,
namely Gastropoda, Bivalvia, Scaphopoda,
Polyplacophora and Cephalopoda. Species
representing each of these classes are included in
this guide. Cephalopoda are addressed in a separate
section due to the large number of species and their
importance as a fishery.

Class Gastropoda

Subclass Vetigastropoda
This group includes the abalones, key-hole and slit
limpets, top-shells and turban shells. In many of
these, the shell interior is nacreous (made of mother-
of-pearl).

Subclass Caenogastropoda
A very diverse group including the periwinkles,
cowries, wentletraps, moon snails, murex shells,
whelks, volutes and cone shells.

Subclass Heterobranchia
These are more advanced gastropods including sea
slugs as well as freshwater and terrestrial snails and
slugs.

Class Bivalvia

Subclass Protobranchia
This group includes nut clams with taxodont hinge
dentition, as well as the awning clams with their
over-grown periostracum. Most are deposit feeders,
but the awning clams feed via sulphide-oxidising
bacteria in their gills.

Subclass Pteriomorphia
This group includes ark shells, almond arks, dog
cockles, wing oysters, mussels, pen shells, file
shells oysters, thorny oysters and scallops. Most
of these organisms are sedentary and attach to
the substratum by means of byssus threads or are
cemented in place. Others like the larger scallops
and some file shells can actively swim. Interior
frequently nacreous. Nearly all are suspension-
feeders.

Subclass Heterodonta
Includes the lucinas, jewel boxes, cockles, mactras,
 wedge shells, tellins, venus clams and piddocks.
Heterodont bivalves have a complex hinge made
up of low numbers of different types of teeth and
the shell lacks nacre. These organisms often burrow
into the sediment and are suspension-feeders, but
the lucinids feed via sulphide-oxidising bacteria in
their gills.

Subclass Anomalodesmata
This group includes some of the most specialised
of all bivalves, some of which are carnivores. Many
are associated with soft sediments in deep water.
Examples include the Pandora clams, cuspidariids
and watering pot shells.
**Phylum: Mollusca**

**Class Scaphopoda**

The appropriately named tusk shells are a distinctive group of molluscs found in association with soft and unconsolidated substrata into which they burrow. They are selective predators of micro-invertebrates living within the sediment.

**Class Polyplacophora**

Better known as chitons or coat-of-mail shells, these molluscs are easily identified on account of the eight articulating dorsal plates and the surrounding girdle. They range from the intertidal to great depths and are nearly always attached to rocks or hard surfaces. Most are grazing herbivores, but some, with anteriorly enlarged girdles, are predators of small invertebrates.

**Class Cephalopoda**

See separate section.

**Collection and preservation**

For morphological study most shelled gastropods, bivalves, tusk shells and chitons are best frozen as quickly as possible. After thorough freezing they can be allowed to thaw and quickly thereafter they should be preserved in 80% ethanol. If the animals are large, the ethanol will need to be replaced after 24 to 48 hours. For DNA studies the entire living animal (with shell cracked) should be preserved in 96+% ethanol. If the animal is large, smaller pieces of the foot can be excised and placed in 96+% ethanol and the remainder treated as for morphology above. Care must be taken to label the excised tissue samples so that they do not become dissociated from the rest of the animal. Ideally chitons should be pressed flat when placed in preservative to prevent them from curling up.

Shell-less sea slugs (nudibranchs) can be preserved in 70% ethanol, 4% formalin, or buffered and isotonic 3.7% glutaraldehyde solution, and in 96% ethanol for molecular studies. Sea slug specimens can be relaxed in isotonic MgCl₂ solution (7%) (or menthol crystals) until unresponsive to touch.

**References**


Phylum: Mollusca

**Gastropod shell terminology**

![Gastropod Shell Diagram]


**Bivalve shell terminology**

![Bivalve Shell Diagram]

**Calliotropis granolirata (Topshl)**

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**Distinguishing features**

Shell small, with conical spire and rounded base; sculptured by strong spiral cords bearing well-developed granules; spire whorls with three cords above and including periphery; base with four cords; umbilicus closed; aperture nacreous (mother-of-pearl) when fresh.

**Colour**

Uniformly milky-white to pale buff, lustreless.

**Size**

Length (height) up to 13 mm.

**Distribution**

South African endemic. To date known reliably only from deep water off the Cape Agulhas–Cape Point region, to depths of 2 750 m. More accurate locality data is urgently needed.

**Similar species**

None on Agulhas Bank.

**References**


**Calliostoma perfragile (CaScot)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Vetigastropoda  
**Order:** Trochida  
**Family:** Calliostomatidae  
**Genus:** Calliostoma  
**Species:** perfragile  
**Common name:** Agulhas calliostoma

### Distinguishing features
Shell top-shaped, with conical spire and somewhat flattened base; spire whorls slightly convex, suture shallowly indented; periphery roundly angular, but not keeled; sculptured by spiral cords of which the first two to three below suture are finely granular, the others smooth; cord intervals often with a fine spiral thread; base smoother with several broad spiral cords around umbilical region; umbilicus closed; aperture nacreous (mother-of-pearl); operculum circular, multi-spiral.

### Colour
Spire overall pale orange-brown (biscuit-coloured), rather glossy and slightly iridescent; under microscope spiral cords whitish, their intervals orange-brown; periphery with a spiral row of dash-like brown markings; base paler.

### Size
Length up to 25 mm.

### Distribution
South African endemic. Agulhas Bank (Cape canyon to southern Transkei), perhaps also KwaZulu-Natal, 100-350 m.

### Similar species
*Calliostoma ornatum*, a shallower water species from the Cape south coast, lacks the peripheral brown markings of *C. perfragile*. The east coast *C. scotti* is much larger and has more strongly angled periphery and concave spire.

### References

**Turritella declivis** (TurDec)

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** unassigned Caenogastropoda  
**Family:** Turritellidae  
**Genus:** Turritella  
**Species:** declivis  
**Common name:** Zebra turret shell/Bokhoring

**Distinguishing features**
Shell long and slender, whorls flattened or slightly concave (hollowed inwards); base of last whorl angular; aperture small and slightly flaring at base; surface with fine, curved axial growth-lines, becoming obsolete on lower part of each whorl; no spiral sculpture; outer lip thin, often damaged.

**Colour**
Shell cream-coloured with a broad brown mid-whorl spiral band; shell surface sometimes etched and colour indistinct; juveniles with brown spots below suture.

**Size**
Length up to 100 mm, but usually less than 65 mm.

**Distribution**
South African endemic. Common on the Agulhas Bank (Kei River to False Bay), in places hugely abundant and dominating the marine benthos; also found on West Coast, but evidently in much lower numbers (more specimens needed to confirm its distribution on West Coast).

**Similar species**
*Turritella carinifera* has a distinct mid-whorl spiral keel and is whitish to buff, lilac or pale mauve-brown, lacking the distinctive brown spiral band of *T. declivis*.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 16.
### Turritella ferruginea (TurFer)

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** unassigned Caenogastropoda  
**Family:** Turritellidae  
**Genus:** Turritella  
**Species:** ferruginea  
**Common name:** Speckled turret shell

#### Distinguishing features
Shell relatively large, many-whorled, long and slender, tapering gradually toward apex; whorls slightly convex (rounded outward), sculptured with numerous close-set, crisp, spiral threads; surface dull; basal angle distinct, delineated by a stronger spiral cord (arrowed in figure); aperture rounded; outer lip distinctly concave (hollowed inwards).

#### Colour
Cream to buff, speckled with reddish-brown, sometimes in the form of curved axial flames.

#### Size
Length up to 110 mm, occasionally more.

#### Distribution
South African endemic. Agulhas Bank (False Bay to Algoa Bay), 40–210 m.

#### Similar species
Might be confused with Turritella sanguinea, but in that species the whorls are more convex, the spiral sculpture more rounded, and the basal angle is not delineated by a slightly stronger spiral cord.

#### References
**Turritella sanguinea** *(TurSan)*

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** unassigned Caenogastropoda  
**Family:** Turritellidae  
**Genus:** Turritella  
**Species:** sanguinea  
**Common name:** Mottled turret shell

**Distinguishing features**
Shell relatively large, many-whorled, long and slender, tapering gradually toward apex; whorls convex (rounded outward), sculptured with relatively uniform rounded or flat-topped spiral cords; surface dull; basal angle not delineated by a stronger spiral cord; aperture rounded; outer lip shallowly concave (hollowed inwards).

**Colour**
Cream to buff with reddish-brown dashes on the spiral cords, sometimes aligned into axial flames or bands.

**Size**
Length up to 100 mm, occasionally more.

**Distribution**
South African endemic. Agulhas Bank (False Bay to East London) and extending northwards into KwaZulu-Natal (the smaller *T. salisburyi* form), 30–120 m.

**Similar species**
Might be confused with *Turritella ferruginea*, but that species has less strongly convex whorls, finer, crisper spiral sculpture, and the basal angle is stronger and delineated by a slightly larger spiral cord.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods.* Published by the authors. p. 16.
**Cypraeovula iutsui** (TesPul)

<table>
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<td>Common name:</td>
<td>Globular Cape cowrie</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Shell globular, often almost spherical, spire entirely enveloped by last adult whorl; aperture elongate with a thickened, white, denticulate margin; teeth on outer lip (labrum) stronger, numbering 17–25; juveniles ('bullia' stage) common, retaining vestiges of spire and narrowed siphonal region.

**Colour**

West coast specimens vary from opaque white to pale plum with few dorsal markings; in Agulhas Bank specimens the dorsum is more densely patterned with reddish-brown spots and blotches.

**Size**

Adult shell length 22–41 mm.

**Distribution**

South African endemic. West coast to South coast, Agulhas Bank; from Olifants River Mouth to Port Alfred, 50–350 m.

**Similar species**

Several other *Cypraeovula* species occur off the coast of South Africa. Some differ only in subtle differences and they are very difficult to identify with certainty. *C. iutsui* seems to be one of the more commonly encountered ones in trawl nets. Specimens which do not match the above description and images should be recorded as *Cypraeovula* sp.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 51.
**Triviella spp. (TriMil)**

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<td>Common name</td>
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</table>

**Distinguishing features**

The genus *Triviella* (previously treated as a subgenus of *Trivia*) consists of several species that are very similar and require microscopic examination of the live animal for accurate species-level identification. The shells of smooth pearl cowrie species are inflated and globular, with a thickened labrum (outer lip of aperture), bearing well-developed denticles that continue as transverse ridges around the outer lip, sometimes extending onto lower lateral part of dorsum; inner lip of aperture also denticulate.

**Colour**

Shell uniformly white to rose-pink or plum; mantle colour highly variable with mottled, blotched, spotted and reticulate patterns, often matching that of the tunicates on which they feed.

**Size**

Length ranges from 11 mm to 27 mm, depending on species.

**Distribution**

South African endemic. Agulhas Bank, from the Atlantic coast of the Cape Peninsula to the Transkei region, shallow subtidal to 160 m.

**Similar species**

Smooth pearl cowries can refer to seven species of *Triviella*, namely *Triviella calvariola, T. khanya, T. magnidentata, T. millardi, T. rubra, T. verhoefi* and *T. ovulata*. Shells are generally smaller and thinner than species of *Cypraeovula*, and often more globose, with more uniform colouration. There are further species of *Triviella*, such as *T. aperta* and *T. sanctispiritus*, but in these the ridges extend over much, if not all, of the dorsum.

**Notes**

All smooth-shelled *Triviella* are captured under the code of *TriMil*, *Triviella* spp. and can include *T. calvariola, T. khanya, T. magnidentata, T. millardi, T. verhoefi, T. ovulata*, and *T. rubra*.

**References**


Phylum: Mollusca

**Velutinid (Opisbr)**

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<td>Velutinid</td>
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</table>

**Distinguishing features**
Resembles a dorid nudibranch sea slug, but anatomically quite different. Shell present, but completely internal, covered by fleshy mantle; ventral surface with a distinct foot and head bearing tentacles with basal eyes; anterior of notum (dorsal surface) indented in mid-line, forming a short siphon; mantle relatively firm, but texture somewhat gelatinous, for the most part smooth; internal shell ear-like, thin and fragile.

**Colour**
Translucent, greyish-white to pinkish or yellow with black/brown spots and blotches. Colouration variable, resembling that of the ascidian prey on which they live and feed and thus providing camouflage.

**Size**
Length 25–40 mm.

**Distribution**
Common on West coast and Agulhas Bank.

**Similar species**
Easily mistaken for a dorid sea slug, but readily distinguished by the anterior siphon and typically snail-like, tentacle-bearing head beneath the anterior mantle. No rhinophores (chemosensory tentacles) or dorsal cirlet of gills.

**Notes**
The taxonomy of the South African species is poorly resolved and needs further study.

**References**
Euspira napus (EusNap)

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Littorinimorpha  
**Family:** Naticidae  
**Genus:** Euspira  
**Species:** napus  
**Common name:** Moon snail

**Distinguishing features**  
Shell rounded, solid and smooth, with a low spire; aperture semi-circular with a thin outer lip; base with a distinct, but narrow umbilicus and a somewhat thickened edge to the inner lip; sculpture comprises only fine, close-set growth-lines. Living animal with a horny operculum.

**Colour**  
Shell white; periostracum (thin outer skin-like covering) dull brown, usually with a pattern of fine spiral lines.

**Size**  
Diameter 30–40 mm.

**Distribution**  
South African endemic. Agulhas Bank (False Bay to western Transkei), 50–210 m.

**Similar species**  
Euspira psila, which also occurs on the Agulhas Bank, is similar but much smaller (diameter ± 10 mm). Natica simplex has a higher spire, is smaller and has a calcareous operculum. Another large moon snail, Euspira lemairei, occurs on the West Coast, but it has a higher spire and a broader umbilicus within which are two low spiral ridges.

**References**  
**Phylum: Mollusca**

### **Semicassis labiata** (Phalab)

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<td>Common name:</td>
<td>Helmet/Lipped bonnet shell</td>
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</table>

**Distinguishing features**

Shell rounded with a low, rather pointed spire; glossy and smooth, but usually with one to two rows of low nodules in shoulder region; outer lip thickened in adult specimens; anterior end with a pronounced, up-curving siphonal notch. Very variable in size, strength of nodules, shell thickness and depth of colouration. Agulhas Bank shells usually larger, thinner, with weak nodules and less vivid colouration.

**Colour**

Pale pinkish-brown to yellowish-brown, some specimens with three to five rows of diffuse semi-circular whitish spots; outer lip with deep purple blotches, frequently in pairs. Shell colours fade noticeably after death.

**Size**

Length up to 80 mm.

**Distribution**

West coast False Bay to KwaZulu-Natal north coast, subtidal to 150 m.

**Similar species**

Species of **Eudolium** have stronger spiral sculpture.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 64.
**Eudolium bairdii (EndBai)**

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<td>Baird’s bonnet</td>
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</tbody>
</table>

**Distinguishing features**

Shell thin, globose, spire prominent with rounded whorls and strongly indented suture; sculpture of well-defined, narrow spiral cords of alternating strength; outer lip thickened and flaring outward in adult specimens, its inner edge finely toothed; anterior end with a pronounced siphonal notch.

**Colour**

Shell buff to pale brown, the primary spiral cords darker brown; spire may have a grey-blue tinge; tip of spire (protoconch/apex), if present, clearly distinct and brown in colour.

**Size**

Adult shell length 40–65 mm.

**Distribution**

Widely distributed in many parts of the world; recorded off South and East coast of South Africa, 100–500 m.

**Similar species**

*Eudolium crosseanum* is a larger species (length up to 95 mm) with a more elevated spire; the sculpture is similar but the spiral cords are not dark brown. Locally it has only been found off KwaZulu-Natal.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 65.
**Phylum:** Mollusca

**Tonna dunkeri** *(TonVar)*

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<td>Tonna</td>
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<tr>
<td>Species</td>
<td>dunkeri</td>
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<tr>
<td>Common name</td>
<td>Boxing-glove</td>
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</table>

**Distinguishing features**
Moderate to large, fragile shells, globular in shape with a very large aperture and low spire; sculptured by well-developed, broad, flat-topped, spiral cords; base with a pronounced siphonal notch. Adult animals lack an operculum. A variable species with shallow- and deep-water forms. On the Agulhas Bank the shell is more globular and has a lower spire with a strong shoulder and somewhat sunken suture.

**Colour**
Fresh shells light brown to orange-brown, ribs marked with irregular white blotches, bordered by darker brown bars.

**Size**
Shell length up to 125 mm.

**Distribution**
South African endemic. South coast Agulhas Bank and East coast, 50–100 m.

**Similar species**
There is a shallow-water form of this species that is smaller (length 40–90 mm), narrower and thicker shelled, and has a well-developed, white parietal callus.

**Notes**
Previously known as *Tonna variegata*. The eggs are laid in broad, flat, jelly-like ribbons.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 67.
**Charonia lampas (ChaLam)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Littorinimorpha  
**Family:** Ranellidae  
**Genus:** Charonia  
**Species:** lampas  
**Common name:** Pink lady

**Distinguishing features**
Shell large to very large, robust with a distinct shoulder bearing strong, rounded knobs; sculptured elsewhere by rather flat spiral cords of varying strength, strongest on base, with numerous finer intermediary threads; growth varices usually present on spire whorls; inner lip glossy, reflected over columella (inner lip) and bearing distinct ridges; additional ridges on parietal region, that closest to insertion of outer lip particularly strong; outer lip thickened with ridge-like teeth, often arranged in sets of two or three; siphonal notch well-developed.

**Colour**
Buff to pinkish-brown, dotted, mottled and blotched with shades of brown to purplish-brown; base of inner lip and teeth of outer lip dark purple-brown, their intervals whitish. Foot of living animal orange-pink, often with white spots; tentacles orange and usually with black barring.

**Size**
Length up to 290 mm.

**Distribution**
False Bay to Kosi Bay, subtidally to 100 m, rarely more.

**Similar species**
South African material is referable to *C. lampas pustulata*; the eastern Atlantic *C. lampas lampas* occurs on the West Coast, from Namibia northwards. This is narrower, has weaker shoulder knobs and fewer intermediary spiral threads.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 74.
**Fusitriton magellanicus (FusMur)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Littorinimorpha  
**Family:** Ranellidae  
**Genus:** Fusitriton  
**Species:** magellanicus  
**Common name:** Waffle whelk

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**Distinguishing features**

Shell broadly spindle-shaped, relatively light in weight; sculpture reticulate (cross-hatched), nodular at intersections, strongest on spire, often weaker on last adult whorl; spire sometimes with distinct growth varices (arrowed in photo), but these sometimes weak or absent; aperture large, its base extending as a somewhat sinuous siphonal canal of moderate length.

**Colour**

Shell white, occasionally with pinkish spiral ridges; surface of living specimens covered with bristly, light brown periostracum; bristles conspicuous in juvenile shells, arranged in spiral pattern.

**Size**

Largest sampled specimen 145 mm in length, but usually smaller than this.

**Distribution**

South African endemic. Agulhas Bank and throughout West coast region, 50–550 m. The most common whelk species occurring on West coast.

**Similar species**

None.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 78.
Afrocominella capensis simoniana (AfrCap)

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<td>Variable Agulhas whelk</td>
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</table>

**Distinguishing features**

Shell spindle-shaped to biconic (two cones), proportions variable; deep-water specimens less elongate; whorls shouldered with sculpture of distinct spiral cords, also with low axial ribs in shoulder region, rendering shoulder somewhat nodular; outer lip thickened and internally ridged at maturity; siphonal canal short.

**Colour**

Cream, greyish-white or fawn, with orange or reddish-brown markings (mottled, spirally banded or with axial flames); aperture generally white in deep-water specimens.

**Size**

Length up to 40 mm, shallow-water form longer.

**Distribution**

South African endemic. Agulhas Bank, subtidal to 160 m.

**Similar species**

*Afrocominella capensis capensis*, which has a less elongate shell and finer spiral cords, occurs in shallow water off the West coast. *A. turtoni* from shallow water on the South and East coasts has less obviously shouldered whorls and much finer sculpture.

**Notes**

Agulhas Bank material traditionally regarded as a deep-water form of *Afrocominella elongata*, but that species is now considered part of a highly variable subspecies of *A. capensis*. Shallow-water specimens are considerably more elongate and have a more mottled colour pattern.

**References**


### Africolaria rutila (FasRut)

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<td>rutila</td>
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<td>Smooth horse conch</td>
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</table>

#### Distinguishing features
Shell spindle-shaped, spire and aperture of similar length; whorls evenly rounded; sculptured by fine spiral threads; siphonal canal of moderate length; inner lip with one spiral columella pleat at start of siphonal canal, occasionally a second one adjacent to this; parietal region with an indistinct, in-running, spiral ridge just below insertion of outer lip; interior of outer lip smooth; tip of spire slightly bulbous when not damaged or worn.

#### Colour
Whitish with a thin, pale horn-coloured or orange-brown periostracum, often eroded on spire. Animal yellowish-white to pale yellow.

#### Size
Length up to 175 mm, perhaps more.

#### Distribution
South African endemic. West coast to Namibian border and Agulhas Bank, 65–500 m.

#### Similar species
Africolaria wattersae, also from the Agulhas Bank, has distinct nodules at the shoulder and a longer siphonal canal – please look out for and preserve living specimens of this species. See also comparative remarks for A. thersites.

#### References

Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 135 (as Fasciolaria).
**Africolaria thersites (AfrThe)**

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<tr>
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<td>thersites</td>
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<td>Common name</td>
<td>Varicose horse conch</td>
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**Distinguishing features**
Shell spindle-shaped, spire half to two-thirds total length of aperture; whorls usually with strong, widely spaced axial ribs (strongest at shoulder), but sculpture variable and some specimens with virtually no ribs on later whorls; spiral sculpture of very fine threads; siphonal canal of moderate length; inner lip with a strong spiral columella pleat at start of siphonal canal, a second weaker one just above this; a third narrow, in-running, spiral ridge in parietal region, below insertion of outer lip; interior of outer lip smooth; tip of spire slightly bulbous when not damaged or worn.

**Colour**
Shell white with a thin, pale horn-brown periostracum, often eroded on spire.

**Size**
Length up to 100 mm.

**Distribution**
South African endemic. Agulhas Bank (west of Cape Town to Tsitsikamma), 100–200 m.

**Similar species**
Smooth specimens resemble *Africolaria rutila*, but that species attains a larger size, has weaker columella pleats and an indistinct parietal spiral ridge. The spire is also proportionately longer in *A. rutila*, almost equalling the length of the aperture.

**References**

Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 136.
Phylum: Mollusca

**Crassibougia clausicaudata** (Fusin)

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<td>Tsitsikamma spindle shell</td>
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**Distinguishing features**

Shell moderately small, narrowly spindle-shaped, robust when adult; spire whorls sculptured with strong, widely-spaced, rounded axial ribs, these much weaker or scarcely evident on last adult whorl; spiral sculpture of low, flat-topped spiral cords, separated by narrow incised grooves of alternating strength; siphonal canal long with a narrow slit-like opening; aperture of mature specimens with a strong callus nodule just below insertion of outer lip and a well-developed varix behind outer lip.

**Colour**

Shell orange-brown when fresh, the axial ribs usually somewhat paler; aperture whitish. Animal orange-red.

**Size**

Length up to 60 mm.

**Distribution**

South African endemic. Agulhas Bank (Still Bay to Port Alfred), 50–150 m.

**Similar species**

*Crassibougia hediae* occurs off Transkei and KwaZulu-Natal, but in that species the spiral cords are more rounded and evenly spaced, and the axial ribs continue onto the last adult whorl.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 148 (as *Pseudolatirus clausicaudatus*).
**Fusinus africanae (FusAfr)**

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<td>Africana spindle shell</td>
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**Distinguishing features**

Shell small, relatively robust, spindle-shaped, with rounded whorls and a strongly indented suture; spire about three-quarters total length of aperture; sculptured by distinct, rather flat, spiral cords and close-set, rounded axial ribs (weaker on body whorl); siphonal canal long, the opening very narrow; protoconch large. Axial ribs almost absent in some individuals.

**Colour**

Shell white to apricot-coloured, usually without further colour pattern; living specimens often thickly encrusted with a brown sponge coating.

**Size**

Adult individuals rarely more than 45 mm in length.

**Distribution**

South African endemic. Agulhas Bank (Cape Peninsula to Algoa Bay), 100–300 m.

**Similar species**

*Fusinus hayesi* has a less robust shell with fewer, stronger axial ribs and more angular spiral cords.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 136.
**Fusinus bonaespei (FusBon)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Neogastropoda  
**Family:** Fasciolaridae  
**Genus:** Fusinus  
**Species:** bonaespei

**Common name:** Good Hope spindle shell

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**Distinguishing features**
Shell spindle-shaped with rounded whorls and strongly indented suture; spire equal to, or slightly shorter than, total length of aperture; siphonal canal long and slender; sculpture of narrow spiral cords with intermediary spiral threads; axial sculpture of distinct axial ribs on early spire whors, but these not evident on later whors; inner lip without columella pleats; interior of outer lip smooth.

**Colour**
Shell white with pale horn-brown periostracum, frequently flaking off. Animal creamy-white.

**Size**
Length up to 110 mm.

**Distribution**
South African endemic. West coast and Agulhas Bank (Cape Columbine to Algoa Bay), 50–600 m.

**Similar species**
Resembles Fusinus ocelliferus, but F. bonaespei is smaller and more slender, has a longer spire and lacks brown pigmentation in the shell itself.

**References**
Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 137.
Fusinus hayesi (FusHay)

Phylum: Mollusca
Class: Gastropoda
Subclass: Caenogastropoda
Order: Neogastropoda
Family: Fasciolariidae
Genus: Fusinus
Species: hayesi
Common name: Hayes’ spindle shell

Distinguishing features
Shell small, broadly spindle-shaped, with rounded whorls and a strongly indented suture; spire about three-quarters total length of aperture; sculptured by crisp, rather narrow (angular), spiral cords and distinct axial ribs, particularly on spire whorls; siphonal canal long and slender.

Colour
White to pale brown, axial ribs often paler than their intervals; periostracum pale horn-brown.

Size
Length up to 60 mm.

Distribution
South African endemic. Eastern Agulhas Bank, 100–150 m.

Similar species
Fusinus africanae is another small species, but the sculpture of F. hayesi is coarser and more angular, particularly on the spire whorls.

References
Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 139.
**Fusinus ocelliferus (FusOce)**

Phylum: Mollusca  
Class: Gastropoda  
Subclass: Caenogastropoda  
Order: Neogastropoda  
Family: Fasciolariidae  
Genus: Fusinus  
Species: ocelliferus  
Common name: Spotted spindle shell

**Distinguishing features**
Shell narrowly to broadly spindle-shaped; spire half to three-quarters total length of aperture; siphonal canal long and slender (up to one-third total shell length), often somewhat curved; sculpture of coarse, flattened spiral ridges, but strength of sculpture very variable; some specimens with a distinct shoulder bearing rounded nodules; a deep false umbilicus commonly present beside base of siphon in mature specimens; inner lip lacking columella pleats; interior of outer lip smooth.

**Colour**
Shell whitish; spiral ridges frequently spotted or mottled with brown, shoulder when present usually with darker brown spots, particularly on nodules; periostracum horny-brown, somewhat velvety, frequently flaking off. Animal orange-red.

**Size**
Length up to 160 mm.

**Distribution**
South African endemic. Namaqualand, West coast to KwaZulu-Natal South coast, infratidal to 150 m, perhaps to 300 m.

**Similar species**
Lack of columella pleats on the inner lip and presence of a false umbilicus distinguish this species from similarly large species of Africolaria and Kilburnia. Attains a larger size than Fusinus bonaespei and has a shorter spire.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 140.
**Granulifusus rubrolineatus** (GraRub)

<table>
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<th>Phylum:</th>
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<td>Red-striped spindle shell</td>
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</table>

**Distinguishing features**

Shell small, broadly spindle-shaped; sculptured with rounded axial ribs crossed by crisp spiral ridges, between which are fine intermediary spiral threads; variable in shell width and strength of axial ribs; siphonal canal relatively short; inner lip not strongly calloused.

**Colour**

Dirty white to pale orange-brown with reddish-brown spiral cords; some specimens with intervals between axial ribs darker brown; reddish-brown colour of spiral ridges often interrupted where these cross the axial ribs; aperture glossy white. Shell often encrusted with other marine organisms (zoanthids).

**Size**

Length rarely more than 40 mm, often less than 30 mm.

**Distribution**

South African endemic. Agulhas Bank and East coast, mostly between 100 and 200 m, living on substrata of coarse sand.

**Similar species**

Small size, reddish-brown spiral cords and relatively short siphonal canal render this species quite distinctive. Evidently quite a variable species in terms of strength of sculpture. More slender specimens with a longer, narrower siphonal canal and continuous reddish-brown ridges occur from the southern Transkei northwards. These have been identified as the East African *Granulifusus poppei*.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 141.
Kilburnia heynemanni (FasLug)

Phylum: Mollusca
Class: Gastropoda
Subclass: Caenogastropoda
Order: Neogastropoda
Family: Fasciolaridae
Genus: Kilburnia
Species: heynemanni
Common name: Agulhas horse conch

Distinguishing features
Shell large, broadly spindle-shaped, spire about half total length of aperture; whorls with distinct shoulder bearing strong, widely-spaced nodules; body whorl smooth or spirally ridged; inner lip expanded at base of siphonal canal to form a strong fold, with one to two weaker pleats above this; parietal region with a crisp in-running ridge just below insertion of outer lip; outer lip not sharply drawn in at its base; interior of outer lip smooth. Specimens from shallow water are smaller and have a crenulate outer lip.

Colour
Cream to pale orange-brown, with a darker yellowish-brown to dark brown periostracum.

Size
Length up to 135 mm.

Distribution
South African endemic. Agulhas Bank (west to False Bay) and Transkei shelf, 25–100 m.

Similar species
Kilburnia scholvieni is larger (length up to 220 mm), has weaker shoulder nodules, a narrower siphonal canal and a higher spire. Nodular specimens of Fusinus ocelliferus lack pleats on the columella, usually possess a distinct false umbilicus and have a longer, narrower siphonal canal. In addition, in F. ocelliferus the nodules are browner than the remaining shell.

Notes
Previously considered a subspecies of Fasciolaria lugubris.

References


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 135.
Kilburnia scholvieni (FasSch)

Phylum: Mollusca
Class: Gastropoda
Subclass: Caenogastropoda
Order: Neogastropoda
Family: Fasciolariidae
Genus: Kilburnia
Species: scholvieni
Common name: Cape horse conch

Distinguishing features
Shell very large, spindle-shaped; spire high, about three quarters total length of aperture; whorls rounded, but often with a weak shoulder bearing low nodules; sculpture of fine spiral threads, some specimens with occasional stronger cords; outer lip sharply drawn in at its base to form a relatively slender siphonal canal; inner lip with strong fold at base of siphonal canal with one to two weak columella pleats above this; parietal region with rounded, in-running ridge just below insertion of outer lip; interior of outer lip mostly smooth, but mature specimens often with subterminal row of denticles behind somewhat flaring outer lip.

Colour
Whitish to pale buff or orange brown, nodules often darker brown; periostracum olive-brown to dark brown. Animal orange-red.

Size
Length up to 220 mm and perhaps more.

Distribution
South African endemic. Agulhas Bank (Cape Agulhas to Port Grosvenor), 30–250 m.

Similar species
Kilburnia heynemanni has a shorter spire and its outer lip is not so sharply drawn in prior to the siphonal canal. It never attains as large a size as K. scholvieni.

References
Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 135.
Phylum: Mollusca

Nassarius speciosus (PerFor)

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<td>Species:</td>
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<td>Common name:</td>
<td>Shouldered/Purple-lipped dog-whelk</td>
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Distinguishing features
Shell small, robust, with strong, widely spaced axial ribs crossed by finer, close-set spiral cords; whorls shouldered, ribs rendering shoulder nodular; ribs weaker on last part of body whorl; aperture with distinct siphonal notch; inner lip with well-developed callus extending over columella and parietal region; outer lip with subterminal external thickening and low internal ridges.

Colour
Shell whitish to buff, axial ribs paler; aperture and callus white, siphonal notch dark purplish-brown when fresh; surface of living shell usually with a khaki-brown periostracum-like layer of encrusting organisms.

Size
Length up to 35 mm.

Distribution
South African endemic. West coast to Agulhas Bank (southern Namibia to western Transkei), shallow water to 130 m, possibly deeper.

Similar species
There are many species of Nassarius occurring off the South African coast, but the combination of characteristics exhibited by N. speciosus renders it quite easy to identify.

References


**Nassarius vinctus (BurNup)**

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<td>Common name</td>
<td>Violet-mouthed dog-whelk</td>
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</table>

**Distinguishing features**
Shell small, spire relatively elongated with weakly convex whorls; periphery rounded; sculpture variable, often reticulate, comprising low axial ribs crossed by broad, flat, spiral cords with narrow intervals, but axial ribs sometimes weak or absent; inner lip with thin, glossy callus spreading over parietal region; outer lip not conspicuously thickened, internally smooth or with weak in-running ridges; siphonal notch wide and shallow.

**Colour**
Fresh specimens reddish-brown to purplish-brown, usually with pale spiral bands; axial ribs, if present, paler; inner lip and interior of aperture violet; colour intensity fading with time. Shell frequently encrusted with other marine organisms and surface often chalky or etched.

**Size**
Length up to 22 mm.

**Distribution**
South African endemic. West coast and Agulhas Bank (northern Namibia to western Transkei), 10–150 m.

**Similar species**
There are many species of *Nassarius* occurring off the South African coast, but the shape, sculpture and colouration of *N. vinctus* render it quite distinctive.

**Notes**
A common species that may occur at high population densities on sandy and muddy substrata.

**References**
Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 133.
**Distinguishing features**
Shell small, biconic (two cones); siphonal canal well-developed, with very narrow channel; sculptured by three very strong axial ribs (varices) bearing recurved spines; largest spines at shoulder, decreasing in size on base and siphonal canal.

**Colour**
White to pale brown, some with a pink/orange undertone.

**Size**
Length up to 35 mm.

**Distribution**
South African endemic. Continental shelf off the West, South and East coasts, subtidal to 300 m.

**Similar species**
Several species occur off the South African coast. They are easy to identify as stag shells, but distinguishing between the species is difficult and requires some experience. The species illustrated here is *Pteropurpura quinquelobata*, which is one of the more commonly found species on the Agulhas Bank.

**References**

**Marginella musica** (MarMus)

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<td>Musical margin shell</td>
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**Distinguishing features**

Shell shape and glossy surface typical of *Marginella* species; striped colour pattern distinctive; adult shells relatively solid, outer lip thickened, lower part of columella with four oblique pleats.

**Colour**

Pale brown to greyish-brown with fine black spiral lines. Animal cream to pale orange, with a pattern of fine red lines on its large foot.

**Size**

Length up to 22 mm.

**Distribution**

West coast and Agulhas Bank (Namibia to Algoa Bay), 40–550 m.

**Similar species**

Slender, thinner-shelled specimens from deeper water are known as *Marginella diadochus*, but it is unclear whether this is a bathymetric form or a genetically distinct species.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 176.
**Afrivoluta pringlei** (Afrivo)

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<td>Giant orange margin shell</td>
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**Distinguishing features**

Shell large, resembling a volute; body whorl oblong, apex bluntly rounded; a well-developed, oval callus deposit adjacent to parietal region; surface smooth and glossy; aperture narrow and elongate; basal half of inner lip with four strong, oblique pleats; outer lip slightly thickened, its edge convex in a side view, internally smooth.

**Colour**

Deep pinkish-orange to orange-brown, body whorl with two or more broad bands of a paler shade; ventral callus cream coloured to pinkish-brown.

**Size**

Length up to 120 mm.

**Distribution**

South African endemic. Eastern Agulhas Bank (Knysna area to western Transkei), 70–500 m.

**Similar species**

None.

**References**


Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 172.
**Coluzea radialis** (ColRad)

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<td>Common name:</td>
<td>Benguela pagoda shell</td>
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**Distinguishing features**
Shell relatively thin, siphonal canal long, slender and straight; periphery with a spiral row of bluntly triangular spines (15–50 on last whorl); elsewhere sculptured by spiral cords, most prominent below periphery and on base of siphonal canal; some specimens with low axial ribs associated with peripheral spines.

**Colour**
Shell uniformly white.

**Size**
Length up to 75 mm.

**Distribution**
South African endemic. West coast, off Atlantic Cape region (Alexander Bay to Cape Point), 160–420 m.

**Similar species**
*Coluzea rotunda*, also from the West Coast, lacks an angular peripheral keel and has proportionately stronger axial sculpture. *Columbarium formossimum* (Agulhas Bank) has much coarser axial sculpture and fewer peripheral spines (10–11 on last whorl).

**References**

Phylum: Mollusca

Coluzea rotunda (Fusinu)

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<td>Rounded pagoda shell</td>
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**Distinguishing features**
Shell relatively thin, siphonal canal long, slender and straight; whorls rounded, periphery at most with low spines, mostly on apical spire whorls; elsewhere sculptured by rounded axial ribs crossed by spiral cords, most prominent below periphery.

**Colour**
Shell uniformly white, with pale khaki-brown periostracum.

**Size**
Length up to 75 mm.

**Distribution**
South African endemic. West coast, off Atlantic Cape region (Alexander Bay to Cape Point), 200–1 400 m.

**Similar species**
See Coluzea radialis, which has an angular peripheral keel not present in _C. rotunda_ and weaker axial sculpture.

**References**

**Phylum: Mollusca**

**Athleta abyssicola** (VolBos)

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<tr>
<td>Common name</td>
<td>Yellow-foot hatch shell</td>
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**Distinguishing features**

Shell moderately elongate, but shell width and spire height variable; aperture long and narrow, comprising well over half shell length; spire conical; sculpture cancellate (hatched), comprising relatively fine axial ribs and spiral cords of more or less equal strength; much of ventral surface with a thin, transparent glaze extending from inner lip; inner lip itself with numerous columella pleats, progressively stronger anteriorly; outer lip slightly reflected, its inner margin thickened and bearing numerous ridge-like denticles.

**Colour**

Surface dull, often etched or eroded; fresh specimens biscuit-coloured to pale orangish- or pinkish-brown; interior of aperture pale apricot, columella pleats white. Surface often encrusted with muddy deposit. Animal greyish-white to yellow, heavily speckled with greyish markings.

**Size**

Length up to 105 mm.

**Distribution**

West coast, off Atlantic Cape region (Walvis Bay to Cape Agulhas), 100–550 m.

**Similar species**

Compare with *A. lutosa*. *A. boswelliae*, a smaller species (length up to 60 mm) ranging from Tsitsikamma to Saldanha Bay, differs from *A. abyssicola* in having coarser sculpture with fewer, stronger axial ribs and weaker spiral cords, a double row of prickly subsutural nodules and often a pattern of spiral rows of brownish-orange squares. *A. disparilis* from the Agulhas Bank resembles *A. boswelliae*, but is even smaller (length up to 38 mm), has a lower spire, more blunt subsutural nodules and a uniformly pale colouration.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 162.
**Athleta lutosa (VolAby)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Neogastropoda  
**Family:** Volutidae  
**Genus:** Athleta  
**Species:** lutosa  
**Common name:** Pink-foot hatch shell

**Distinguishing features**
Shell relatively broad with a wide aperture; shell thickness very variable; spire conical with convex whorls and indented suture; sculpture less obviously cancellate (hatched), dominated by crisp spiral cords crossed by irregular growth lines; ventral surface with a thin, transparent glaze extending from inner lip; columella with four to six low pleats, sometimes in pairs; outer lip not reflected, its inner margin usually weakly thickened and with indistinct ridges. Lip and callus frequently deformed.

**Colour**
Surface dull, usually etched or eroded; fresh specimens pale cream to apricot-pink, most obvious inside aperture; columella pleats white. Surface often encrusted with muddy deposit or stained reddish-brown. Animal pinkish to mauve, heavily speckled with grey-black markings.

**Size**
Length up to 110 mm, but usually considerably smaller (60–70mm).

**Distribution**
West coast, Atlantic Cape (Angola to Saldanha Bay), 20–220 m.

**Similar species**
Similar to *Athleta abyssicola*, but broader, outer lip less strongly thickened and not reflected, sculpture less obviously cancellate, fewer columella pleats and foot pinkish.

**References**

Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 165.
Phylum: Mollusca

**Fusivoluta pyrrhostoma (FusPyr)**

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</table>

**Distinguishing features**

Shell spindle-shaped, siphonal canal relatively short and dorsally recurved; spire approximately half total length of shell, suture indented; sculpture of low axial ribs, often somewhat curved; base with close-set spiral threads; inner lip and columella smooth; outer lip thin, somewhat flaring, its interior smooth; protoconch (apex) bulbous.

**Colour**

Pale orange-white to light apricot, with thin olive-brown periostracum; surface commonly badly eroded; interior of aperture glossy, deep apricot in fresh specimens, more intense on basal half of inner lip.

**Size**

Length up to 90 mm.

**Distribution**

South African endemic. West coast and western Agulhas Bank (Lambert’s Bay to Mossel Bay), 70–400 m.

**Similar species**

*Fusivoluta lemairei*, a slightly smaller species (length up to 70 mm), has stronger axial ribs, weakly angled at shoulder, a deeper orange-brown colour and a larger, whitish protoconch.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 169.
**Neptuneopsis gilchristi (Neptun)**

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**Distinguishing features**

Shell large and light, spire high with convex (rounded outward) whorls and indented suture; sculpture of very fine, dense spiral threads; aperture wide, somewhat flaring and tapering to a short siphonal canal; inner lip lacking pleats, but with a thin, smooth callus glaze. Protoconch (apex) bud-shaped, disproportionately large. Operculum smaller than aperture.

**Colour**

Pale buff to pale orange-brown with a thin, persistent lustreless olive-brown periostracum; some specimens with diffuse paler spiral bands.

**Size**

Length up to 240 mm, but usually 120–150 mm.

**Distribution**

South African endemic. West and South coast, Agulhas Bank, 60–500 m.

**Similar species**

*Africolaria rutila* has a longer siphonal canal and a smaller protoconch.

**References**


Steyn DG and Lussi M. 2005. Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods. Published by the authors. p. 170.
**Amalda bullioides (AlmBul)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Neogastropoda  
**Family:** Olividae  
**Genus:** Amalda  
**Species:** bullioides  
**Common name:** Bullet amalda

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**Distinguishing features**  
Shell bullet-shaped, smooth and glossy; spire and parietal region enveloped in enamel-like callus, covering sutures; aperture elongate, narrowing apically and with a broad siphonal notch; inner lip concave, outer lip thin.

**Colour**  
Fresh shells orange to brown, darkest around suture; body whorl with two narrow white bands separated by a broad orange band; a narrow orange-brown band below lower white band; columella and tip of spire whitish. Old shells much faded.

**Size**  
Length up to 42 mm.

**Distribution**  
South African endemic. West coast and Agulhas Bank, 100–370 m, possibly deeper.

**Similar species**  
Several other species of *Amalda* occur on the Agulhas Bank, but most are considerably smaller than *A. bullioides*. *A. obtusa* is of similar size to *A. bullioides*, but it has a much broader, bluntly rounded spire and a brownish spire callus.

**References**  
Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 148.
### Pulsarella fultoni (PulFul)

<table>
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**Distinguishing features**

Shell fairly solid, spire elevated, narrowly tapering to sharp point; outer lip thin, with U-shaped anal sinus just below suture; sculptured with widely spaced spiral cords, one just below apical suture, one at periphery (level with basal suture) and a third, between these, also with several narrower cords on base; intervals between cords concave (hollowed inwards).

**Colour**

Fresh specimens orange-brown to dark brown, spiral cords white; inner lip and base darker purplish-brown. Colour fading in dead specimens.

**Size**

Length up to 32 mm.

**Distribution**

South African endemic. Cape Peninsula to Agulhas Bank (from False Bay to western Transkei), 20–85 m.

**Similar species**

None.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 222.
**Comitas saldanhae (ComSal)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Caenogastropoda  
**Order:** Neogastropoda  
**Family:** Pseudomelatomidae  
**Genus:** Comitas  
**Species:** saldanhae  
**Common name:** Benguela comitas

**Distinguishing features**
Shell spindle-shaped, with short siphonal canal and elevated spire; whorls shouldered and suture indented; shoulder slope sculptured with spiral threads only, sculpture below shoulder comprising oblique axial ribs crossed by finer spiral threads, base with spiral threads and growth lines only; outer lip with broad, moderately deep, U-shaped anal sinus at shoulder, lip edge flaring outward below this in large specimens.

**Colour**
Shell chalky white, with dull brown periostracum; apex, ribs and subsutural region frequently eroded; often covered in mud.

**Size**
Length up to 62 mm, but usually less than 45 mm.

**Distribution**
West coast (Namibia to west of Cape Point), 50–600 m.

**Similar species**
None.

**References**
Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods.* Published by the authors. p. 207.
**Phylum: Mollusca**

### Comitas stolida (ComSto)

| Phylum: | Mollusca |
| Class: | Gastropoda |
| Subclass: | Caenogastropoda |
| Order: | Neogastropoda |
| Family: | Pseudomelatomidae |
| Genus: | Comitas |
| Species: | stolida |
| Common name: | Agulhas comitas |

**Distinguishing features**

Shell spindle-shaped, with elevated spire; whorls angled at periphery and with distinct, obliquely elongate nodules, somewhat rib-like; shell otherwise sculptured only by growth lines and close-set, microscopic, spiral threads; outer lip with moderately deep, U-shaped anal sinus below suture, lip edge convex below this.

**Colour**

Brown to reddish-brown, peripheral nodules whitish.

**Size**

Length up to 55 mm.

**Distribution**

South African endemic. South coast, Agulhas Bank, 60–150 m.

**Similar species**

*Makiyamaia gravis*, from the eastern Agulhas Bank and Transkei, is somewhat similar, but is smaller (length up to 32 mm), has a broader shoulder slope and a swollen subsutural cord.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 207.
**Conus gradatulus (DenAlg)**

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<thead>
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<tr>
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<td>gradatulus</td>
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<td>Common name:</td>
<td>Agulhas cone shell</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Shell light in weight, body whorl weakly convex, angular at shoulder; spire broadly tapering to a sharp tip, but spire height variable; spire with stepped profile due to angular shoulder; whorls concave above shoulder, essentially smooth; base of body whorl with weak spiral threads, otherwise sculpture comprising only weak growth lines; aperture elongate and narrow, outer lip thin. Operculum very small, oblong-ovate.

**Distribution**
From Namibia (Walvis Bay) and West Coast to Agulhas Bank, 30–500 m.

**Similar species**
Several other Conus species occur on the Agulhas Bank, but these are smaller than *C. gradatulus*, have a less strongly stepped spire and a different colour pattern. They can be difficult to identify. Any cone shells not matching the above description should be recorded as *Conus* spp.

**Notes**
The West coast *Conus patens* is now considered to belong to the same species.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 245 (as *Leptoconus*).
**Distinguishing features**
Shell internal, entirely covered by body of animal; body divided into a head shield (flattened for burrowing in sandy substrata), a posterior shield (overlying viscera and internal shell) and two lateral lobes, one on each side. Internal shell thin and translucent.

**Colour**
Animal uniformly milky white to yellowish, somewhat translucent.

**Size**
Adult body length 60–70 mm, up to 100 mm.

**Distribution**
Saldanha Bay, West coast to Mozambique, subtidal to 100 m.

**Similar species**
Unlikely to be confused with any other South African species.

**Notes**
A predator on sandy substrata, feeding primarily on other invertebrates, chiefly small molluscs, which are crushed by hard plates occurring in the animal’s gizzard. The skin contains gland cells that secrete sulphuric acid to deter predators. Long thought to be the same as the species occurring in Europe, but now considered distinct (Price *et al.*, 2011).

**References**


**Scaphander punctostriatus** (Scapha)

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<td>Scaphander</td>
</tr>
<tr>
<td>Species:</td>
<td>punctostriatus</td>
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<tr>
<td>Common name:</td>
<td>Giant canoe bubble</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Shell elongate and rather bubble-like, thin and fragile; no spire evident, body whorl expanding rapidly so as to cover earlier whorls; smooth but under a microscope sculptured by fine spiral lines of tiny elongate pits (punctations); aperture elongate, very broad basally. Animal large, cannot retract completely into shell.

**Colour**
Shell whitish with a thin yellowish periostracum, sometimes with faint, darker spiral bands. Animal yellowish-white.

**Size**
Length 30–40 mm.

**Distribution**
Outer continental shelf and upper slope, West coast and Agulhas Bank, 170–2700 m (also much of the North Atlantic, Gulf of Mexico and Mediterranean).

**Similar species**
None.

**References**

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 269.
**Phylum: Mollusca**

| **Phylum:** | *Mollusca* |
| **Class:** | *Gastropoda* |
| **Subclass:** | *Heterobranchia* |
| **Order:** | *Nudibranchia* |
| **Family:** | *Aglajidae* |
| **Genus:** | *Philinopsis* |
| **Species:** | *capensis* |
| **Common name:** | Slipper/Philip’s slug |

**Philinopsis capensis (PhiCap)**

| **Phylum:** | *Mollusca* |
| **Class:** | *Gastropoda* |
| **Subclass:** | *Heterobranchia* |
| **Order:** | *Nudibranchia* |
| **Family:** | *Aglajidae* |
| **Genus:** | *Philinopsis* |
| **Species:** | *capensis* |
| **Common name:** | Slipper/Philip’s slug |

**Distinguishing features**
Mottled brown-black and cream appearance covered with white or yellow spots. Posterior has two tails of equal length. Body consists of three segments joined together.

**Colour**
Mottled brown-black on outside with cream/opaque inside colour.

**Size**
At least 40 mm.

**Distribution**
False Bay to East London, South Africa.

**Similar species**
*Pleurobranchaea bubala* has a similar colouration and mottling, but *Philinopsis capensis* is much firmer in texture and made up of three distinct segments.

**References**
Identified from photograph by Georgina Jones and Terry Gosliner.

**Phylum: Mollusca**

**Pleurobranchaea bubala (PleBub)**

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</tr>
<tr>
<td>Species:</td>
<td>bubala</td>
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<tr>
<td>Common name:</td>
<td>Warty pleurobranch</td>
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</tbody>
</table>

**Distinguishing features**
Honeycomb, mottled colouration of brown/black/yellow on dorsal surface. Very soft, fleshy body with a slimy surface texture. If left in water, two rhinophores (chemosensory tentacles) located dorso-laterally often appear and a tube-like mouth. Branchia (feather-like gills) are clearly visible from the ventral view on the right side of the animal, as is the foot. *Pleurobranchaea* has a very soft body that does not retain shape well out of water.

**Colour**
Mottled brown/yellow/black colouration on dorsal surface, which often wears off on the most elevated areas to be translucent. Ventral body cream to white.

**Size**
Average 60 to 70 mm.

**Distribution**
West coast, South coast to Port Elizabeth.

**Similar species**
P. tarda is smaller and has a continuous smooth dorsal surface.

**References**


**Kaloplocamus ramosus** (NudFla)

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<tr>
<td>Class:</td>
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<tr>
<td>Common name:</td>
<td>Tassled/Orange flame nudibranch</td>
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</tbody>
</table>

**Distinguishing features**
Distinct orange colour with brighter orange speckles. May have scattered, raised white spots. Soft textured body with numerous branched lateral projections, more visible when viewed in water.

**Colour**
Pale orange with brighter orange speckles and raised white spots.

**Size**
Up to 100 mm.

**Distribution**
West coast to the Transkei, 25-400 m, also the Mediterranean, Australia and Japan.

**Similar species**
None.

**References**
Identified from photograph by Georgina Jones and Terry Gosliner.


**Aphelodoris sp. 1 (AphDot)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
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<td><strong>Order:</strong></td>
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<td><strong>Species:</strong></td>
<td>sp. 1</td>
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<td><strong>Common name:</strong></td>
<td>Chocolate-chip nudibranch</td>
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</table>

**Distinguishing features**
White-bodied dorid with a smooth dorsal surface and large, irregular brown/black spots. Rhinophores (chemosensory tentacles) elongated and cream to light brown in colour. Spots may be blotchy.

**Colour**
White-bodied with variably blotchy dark brown/black patches.

**Size**
At least 50 mm.

**Distribution**
West coast, both sides of the Cape Peninsula and South coast, Algoa Bay.

**Similar species**
Small-spot dorid (*Paradoris* sp.), which has smaller spots; Mandela’s nudibranch (*Mandelia mirocornata*) has a rough dorsal surface and darker patches between spots.

**References**
Identified from photograph by Georgina Jones.


**Paradoris sp. 1 (Parador)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Heterobranchia  
**Order:** Nudibranchia  
**Family:** Discodorididae  
**Genus:** Paradoris  
**Species:** sp.  
**Common name:** Small-spot nudibranch

**Distinguishing features**  
White-bodied dorid with a slightly rough surface and small irregular brown or black spots. Rhinophores (chemosensory tentacles) small and white.

**Colour**  
White-bodied with small black or brown spots.

**Size**  
At least 30 mm.

**Distribution**  
West coast and South coast, South Africa.

**Similar species**  
Chocolate chip nudibranch (*Aphelodoris* sp. 1) has large blotchy dark patches; Mandela’s nudibranch (*Mandelia mirocornata*) has a warty body, darker patches between spots and oblong rhinophores (chemosensory tentacles).

**References**  
Identified from photograph by Georgina Jones.  
**Ceratosoma ingozi (CerIng)**

<table>
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<tr>
<th>Phylum:</th>
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<tr>
<td>Class:</td>
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<td>Species:</td>
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<td>Common name:</td>
<td>Inkspot nudibranch</td>
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</table>

**Distinguishing features**

Bright orange in colour with distinct bluish edged darker spots ranging in colour from dark red to black or brown. Club-shaped body with dorsal frill. In water, creamy Rhinophores (chemosensory tentacles) and dorsal gill rosette.

**Colour**

Bright orange in colour with distinct bluish edged darker spots ranging in colour from dark red to black or brown.

**Size**

Up to 80 mm.

**Distribution**

West and South coasts: False Bay to Port Elizabeth, recorded up to 108 m depth.

**Similar species**

None.

**References**

Identified from photograph by Georgina Jones and Terry Gosliner.


**Mandelia mirocornata (ManMir)**

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<thead>
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<th>Phylum:</th>
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<tbody>
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<td>Species:</td>
<td>mirocornata</td>
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<tr>
<td>Common name:</td>
<td>Mandela's nudibranch</td>
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**Distinguishing features**

Irregular solid black spots on dirty white or pale brown body, body surface bumpy. In water, rhinophores (chemosensory tentacles) oblong and creamy. Dorsal surface often translucent, with internal organs partially visible.

**Colour**

White to cream body with brown/black blotches, creamy rhinophores and gills.

**Size**

Up to 70 mm.

**Distribution**

West coast of Cape Peninsula to Algoa Bay South coast, in 10–400 m depth.

**Similar species**

*Aphelodoris* sp.1 but dark blotches are patchy, rhinophores oval and skin smooth, *Paradoris* sp. but spots are smaller.

**References**

Identified from photograph by Georgina Jones.


**Notobryon thompsoni (NotTho)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Heterobranchia  
**Order:** Nudibranchia  
**Family:** Scyllaeidae  
**Genus:** Notobryon  
**Species:** thompsoni  
**Common name:** Iridescent blue spot nudibranch

**Distinguishing features**
Three distinct blue spots on the dorsal side of body. Body slender and elongated with two pairs of flattened lobes on either side of the dorsal gills. Translucent gills visible in water. Posterior dorsal crest. Front of head has two rhinophores (chemosensory tentacles), each surrounded by a sheath.

**Colour**
Pale orange with darker orange spots and extremities. Three distinct blue spots on dorsal surface.

**Size**
Up to 50 mm.

**Distribution**
West coast (Elands Bay) to South coast (Port Elizabeth).

**Similar species**
*N. wardi, N. clavigerum, N. bijerecum,* not locally known.

**References**
Identified from photograph by Georgina Jones and Terry Gosliner.


### Armina sp. (ArmSpp)

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<tr>
<td>Species:</td>
<td>sp.</td>
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<tr>
<td>Common name:</td>
<td>Striped sand slug/Pierre’s Armina</td>
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</tbody>
</table>

### Distinguishing features
Black with white (sometimes yellow or cream) ridges/stripes along body. Club-shaped body with frill-like edges. Anterior, small, ridged rhinophores (chemosensory tentacles), close together at their base. Known to predate on sea pens.

### Colour
Black-bodied nudibranch with raised white longitudinal ridges. Edge of mantle yellow and foot pinkish with yellow margin.

### Size
Up to 70 mm.

### Distribution
On soft sediment substrates, West and South coast, South Africa.

### Similar species
*Armina gilchristi* is smaller with broken longitudinal ridges. Several other *Armina* sp. are known to occur in the region, however the group is poorly studied and in need of taxonomic revision.

### References
- Identified from photograph by Georgina Jones.
**Dermatobranchus albineus (DerAlb)**

**Phylum:** Mollusca  
**Class:** Gastropoda  
**Subclass:** Heterobranchia  
**Order:** Nudibranchia  
**Family:** Arminidae  
**Genus:** Dermatobranchus  
**Species:** albineus  
**Common name:** White-ridged nudibranch

**Distinguishing features**
Small with opaque white ridges along body. Rhinophores (chemosensory tentacles) small and oval, with longitudinal ridges.

**Colour**
Pale-bodied nudibranch with raised opaque white longitudinal ridges.

**Size**
Up to 20 mm.

**Distribution**
Cape Peninsula to Port Elizabeth, shallow waters.

**Similar species**
*Armina gilchristi* is smaller with broken longitudinal ridges; Pierre's Armina is larger with a black body and yellow margin. Several other *Armina* sp. are known to occur in the region, however the group is poorly studied and in need of taxonomic revision.

**References**
Identified from photograph by Georgina Jones.
Dermatobranchus arminus (DerArm)

Phylum: Mollusca
Class: Gastropoda
Subclass: Heterobranchia
Order: Nudibranchia
Family: Arminidae
Genus: Dermatobranchus
Species: arminus
Common name: Brown ridged nudibranch

Distinguishing features
Small with opaque white ridges along body. Ridges with dark brown blotches. Body pale with indistinct brown saddles. Rhinophores (chemosensory tentacles) small and oval with longitudinal ridges.

Colour
Pale-bodied, indistinctly brown saddled nudibranch with raised opaque white longitudinal ridges having dark blotches along them.

Size
Up to 20 mm.

Distribution
West and South coasts, usually deeper than 20 m.

Similar species
Dermatobranchus albinus has no dark blotches or saddles. Armina gilchristi is smaller with broken longitudinal ridges; Pierre’s Armina is larger with a black body and yellow margin. Several other Armina sp. are known to occur in the region, however the group is poorly studied and in need of taxonomic revision.

References
Identified from photograph by Georgina Jones.
Leminda millecra (LemMil)

Phylum: Mollusca
Class: Gastropoda
Subclass: Heterobranchia
Order: Nudibranchia
Family: Charcotiidae
Genus: Leminda
Species: millecra
Common name: Frilled nudibranch

Distinguishing features
White-edged mantle relatively thin with large sinuous folds. Anterior break in mantle edge between the rhinophores (chemosensory tentacles). Large oral veil. Rhinophores pale, smooth and tapering, and do not retract into a pocket. Digestive gland divided into relatively fine ramifying ducts, which can be seen through the translucent body wall. Colour dependent on food colour in digestive gland ducts, but varies between pink and brown.

Colour
Pink to brown with an opaque white dorsal edge. Highly variable, depending on the food in the digestive ducts.

Size
Up to 90 mm.

Distribution
West coast of Cape Peninsula to Kwa-Zulu Natal, South coast, in 10–104 m.

Similar species
None.

References
**Nucula nucleus** (Tellin)

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<td>Species:</td>
<td>nucleus</td>
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<tr>
<td>Common name:</td>
<td>Common nut clam</td>
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</table>

**Distinguishing features**

Shell roundly triangular, but not equilateral (have unequal sides), posterior slope longer than anterior one; surface sculptured with somewhat irregular concentric growth lines (often scarcely evident) and microscopic radial lines; ventral margin finely denticulate; hinge with comb-like dentition (taxodont – with numerous fine interdigitating teeth).

**Colour**

Whitish with a dull olive-brown periostracum; often encrusted with pale orange or reddish deposits.

**Size**

Length up to 13.5 mm.

**Distribution**

South coast, Agulhas Bank (from False Bay to eastern Transkei), 40–350 m. Also in western Europe and Mediterranean.

**Similar species**

None; all other species of *Nucula* occurring on the Agulhas Bank are considerably smaller than *N. nucleus*.

**References**


**Lembulus belcheri (VenSpp)**

**Phylum:** Mollusca  
**Class:** Bivalvia  
**Subclass:** Protobranchia  
**Order:** Nuculanida  
**Family:** Nuculanidae  
**Genus:** *Lembulus*  
**Species:** belcheri  
**Common name:** Agulhas ridged nut clam

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**Distinguishing features**

Shell elongate, anterior end rounded, posterior end somewhat drawn out and with three distinct ribs that notch the posterior margin; surface sculptured with evenly spaced, obliquely concentric ridges; hinge with comb-like dentition (taxodont – with numerous fine interdigitating teeth).

**Colour**

Milky-white to yellowish-white, somewhat glossy; dorsal and ventral edges usually with marginal band of khaki-brown periostracum.

**Size**

Length up to 40 mm.

**Distribution**

South African endemic. South coast, Agulhas Bank (from False Bay to western Transkei), 30–500 m.

**Similar species**

*Lembulus lamellatus* and *L. gemmulatus* are similar species occurring off the East coast, but both are considerably smaller than *L. belcheri* (length up to 21 mm).

**References**

**Solemya togata (SolTog)**

**Phylum:** Mollusca  
**Class:** Bivalvia  
**Subclass:** Protobranchia  
**Order:** Solemyida  
**Family:** Solemyidae  
**Genus:** Solemya  
**Species:** togata  
**Common name:** Mediterranean awning clam

**Distinguishing features**
Shell very fragile, gaping at each end, with a thick, horny periostracum that projects well beyond ventral and anterior margins like an awning; anterior region of shell with broad low ridges, evident also in periostracum; hinge essentially toothless. Foot of living animal long, visible at anterior end, the tip truncated, ending in a disc with a fringed margin.

**Colour**
Shell translucent white to buff, periostracum glossy, initially honey-brown, becoming dark brown with growth.

**Size**
Shell length up to 40 mm.

**Distribution**
West Coast, Saldanha Bay to Mossel Bay, 30–250 m.

**Similar species**
*Solemya africana* from the East coast (south to East London) attains a considerably larger size (length up to 100 mm).

**Notes**
*Solemya togata* is a Mediterranean species and whether the South African material is genuinely the same requires further study.

**References**

**Limopsis chuni** (Dosini)

**Phylum:** Mollusca  
**Class:** Bivalvia  
**Subclass:** Pteriomorpha  
**Order:** Arcida  
**Family:** Limopsidae  
**Genus:** Limopsis  
**Species:** chuni  
**Common name:** Cape limopsis

---

**Distinguishing features**
Shell almost circular in outline, usually covered throughout with dense, fine periostracal hairs, but these sometimes partially or entirely worn off; underlying shell sculptured with fine concentric ridges and indistinct radial lines; hinge with comb-like dentition (taxodont – with numerous fine interdigitating teeth).

**Colour**
Shell whitish, periostracal hairs light brown; often coated in mud.

**Size**
Length up to 40 mm.

---

**Distribution**
South African endemic. West coast and Agulhas Bank, 50–430 m.

**Similar species**
*Oblimopa multistriata* is another relatively large limopsid species, but it has much stronger radial sculpture. It is an Indian Ocean species ranging south to the Durban area.

**References**
**Atrina squamifera (AtrSqu)**

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**Distinguishing features**
Shell triangular in shape, large and fragile; hinge line straight, broad (posterior) end rounded and gaping; surface sculptured by six to twelve rounded ribs radiating from pointed anterior end; ribs bearing well-developed, curved (vaulted) scales, particularly in posterior half; strength of sculpture variable; living specimens with a ‘beard’ of long byssal threads projecting from antero-ventral region.

**Colour**
Light greyish-brown to horn-brown, semi-translucent, darkening with age.

**Size**
Length reportedly up to 390 mm, but rarely more than 250 mm.

**Distribution**
South African endemic. Saldanha Bay to East London; commonly found in lagoons and estuaries, but also occurs on the Agulhas Bank at depths of 30–120 m.

**Similar species**
The shell of *Pinna muricata* (East coast, south to Algoa Bay) is similar, but has a more square-cut posterior profile and internally there is a longitudinal furrow that divides the inner nacreous layer into two lobes.

**References**

**Ostrea atherstonei (OstAth)**

**Phylum:** Mollusca  
**Class:** Bivalvia  
**Subclass:** Pteriomorphia  
**Order:** Ostreida  
**Family:** Ostreidae  
**Genus:** Ostrea  
**Species:** atherstonei  
**Common name:** Cape brooding oyster

**Distinguishing features**  
A typical oyster with a large, flat shell; somewhat rounded in outline; lower valve shallow, without a recess below hinge; externally with coarse overlapping growth lamellae.

**Colour**  
Purplish brown to wine red occasionally with dark rays; interior whitish, often pink edged.

**Size**  
Maximum diameter 105 mm.

**Distribution**  
South African endemic. West coast Saldanha Bay to KwaZulu-Natal, South coast, shallow subtidal reefs.

**Similar species**  
The Pacific oyster, *Crassostrea gigas*, introduced to the Cape for aquaculture purposes, is more elongate in shape and has strong, wavy concentric sculpture.

**References**  

**Pecten sulcicostatus (PecMax)**

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<td>Agulhas ridged scallop</td>
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**Distinguishing features**
Shell large, right valve convex, left valve flat and slightly smaller than the right one; ears of equal size; sculptured by 12-15 radial ribs. On the right valve the ribs have sloping sides and are wider than their intervals, while the whole surface bears fine secondary radial threads; left valve with higher, more flat-topped ribs, no wider than their intervals, which lack secondary radial threads.

**Colour**
Cream to buff, left valve usually mottled with pink, salmon, or pinkish-brown, right valve paler, although often tinged with pink or salmon towards umbo (adults generally very pale); interior white.

**Size**
Maximum diameter 106 mm, usually 60–80 mm.

**Distribution**
South African endemic. Agulhas Bank (from False Bay to East London), 30–70 m.

**Similar species**
*Pecten afriflatus* from the East Coast (south to East London) has a concave left valve and a more convex right valve in which the radial ribs lack fine radial threads. In addition, it has a wide purple-brown band around the ventral margin of the interior and it does not reach such a large size (maximum diameter 76 mm).

**References**


### Pseudamussium gilchristi (Pecten)

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<td>Gilchrist’s scallop</td>
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**Shell** typically scallop-shaped, but with ±8 low, broad, rounded radial ribs and sculptured all over with fine, granulose radial riblets; ears of unequal size.

**Colour**
Orange or pinkish; interior glossy.

**Size**
Greatest dimension up to 35 mm.

**Distribution**
West coast; Namibia to Cape Point, 130–420 m.

**Distinguishing features**
Several other species of scallop occur off South Africa, but the sculptural features of *P. gilchristi* render it distinctive.

**Notes**
More specimens with accurate locality data are needed.

**References**
**Phylum:** Mollusca

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**Lucinoma capensis (LucCap)**

- **Phylum:** Mollusca
- **Class:** Bivalvia
- **Subclass:** Heterodonta
- **Order:** Lucinida
- **Family:** Lucinidae
- **Genus:** Lucinoma
- **Species:** capensis
- **Common name:** Cape lucina

---

**Distinguishing features**

Small to medium-sized; shell outline almost circular; umbones more or less central and curved slightly forward; valves of equal size; sculptured by thin, raised, concentric ridges, often eroded at umbones; hinge with two cardinal teeth per valve; interior pallial line without sinus; ventral margin smooth.

**Colour**

Shell white, with thin horn-brown periostracum when fresh; usually coated in mud.

**Size**

Diameter up to 40 mm.

**Distribution**

West coast to South coast; Namibia to Transkei shelf, 30–450 m.

**Similar species**

*Limopsis chuni* is somewhat similar, but it has a taxodont hinge and a hairy periostracum. *Dosinia lupinus orbignyi*, a common venerid bivalve on the South and West coasts, has a similar shape, but has a thicker shell with more prominent umbones, finer concentric sculpture and a well-developed pallial sinus internally.

**References**

**Pitar medipictus (PitAbb)**

**Phylum:** Mollusca  
**Class:** Bivalvia  
**Subclass:** Heterodonta  
**Order:** Venerida  
**Family:** Veneridae  
**Genus:** Pitar  
**Species:** medipictus  
**Common name:** Agulhas pitar venus

## Distinguishing features
Shell broadly ovate, valves inflated; anterior evenly rounded, posterior more bluntly so; anterior and posterior ends with distinct concentric threads, but mid-region largely smooth; pallial sinus blunt, not reaching mid-line; inner ventral margin smooth.

## Colour
Off-white, mid-region with broad, broken rays or concentric bands of medium or reddish-brown; lunule without brown lines; interior white, central region usually suffused with pale mauve.

## Size
Length up to 27 mm.

## Distribution
South African endemic. South coast; Agulhas Bank and Transkei shelf (from False Bay to Port St Johns), 50–220 m.

## Similar species
*Pitar medipictus* was previously confused with *P. hebraeus* and *P. abbreviatus* and was only recognised as a distinct species in 1999. It is endemic to South Africa and is the only temperate water species of *Pitar* occurring in the region. The remaining species are all warm-water forms occurring off the eastern seaboard.

## References
**Cuspidaria capensis (CusSpp)**

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**Distinguishing features**
Shell small, thin and fragile; smooth; posterior region is drawn out into a spout-like rostrum.

**Colour**
White; often with dirty superficial deposit.

**Size**
Length up to 32 mm.

**Distribution**
South African endemic. West and South coast; Atlantic Cape coast to Transkei shelf, 70–550 m or more.

**Similar species**
Several species of *Cuspidaria* have been recorded off the South African coast. They are poorly documented and difficult to identify, but the rostrate shell shape is characteristic of the genus. The species differ in the length of the rostrum and the strength of sculpture.

**Notes**
*Cuspidaria* species are predatory. The siphon is shot out of the rostrum and expands rapidly, sucking in small prey items such as copepods.

**References**
**Schizodentalium plurifissuratum (SchPlu)**

- **Phylum:** Mollusca
- **Class:** Scaphopoda
- **Subclass:** -
- **Order:** Dentalida
- **Family:** Dentaliidae
- **Genus:** Schizodentalium
- **Species:** plurifissuratum
- **Common name:** Multi-fissured tusk shell

**Distinguishing features**
Shell resembles a miniature elephant’s tusk; no evidence of coiling; shell hollow, tapering from one end to the other, slightly curved; sculptured with fine, close-set, longitudinal ridges; narrow end (posterior) with a row of one to five longitudinal, slit-like perforations on convex surface (occasionally none).

**Colour**
Shell dirty white to yellowish-cream; frequently stained with blackish marks.

**Size**
Length up to 70 mm.

**Distribution**
South African endemic. Agulhas Bank (from False Bay to western Transkei), 70–300 m.

**Similar species**
None; the slits at the posterior end are distinctive.

**References**

Leptochiton sykesi (LepSyk)

- **Phylum**: Mollusca
- **Class**: Polyplacophora
- **Subclass**: -
- **Order**: Lepidopleurida
- **Family**: Leptochitonidae
- **Genus**: Leptochiton
- **Species**: sykesi
- **Common name**: Sykes’s chiton

**Distinguishing features**
Animal with eight valves (plates) covering dorsal surface, surrounded by a thin girdle with fine velvety spicules; valves strongly arched and midline of animal angular; valve surface with numerous extremely fine longitudinal beaded threads (only visible under a microscope), lateral areas of valves two to seven weakly raised and with concentric growth lines.

**Colour**
Valves whitish, usually stained to varying degrees with black (sometimes heavily so); girdle yellowish-white to pale apricot.

**Size**
Length up to 23 mm.

**Distribution**
South African endemic. Known only from off the south-western Cape (from Saldanha Bay to Cape Point), 70–433 m, but mostly deeper than 250 m.

**Similar species**
Several deep-water species of *Leptochiton* have been described from off South Africa and their identification requires close scrutiny. *L. sykesi* is characterised by the very fine sculpture on the valves.

**References**

PHYLUM: MOLLUSCA
CLASS: CEPHALOPODA

Authors

Rob Leslie¹ and Marek Lipinski²

Citation

Leslie RW and Lipinski MR. 2018. Phylum Mollusca – Class Cephalopoda
In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates

¹ South African Department of Agriculture, Forestry and Fisheries, Cape Town
² Ichthyology Department, Rhodes University, Grahamstown, South Africa
Phylum: **MOLLUSCA** Class: Cephalopoda

**Introduction to the Class Cephalopoda**

Cephalopods are among the most complex and advanced invertebrates. They are distinguished from the rest of the Phylum Mollusca by the presence of circumoral (around the mouth) appendages commonly referred to as arms and tentacles. Cephalopods first appeared in the Upper Cambrian, over 500 million years ago, but most of those ancestral lineages went extinct. Only the nautiluses (Subclass Nautiloidea) survived past the Silurian (400 million years ago) and are today represented by only two surviving genera. All other living cephalopods belong to the Subclass Coleoidea that first appeared in the late Palaeozoic (400-350 million years ago).

**Subclass Coleoidea**

Coleoidea are characterised by possessing eight or ten circumoral appendages armed with suckers, suckers modified into hooks in some Oegopsida; shell internal, reduced or absent. The family-level taxa of living cephalopods are well-resolved and accepted. However, although most families can be sorted into groups, there is considerable debate on the relationships between, and to a lesser extent within, these groups – see Jereb and Roper (2005) for several classification schemes that have been proposed. For fisheries purposes, length frequency data are recorded as mantle length (ML; Figures 1-3) measured in centimetres or millimetres.

**Order Octopoda (Octopods)**

Sac-like body with eight circumoral appendages armed with sessile suckers (without stalks) without chitinous rings. Arm pairs are numbered from dorsal to ventral (Figure 1). There are two suborders. Suborder Incirrata: suckers in one or two rows without cirri; body firm, well-muscled (all octopods in this guide) or soft and gelatinous; fins absent. Suborder Cirrata: suckers in a single row flanked by a row of cirri (Figure 4); body soft, semi-gelatinous; a pair of paddle-like fins.

The relative length of the arm pairs, an important identification character, is generally expressed as an **arm formula**, listing the arms from longest to shortest pair: e.g. III≥II>IV>I indicates that the two lateral arm pairs (Arms II and III) are of similar length and are longer than the ventral pair (Arms IV). The dorsal pair (Arms I) is the shortest.

**Order Vampyromorpha (Vampire squids)**

This order contains a single species. Body sac-like, black, gelatinous with one pair (two in juveniles) of paddle-like fins on mantle and a pair of large light organs at the base of the fins; the eight circumoral appendages have deep webs; a pair of long, thin, filamentous appendages that can be retracted into pits on the outer crown between Arms I and II; arms with a single row of stalked suckers lacking chitinous rings, flanked by a row of cirri on either side.

**Order Spirulida (Ram’s horn squids)**

Ten circumoral appendages; internal shell well-developed, spirally coiled and chambered, visible externally; fins small, positioned on posterior edge of mantle.

**Order Sepiida (Cuttlefish and bobtail squids)**

Ten circumoral appendages (eight arms and two tentacles – Figure 2); **tentacles can be retracted into pockets** between Arms III and IV; eyes covered by a cornea. Cuttlefish (Sepiidae): shell straight, well-developed, calcareous or chitinous; fins long, fringing the dorsal-lateral edge of mantle. Bobtail squids (Sepiolidae): shell rudimentary; fins wide, rounded, attached about midway along mantle.

The structure of the club (Figure 5), presence or absence of suckers at the tips of the dorsal arms and whether the ventral mantle margin is entire or emarginated (Figure 6) are important field characters for identification of cuttlefish.
Figure 1: Schematic of a generalised incirrate octopus

Figure 2: Schematic of a generalised cuttlefish

Figure 3: Schematic of a generalised squid
Orders Myopsida and Oegopsida (Squids)
Two closely related orders (sometimes treated as suborders). Ten circurnal appendages (eight arms and two tentacles – Figure 3); tentacles cannot be retracted into pockets, reduced or absent in adults of some species; eyes covered by a membrane, cornea (Myopsida) or open to seawater (Oegopsida); stalked suckers with chitinous rings (modified into hooks in some species); photophores present in many species (on internal organs, externally in mantle, on the eyeballs or on the arms); mantle can be locked to the head and funnel using the nuchal- and funnel-locking cartilages respectively (fused to head and funnel in some species).

The shape of the funnel-locking cartilage (Figure 7), found at the lateral corners of the funnel just under the ventral mantle margin (Figure 3), is an important identification character. Other important characters are whether the buccal connective is attached to the dorsal or ventral edge of the ventral arms (Figure 8), the number of buccal lappets (Figure 8), the number and position of photophores on the eyeballs, and the presence or absence of hooks on the arms and/or clubs.

General
Distribution maps are based on records in the Research Survey database for surveys conducted between years 1986 and 2016 by the RS Africana, RV Dr Fridtjof Nansen, FV Andromeda and FV Compass Challenger. Records are augmented with specimens from Iziko Museum, Cape Town. All photographs, except where noted otherwise, are copyright of RW Leslie.

Acknowledgements
Illustrations from the three-volume work, Cephalopods of the World (Jereb & Roper 2005, 2010; Jereb et al., 2014) are used with permission from the Food and Agriculture Organization of the United Nations.

**Figure 4:** Oral view of typical Cirrate octopod showing suckers flanked by cirri

**Figure 5:** Example cuttlefish clubs with a) small subequal suckers, b) moderately enlarged and c) greatly enlarged medial suckers
Figure 6: Ventral mantel of cuttlefish showing entire (left) and deeply emarginated (right) ventral margin

Figure 7: Examples of shapes of funnel-locking cartilage

Figure 8: Buccal anatomy of squids
Distinguishing features

- Head small, embedded within mantle. Eyes prominent, protruding and constricted at base.
- Ink sac present. All arms with two rows of suckers. Webs between arms shallow.
- ♀ ♂: Arms I thick at base, length variable, large membranous flap extending full length of arm. Arms IV more than 3x ML and 20-30% longer than Arms II. Arm formula IV > II > III.
- ♀ ♂: Small. 12-13 suckers on normal arms.
- Lateral ribs smooth, continuous or branched from axis to keel, aligned with keel tubercles.
- Dorsal keel narrow and constant width around circumference of shell.
- Keel tubercles consistent in size and arranged in pairs with a ridge across keel between pairs.

Hectocotylus

Left Arm III. Long, slender, self-amputating extension (almost as long as the arm) kept coiled in sac below left eye.

Size

Females attain 97 mm ML, 300 mm shell length. Males 9 mm ML.

Distribution

Circumglobal between 40° N and 40° S. Pelagic, surface to 200 m on both West and South Coasts.

Similar species

A. hians and A. nodosus: Shell dorsal keel width and tubercle size increasing with growth, i.e. from apex towards mouth. Keel tubercles not paired, alternating on either side of the keel. ♀ ♂: Arms IV shorter than Arms II; ♀ ♂ with 10-11 (A. hians) or 17-20 (A. nodosus) suckers on normal arms.

References

**Distinguishing features**

- Head small, embedded within mantle. Eyes prominent, protruding and constricted at base.
- Ink sac present. All arms with two rows of suckers. Webs between arms shallow.
- ♀♂: Arms I thick at base, length variable, large membranous flap extending the full length of arm. Arms II & III 1.4x to 2x ML and 20-50% longer than Arms IV. **Arm formula III > II > IV.**
- ♀♂: Small. 10-11 suckers on normal arms.
- Lateral ribs prominent **smooth** without tubercles, **not aligned** with keel tubercles.
- Dorsal keel width and tubercle size increase with growth (i.e. from apex towards aperture). Tubercles alternate on either side of keel.
- Dorsal keel wide.

**Hectocotylus**

Left Arm III. Long, slender, self-amputating extension (almost as long as the arm) kept coiled in sac below left eye.

**Size**

Females attain 40 mm ML, 106 mm shell length. Males 7 mm ML.

**Distribution**

Oceanic on both coasts. Pelagic, surface to 200 m depth.

**Similar species**

- *A. argo*: Lateral ribs smooth; dorsal keel narrow, width and tubercle size constant; keel tubercles arranged in pairs. ♀♂: Arms IV longest (more than 3x ML); ♀♂: 12-13 suckers on arms.
- *A. nodosus*: Lateral ribs inconspicuous, ending in a chain of separate tubercles; shell white. ♀♂: Arms II longer than Arms III, 2.0 to 2.8 times ML; ♀♂: 17-20 suckers on normal arms.

**References**

**Argonauta nodosus (ArgNod)**

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**Distinguishing features**

- Head small, embedded within mantle. Eyes prominent, protruding and constricted at base.
- Ink sac present. All arms with two rows of suckers. Webs between arms shallow.
- ♀♂: Arms I thick at base, length variable, large membranous flap extending the whole length. Arms II 2.0 to 2.8 times ML; Arms III & IV subequal. Arm formula II > III ≈ IV.
- ♀♂: Small. 17-20 suckers on normal arms.
- Lateral ribs ending in a chain of separate tubercles terminating in an acute keel tubercle.
- Dorsal keel width and tubercle size increase with growth (i.e. from apex towards aperture). Tubercles alternate on either side of keel.

**Hectocotylus**

Left Arm III. Long, slender, self-amputating extension (almost as long as the arm) kept coiled in sac below left eye.

**Size**

Females attain 138 mm ML, 292 mm shell length. Males 11 mm ML.

**Distribution**

Circumglobal in southern hemisphere between 10° S and 44° S. Pelagic, surface to 200 m depth.

**Similar species**

A. argo: Lateral ribs smooth; dorsal keel narrow, width and tubercle size constant; keel tubercles arranged in pairs. ♀♂: Arms IV longest (more than 3x ML); ♀♂: 12-13 suckers on normal arms.

A. hians: Lateral ribs prominent, smooth, not terminating in keel tubercle; dorsal keel 20-30% of shell length. Shell off-white to brown. ♀♂: Arms II & III subequal, 1.4 to 2.0 times ML; ♀♂: 10-11 suckers on normal arms.

**References**

Phylum: Mollusca Cephalopoda

**Bathypolypus valdiviae (BatVal)**

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### Distinguishing features
- Ink sac absent.
- Small, smooth, purplish octopod with ovoid muscular mantle.
- Head narrower than body, eyes slightly protuberant.
- Interbranchial web pouches absent.
- A single papilla over each eye.
- Arms short, subequal with two rows of small suckers, webbed for 33% of length.
  
  **Arm formula:** I ≈ II ≈ III ≈ IV.

### Hectocotylus
Right Arm III. Ligula a broad, rounded disc with a deep trough bearing four big transverse laminae.

### Distribution
Both coasts, but more common on West Coast. Generally 450 to 1000 m depth, but has been recorded at 200 m.

### Similar species
*Enterocotopus* and *Octopus*: Arms moderate length (3.5-5.0 times mantle length); ink sac present.

*Benthocotopus*: Arms three to six times mantle length; large prominent suckers; ink sac absent.

*Eledone schultzei* (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

### Size
80 mm mantle length.

### References
**Benthoctopus berryi (BenBer)**

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**Phylum: Mollusca Cephalopoda**

*Phylum: Mollusca Cephalopoda*

**Distinguishing features**

- Ink sac absent.
- Buccal area and ventral surface of arms chocolate brown.
- Suckers large, prominent, arranged in two alternating rows, i.e. not arranged in pairs.
- Arms three to six times longer than mantle. Arms I, II and III subequal in length and longer than Arms IV. **Arm formula: I ≈ II = III > IV.**

*Hectocotylus*

Right Arm III. Ligula short, narrow 5-7% of hectocotylised arm length.

**Size**

50 mm ML.

**Distribution**

Rare endemic. West Coast from 600-2 200 m.

**Similar species**

*Enteroctopus magnificus*: Ink sac present; characteristic fold of loose skin at end of mantle; lacks the dark pigmentation on the buccal area and ventral surfaces of arms; **Arm formula II = I > III = IV.**

*Octopus vulgaris*: Ink sac present; lacks the dark pigmentation on the buccal area and ventral surfaces of arms; **Arm formula II = III > I = IV.**

*Bathypolypus valdiviae*: Small, purple, with short subequal arms; ink sac absent.

*Eledone schultzei* (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

**References**

**Enteroctopus magnificus (OctMag)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Octopoda  
**Suborder:** Incirrata  
**Family:** Octopodidae  
**Common:** Southern giant octopus  
**Alternate:** Octopus dofleini (in error); Octopus magnificus

### Distinguishing features
- Ink sac present.
- Large and robust, without enlarged suckers on arms.
- Arm length moderate 3.5-5.0 times ML; subequal in length. **Arm formula II = I > III = IV.**
- Colour usually with reddish tones; distinctive fold of loose skin at the end of the mantle.
- No large erectile papillae on dorsal mantle; single large papilla and three or four cirri over each eye.

**Hectocotylus**
Right Arm III. Ligula long (16-25% of length of arm), tapering to a blunt terminus.

### Size
Up to 360 mm mantle length and more than 10 kg.

### Distribution
West and South Coasts. Usually deeper than 100 m.

### Similar species
- **Octopus vulgaris:** Lateral arms distinctly longer than medial arms (III ≥ II > IV > I); two to three pairs enlarged suckers on lateral arms; generally smaller and found at shallower depths; colour usually greyish rather than reddish tones; lacks the loose skin on the mantle. Ligula small (only 2.5% of arm length) and spoon-shaped.
- **Benthoctopus:** Ventral surface of arms dark brown; suckers prominent. Arm formula I = II = III = IV.
- **Bathypolypus:** Small, purple with short arms; ink sac absent.
- **Eledone schultzei** (inshore, under 20 m depth) and **Velodona togata** (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

### References
Jereb et al., 2014; Nesis, 1987; Roper et al., 1984.
**Phylum: Mollusca Cephalopoda**

### Octopus vulgaris (OctVul)

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Mollusca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
<td>Cephalopoda</td>
</tr>
<tr>
<td>Order:</td>
<td>Octopoda</td>
</tr>
<tr>
<td>Suborder:</td>
<td>Incirrata</td>
</tr>
<tr>
<td>Family:</td>
<td>Octopodidae</td>
</tr>
<tr>
<td>Common:</td>
<td>Common octopus</td>
</tr>
<tr>
<td>Alternate:</td>
<td>Octopus “vulgaris” type III</td>
</tr>
</tbody>
</table>

**Distinguishing features**

- Ink sac present.
- Large muscular species; arms long, 4x to 5.5x ML; lateral pairs distinctly longer than median pairs; Arm formula III ≥ II > IV > I.
- Both sexes with two to three enlarged suckers on lateral arms at level of 15th–19th proximal suckers.
- Colour usually with greyish tones. No loose skin fold at the end of the mantle.
- Four large erectile papillae in diamond arrangement on dorsal mantle.
- One to two supraocular papillae over each eye.

**Hectocotylus**

Right Arm III. Ligula small, spoon-shaped, 2.5% of arm length.

**Size**

Maximum weight 10 kg.

**Distribution**

West and South Coasts. To about 200 m, but generally less than 100 m.

**Similar species**

*Enteroctopus magnificus*: All arms similar length, lateral pairs (II & III) NOT distinctly longer than median pairs; no enlarged suckers on lateral arms; generally larger and found at greater depths; colour usually with reddish rather than greyish tones; characteristic fold of loose skin at end of mantle; ligula prominent, long (16-25% of arm length), tapering to a blunt tip.

*Benthoctopus*: Ventral surface of arms dark brown; suckers prominent. Arm formula I = II = III = IV.

*Bathypolypus*: Small, purple with short arms; ink sac absent.

*Eledone schultzei* (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

**References**

Jereb et al., 2014; Nesis, 1987; Roper et al., 1984; Sanchez, 1988.
**Opisthoteuthis massyae (Opisto)**

- **Phylum:** Mollusca
- **Class:** Cephalopoda
- **Order:** Octopoda
- **Suborder:** Cirrata
- **Family:** Opisthoteuthidae
- **Common:** Umbrella octopus
- **Alternate:** *Opisthoteuthis vossi*

### Distinguishing features
- Arms almost fully encased in a thick web with a single row of suckers to the tips, flanked by a row of cirri on either side. A pair of small fins near posterior end of mantle.
- It looks like a dark reddish-brown gelatinous blob, and it is only the eight rows of suckers on the oral side that show that it is a cephalopod.
- In males, the proximal four suckers on each arm are small, the next three to six enlarged, then decrease progressively to tips, but with a second field of enlarged suckers at the web margin.
- Dorsal arms (Arms I) of males thick, muscular and robust to web margin, distal 3rd attenuate and slender. Dorsal arms of females not different to the other arms.

### Hectocotylus
None.

### Size
70 mm mantle length.

### Distribution
West and South Coasts between 500 and 1 500 m.

### Similar species
Four nominal species have been reported from Namibia and South Africa: *O. agassizi*, *O. grimaldii*, *O. massyae* and *O. vossi*. Villanueva et al. (2002) revised the genus in the Atlantic, they designate *O. vossi* as a junior synonym of *O. massyae* and restrict *O. agassizi* to the Caribbean and *O. grimaldii* to the eastern Atlantic from Azores to northern Namibia. This leaves *O. massyae* as the only known species off South Africa. Male *O. grimaldii* lack enlarged dorsal arms, females difficult to distinguish from *O. massyae*. *O. grimaldii* may be confined to deeper water as all known specimens were collected between 1 135 and 2 287 m.

### References
Jereb et al., 2014; Sanchez, 1988; Sanchez & Guerra, 1989; Villanueva et al., 2002.
**Vampyroteuthis infernalis** (VamInf)

| Phylum: | Mollusca |
| Class:  | Cephalopoda |
| Order:  | Vampyromorpha |
| Suborder: | - |
| Family: | Vampyroteuthidae |
| Common: | Vampire squid |
| Alternate: | - |

**Distinguishing features**

- Eight arms, webbed for most of their length.
- Two long filamentous limbs that can be retracted into pits between Arms I and II.
- A single row of stalked suckers on distal 2/3 of arms, flanked by a row of cirri on either side.
- Body gelatinous with black pigmentation.
- A pair of small fins near posterior end of mantle in adults; juveniles with two pairs of fins.

**Size**

Maximum 130 mm mantle length.

**Distribution**

Mesopelagic (600-1 200 m) on West and South Coasts.

**Similar species**

None, only known black octopod in the area.

**References**

### Spirula spirula (Spirul)

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Mollusca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
<td>Cephalopoda</td>
</tr>
<tr>
<td>Order:</td>
<td>Spirulida</td>
</tr>
<tr>
<td>Suborder:</td>
<td>-</td>
</tr>
<tr>
<td>Family:</td>
<td>Spirulidae</td>
</tr>
<tr>
<td>Common:</td>
<td>Ram’s horn squid</td>
</tr>
<tr>
<td>Alternate:</td>
<td>-</td>
</tr>
</tbody>
</table>

**Distinguishing features**
- Tightly coiled, chambered shell. The shell is internal, but visible on both dorsal and ventral surfaces.
- Rectangular mantle with small fins at the posterior corners.
- Mantle margin produced dorsally and deeply emarginated ventrally.
- Colour dark reddish brown, but usually skinned during trawl capture.

**Club**
Small, marginally wider than the stalk. Suckers small, subequal.

**Hectocotylus**
Both ventral arms modified.

**Size**
Maximum size 45 mm mantle length.

**Distribution**
Pelagic in surface waters on West and South Coasts. Seldom captured on demersal surveys, regular on pelagic surveys.

**Similar species**
None.

**References**
Quick guide to the Genus *Sepia*

See Figure 6 (p. 325) for illustration of emarginated versus entire ventral mantle margin. If you are unsure of the species, but are sure that your *Sepia* is in the subgenus *Hemisepius*, then use the code “Hemisep”, otherwise use the code “Sepia”.

**Table 1: Large *Sepia* – mainly South Coast**

<table>
<thead>
<tr>
<th>Character</th>
<th><em>Sepia papillata</em></th>
<th><em>Sepia simoniana</em></th>
<th><em>Sepia tuberculata</em></th>
<th><em>Sepia vermiculata</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorsal margin</td>
<td>broadly produced</td>
<td>slightly produced</td>
<td>broadly produced</td>
<td>produced dorsally</td>
</tr>
<tr>
<td>Ventral margin</td>
<td>entire</td>
<td>entire</td>
<td>entire</td>
<td>entire (♂) or emargined (♀)</td>
</tr>
<tr>
<td>Dorsal mantle</td>
<td>rough, densely</td>
<td>smooth, covered</td>
<td>densely covered</td>
<td>smooth; no</td>
</tr>
<tr>
<td></td>
<td>covered with small</td>
<td>with fine papillae</td>
<td>with obvious tubercles</td>
<td>tubercles or papillae</td>
</tr>
<tr>
<td>Wrinkled patches</td>
<td>present</td>
<td>usually absent;</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rarely present on</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mantle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diameter of largest club</td>
<td>equal to or greater</td>
<td>no enlarged</td>
<td>much less than</td>
<td>much less than</td>
</tr>
<tr>
<td>suckers</td>
<td>than width of club</td>
<td>suckers</td>
<td>width of club</td>
<td>width of club</td>
</tr>
</tbody>
</table>

**Table 2: Medium-sized *Sepia* (but beware of small individuals of above and of large *Sepia faurei*)**

<table>
<thead>
<tr>
<th>Character</th>
<th><em>Sepia angulata</em></th>
<th><em>Sepia australis</em></th>
<th><em>Sepia hieronis♂</em></th>
<th><em>Sepia hieronis♀</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorsal margin</td>
<td>slightly produced</td>
<td>produced dorsally</td>
<td>strongly produced</td>
<td>produced</td>
</tr>
<tr>
<td>Ventral margin</td>
<td>entire</td>
<td>entire</td>
<td>entire</td>
<td>emargined</td>
</tr>
<tr>
<td>Dorsal mantle</td>
<td>densely covered</td>
<td>smooth</td>
<td>smooth</td>
<td>smooth</td>
</tr>
<tr>
<td></td>
<td>with obvious</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>tubercles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posterior spine</td>
<td>absent</td>
<td>large, obvious</td>
<td>absent</td>
<td>absent</td>
</tr>
<tr>
<td>Enlarged club suckers</td>
<td>absent</td>
<td>present</td>
<td>absent</td>
<td>absent</td>
</tr>
<tr>
<td>Arms I, II &amp; III</td>
<td>long, strongly</td>
<td>not attenuated</td>
<td>not attenuated</td>
<td>not attenuated</td>
</tr>
<tr>
<td></td>
<td>attenuated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 3: Subgenus *Hemisepius*: Small to medium-sized, characterised by the presence of a fleshy ridge on sides of belly (visible as an iridescent blue line) and shell partially or completely chitinised**

<table>
<thead>
<tr>
<th>Character</th>
<th><em>Sepia dubia</em></th>
<th><em>Sepia faurei</em></th>
<th><em>Sepia robsoni</em></th>
<th><em>Sepia sp. A</em></th>
<th><em>Sepia cf. typica</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorsal margin</td>
<td>straight</td>
<td>straight or</td>
<td>straight</td>
<td>slightly</td>
<td>slightly convex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>slightly convex</td>
<td></td>
<td>convex</td>
<td></td>
</tr>
<tr>
<td>Ventral margin</td>
<td>deeply</td>
<td>emarginated</td>
<td>emarginated</td>
<td>entire or</td>
<td>entire or</td>
</tr>
<tr>
<td></td>
<td>emarginated</td>
<td></td>
<td></td>
<td>emarginated</td>
<td>emarginated</td>
</tr>
<tr>
<td>Dorsal mantle</td>
<td>sparsely</td>
<td>densely covered</td>
<td>smooth</td>
<td>smooth or</td>
<td>smooth</td>
</tr>
<tr>
<td></td>
<td>papillose, 2</td>
<td>with papillae</td>
<td></td>
<td>sparsely</td>
<td></td>
</tr>
<tr>
<td></td>
<td>large wart-like</td>
<td>or tubercles</td>
<td></td>
<td>papillose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>growths</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventral pores</td>
<td>absent</td>
<td>absent</td>
<td>absent</td>
<td>absent</td>
<td>present</td>
</tr>
<tr>
<td>Shell</td>
<td>hard calcified</td>
<td>hard centre,</td>
<td>completely soft</td>
<td>hard centre,</td>
<td>hard centre, edges</td>
</tr>
<tr>
<td></td>
<td></td>
<td>edges soft</td>
<td></td>
<td>edges soft</td>
<td>edges soft</td>
</tr>
<tr>
<td>Dorsal arms</td>
<td>suckers to</td>
<td>tips devoid of</td>
<td>suckers to</td>
<td>suckers to</td>
<td>suckers to tips</td>
</tr>
<tr>
<td></td>
<td>tips</td>
<td>suckers</td>
<td>tips</td>
<td>tips</td>
<td>tips</td>
</tr>
</tbody>
</table>
**Sepia angulata (SepAng)**

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Mollusca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
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<tr>
<td>Order</td>
<td>Sepiida</td>
</tr>
<tr>
<td>Suborder</td>
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</tr>
<tr>
<td>Family</td>
<td>Sepiidae</td>
</tr>
<tr>
<td>Common</td>
<td>-</td>
</tr>
<tr>
<td>Alternate</td>
<td>-</td>
</tr>
</tbody>
</table>

**Distinguishing features**

- Fins narrow, rounded. Separate posteriorly.
- Dorsal surface of mantle, head and arms densely covered with large, coarse papillae.
- Ventral surface of mantle generally smooth, with widely scattered large papillae.
- Arm suckers arranged in four series to tips.
- Arms I to III long and strongly attenuated.

**Club**

Long, slightly recurved, bearing numerous subequal small suckers.

**Hectocotylus**

Not described.

**Size**

ML up to 100 mm (♂) and 120 mm (♀).

**Distribution**

Coastal to 350 m on South Coast, but all research survey records 100-110 m.

**Similar species**

See Tables 1 and 2 (page 336).

The combination of strongly attenuated arms and dorsal surface densely covered with large papillae distinguishes this species from all except *Sepia tuberculata*. Differs from *S. tuberculata* in longer, thinner arms, absence of wrinkled patches on the belly, and absence of enlarged suckers on the clubs.

**References**

None.
**Sepia australis** (SepAus)

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Mollusca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
<td>Cephalopoda</td>
</tr>
<tr>
<td>Order:</td>
<td>Sepiida</td>
</tr>
<tr>
<td>Suborder:</td>
<td>-</td>
</tr>
<tr>
<td>Family:</td>
<td>Sepiidae</td>
</tr>
<tr>
<td>Common:</td>
<td>Southern cuttlefish</td>
</tr>
<tr>
<td>Alternate:</td>
<td>-</td>
</tr>
</tbody>
</table>

**Distinguishing features**
- Strong, robust spine on posterior end of cuttlebone.
- Mantle oval, dark purple dorsally. Ventral surface reddish-brown to orange when fresh, but on death fades to white with red centre.
- Mantle margin produced dorsally and straight (not emarginated) ventrally.
- Suckers on arms in four rows.

**Club**
Short, somewhat recurved. Suckers arranged in transverse rows, five suckers per row; size varies markedly, smaller distally and four greatly enlarged median suckers near proximal end.

**Hectocotylus**
Left ventral arm hectocotylised.

**Size**
Up to 85 mm mantle length, 5 gram.

**Distribution**
Common on both West and South Coasts to 500 m, but most abundant (90% of records) 60-200 m.

**Similar species**
See Table 2 (page 336).

Distinguished from other cuttlefish in the region by reddish belly and robust posterior spine.

S. elegans: Recorded off Namibia is similar, has smaller spine and part of each arm (extent varies between sexes) with suckers arranged in two rows.

**References**
**Sepia dubia (SepDub)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Mollusca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
<td>Cephalopoda</td>
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<tr>
<td>Order:</td>
<td>Sepiida</td>
</tr>
<tr>
<td>Suborder:</td>
<td>-</td>
</tr>
<tr>
<td>Family:</td>
<td>Sepiidae</td>
</tr>
<tr>
<td>Common:</td>
<td>-</td>
</tr>
<tr>
<td>Alternate:</td>
<td>Hemiseius dubia</td>
</tr>
</tbody>
</table>

**Distinguishing features**
- A fleshy ridge without pores on sides of ventral mantle typical of the subgenus Hemiseius.
- Shell hard, well-calcified, unlike any others in the subgenus Hemiseius.
- Mantle rounded, papillate, with **two large complex wart-like growths**.
- Mantle margin straight dorsally, deeply emarginate ventrally.
- Wide keels on ventral arms.
- Arms with small suckers to the tips. **Suckers biserial, but widely spaced so that they look as though they are uniserial.**

**Club**
Small, with few small subequal suckers.

**Hectocotylus**
Not described. Only known specimens are female.

**Size**
17 mm mantle length.

**Distribution**
Very rare, known from only two specimens, 150-200 m.

**Similar species**
See Table 3 (page 336).

Differs from all others in the subgenus Hemiseius in possessing a hard, calcified shell, wide keels on ventral arms and diagnostic skin growths. Additional differences are:
- *S. faurei*: Dorsal mantle densely covered with small round papillae; tips of Arms I finger-like without suckers.
- *S. robsoni*: Shell reduced, soft without hard centre; distal half of Arms I finger-like without suckers.
- *S. sp A.*: Mantle broadly oval; dorsal margin convex; ventral margin entire.
- *S. cf. typica*: 10-12 diagnostic obvious black pores ventrally.

**References**
Adam and Rees, 1966; Roeleveld, 1972.
**Sepia faurei** (SepFau)

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Sepiida  
**Suborder:** -  
**Family:** Sepiidae  
**Common:** -  
**Alternate:** Hemiseptus faurei

### Distinguishing features
- A fleshy ridge on sides of ventral mantle typical of the subgenus Hemiseptus visible as a narrow iridescent blue line without pores.
- Shell thin, not calcified, but middle hard to the touch as in most Hemiseptus.
- Mantle broad, almost round. Dorsal margin straight, deeply emarginate ventrally.
- Dorsal surface of mantle, head and arms brownish, densely **covered with small round papillae**.
- Arm suckers small, globose and biserial. Arms I attenuated for distal half, **tips finger-like, devoid of suckers**.
- Web between Arms I, II and III not reaching half of arm length.

### Size
Most small (20-30 mm ML), but specimens of over 40 mm ML have been recorded.

### Distribution
South Coast; from coast to 900 m. Rare and easily overlooked.

### Similar species
See Table 3 (page 336).

Differ from others in the subgenus Hemiseptus in densely papillose dorsal mantle and from all other Sepia in the region except S. robsoni in having tips of Arms I finger-like, devoid of suckers.

S. robsoni: Dorsal mantle and head smooth, or with few papillae around edges of shell. Shell thin, completely chitinous without hard central area.

### References
Roeleveld, 1972.
**Sepia hieronis (SepHie)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Sepiida  
**Suborder:** -  
**Family:** Sepiidae  
**Common:** -  
**Alternate:** -

**Distinguishing features**
- Dorsal projection of mantle in males long, reaching to between eyes, shorter in females.
- Ventral mantle margin entire in males, emarginated in females.
- Fins a very narrow, inconspicuous fringe along mantle, separate posteriorly.
- Dorsal arms shorter than ventral arms, with suckers to the tips.
- Suckers biserial on basal two-thirds of arms. Proximal 3rd biserial (females) or quadriserial (males).
- Dorsal colour reddish brown. Ventral colour white, with reddish or orange border near base of fins. No posterior spine.

**Club**
Small, curved with five to six transverse rows of numerous small subequal suckers.

**Hectocotylus**
Left ventral arm. Modified region about half of arm. Transversely wrinkled with minute lateral suckers.

**Size**
80 mm mantle length.

**Distribution**
West and South Coasts, between 40 and 550 m.

**Similar species**
See Table 2 (page 336).
This is the second commonest *Sepia* species after *S. australis*.


**References**
**Distinguishing features**
- Mantle broadly oval. Mantle margin dorsally produced, ventrally slightly emarginated.
- Fins wide, rounded. Separate posteriorly.
- Dorsal surface of mantle, head and arms densely covered with small tubercles.
- Wrinkled areas on ventral surface of mantle and on outer sides of ventral arms.
- Arm suckers not globose, arranged in four series basally, in four (♀) or eight (♂) rows on distal \( \frac{1}{4} \).
- Arms I to III not attenuated, webbed for about half of length.
- Colour: Dorsal dark reddish-brown to purple; ventral pale with scattered chromatophores.

**Size**
140 mm mantle length.

**Diameter**
Mainly South Coast shallower than 210 m.

**Similar species**
See Table 1 (page 336).

**Wrinkled patches on belly unique to S. papillata and S. tuberculata and rarely S. simioniana.**

S. tuberculata: Dorsal surface of head and body densely covered with large, coarse tubercles. Club long, enlarged median suckers less than width of club. Arms I-III attenuated suckers in four rows to tip in both sexes. Maximum size 82 mm ML.

S. simioniana: Club very long, with numerous minute suckers. Normally lacks wrinkled patches on belly.

**References**
Augustyn et al., 1995; Jereb & Roper, 2005; Roeleveld, 1972.
**Sepia robsoni (SepRob)**

<table>
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<tr>
<td>Alternate:</td>
<td><em>Hemisepius robsoni</em></td>
</tr>
</tbody>
</table>

**Distinguishing features**

- A fleshy ridge on sides of ventral mantle typical of the Subgenus *Hemisepius* visible as a narrow iridescent line without pores.
- Shell thin, completely chitinised, lacking the hard centre of other *Hemisepius*.
- Mantle broad; dorsal margin convex, almost straight; ventral margin deeply emarginate.
- Dorsal surface of mantle, head and arms brown, covered with small, round papillae.
- Arm suckers small, globose and biserial. Distal half of dorsal arms finger-like, devoid of suckers. Suckers to the tips of ventral and dorso-lateral arms.
- Arms I, II & III webbed half of arm length.
- Wide fin not reaching edge of mantle (along 60-80% of mantle) and separate posteriorly.

**Club**

Crescent-shaped, with about 53 subequal suckers in transverse rows of four to six.

**Hectocotylus**

Left ventral arm. Ten pairs of minute suckers in modified basal ¼.

**Size**

Maximum 20 mm.

**Distribution**

Uncommon on both West and South Coasts, from 300-500 m.

**Similar species**

Other species in the subgenus *Hemisepius* (see Table 3 on page 336).

*S. dubia*, *S. sp. A* and *S. cf. typica*: Shell with hard, calcified central area. Arms with suckers to the tips and not attenuated. In addition, *S. cf. typica* ten to twelve pairs of obvious black pores ventrally.

*S. faurei*: Centre of shell hard; dorsal surface of mantle densely covered with papillae or tubercles; distal half of Arms I-III attenuated and webbed for less than half of length; tips of Arms I devoid of suckers.

**References**

Phylum: Mollusca Cephalopoda

**Sepia simoniana (SepSim)**

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</table>

**Distinguishing features**

- Mantle broadly oval. Mantle margin dorsally produced, ventrally entire.
- Fins narrow, rounded. Separate posteriorly.
- Skin finely papillose on dorsal surface of mantle, head and arms.
- Wrinkled areas on outer sides of ventral arms and rarely on ventral mantle.
- All except ventral arms attenuated over distal quarter.
- Arm suckers not globose, quadriserial to tips of all arms in both sexes.
- Colour: Dorsal pinkish-brown; ventral pale with scattered chromatophores.

**Club**

Very long, more than half the length of mantle, with numerous minute suckers.

**Hectocotylus**

Left ventral arm. Modified region – two ventral and two dorsal rows of minute suckers separated by naked region with transverse ridges. Distal half normal.

**Size**

185 mm mantle length.

**Distribution**

Mainly South Coast. Recorded to 190 m, but usually less than 100 m.

**Similar species**

See Table 1 (page 336).

Long clubs with numerous small suckers are diagnostic.

*S. vermiculata*: Mantle broadly oval; slightly produced. Skin dorsal and ventral smooth. Arms I-III attenuated tips. Club large, enlarged median suckers 3x of marginal.

*S. papillata* and *S. tuberculata* have large wrinkled patches on the belly, and enlarged suckers on the clubs.

**References**

Augustyn et al., 1995; Jereb & Roper, 2005; Roeleveld, 1972.
**Phylum**: Mollusca Cephalopoda

**Sepia sp. A (Sep001)**

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<tr>
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</table>

**Distinguishing features**

- A fleshy ridge on sides of ventral mantle typical of the subgenus *Hemisepius* visible as a narrow iridescent blue line without pores.
- Shell reduced. Middle hard to the touch, margins soft, chitinous.
- Mantle margin: slightly convex dorsally; ventrally entire or shallowly emarginate.
- Arm suckers small and biserial. Dorsal arms not attenuated and bearing suckers to the tips.
- Dorsal surface of mantle, head and arms greenish, with well-spaced round papillae.

**Club**

Small, crescent-shaped, thicker than tentacle, with numerous small subequal suckers.

**Hectocotylus**

Left ventral arm.

**Size**

Up to 17 mm mantle length.

**Distribution**

West and South Coasts, between 50 and 500 m.

**Similar species**

Other species in the subgenus *Hemisepius* (see Table 3 on page 336). For many years has been misidentified as *Sepia dubia*.

*S. dubia*: Very large keel on ventral arms; ventral margin deeply emarginated; dorsal mantle sparsely papillate with two large wart-like growths on dorsal mantle.

*S. faurei*: Dorsal mantle densely covered with small round papillae; tips of Arms I finger-like without suckers.

*S. robsoni*: Shell reduced, soft without hard centre; distal half of Arms I finger-like without suckers.

*S. cf. typica*: 10-12 diagnostic obvious black pores ventrally.

**References**

None.
Phylum: Mollusca Cephalopoda

**Sepia tuberculata (SepTub)**

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<td>Common:</td>
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</table>

**Distinguishing features**
- Fins wide, rounded. Separate posteriorly.
- Dorsal surface of mantle, head and arms densely covered with large coarse tubercles.
- Large wrinkled patches on either side of otherwise smooth ventral surface of mantle and on outer area of ventral arms.
- Arm suckers not globose, arranged in four series to tips. Tips of Arms I to III attenuated, webbed for less than half of arm length.

**Club**
Long, slightly recurved. Small suckers distally with enlarged suckers proximally. Diameter of largest suckers less than width of the sucker-bearing part of the club.

**Hectocotylus**
Left ventral arm. The two dorsal rows of suckers normal, separated from reduced ventral suckers by a broad naked area with transverse ridges. Distal half of arm normal.

**Size**
82 mm mantle length.

**Distribution**
Shallower than 200 m on South Coast.

**Similar species**
See Table 1 (page 336).
- Wrinkled patches on belly unique to *S. papillata* and *S. tuberculata* and rarely *S. simoniana*.
- *S. papillata*: Mantle produced dorsally; slightly emarginated ventrally; arms not attenuated, suckers in 4 (♀) or 8 (♂) rows on distal ¼; club large, diameter of enlarged median suckers equal to club width.
- *S. simoniana*: Club very long, with numerous minute suckers.
- *S. angulata*: Also has large, obvious tubercles on dorsal, but lacks wrinkled patches on belly.

**References**
**Sepia cf. typica (SepTyp)**

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<td>Alternate:</td>
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</table>

**Distinguishing features**

- A fleshy ridge on sides of ventral mantle typical of the Subgenus *Hemisepius*, with 5-15 (usually 10-12) diagnostic obvious black pores.
- Shell not calcified, very thin and fragile, but hard to the touch.
- Mantle very broadly oval, almost as wide as long; dorsal margin convex; ventral margin entire or emarginated.
- Dorsal surface of head and mantle greenish, sparsely papillose.
- Suckers globose, biserial and extending to the tips of the arms. Tips not attenuated.
- Arms short, subequal in length; interbranchial web between Arms I-III half arm length.
- Fins narrow, fused posteriorly.

**Hectocotylus**

Left ventral arm. Basal half modified. Suckers minute, widely spaced, separated by fleshy transverse ridges.

**Size**

25 mm mantle length.

**Distribution**

Both West and South Coasts, from coast to 600 m.

**Similar species**

See Table 3 (page 336).

Distinguished from all others in the Subgenus *Hemisepius* (*Sepia dubia, S. faurei, S. robsoni*, and *S. sp. A*) by the presence of pores in the fleshy ventral ridge.

**References**

Roeleveld, 1972.
Sepia vermiculata (SepVer)

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Sepiida  
**Family:** Sepiidae  
**Common:** Sepia officinalis vermiculata

### Distinguishing features
- Mantle broadly oval. Dorsal margin convex, somewhat produced, ventral margin entire (male) or emarginated (female).
- Fin wide, rounded. Along entire margin of mantle with small gap at tail.
- Skin smooth, both dorsally and ventrally, no obvious pores or wrinkled patches.
- Ventral arms longest, dorsal arms shortest. Arms III and IV keeled, joined by shallow web.
- Suckers on arms in four rows, extending to somewhat attenuated tips.
- Some individuals show diagnostic transverse zebra-like stripes on mantle and ventral arms.

### Club
Large, one third of mantle length; distal suckers small in oblique rows of eight; proximal suckers in oblique rows of five, with median suckers 1.5-2 times and middle suckers 3 times the size of the marginal suckers.

### Hectocotylus
Left ventral arm. Modified region with 9-12 rows of reduced suckers separated by transverse ridges.

### Size
287 mm mantle length.

### Distribution
Mainly shallow water on South Coast, but recorded to 290 m.

### Similar species
See Table 1 (page 336).

S. simoniana: Dorsally mantle more produced and skin finely papillose. Arms I-III attenuated and webbed for about half of length. Club very long, with numerous minute suckers.

S. papillata and S. tuberculata have large wrinkled patches on the belly.

### References
**Austrorossia enigmatica** (RosEni)

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<tr>
<td>Common:</td>
<td>Bobtail squid</td>
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<tr>
<td>Alternate:</td>
<td><em>Rossia enigmatica; Austrorossia mastigophora</em></td>
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</table>

**Distinguishing features**
- Shell rudimentary, chitinous, feels as though there is no internal shell.
- Fins large, rounded, attached about midway along mantle; broadly separated posteriorly.
- Anterior mantle edge not fused with head dorsally, not covering funnel ventrally.
- Head short and broad, constricted round crown of circumoral appendages anterior to eyes.
- Eyes large, prominent iridescent green.

**Club**
Narrow, not wider than tentacle. Suckers microscopic in 30-40 rows.

**Hectocotylus**
Both dorsal arms.

**Size**
40 mm mantle length.

**Distribution**
West (common) and South (uncommon) Coasts, between 200 and 500 m.

**Similar species**
None.

**References**
**Inioteuthis capensis (Inio)**

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<tr>
<td>Alternate:</td>
<td>Rondeletiola capensis</td>
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**Distinguishing features**
- Shell absent.
- Fins small, rounded, attached mid-laterally to mantle. Broadly separated posteriorly.
- Mantle fused with head dorsally by a narrow occipital band.
- Funnel not covered by a forward extension of the antero-ventral edge of mantle.
- Body oblong, longer, less eyeball-like than *Stoloteuthis*.
- Ventral surface of ink sac without luminous organ.

**Club**
Small, slightly wider than stalk, with small suckers.

**Hectocotylus**
Left dorsal arm. Basal part modified into specialised copulatory apparatus.

**Size**
20 mm mantle length.

**Distribution**
Common in surface waters on both coasts, but seldom recorded on demersal surveys because of small size.

**Similar species**
*Stoloteuthis*: Larger, more globular; dorsal mantle broadly fused with head (occipital band 40-50% head width); ventral mantle extended to form a ventral shield; luminous organ present on ink sac.

**References**
**Stoloteuthis sp. (Stolot)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Sepiida  
**Suborder:** -  
**Family:** Sepiolidae  
**Common:** Eye-ball squid, Butterfly bobtail squid  
**Alternate:** -

**Distinguishing features**
- Shell absent.
- Fins large, ear-like, attached laterally to posterior half of mantle. Broadly separated posteriorly.
- Dorsal mantle edge fused to head by a broad occipital band 40-50% of head width.
- Anterior edge of mantle extended as a ventral shield to level with eyes.
- Body round, globular, looks like an eyeball. Top of head iridescent green.
- First three pairs of arms joined by a deep web. Suckers on arms in two series.
- A luminous organ on ventral side of ink sac.

**Club**
Not thicker than tentacle, with numerous small suckers.

**Hectocotylus**
Both Arms II.

**Size**
20 mm mantle length.

**Distribution**
Between 100 and 850 m, mainly on West Coast.

**Similar species**
Inioteuthis capensis: Smaller, body longer, less globular. Anterior edge of mantle not extended into a ventral shield. Mantle narrowly fused to head dorsally. No luminous organ on the ink sac.

**References**
Afrololigo mercatoris (Lollig)

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Myopsida  
**Family:** Loliginidae  
**Common:** African thumbstall squid  
**Alternate:** Lolliguncula mercatoris

**Dorsal View**
- Reddish spots on mantle, head and arms
- Fins small, posterior margin convex
- Ventral mantle deeply emarginated, edge extended in lateral points
- Dorsal arms short

**Ventral View**
- Tentacular club

**Distinguishing features**
- Lens of eye covered by a cornea, not in direct contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Arms with two rows of suckers, clubs with four rows. No hooks.
- Dorsal arms (Arms I) much shorter than other arms.
- Fins translucent, short (40% ML) and rounded, with convex posterior margins.
- White, with irregular reddish-brown spots on mantle, head and arms.

**Club**
Narrow, small, with suckers arranged in four longitudinal rows; four to five pairs of medial suckers on manus enlarged, sucker rings with 15-25 teeth.

**Hectocotylus**
Left ventral arm. Basal half normal; distal half with elongate papillae.

**Size**
Males 50 mm mantle length, females 35 mm.

**Distribution**
West and South Coasts to 470 m.

**Similar species**
Juvenile *Loligo reynaudii* have longer, narrower fins with concave posterior margins; ventral mantle shallowly emarginated; and lack the irregular reddish spots. Clubs wider, with some enlarged suckers.

**References**
**Loligo reynaudii (CHOK)**

### Phylum: Mollusca

### Class: Cephalopoda

### Order: Myopsida

### Suborder: Loliginidae

### Common: Chokka

### Alternate: Loligo vulgaris reynaudii

### Distinguishing features

- Lens of eye covered by a cornea, not in direct contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Arms with two rows of suckers, clubs with four rows. No hooks.
- Mantle narrow, firm and elongate.
- Skin red, deciduous, usually rubbed off in the trawl showing white mantle.
- Fins posterior, long, over 65% of mantle, rhomboidal in shape, with concave posterior margin.

### Club

Tentacles long; clubs expanded; suckers in four series; suckers on manus greatly enlarged, cups smooth without chitinious teeth.

### Hectocotylus

Left ventral arm. Basal part of arm with two series of suckers. Suckers on distal part reduced, but with elongated stalks to form papillae making a feathery tip.

### Size

Males up to 400 mm mantle length. Females smaller.

### Distribution

Widespread on both coasts but most common on South Coast, shallower than 200 m.

### Similar species

Juveniles can be confused with *Afrololigo mercatoris* of similar size.

*Afrololigo mercatoris*: Short, rounded fins with convex posterior margin; ventral mantle deeply emarginated; clubs small, narrow, without greatly enlarged suckers on manus; mantle and arms with reddish spots.

*Uroteuthis duvaucelii* from KwaZulu-Natal which has a wider club with four rows of enlarged suckers.

### References

**Phylum:** Mollusca Cephalopoda

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### Ctenopteryx sicula (CteSic)

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<td>Common:</td>
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<td>Alternate:</td>
<td><em>Ctenopteryx sicula</em> (common misspelling)</td>
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**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Mantle broadly rounded with fins along full length, similar shape to cuttlefish.
- Fins comprised of slender rib-like muscle bundles connected by membranes, giving a comb-like appearance.
- Arms I to III with suckers in transverse series of 6 to 14; Arms IV with a few small suckers in a zigzag pattern.
- Large photogenic patches on ventral surface of eyeballs.
- Minute suckers on lappets of the buccal membrane.

---

**Club**

Narrow, not expanded, with minute suckers in 8 to 20 irregular transverse series.

**Hectocotylus**

None.

**Size**

Up to 100 mm mantle length.

**Distribution**

Both West and South Coasts, from 500 to 1000 m.

**Similar species**

Comb-like fins are diagnostic.

**References**


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*Figure reproduced from Jereb & Roper, 2010, with permission.*
**Ancistrocheirus lesueurii (AncLes)**

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<td>Common</td>
<td>Sharpear enope squid</td>
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<tr>
<td>Alternate</td>
<td>Thelidiotheuthis alessandrini</td>
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**Dorsal View**

- Mantle elongate forming a tail.
- Fin very large, subterminal with characteristic brown transverse dashed lines.

**Ventral View**

- Hooks present on all arms.

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Fin very large, rhomboidal, length 70-80% and width 80% of ML. Attached from anterior of mantle ending slightly subterminal. Dorsal surface with irregular brownish transverse dashed lines (photophores).
- Posterior end of mantle elongated, forming a tail.
- Arms robust with two series of hooks. Small suckers sometimes present on tips.
- Ventral surface of mantle studded with 20-24 relatively large separated photophores. No photophores on eyeballs or viscera.

**Club**

Tentacles robust, 12 photophores on aboral side of stalk. Clubs not expanded, two series of hooks on manus, no suckers. Discrete carpal cluster.

**Hectocotylus**

Right ventral arm.

**Size**

Attains 410 mm mantle length, and 3 kg.

**Distribution**

Mesopelagic and bathypelagic on West and South Coasts.

**Similar species**

Octopoteuthidae also have very large rhomboidal fins, but lack the brown dashed lines on the dorsal surface, and the tentacles are reduced or absent.

**References**

**Brachioteuthis picta (BraPic)**

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<td>Family:</td>
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<td>Common:</td>
<td>Ornate arm squid</td>
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**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Mantle long and slender; slightly flared at opening; abruptly narrows anterior to fins.
- Fin almost as wide as long, length and width about 50% ML.
- A sausage-shaped photophore on ventral surface of each eye.
- Skin smooth in both sexes, never rough even in mature individuals.

**Club**
Manus greatly expanded, covered with numerous rows of small, long-stalked suckers; dactylus section with three to four rows of suckers.

**Hectocotylus**
Not described.

**Size**
90 mm mantle length.

**Distribution**
Oceanic on both West and South Coasts.

**Similar species**
*Brachioteuthis* sp. A. has rough “warty” skin. Fin length less than 50% ML, width greater than length.

**References**
**Brachioteuthis sp. A (Brachi)**

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**Dorsal View**

- Large clubs without hooks
- Flared mantle opening
- Abrupt narrowing of mantle
- Sausage-shaped photophore on ventral surface of eye
- Granular skin
- Tentacular club showing greatly expanded manus and elongated dactylus

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Mantle long and slender; slightly flared at opening; abruptly narrows anterior to fins.
- Fin length less than 50% of ML. Width greater than length.
- A sausage-shaped photophore on ventral surface of each eye.
- Skin rough, granular.

**Club**

Manus greatly expanded, covered with numerous rows of small, long-stalked suckers. Dactylus section with three to four rows of suckers.

**Hectocotylus**

Not described.

**Size**

90 mm mantle length.

**Distribution**

Mesopelagic on both West and South Coasts, deeper than 300 m.

**Similar species**

*Brachioteuthis picta*: Smooth skin; fin length equals width, about 50% of ML.

*Onykia* species also have rough, warty skin but differ in the presence of hooks on the clubs.

**References**

**Chiroteuthis mega** *(ChrCap)*  

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Teuthoidea  
**Suborder:** Oegopsida  
**Family:** Chiroteuthidae  
**Common:** Atlantic long-arm squid  
**Alternate:** *Chiroteuthis capensis*  

**Lateral View**

- Both head and neck very long  
- Circular fin  
- Tentacle very long and thin  
- Ink sac bearing a single photophore  
- Short “tail”  
- One photophore on anterior eye margin  
- One post-ocular photophore  
- Seven photophores on ventral eye margin  
- Ventral arms much larger than others  

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.  
- Funnel-locking cartilage oval, with two knobs directed towards centre of the concavity.  
- Head and neck long and tubular, but squarish near the eyes; head plus neck almost as long as mantle; eyes about midway between arm bases and mantle.  
- Fins thick and fleshy, together circular, not lobed; gladius extends as a short tail past fins.  
- Arms IV much longer and thicker than other arms; Arms II and III subequal; Arms I short.  
- Eyeball with one photophore on anterior margin just above midline and one just below midline on posterior margin; a series of seven photophores on antero-ventral margin.  
- A single photophore on the ink sac.  

**Hectocotylus**  
Absent.  

**Size**  
100-200 mm mantle length.  

**Distribution**  
West and South Coasts, from 700 to 1400 m.  

**Similar species**  
*Chiroteuthis veranii* (possible occurrence on South Coast) differs in having two photophores on the ink sac.  
*Joubiniteuthis portieri*: Long slender tail (greater than ML) posterior to short round fin. Arms I - III very long, 2x mantle length and 3x length of Arms IV. Lacks photophores on eyeballs.  

**References**  
**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage.
- Ventral surface of mantle with two cartilaginous strips extending posteriorly from anterior apex of each funnel-mantle fusion; funnel fused to head laterally.
- Brachial photophore on end of each arm in mature females.
- Eyes with 14 small round photophores: an inner group of six around pupil; an outer group of seven in an arc on ventral edge; one between the inner and outer groups.
- Mantle a thin-walled sac covered in spiky, cartilaginous tubercles.
- Fins small (less than 25% ML) posterior. Each nearly oval with free posterior lobe.

**Hectocotylus**

Right ventral arm. Suckers in four series on midpoint of hectocotylised arm.

**Size**

Up to 150 mm mantle length.

**Distribution**

Both West and South Coasts, from 400 to 1200 m.

**Similar species**

Monotypic genus. Cartilaginous tubercles scattered over entire mantle unique among Cranchiidae. *Sandalops melancholicus* similar in general shape, but with smooth skin and funnel free from head laterally.

**References**


---

**Club**

Not expanded, with small sub-equal suckers. Alternating series of carpal suckers and pads for most of tentacle length.
**Phylum:** Mollusca Cephalopoda

---

**Leachia cyclura (LeaCyc)**

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<tr>
<td>Class:</td>
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<tr>
<td>Family:</td>
<td>Cranchiidae</td>
</tr>
<tr>
<td>Common:</td>
<td>Leach’s cranch squid</td>
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<tr>
<td>Alternate:</td>
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</table>

**DORSAL VIEW** One cartilaginous strip extends ventrally for 20-30% of ML from apex of each funnel-mantle fusion

- Fins terminal, rounded and fused posteriorly
- Cartilaginous dorsal keel with small tubercles along dorsal midline
- Mantle spindle-shaped, tapering to point
- Eight small oval photophores on eyes
- Mantle fused to head dorsally and to funnel ventrally

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage. Funnel fused to head laterally.
- Mantle spindle-shaped, tapering to sharp point, with a cartilaginous dorsal keel.
- Ventral surface of mantle with one cartilaginous strip extending posteriorly for 20-30% of mantle length from anterior apex of each funnel-mantle fusion.
- Body translucent with scattered chromatophores and three dark internal organs easily visible.
- Large elongate brachial photophore on tips of Arms III in mature females.
- Eight eye photophores, five in outer row and three near pupil.
- Fins terminal, rounded and fused posteriorly.

**Hectocotylus**

Not described.

**Size**

Maximum 150-200 mm mantle length.

**Distribution**

South Coast to west of Cape Point, from surface to 2 000 m.

**Similar species**

*Leachia atlantica*: Cartilaginous strip 14-15% of ML; six photophores on each eye (five outer and one near pupil).

*Liocranchia* sp.: Head nearly as wide as mantle; either 4 or 14 oval photophores on eyes depending on species.

**References**

**Liocranchia reinhardtii** (LioRei)

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:** -  
**Family:** Cranchiidae  
**Common:** Reinhart’s cranch squid  
**Alternate:** -

### Distinguishing features

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Mantle spindle-shaped, tapering to sharp point; **cartilaginous tubercles along dorsal midline.**
- Head fused to the mantle at the nuchal cartilage. Funnel fused to head laterally.
- Ventral surface of mantle with a **pair of cartilaginous strips**, studded with tubercles, extending posteriorly in a V-shape from apex of each lateral funnel-mantle fusion (four strips in total).
- Mature females with brachial photophores on tips of Arms III only.
- **14 small photophores around eyes:** four around pupil; eight in ventral arc; two between the two series.
- Fins terminal, rounded and fused posteriorly.

### Club

Slightly expanded with small, sub-equal suckers. An alternating series of carpal suckers and pads for most of tentacle length.

### Size

Maximum 250 mm mantle length.

### Distribution

Pelagic to mesopelagic on West and South Coasts.

### Similar species

**Liocranchia valdiviae**: No cartilaginous tubercles on dorsal midline, four small round photophores on eyes.

**Leachia** sp.: Head small, much narrower than width of mantle; one cartilaginous strip from each lateral funnel-mantle fusion; six or eight oval photophores on eyes depending on species.

### References


---

**VENTRAL VIEW** If unsure of the species, use the code Liocra for Liocranchia sp.

[Diagram of Liocranchia reinhardtii showing ventral view features]
### Liocranchia valdiviae (LioVal)

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<td>Class:</td>
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<tr>
<td>Common:</td>
<td>Valdivia cranch squid</td>
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<td>Alternate:</td>
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</table>

**Distributing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage. Funnel fused to head laterally.
- Mantle spindle-shaped, tapering to sharp point, without cartilaginous tubercles along dorsal midline.
- Ventral surface of mantle with a pair of cartilaginous strips, studded with tubercles extending posteriorly in a V-shape from apex of each lateral funnel-mantle fusion (four strips in total).
- Brachial photophore only on Arms III of mature females. Eyes with four small round photophores.
- Fins terminal, rounded and fused posteriorly.

### Hectocotylus

- Right or left ventral arm. Suckers in two series on midpoint of hectocotylised arms.

### Size

- Maximum 250 mm mantle length.

### Distribution

- Pelagic to mesopelagic on West and South Coasts.

### Similar species

- *Leachia* sp.: Head small, much narrower than width of mantle; one cartilaginous strip from each lateral funnel-mantle fusion, six or eight oval photophores on eyes depending on species.

### References

**Megalocranchia maxima** *(Megalo)*

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:**  
**Family:** Cranchiidae  
**Common:** Large cranch squid  
**Alternate:** -

**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage; funnel free from the head laterally.
- Mantle slender, elongate, tapers dramatically to thin sharp tip, lacking cartilaginous tubercles.
- Most of ventral hemisphere of eyes covered by two photophores, a large crescent-shaped posterior photophore and a smaller anterior photophore within its concavity.
- Large, complex, bilobed compound photophore present on ventral surface of rounded digestive gland and ink sac.
- Long lanceolate fins (50% ML) terminal-lateral without anterior lobes; anterior 10-15% of fin fused to lateral margins of mantle (unique to *Megalocranchia* and *Teuthowenia*).

**Hectocotylus**
- Absent.

**Size**
- 1 800 mm mantle length.

**Distribution**
- West and South Coasts, 600-2000 m during day; migrates to 100-700 m at night.

**Similar species**
- Distinguished from other Cranchiids except *Teuthowenia* by fusing of anterior of fin to lateral mantle.  
*Teuthowenia:* Lack photophore on ink sac, have three photophores on eyes and fin extends beyond gladius.

**References**
**Sandalops melancholicus (SanMel)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:** -  
**Family:** Cranchiidae  
**Common:** Melancholy cranch squid  
**Alternate:** -

**DORSAL VIEW**

- **Mantle smooth, no cartilaginous tubercles**
- **Mantle fused to head dorsally and to funnel ventrally**
- **Fins small, subterminal**
- **Eye photophores: one small anterior and one large posterior**
- **No brachial photophores on arm tips**
- **Head small, eyes large and bulbous**
- **Clubs without hooks or enlarged suckers**

---

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage; funnel free from the head laterally.
- Mantle without cartilaginous tubercles, skin smooth.
- Head small; eyes large, bulbous with two photophores (one large posterior and one small anterior).
- Arms with biserial, spherical suckers.
- Fins small (12-15% ML), rounded, subterminal.

**Size**

Maximum mantle length 110 mm.

**Distribution**

Mesopelagic and bathypelagic on West Coast.

**Similar species**

_Cranchia scabra_ is superficially similar, but that species has rough skin, and funnel fused to head laterally.

**References**


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**Club**

Club moderate, without enlarged suckers or hooks. Suckers in four series.

**Hectocotylus**

Absent.
**Taonius pavo** (Taonis)

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<th>Phylum:</th>
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<td>Family:</td>
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<tr>
<td>Common:</td>
<td>Peacock cranch squid</td>
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<td>Alternate:</td>
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**Dorsal View**

- Mantle very long and slender without tubercles
- Fin long, narrow, strongly attenuated
- Clubs without hooks
- Head small, eyes large, bulbous with two large photophores
- Mantle and fin extended into thin tail
- Mantle fused to head dorsally and to funnel ventrally

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage.
- Funnel free from the head laterally.
- Mantle without cartilaginous tubercles, very long, slender, tapering to long thin “tail”.
- Head small; eyes large, bulbous with one large posterior crescent-shaped photophore that engulfs the small anterior photophore.
- Arms with biserial, spherical suckers; without hooks.
- Fins long (50% ML), narrow, lanceolate, very attenuated posteriorly. Anterior lobes small.

**Hectocotylus**

- Absent.

**Size**

- 650 mm mantle length.

**Distribution**

- West and South Coasts. Juveniles below 600 m, adults to 2000 m.

**Similar species**

- None.

**References**


**Club**

- Moderate without hooks; enlarged suckers with one or two large hook-like teeth.
**Phylum: Mollusca Cephalopoda**

**Teuthowenia pellucida (Teuthw)**

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<td>Family:</td>
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<td>Common:</td>
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**DORSAL VIEW**

- Mantle fused to head dorsally and to funnel ventrally
- Anterior 10-15% of fin fused to mantle
- Large bulbous eyes with three photophores
- Short, muscular tentacles
- Carpal suckers in four series in zigzag pattern
- FEMALE: Light organs on tips of Arms I-IV
- Fin extends past gladius as small lobes

Figure reproduced from Jereb & Roper, 2010, with permission.

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle fused to posterior-lateral corners of funnel, no funnel-locking cartilage.
- Head fused to the mantle at the nuchal cartilage.
- Mantle thin, leathery; funnel free from the head laterally.
- Funnel/mantle fusion cartilages small, oval with one to four cartilaginous tubercles at mantle margin.
- Head small; eyes large, bulbous, with three nested photophores – a large crescent-shaped posterior photophore, within its concavity a smaller crescent-shaped anterior photophore and a third small oval photophore.
- Brachial end-organ (photophore) on tips of Arms I-IV of mature females.
- Fins long, narrow, terminal-lateral, taper posteriorly, terminating in small lobes that extend posteriorly beyond the tip.

**Hectocotylus**

Absent.

**Size**

210 mm mantle length.

**Distribution**

West and South Coasts. Occur at greater depths with age; juveniles and subadults to 1 000 m; adults 1 000-2 500 m.

**Similar species**

Distinguished from other Cranchiids except *Teuthowenia* by fusing of anterior of fin to lateral mantle.

*Megalocranchia*: Has complex photophore on ink sac, and two on eyes; fin does not extend beyond gladius.

**References**


**Club**

Tentacles short, muscular; carpal suckers in four series in a zigzag pattern on stalk; club slightly expanded with suckers on long pedestals.
Discoteuthis discus (DisDis)

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Family:** Discoteuthidae

**Common:** Discus squid  
**Alternate:** -

**Distribution**
Rare. Possible on both West and South Coasts, 500 to 1000 m.

**Similar species**
Combination of large disc-like fin and globose suckers unique in area. Other species with large fin are:
- *Mastigopsis hjorti*: Has small suckers, weak tentacles and two photophores on eyeball.
- Octopoteuthidae (*Octopoteuthis sicula* and *Taningia danae*): Tentacle residual or absent; armature of hooks.
- *Ancistrocheirus lesueuri*: Armature of hooks, diagnostic dashed brown line on fins.

**References**

**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- **Fin large, disc-like**, wider than long, equal to mantle length.
- Suckers on arms **globose**, biserial.
- A single photophore on ventral mantle near posterior end of body; no photophores on head or near anterior edge of mantle, or on ink sac.
- Funnel-locking cartilage triangular, with an oblique groove.

**Club**
Compact, widened, with four rows of suckers, two central rows greatly enlarged, globose.

**Hectocotylus**
Absent.

**Size**
600 mm mantle length.
**Abraliopsis gilchristi (AbrGil)**

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<tr>
<td>Family:</td>
<td>Enoploteuthidae</td>
</tr>
<tr>
<td>Common:</td>
<td>Gilchrist's enope squid</td>
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<tr>
<td>Alternate:</td>
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</table>

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage a simple straight groove and ridge.
- Characteristic purplish buccal area contrasting with the whitish bases of the arms.
- Mantle, head and arms covered with small photophores visible as small spots.
- Photophores on ventral surface of head arranged in five to seven clearly defined longitudinal lines, no photophores between these lines.
- Arms IV without suckers, two to four (usually three) large photophores covered by black chromatophores on tips of arms.
- Eyeball with five photophores ventrally, anterior and posterior photophores enlarged.
- Fin strongly emarginated, lacking posterior lobes and not extending past end of mantle.

**Hectocotylus**

Right or left Arm IV.

**Size**

40 mm mantle length.

**Distribution**

Mainly northern parts of West Coast, 200 to 1400 m.

**Similar species**

*Abraliopsis hoylei*: Photophores on ventral surface of head diffuse, not arranged in clear longitudinal lines.

*Abralia siedleckyi*: Has one very large and four small photophores on eyes; Arms IV with suckers distally and without photophores; club with one row of hooks. Other *Abralia* sp. have 5-12 photophores on eyes.

**References**

Quick guide to the Jewel Squids, Genus *Histioteuthis*

**Table 4: Comparison of species in the genus *Histioteuthis*. If unsure of the species use the code “Histio”**.

<table>
<thead>
<tr>
<th></th>
<th><em>H. bonnellii</em></th>
<th><em>H. macrohista</em></th>
<th><em>H. meleagroteuthis</em></th>
<th><em>H. miranda</em></th>
<th><em>H. reversa</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mantle length relative to head length</td>
<td>Much shorter than head</td>
<td>Much shorter than head</td>
<td>Shorter than head</td>
<td>Longer than head</td>
<td>Longer than head</td>
</tr>
<tr>
<td>Cartilaginous tubercles on mantle</td>
<td>None</td>
<td>None</td>
<td>Large obvious tubercles on dorsal midline of mantle and on Arms I-II</td>
<td>Small inconspicuous tubercles on dorsal midline of mantle and on Arms I-II</td>
<td>None</td>
</tr>
<tr>
<td>Large, elongate photophore on tips of Arms I-III</td>
<td>Present</td>
<td>Present</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>Inner webbing between Arms I-III</td>
<td>50% of arm length</td>
<td>50% of arm length</td>
<td>Less than 15% of arm length</td>
<td>Up to 15% of arm length</td>
<td>Vestigial</td>
</tr>
<tr>
<td>Number of photophores around left eye</td>
<td>17</td>
<td>16</td>
<td>19-21</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Number of buccal lappets</td>
<td>6</td>
<td>7</td>
<td>7</td>
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Examples of the buccal crown in *Histioteuthis* to illustrate the number of buccal lappets; either six (*H. bonnellii*, left) or seven lappets (*H. macrohista* and *H. miranda*, centre and right panels respectively)
**Histiotethis bonnellii (HisBon)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:** -  
**Family:** Histiotethidae  
**Common:** Ornate/Bonnelli’s jewel squid  
**Alternate:** -

**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.  
- Body covered with minute photophores.  
- Left eye much larger than right.  
- Mantle short, subequal to head length; no cartilaginous tubercles on mantle or arms.  
- Arms joined by an inner web to 50% or more of arm length.  
- Tip of each of Arms I–III bearing a single large elongate photophore.  
- Buccal membrane with six lappets (see image on page 369); 17 (rarely 16 or 18) photophores around right eye.  
- Large compound photophores on ventral surface of head and on Arms III and IV.

**Club**
Small, with four to eight rows of suckers of varying sizes.

**Hectocotylus**
Both dorsal arms.

**Size**
Up to 330 mm mantle length (largest Histiotethis).

**Distribution**
Mainly on West Coast, from 500 to 1500 m.

**Similar species**
See Table 4 (page 369).

The only Histiotethis sp. in area with six lappets.

*H. macrohista*: Mantle short; buccal lappets seven; right eye photophores 16; inner web >50% of arms; ventral surface of head and Arms III and IV without large compound photophores.

*H. meleagroteuthis*: Mantle short; buccal lappets seven; right eye photophores 19-21; inner web <15% of arm; single row of large cartilaginous tubercles on dorsal midline of mantle and of Arms I-III.

*H. miranda* and *H. reversa*: Mantle long; buccal lappets seven.

**References**
**Histiotethis macrohista (HisMac)**

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<tr>
<td>Family:</td>
<td>Histiotethiidae</td>
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<tr>
<td>Common:</td>
<td>Plain jewel squid</td>
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**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Body covered with minute photophores.
- Left eye much larger than right.
- Mantle short, less than head length; no cartilaginous tubercles on mantle or arms.
- Arms joined by an inner web to 50% or more of arm length.
- Tip of each of Arms I–III bearing a single large elongate photophore.
- Buccal membrane with seven lappets (see image on page 369); 16 photophores around right eye.
- Ventral surface of head and Arms III and IV plain, without large compound photophores.

**Club**
Small, four to eight rows of suckers of varying sizes.

**Hectocotylus**
Both dorsal arms.

**Size**
Up to 70 mm mantle length.

**Distribution**
Both coasts, but more common on West Coast; 100 to 1000 m.

**Similar species**
See Table 4 (page 369).

- *H. bonnellii*: Mantle short; buccal lappets six; right eye photophores 17; inner web >50% of arms; large compound photophores on ventral surface of head and Arms III and IV.
- *H. meleagroteuthis*: Mantle short; buccal lappets seven; right eye photophores 19-21; inner web <15% of arm; single row of large cartilaginous tubercles on dorsal midline of mantle and of Arms I-III.
- *H. miranda* and *H. reversa*: Mantle long; seven buccal lappets.

**References**
**Histiotethis meleagroteuthis** (HisMel)

| Phylum:  | Mollusca |
| Class:   | Cephalopoda |
| Order:   | Oegopsida |
| Suborder: | - |
| Family:  | Histiotethidae |
| Common:  | Crested jewel squid |
| Alternate: | - |

**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Body covered with minute photophores.
- Left eye much larger than right.
- Mantle short, subequal to head length; inner web between arms less than 15% of arm length.
- No large elongate photophores at the tips of arms.
- Buccal membrane with seven lappets; 19-21 photophores around right eye.
- Eight to nine longitudinal rows of photophores in basal parts of Arms IV; 30 transverse rows of photophores on ventral mantle.
- **Large cartilaginous tubercles** on dorsal midline of mantle and basal parts of Arms I–III.

**Club**
Small, with four to eight rows of suckers of varying sizes.

**Hectocotylus**
Both dorsal arms.

**Size**
Up to 114 mm mantle length.

**Distribution**
West Coast. Off the shelf in water column to over 1 000 m.

**Similar species**
See Table 4 (page 369).
Distinguished from other *Histiotethis* by large cartilaginous tubercles on dorsal midline of mantle and dorsal base of Arms I–III; 19-20 photophores around right eye.

**References**
**Histiooteuthis miranda** (HisMir)

**DORSAL VIEW**

- **Right eye much smaller than left**
- **Web extends for 15% of arm length**
- **Right eye surrounded by 16 photophores**
- **Buccal area showing the restricted webbing between the arms and seven lappets in the buccal membrane**
- **Small cartilaginous tubercles**

**Distinguishing features**

- **Eye not covered by a transparent membrane, lens in open contact with seawater.**
- **Body covered with minute photophores.**
- **Left eye much larger than right.**
- **Mantle length greater than head length,** with small inconspicuous cartilaginous tubercles on dorsal midline of mantle and basal parts of Arms I–III.
- **Inner web connects basal 15-25% of Arms I-III; outer web not developed.**
- **No large elongate photophores at the tips of arms.**
- **Buccal membrane with seven lappets; 16 photophores around right eye.**

**Club**

Manus with closely packed suckers of varying sizes in six to seven series.

**Hectocotylus**

Both dorsal arms.

**Size**

Up to 270 mm mantle length.

**Distribution**

Most common *Histiooteuthis* species in the region, on both coasts in 700 to 900 m.

**Similar species**

See Table 4 (page 369).

- *H. bonnellii*, *H. macrohista* and *H. meleagroteuthis*: Mantle length less than head length.
- *H. reversa*: Lacks tubercles on dorsal midline and base of arms; 18 photophores around right eye; inner web between arms vestigial.

**References**

**Histioteuthis reversa (HisRev)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Family:** Histioteuthidae  
**Common:** Reverse jewel squid  
**Alternate:** -

**Dorsal View**

- Left eye much bigger than right  
- No cartilaginous tubercles on arms  
- No cartilaginous tubercles on mantle  
- Inner webbing vestigial  
- 18 photophores around right eye  
- Buccal membrane with seven lappets  
- Tentacular Club

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.  
- Body covered with minute photophores.  
- Left eye much larger than right.  
- **Mantle elongate**, much longer than head, lacking cartilaginous tubercles on dorsal midline.  
- Arms robust, of moderate length, without cartilaginous tubercles or terminal photophores.  
- Inner web between Arms I-III low, vestigial.  
- Buccal membrane with seven lappets; 18 photophores around right eye.

**Club**

Manus with deep longitudinal cleft on aboral surface; suckers in six diagonal series, median ventral series enlarged (three to four times marginal).

**Hectocotylus**

Both dorsal arms.

**Size**

Up to 200 mm mantle length.

**Distribution**

Occurs off Namibia; possible on northern West Coast; 300–1 000 m.

**Similar species**

See Table 4 (page 369).  
*H. bonnellii, H. macrohista* and *H. meleagroteuthis*: Mantle length less than head length.  
*H. miranda*: 16 eye photophores; inner web on Arms I-III <15% of arm; single row of small cartilaginous tubercles on dorsal midline of mantle and of Arms I-III.

**References**

**Joubiniteuthis portieri (JouPor)**

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<td>Joubin's squid</td>
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**Dorsal View**

- Arms I-III more than twice mantle length
- Fins fused, circular

**Ventral View**

- Arms IV very short
- Tail longer than mantle

*Figure reproduced from Young & Roper, 1969, with permission.*

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage oval, without knobs.
- Arms I-III very long, more than 2x ML, with very small suckers in six series.
- Arms IV short (1/3 length of other arms), with suckers in four series.
- Head narrow, eyes small without photophores.
- Mantle long and narrow.
- Fin round, short (30% ML); long thin tail (longer than mantle).

**Club**

Long and laterally compressed; minute suckers in 5-12 transverse series; no carpus.

**Hectocotylus**

Absent.

**Size**

105 mm mantle length.

**Distribution**

West Coast, very rare. Meso- to bathypelagic from 500 m to over 3 000 m.

**Similar species**

None. Combination of long Arms I-III and long tail diagnostic.

**References**

**Phylum:** Mollusca Cephalopoda

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**Lycoteuthis lorigera (Lycote)**

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<tr>
<td>Common:</td>
<td>Crowned firefly squid</td>
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<tr>
<td>Alternate:</td>
<td><em>Lycoteuthis diadema</em></td>
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**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Large luminous organs in body cavity visible through the ventral mantle: Two round photophores near mantle opening; five round photophores in a transverse row across mantle anterior to edge of fin; a luminous cross bar near the posterior end of the mantle.
- Ventral side of eyeball with five luminous organs arranged in a single row.
- No hooks present. Suckers in two series on arms and four series on clubs.
- Males: Arms II greatly elongated, with a series of regularly spaced photophores; Arms III elongated, strongly attenuated.
- Muscular, conical mantle.
- Fins broad, rhomboidal.

**Club**

Four rows of suckers.

**Hectocotylus**

Absent.

**Size**

Males 190 mm ML. Females 110 mm.

**Distribution**

Both West and South Coasts. Deeper than 300 m.

**Similar species**

None. The three series of visceral photophores (visible through the mantle) diagnostic in the area.

**References**

Distinguishing features

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage oval without knobs.
- Mantle weakly muscular, semi-gelatinous.
- Two photophores on ventral surface of eyeball; no other photophores on eye or body surface.
- Arm suckers biserial, no hooks; ventral arms thicker than other arms, greatly elongated.
- Fins very large, diamond-shaped, reaching almost to anterior edge of mantle (about 90% of ML); width greater than ML.

Club

Tentacles vermiform, extremely long, slender; club elongate, with numerous minute suckers arranged in more than 15 series.

Size

100 mm mantle length.

Distribution

Both West and South Coasts. Oceanic pelagic or benthopelagic.

Similar species

Octopoteuthis sicula: Mantle produced posteriorly into a “tail”; armature of hooks; no photophores on eyeball; tentacles residual or absent.

Taningia danae: Tentacles residual; no photophores on eyeball; arms with hooks; large, swollen terminal photophore at tips of Arms II.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988; Vecchione & Young, 2014.
**Octopoteuthis sicula (Octhis)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:** -  
**Family:** Octopoteuthidae  
**Common:** Rüppell’s octopus squid  
**Alternate:** -

---

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Arms robust, with **biserial hooks** enveloped in soft integumentary sheaths. Minute suckers only at tips.
- Small, black, spindle-shaped terminal photophore at the tips of each arm.
- One pair of photophores embedded in posterior mantle; and three pairs on lateral sides of funnel groove near neck.
- Fin large, length ca 90% ML, width ca 115% ML.

**Club**

Tentacles present in paralarval stage (up to 15 mm ML) only, absent in adults.

**Hectocotylus**

Absent.

**Size**

200 mm mantle length.

**Distribution**

Both West and South Coasts. Meso- to bathypelagic down to about 2 000 m.

**Similar species**

*Taningia danae*: Fin width much greater than ML; large, swollen terminal photophore at tips of Arms I; no terminal photophores on other arms.

*Ancistrocheirus lesueurii*: Armature of hooks, diagnostic brown dashed lines on fin.

*Mastigopsis hjorti*: Tentacles present; armature of suckers without hooks; two photophores on eyeballs.

**References**

### Taningia danae (TanDan)

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<td>Family:</td>
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<tr>
<td>Common:</td>
<td>Taning’s octopus squid</td>
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#### Distinguishing features

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Arms robust, with large hooks in two series to tips. Minute suckers sometimes at tips.
- Tips of **Arms II with large, oval, swollen photophore**. No photophores on other arms.
- No photophores embedded in mantle or arms. One photophore on either side of intestine ventral to the ink sac.
- Fin very large, length ca 100% ML, width ca 130% ML.

#### Size

1 700 mm mantle length, 161 kg.

#### Distribution

Both West and South Coasts. Meso- to bathypelagic down to about 2 000 m.

#### Similar species

**Octopoteuthis sicula**: Mantle extends as a tail posterior to broad fin; small, black, spindle-shaped terminal photophore at the tips of each arm.

**Ancistrocheirus lesueurii**: Armature of hooks, diagnostic brown dashed lines on fin.

**Mastigopsis hjorti**: Tentacles present; armature suckers without hooks; two photophores on eyeballs.

#### References

**Phylum: Mollusca Cephalopoda**

**Ommastrephes bartramii (OmmBar)**

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<td>Common:</td>
<td>Neon flying squid</td>
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**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel groove: **Foveola** with **five to eight longitudinal** folds; side pockets **two to five** (usually three to four), distinct, but can be difficult to see on fresh, wet specimens.
- No ocular, intestinal or large dorsal photophores; small scattered subcutaneous photophores embedded in the mantle, head and ventral arms (not easily visible).
- Arms strong, not attenuated, bearing biserial suckers; swimming keels well-developed.
- In adult females, the ventral membranes of Arms III expand into large, triangular lobes.
- Colour red, dorsal surfaces typically darker than ventral; a long, wide, silvery or golden opalescent strip on ventral midline from mantle opening to the level of the fins.
- Fins terminal, large, rhomboidal, slightly attenuated posteriorly; length **40-50% ML**; width **60-85% ML**; **shorter and wider than Todarodes**.

**Hectocotylus**

Right or left ventral arm, smooth without suckers.

**Size**

♂ 400 mm ML; ♀ 900 mm ML.

**Distribution**

Oceanic, offshore of the 200-m isobath where sea surface temperature is 10-25 °C. Surface to 1 500 m, but not close to seabed.

**Similar species**

*Sthenoteuthis oualaniensis* and *Sthenoteuthis pteropus* very similar, distinguished by large obvious photophore anteriorly on dorsal mantle. Mantle fused to funnel in *S. oualaniensis*, not fused in *S. pteropus* or other Ommastrephids. See also *Ornithoteuthis* and *Todarodes*.

**References**


---

**Club**

Dactylus with four rows of small suckers. Manus with enlarged suckers, **largest suckers with four large pointed teeth (one in each quadrant)**. Carpal-locking apparatus present.
Phylum: Mollusca Cephalopoda

Ornithoteuthis sp. (Ornith)

Phylum: Mollusca  
Class: Cephalopoda  
Order: Oegopsida  
Family: Ommastrephidae  
Common: Atlantic and Shiny bird squids  
Alternate: -

**FEMALE: DORSAL VIEW**

Two very similar species that can be identified with certainty to species only by the structure of the hectocotylus. See next page for identification of males.

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle cylindrical and muscular, narrow, extending posteriorly as a long thin tail; head broad, equal to or broader than mantle width.
- Fins long, sharply lanceolate, posterior margins concave accentuating the long tail.
- Funnel groove: Foveola with 7-12 folds; side pockets obscure few or none.
- No external or subcutaneous photophores; two visceral photophores: one large, round, yellowish near the anus, other small, oval, white at posterior end of intestine, pinkish bioluminescent strip extends from the small photophore to posterior tip of mantle cavity.
- A single round photophore patch on ventral surface of each eye.
- Arms strong with well-developed swimming keels; suckers biserial with toothed rings.

**Hectocotylus**

Right Arm IV. Structure differs between species (see next page).

**Size**

300 mm mantle length.

**Distribution**

Both West and South Coasts, surface to 1 000 m.

**Similar species**

The Ommastrephid genera are distinguished by the structure of the funnel groove (see Ommastrephes, Todarodes and Todaropsis). See next page for differences between the two species in this genus.

**References**

**Ornithoteuthis Males**

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<tr>
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<td>Atlantic and Shiny bird squids</td>
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**Todarodes angolensis (Toddes)**

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<tr>
<td>Common:</td>
<td>Angola flying squid</td>
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**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle cylindrical and muscular, narrow and tight in ♂, wider and looser in ♀.
- Trawl-caught males usually skinned.
- No light organs on eyes, viscera or mantle.
- Arms strong, with well-developed swimming keels. Suckers biserial, with toothed rings.
- Funnel groove with **foveola (containing longitudinal folds) only, side pockets absent.**
- Fin large; convex anterior margin; posterior margin attenuated to form short tail.

**Club**

Very long; manus with 14-18 quadrirserial sucker rows, medial manus suckers enlarged, with 13-16 long pointed teeth. **Four pairs of carpal suckers.**

**Hectocotylus**

Right Arm IV long, with suckerless thick pedicels forming a feather-like fringe for distal 40% of arm.

**Size**

430 mm mantle length.

**Distribution**

Both South and West Coasts. Offshore of the 300 m isobath.

**Similar species**

Ommastrephid genera distinguished by the structure of the funnel groove: either smooth (*Todaropsis*); with foveola only (*Todarodes*) or; with foveola and indistinct (*Ornithoteuthis*) or distinct (*Ommastrephes* and *Sthenoteuthis*) side pockets.

*Todarodes filippovae*: Club much shorter; with 12-14 quadrirserial sucker rows; sucker rings with 7-13 teeth; carpus very short, only two pairs of carpal suckers; longer fin.

**References**

**Phylum: Mollusca Cephalopoda**

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**Todarodes filippovae (TodFil)**

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**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle cylindrical and muscular, narrow.
- No light organs on eyes, viscera or mantle.
- Arms strong, with well-developed swimming keels; suckers biserial, with toothed rings.
- Funnel groove with foveola only, side pockets absent.
- Fin large; convex anterior margin; posterior margin attenuated to form short tail.

**Club**
Short, well-developed; manus wide with 12-14 quadriserial sucker rows; medial manus suckers enlarged, with 7-13 long pointed teeth; carpus very short, only two pairs of carpal suckers.

**Hectocotylus**
Right Arm IV long, with suckerless thick pedicels forming a feather-like fringe for distal 21-36% of arm.

**Size**
Max female 540 mm, male 400 mm mantle length.

**Distribution**
Circumpolar south of 35° S. Rare on South Coast. Oceanic 300-1 200 m.

**Similar species**
Other Ommastrephids; genera distinguished by the structure of the funnel groove (see under *T. angolensis*).

*Todarodes angolensis*: Club much longer, with 14-18 quadriserial sucker rows; sucker rings with 13-16 teeth; four pairs of carpal suckers; shorter fin.

**References**
### **Todaropsis eblanae (Todrop)**

| Phylum: | Mollusca |
| Class: | Cephalopoda |
| Order: | Oegopsida |
| Suborder: | - |
| Family: | Ommastrephidae |
| Common: | Lesser flying squid |
| Alternate: | - |

#### Distinguishing features
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle robust, stout, but thinner walled and flabbier than Todarodes, especially in ♀.
- Head broad, with four nuchal folds on neck; funnel groove **without foveola or side pockets**.
- Arms strong, with well-developed swimming keels. Suckers biserial with toothed rings.
- Largest arm suckers with one large median tooth and three or four smaller teeth.
- No light organs on eyes, viscera or mantle.
- Fin large, broad, width about twice length, anterior edge convex.

#### Hectocotylus
Bases of both ventral arms with beak-like lappets, edges brown in mature ♂.

#### Size
290 mm mantle length in females; 220 mm for males.

#### Distribution
Both South and West Coasts, 20-850 m.

#### Similar species
Distinguished from other Ommastrephids in the area by smooth funnel groove lacking both foveola and side pockets; absence of body, eye and visceral photophores; presence of nuchal folds and having both ventral arms hectocotylised.

#### Club
Dactylus with four rows of small suckers. Manus with six transverse rows of four suckers, medial suckers 4x larger than lateral suckers. Largest suckers with about 30 teeth.

#### References
**Notonykia africanae (NotAfr)**

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<tr>
<td>Common:</td>
<td>Benguela clubhook squid</td>
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**Distinguishing features**
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle densely muscular, broad. Skin smooth, not rugose. Photophores absent.
- **Nuchal folds four to five** on each side of neck.
- V-shaped funnel groove without fleshy ridge.
- Arms robust, subequal (33-55% ML) with biserial suckers.
- Colour maroon to brick red, darker dorsally.
- Fin large, rhomboidal 58-66% ML, anterior margins slightly convex, posterior almost straight.

**Club**
Dactylus 20-38 minute suckers; manus narrow, two medial series of 14-20 (usually 17-18) strong hooks, no marginal suckers; carpus well defined, 6-12 smooth suckers plus knobs.

**Hectocotylus**
Absent.

**Size**
180 mm mantle length.

**Distribution**
Common on West Coast. Bathypelagic to 1 200 m.

**Similar species**
*Todarodes angolensis*: Superficially similar, but differs in the absence of hooks on the clubs, the lack of V-shaped funnel groove, and ventral mantle margin not emarginated.
*Onykia robsoni*: Skin very rough, “warty”, no photophores; no nuchal folds; long slender tail.
*Onychoteuthis banksii*: Skin smooth; two visceral photophores on ventral midline; large light organ on eyes; 9-10 pairs of prominent nuchal folds; 20-22 large medial hooks on club.

**References**
**Onychoteuthis banksii (OnyBan)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:** -  
**Family:** Onychoteuthidae  
**Common:** Common clubhook squid  
**Alternate:** -

### Distinguishing features
- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle very robust, densely muscular.
- Skin smooth, without warts or wrinkles.
- **Nine to ten** pairs of prominent, elongate, flap-like nuchal folds dorso-laterally on neck.
- A large bi-lobed, patch-like **light organ** on **ventral** surface of each **eye**.
- **Two large** bulbous **visceral photophores** on ventral midline, posterior 2x size of anterior.
- Fins moderate, rhomboidal, sharply pointed posteriorly.

### Club
Dactylus with 13-15 small suckers in four series. Manus slightly expanded with 20-22 large strong hooks in two medial series; no marginal suckers.

### Hectocotylus
Absent.

### Size
300 mm mantle length.

### Distribution
Possible on both South and West Coasts. Epipelagic, usually in surface 150 m, but has been recorded to 4 000 m.

### Similar species
*Notonykia africanae:* Skin smooth; no photophores; four to five pairs of nuchal folds; 14-20 medial hooks on club.

*Onykia species:* Skin very rough, “warty”; no photophores; no nuchal folds.

### References
**Phylum**: Mollusca  
**Class**: Cephalopoda  
**Order**: Oegopsida  
**Suborder**:  
**Family**: Onychoteuthidae  
**Common**: Warty squid  
**Alternate**: Moroteuthis robsoni

### Onykia robsoni (MorRob)

- **Phylum**: Mollusca  
- **Class**: Cephalopoda  
- **Order**: Oegopsida  
- **Suborder**:  
- **Family**: Onychoteuthidae  
- **Common**: Warty squid  
- **Alternate**: Moroteuthis robsoni

### Dorsolateral View

- **Skin very rough**  
- **Arms attenuated**  
- **Long lanceolate tail** (similar to O. ingens has no tail)  
- **Dactylus with minute suckers**  
- **Manus with 26-32 hooks**  
- **Carpus clearly defined**  
- **Fin large, attenuated**  
- **No eye photophores**  
- **Very rough “warty” skin**  
- **Detail of mantle skin**

### Distinguishing features

- Eye not covered by a transparent membrane, lens in open contact with seawater.  
- Mantle robust, long and slender.  
- Skin rugose, covered with flat, irregular warts.  
- Photophores absent on mantle, eyes and viscera; no nuchal folds.  
- Arms attenuated with two series of suckers; Arms IV longest.  
- Fins heart-shaped, very long, attenuated, drawn into long lanceolate tail.

### Club

**Manus long, slender, not expanded**, 26-32 hooks in two medial series. No marginal suckers. Minute suckers on dactylus. Carpus clearly defined.

### Hectocotylus

Absent.

### Size

900 mm mantle length.

### Distribution

Both South and West Coasts in deep waters, 500 to 2,500 m.

### Similar species

**Notonykia africanae**: Skin smooth; no photophores; four to five pairs of nuchal folds; 14-20 medial hooks on club.

**Onychoteuthis banksii**: Skin smooth; two visceral photophores on ventral midline; large light organ on eyes; 9-10 pairs of prominent nuchal folds; 20-22 large medial hooks on club.

**Onykia ingens**: Very similar, but differs in lacking an elongated tail, arms not attenuated, and Arms II and III longer than Arms IV.

### References

**Pyroteuthis margaritifera (Pyrote)**

**Phylum:** Mollusca  
**Class:** Cephalopoda  
**Order:** Oegopsida  
**Suborder:** -  
**Family:** Pyroteuthidae  
**Common:** -  
**Alternate:** Jewel enope squid

---

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Mantle without embedded photophores, cone-shaped. Head broader than mantle.
- Arms I-IV long and strong, armed with hooks in two series almost to tips.
- Arms without photophores.
- Ventral surface of eye with 12 photophores, nine large and three small.
- Ten photophores in mantle cavity, three in transverse row at level of the gills.
- Six to seven separated photophores embedded in tentacular stalk.
- Fins semi-circular, subterminal.

**Club**

Manus with a central series of three to five hooks and two series of suckers.

**Hectocotylus**

Right ventral arm, without tooth plate. Longitudinal membrane along 33% of arm.

**Size**

50 mm mantle length.

**Distribution**

South and West Coasts. Mesopelagic 400-800 m during the day, migrating to upper 200 m at night.

**Similar species**

None.

**References**


Figure reproduced from Jereb & Roper, 2010, with permission.
**Phylum: Mollusca Cephalopoda**

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**Thysanoteuthis rhombus (ThyRho)**

<table>
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<tr>
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</thead>
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<td>Class:</td>
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<td>Family:</td>
<td>Thysanoteuthidae</td>
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<tr>
<td>Common:</td>
<td>Rhombic squid</td>
</tr>
<tr>
<td>Alternate:</td>
<td>-</td>
</tr>
</tbody>
</table>

**Distinguishing features**

- Eye not covered by a transparent membrane, lens in open contact with seawater.
- Funnel-locking cartilage diagnostic, vertical groove that is joined by a transverse groove about halfway along its length in a t-shape.
- Mantle very muscular and powerful, bluntly rounded.
- Arms short, strong, biserial suckers, no hooks.
- Well-developed **protective membranes on long cirri-like structures on all arms**, but most obvious on Arms III.
- Arms I-III with distinct aboral keels.
- Young squid (60-350 mm ML) with a well-developed photophore on ink sac. Reduced, non-functional in adults.
- **Rhomboidal, muscular fin** 100% of mantle length, widest 1/3 from front.

**Hectocotylus**

Left ventral arm (IV). Distal third modified. Small untoothed suckers.

**Size**

1 300 mm mantle length.

**Distribution**

Off the continental shelf (offshore of the 400 m isobath) on both South and West Coasts. Pelagic, usually found at or near the surface.

**Similar species**

None.

**References**

REFERENCES


Phylum: Mollusca Cephalopoda

The tube feet of starfish leave tiny ‘footprints’ in soft sediments on the South Coast.
Photo credit: ACEP Imida Frontiers Project

Brisingid seastars, pumpkin urchin (*Dermechinus horridus africanus*) and bottlebrush soft corals (*Thouarella* sp.) at 500 m in the proposed Marine Protected Area on the tip of the Agulhas Bank.
Photo credit: ACEP Deep Secrets Project
PHYLUM: ECHINODERMATA

Authors

Lara Atkinson¹, Christopher Mah², Zoleka Filander³, Jennifer Olbers⁴ and Ahmed Thandar⁵

Citation


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² Smithsonian Institution National Museum of Natural History, Washington DC
³ Department of Environmental Affairs Branch: Oceans and Coasts
⁴ Ezemvelo KwaZulu-Natal Wildlife, Durban
⁵ University of KwaZulu-Natal, School of Life Sciences (Biological and Conservation), Durban
Echinoderms, meaning ‘spiny skin’, are easily recognised by their distinctive adult radial symmetry (five-point or multiples of five), calcareous projections (spiny or warty) and the absence of a clear anterior end or head, except in the sea cucumbers which have become secondarily bilaterally symmetrical. They occur exclusively in marine environments and are found at all known depths and in all habitats. Echinoderm larvae are free-living, with growth generally occurring on the left side of the body at the expense of the right side, arranging itself into five parts either in a simple contour, rounded to cylindrical or star-like with arms radiating from a central disc. Some classes include specialised skeletal elements such as sea urchins, which make use of an “Aristotle’s lantern” for grinding food, and sea cucumbers, which have a “calcareous ring” for tentacle and muscle attachment.

Many echinoderms have significant regeneration powers which are used for regular replacement of damaged limbs, spines or internal organs that may be released in response to predation and/or rejuvenation. Regeneration can also occur during asexual reproduction in all classes except Crinoidea (feather stars). All echinoderms also reproduce sexually and release sperm and egg cells into the water column where fertilisation takes place. This event is often synchronised according to lunar cycles and some species will often aggregate during this time.

The primary form of locomotion in echinoderms involves the use of tube feet whose ends are shaped like suction pads, often with some stickiness caused by mucus secreted to aid adhesion. This locomotion is assisted by a water vascular system. Feeding modes vary within the echinoderm classes, ranging from filter and deposit feeding and grazing to active hunters and scavengers. Echinoderms are often preyed upon by crabs, sharks, sea birds and even other echinoderms. They employ several defensive strategies including the presence of spines and toxins to protect themselves.

Globally approximately 7,550 living echinoderms are recognised with recent efforts in South Africa increasing the known numbers of species from 410 in 2010 to 497 in 2018.

### Class Asteroidea (Starfish)
Class Asteroidea includes all starfish or sea star species which are easily identified as star-shaped organisms, with five arms (sometimes more) which join to a central disc. Starfish should not be confused with brittle stars (Class Ophiuroidea). On the ventral side of the body of the Asteroidea, the arms and body cavity are open with tube feet protruding, while in the brittle stars, these are closed. Tube feet tips can be pointed or have solid round surfaces. Although they may superficially resemble suckers, the ‘footprints’ they leave show otherwise. Asteroidea may be smooth, granular or spiny and can be covered with overlapping plates. Skeletal support is provided by the ossicles of the body wall that often combine with those of the central disc, providing the starfish arms with a broad attachment area to the disc. These organisms are mostly opportunistic feeders preying on other benthic invertebrates. Starfish are predators and feed by expelling their stomach and digesting prey externally. Some starfish species feed on coral, sea fans or other anthozoan species and have been known to cause extensive damage to coral reefs and commercial oyster beds.

### Class Crinoidea (Feather stars)
Crinoidea, also known as feather stars or sea lilies, are characterised by the mouth being located on the top surface surrounded by several (often more than five) feeding arms. Crinoids often have claw-like limbs (cirri) that allow them to attach and detach themselves from a substrate. Crinoids feed by filtering seawater using their feather-like arms, which are covered with sticky tube feet that trap food particles and carry them to the mouth area. Feather stars are preyed upon by sea urchins and some fish species.

### Class Echinoidea (Sea urchins)
Echinoidea, commonly called sea urchins, are superficially categorised into ‘regular’ and ‘irregular’ forms. ‘Regular’ sea urchins have a globular test, with their mouth (having a set of teeth known as Aristotle's lantern) situated on the ventral side of the animal. Most ‘regular’ sea urchins are grazers thus evolution of a ventral mouth ensures successful feeding. ‘Irregular’ sea urchin forms generally have a more flattened test and tend to burrow in soft
Phylum: Echinodermata

Many sea urchins cling onto rocks, however, some species live in sandy habitats and are known as burrowing urchins. Echinoids are preyed on by several species including lobsters, crabs, starfish, certain linefish and octopus. The eggs and larve of sea urchins are preyed upon by zooplankton and suspension-feeding invertebrates like hydroids, anemones, and bivalves. Echinoids have developed defensive mechanisms such as spines and toxins to prevent extensive damage to individuals. Echinoids contribute ecological value to benthic ecosystems as grazing by sea urchins maintains algal populations, which allow reef ecosystems to thrive, while the burrowing species facilitate the release of nutrients from benthic sediments.

Class Holothuroidea (Sea cucumbers)
The class Holothuroidea includes all sea cucumbers, identified by their reduced endoskeleton and bilateral symmetry. Sea cucumbers are often slow-moving animals, only able to move by burrowing through the sand, creeping along the surface with short tube feet, or “swimming” via rhythmically contracting and flexing their body. Most sea cucumbers are suspension or deposit feeders, the latter consume large amounts of sediment, absorbing the organic matter, while the rest is excreted. Many sea cucumbers spend most of their lives in cracks, hollows and burrows and will often not move far after settling. Holothuroidea have several predators such as crabs, fish, crustaceans, sea turtles and sea stars. As a defence and/or rejuvenation mechanism some sea cucumbers expel their gut (evisceration) and a few other organs, only to rejuvenate them later. Many tropical-subtropical forms expel sticky Cuvierian tubules which can extend considerably to entangle their prey or any species tampering with them.

Collection and preservation
Specimens should be preserved in 80-90% ethanol and 96% ethanol for molecular studies. If the climate is not excessively humid, specimens can be preserved in 96% ethanol and later dried for storage. Although not always necessary, but if possible, specimens can be relaxed before preservation by placing them in a mixture of seawater and magnesium chloride or menthol crystals, for a few hours. Caution should be taken when handling these animals as they readily detach their arms as a defence mechanism, thus damaging the specimen. Holothuroidea specimens should be relaxed by placing the specimen in a mixture of seawater and magnesium chloride. The solution must have a weak concentration of magnesium chloride to prevent the organisms from eviscerating their organs. The solution can be made stronger over time, which will ultimately kill the animal. Specimens can be stored and preserved wet or dry. Specimens should initially be preserved in 70-96% ethanol.

References
Phylum: Echinodermata

Asterioidea body plan (General FB code STARFS):

Ophiuroidea body plan (General FB code OPHIUR):

Composite diagram showing characters of the dorsal surface of the disc in the following families: A) Ophiotrichidae, B) Ophiuridae, C) Ophiocomidae, D) Amphiuridae and E) Ophiodermatidae. Adapted from Clark and Rowe (1971).

Composite diagram showing characters of the ventral surface of the disc in the following families: A) Ophiotrichidae, B) Ophiuridae, C) Ophiocomidae, D) Amphiuridae and E) Ophiodermatidae. Adapted from Clark and Rowe (1971).

Reference:
**Phylum: Echinodermata**

**Echinoidea body plan (General FB code URCHIN):**

Composite diagram showing features of the dorsal and ventral surfaces of a general Echinoidea body plan.

**Holothuroidea body plan (General FB code CUMBER):**
Phylum: Echinodermata

**Coronaster volsellatus (CorVol)**

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<tr>
<th>Phylum:</th>
<th>Echinodermata</th>
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</thead>
<tbody>
<tr>
<td>Class:</td>
<td>Asteroidea</td>
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<tr>
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<td>Forcipulatida</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>Species:</td>
<td>volsellatus</td>
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<tr>
<td>Common name:</td>
<td>False brisingid/Spiny pom-pom starfish</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Characterised by having a small, circular disc, sharply differentiated from long, slender, slimy and usually deciduous arms (arms readily fall off, look for parts in catch!), always more than five arms, usually up to 11 arms. Arms and body surface covered by sharp spines, each with a tuft or “pom pom” of pedicellariae. Tube feet suckered in two rows. Skeleton is a delicate mesh, often reduced to scattered plates. Brisingid species are unlikely to be whole when landed in a trawl net, any parts should be recorded.

**Colour**
Orange and white patterning, salmon coloured to red.

**Size**
Usually ± 110 mm radius, i.e. 220 mm arm tip to arm tip (diameter), but recorded up to 630 mm diameter.

**Distribution**
West Coast of South Africa. Depth from 250-300 m and likely deeper.

**Similar species**
Brisingid *Stegnobrisinga splendens*, which has a more rigid, less slimy body.

**References**
Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Cosmasterias felipes (Sticha)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Forcipulatida  
**Family:** Stichasteridae  
**Genus:** Cosmasterias  
**Species:** felipes  
**Common name:** Indistinct star

**Distinguishing features**
Plates on upper surface in regular longitudinal rows, arm tips paler in colour, distinct madreporite located off-centre. Coarse texture. Arms usually readily detach from centre disc once out of water. Four rows of tube feet evident, characteristic of all Asteriidae family.

**Colour**
Brown, pink to orange, with pale tips of arms.

**Size**
Up to 100 mm diameter, but frequently smaller.

**Distribution**
West and South Coasts of South Africa. Depth from 79-373 m.

**Similar species**
Perissasterias polyacantha, but Cosmasterias felipes is smaller, firmer, rigid in texture and less ‘spiny’.

**References**
**Marthasterias africana (Mart)**

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<tr>
<td>Class:</td>
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<tr>
<td>Genus:</td>
<td>Marthasterias</td>
</tr>
<tr>
<td>Species:</td>
<td>africana</td>
</tr>
<tr>
<td>Common name</td>
<td>African spiny starfish</td>
</tr>
</tbody>
</table>

**Distinguishing features**
One row of distinct, solid spines projecting all along midradius (carina) of each arm. Other aboral spines also present. Spines have rosettes of pedicellariae encircling spines. Small disc with long, chunky arms. Four rows of tube feet, each with a sucker disc. Five long, tapering arms. Marginal plates inconspicuous. Has tiny red dot on tip of each arm. Legs break off quite easily with handling. Four rows of tube feet evident, characteristic of all Asteriidae family.

**Colour**
Brick red to orange or blue-grey with spines mostly orange in colour. Tips of arms usually deeper maroon colour.

**Size**
Up to 180 mm radius sampled.

**Distribution**
Southern African endemic. West and South Coasts of South Africa; depth from 50 to 150 m, possibly deeper.

**Similar species**
*Sclerasterias* spp. appear similarly spiny and similar in shape, but *M. africana* has larger, distinct midradial spines along each arm.

**References**


**Sclerasterias spp. (SclEus)**

<table>
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</thead>
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<td>Class:</td>
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<tr>
<td>Species:</td>
<td>spp.</td>
</tr>
<tr>
<td>Common name</td>
<td>Small spiny starfish</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Main radius of each arm has an array of distinct spines along the arm which are smaller in size than those of *Marthasterias africana*, but are more numerous in *Sclerasterias* spp. This species is generally smaller in size and has a more slender body shape. The midradial spine (carina) is not as large or distinct as that of *Marthasterias africana*. *Sclerasterias* species usually have distinct brown to red to purple colouration. Four rows of tube feet evident, characteristic of all Asteriidae family.

**Colour**

Brick red to orange/brown, with white spines.

**Size**

Up to 60 mm diameter.

**Distribution**

West Coast of South Africa, but seldom encountered.

**Similar species**

*Marthasterias africana*, but *Sclerasterias* spp. spines are more equal in size than the distinctly larger central arm spine of *M. africana*.

**References**

**Perissasterias polyacantha** (Cosmas)

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<th>Echinodermata</th>
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</thead>
<tbody>
<tr>
<td>Class:</td>
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<td>Genus:</td>
<td>Perissasterias</td>
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<tr>
<td>Species:</td>
<td>polyacantha</td>
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<tr>
<td>Common name:</td>
<td>Very large orange star</td>
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</tbody>
</table>

**Distinguishing features**

Very large in size, arms usually break off easily or are broken off on disturbance. Can have five to seven arms. Marginal plates inconspicuous, tips of arms often curl. Four rows of tube feet, sharp spines lining rows of tube feet. Aboral surface (adambulacral plates) has middle ridge of spines (carina) distinctly enlarged and tipped white that are visibly larger and thicker than other spines. Six rows of spines either side of aboral spine ridge. Madreporite located nearer to arm than to disc centre.

**Colour**

Bright orange, with distinct white-tipped spines along midradial ridge.

**Size**

Average 200–300 mm radius from tips of legs if present. Up to 620 mm arm tip to arm tip, 70 mm disc, 280 mm arm length.

**Distribution**

West and South Coasts of South Africa. Depth 96 to 760 m.

**Similar species**

Cosmastarias felipes, Marthasterias glacialis or Sclerasterias spp., but Perissasterias polyacantha has distinct white-tipped spines along midradial ridge.

**References**


Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Phylum: Echinodermata**

### Anseropoda grandis (AnsGra)

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<td><strong>Class:</strong></td>
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<tr>
<td><strong>Common name:</strong></td>
<td>Pancake/Goosefoot star</td>
</tr>
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</table>

**Distinguishing features**

Large in size (up to 300 mm diameter), flat and thin, flexible, but tears easily. Two rows of tube feet. Each arm has raised midradial ridge running the length of the arm. Shape described as a ‘maple leaf-like’. Species is fragile and often breaks up easily in the trawl. Please keep a look out for fragments and record.

**Colour**

Orange.

**Size**

Up to 300 mm diameter.

**Distribution**

Southern African endemic. West and South Coasts of South Africa, up to Port Elizabeth. Depth from ± 275 to 315 m.

**Similar species**

None.

**References**


**Callopatiria granifera (CalGra)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Valvatida  
**Family:** Asterinidae  
**Genus:** Callopatiria  
**Species:** granifera  
**Common name:** Red starfish

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**Distinguishing features**
Thick finger-like, blunt-tipped arms, almost semi-circular in cross-section. Granular texture on aboral surface said to resemble overlapping tiles.

**Similar species**
Cushion star Pteraster capensis, but C. granifera has more distinct, longer arms. Patiria stellifera cushion star with more webbing between the arms.

**Colour**
Variable, some can be bright red to deep orange, or ranging to pale with darker patches. Usually has a lighter, paler shade on oral surface.

**Size**
Can reach up to 150 mm diameter.

**Distribution**
Southern African endemic. Known to occur on West and South Coasts of South Africa, usually in shallow water to ± 90 m.

**References**
**Callopatiria formosa (CalFor)**

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<td>Class:</td>
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<td>Genus:</td>
<td>Callopatiria</td>
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<td>Species:</td>
<td>formosa</td>
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<tr>
<td>Common name:</td>
<td>Purple starfish</td>
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</tbody>
</table>

**Distinguishing features**

Thick finger-like, blunt-tipped arms (some more than others), almost semi-circular in cross-section. Granular texture on aboral surface resembles overlapping tiles. Distal plates on arm tips are more enlarged and rounded than in *Callopatiria granifera*.

**Colour**

Blue-grey, purple to red, pale purple centrally grading to pale orange distally, underside white.

**Size**

Up to 80 mm diameter.

**Distribution**

Southern African endemic. West and South Coasts of South Africa. Previously only reported from False Bay, South Africa, 12-55 m depth. Verify identification and depth distribution needed.

**Similar species**

*Callopatiria granifera* has no enlarged distal plates on arm tips and is orange to red in colour.

**References**


Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
Phylum: Echinodermata

Astropecten irregularis pontoporeus (AstPan)

- **Phylum:** Echinodermata
- **Class:** Asterioidea
- **Order:** Paxillosida
- **Family:** Astropectinidae
- **Genus:** Astropecten
- **Species:** irregularis pontoporeus
- **Common name:** Astropecten orange trim

**Distinguishing features**
Distinct marginal plates separated by grooves on aboral and oral sides. Lower marginal plates project beyond upper plates to form a distinct edge to disc and arms. Both series of marginal plates bear spines. Tube feet in two rows. Node in centre of disc sometimes raised (anal cone). Disc plates (paxillae) fine, often darker brown in colour, sometimes with distinct line down centre of each arm. Plates on upper surface with clusters of short spinelets. Madreporite in a slightly depressed area near marginal plate.

**Colour**
Pale orange to apricot/pink marginal plates, with darker pink/brown/mauve body. Distinct darker brown/purple lines along central aboral side of each arm. Often brighter orange bands separate each marginal plate. Pale cream colouring on oral side.

**Size**
Up to 90 mm diameter.

**Distribution**
Common on both West and South Coasts of South Africa; from 50 m to +200 m.

**Similar species**
Astropecten antares, which has shorter, wider, more petal-shaped arms. A. irregularis pontoporeus arms taper more and are longer.

**References**
**Phylum: Echinodermata**

---

### Astropecten cingulatus (AstAnt)

| Phylum: | Echinodermata |
| Class: | Asteriodea |
| Order: | Paxillosida |
| Family: | Astropectinidae |
| Genus: | Astropecten |
| Species: | cingulatus |
| Common name: | Shallow water Astropecten |

---

**Distinguishing features**

Has relatively short, petaloid (petal-like) arms and distinct marginal plates on both aboral and oral surfaces with distinctly elongated oral marginal plates. Lower marginal plates project beyond upper plates to form a distinct edge to disc and arms. A deeper mid-line colouration can be evident on the aboral disc plates (paxillae). Both series of marginal plates bear spines. Tube feet in two rows. Sometimes node raised in centre of disc (anal cone).

**Distribution**

This is a shallow-water species found more commonly on the South Coast of South Africa, from 0-65 m depth.

**Similar species**

Similar to Astropecten irregularis pontoporeus, but the marginal plates in *A. irregularis pontoporeus* are pale in comparison to *A. cingulatus*, which has petaloid arms and elongated oral marginal plates.

**Colour**

Dusty pink to brown/purple colouring on upper surface. The spines protruding from the marginal plate may be dark purple-brown but pale towards the tips. Pale cream colouring on oral side.

**Size**

Up to 90 mm diameter.

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**References**

**Astropecten exilis (AstrLa)**

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<tr>
<th>Phylum:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
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<tr>
<td>Genus:</td>
<td>Astropecten</td>
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<tr>
<td>Species:</td>
<td>exilis</td>
</tr>
<tr>
<td>Common name:</td>
<td>Long-arm Astropecten</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Small disc; long, narrow tapering arms, flexible. Fine-grained aboral (top) plates, papillae-like. Distinct marginal plates on both aboral and oral sides. Three long spines on outer edge of oral marginal plate. Two rows of tube feet ending in a point, but without sucker disc.

**Colour**
Light brown in colour, marginal plates paler in colour.

**Size**
150 mm diameter.

**Distribution**
Previously recorded off Natal, however trawl specimens found along West and South Coasts of South Africa. Depth from 180 m to ±250 m.

**Similar species**
Other Astropecten species and Cheiraster hirsutus, however A. exilis has distinctly long, strap-like arms that are fairly fragile. Spines of marginal plates usually fold flat on capture.

**References**
Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Dipsacaster sladeni capensis (PerAga)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Paxillosida  
**Family:** Astropectinidae  
**Genus:** Dipsacaster  
**Species:** sladeni capensis  
**Common name:** Coarse-grained orange star

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**Distinguishing features**

A common deep-water starfish found off South Africa. Distinct, large, star-shaped body form (stellate). Arms form triangle shape with body, ranging ~70-100 mm in diameter. Relatively large disc, coarse body texture. Arms tapering and pointed. Madreporite covered over by paxillae. Paxillae in regular rows. Tube feet are pointed. Marginal plates conspicuous and slightly swollen. Ventral marginal plate (inferomarginal) projects beyond the aboral marginal plate (superomarginal), defining the edge of the body when viewed from above.

**Colour**

Bright orange to reddish orange.

**Size**

Mostly 70-100 mm; can reach up to 150 mm diameter.

**Distribution**

West Coast of South Africa to East London, from ± 110 m to 630 m depth.

**Similar species**

*Dipsacaster sladeni*, which is a subspecies.

**References**


Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Phylum:** Echinodermata

### Persephonaster sp. (PerCou)

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<tr>
<th>Phylum</th>
<th>Echinodermata</th>
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<tbody>
<tr>
<td>Class</td>
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<tr>
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<tr>
<td>Family</td>
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<tr>
<td>Genus</td>
<td>Persephonaster</td>
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<tr>
<td>Species</td>
<td>sp.</td>
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<tr>
<td>Common name</td>
<td>Coarse-grained pale star</td>
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</table>

**Distinguishing features**
Large in size (70-100 mm diameter), coarse body texture, plates at margin conspicuous and slightly swollen. Appears similar to degraded *Dipsacaster sladeni capensis*, but specimens are required to confirm accurate identification.

**Colour**
Pale orange to apricot colour.

**Size**
70-100 mm diameter.

**Distribution**
South Coast of South Africa.

**Similar species**
*Dipsacaster sladeni capensis*, however *Persephonaster* sp. appear more sunken/collapsed on aboral, with midradial ribs projecting. Specimens to be retained for further taxonomic study.

**References**
Psilaster acuminatus (PleAg)

Phylum: Echinodermata
Class: Asteroidea
Order: Paxillosida
Family: Astropectinidae
Genus: Psilaster
Species: acuminatus
Common name: Pale orange fine-grained star

Distinguishing features
Leathery star with fine disc plates (paxillae), distinct marginal plates with dividing grooves. Marginal plates become more ‘rolled’ inwards towards the distal (end) part of the arms. Raised node in centre of disc (anal cone). Madreporite is evident. Long arms tapering to narrow, pointed tips. No obvious projecting spines visible to the naked eye. The tube feet are pointed and occur in two rows.

Colour
Pale orange to dark pink.

Size
Up to 180 mm diameter across arms. Smaller individuals 40-50 mm width.

Distribution
West and South Coasts of South Africa, 155-550 m or deeper.

Similar species
None.

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<tr>
<td><strong>Genus:</strong></td>
<td>Plutonaster</td>
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<tr>
<td><strong>Species:</strong></td>
<td>cf. intermedius</td>
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<tr>
<td><strong>Common name:</strong></td>
<td>Intermediate starfish</td>
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</table>

### Distinguishing features
Arms moderate length, narrow, tapering more abruptly in the basal part than beyond, tips blunt. Terminal plates more or less truncated (cut short); paxillae (plates) with low rounded columns crowned with 12-30 short spinelets, which emerge directly from the marginal plate. Madreporite covered with paxillae. Stiff, inflexible starfish. Specimens seldom encountered in trawls and are needed for confirming identification.

### Colour
Pale orange with white marginal plates.

### Size
Average ± 80 mm diameter, but larger up to 150 mm diameter have been recorded.

### Distribution
Occurs on West and South Coasts of South Africa, around 350 m depth.

### Similar species
Persephonaster sp. and Dipsacaster sladeni capensis. Other species of Plutonaster spp. may occur in the region and may have distinct spines on the inferomarginal plates.

### References
**Cheiraster hirsutus (Astrop)**

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<tr>
<td><strong>Genus:</strong></td>
<td>Cheiraster</td>
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<tr>
<td><strong>Species:</strong></td>
<td>hirsutus</td>
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<tr>
<td><strong>Common name:</strong></td>
<td>Spiky orange centre star</td>
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</tbody>
</table>

**Distinguishing features**
Tips of arms often curled at ends. Numerous spines, both small and larger, protrude from aboral marginal edge. Long, thin, tapering arms. Double rows of tube feet. Single aboral spine shorter than oral (underside) spines. Two oral (underside) spines, one nearly twice the length of the other.

**Colour**
Ranging from light to dark pink and pale to bright orange.

**Size**
Up to 110 mm diameter. Disc 20 mm diameter.

**Distribution**
Predominantly West Coast region of South Africa.

**Similar species**
Can appear similar to some Astropecten species, however *Cheiraster hirsutus* is distinct in having particularly long spines, suckered tube feet and tips of arms curl up on capture.

**References**
**Stegnobrisinga splendens (SteSpl)**

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<td>Species:</td>
<td>splendens</td>
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<tr>
<td>Common name:</td>
<td>Brisingid rigid</td>
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**Distinguishing features**
Characterised by having a small, circular disc, sharply differentiated from long, slender, rigid and usually deciduous arms (arms fall off), always more than five, usually between 11 to 14. Tube feet suckered in two rows. More rigid, calcified skeleton with raised, ridged markings (furrows) along arms.

**Colour**
Orange, with white ridges.

**Size**
Arms up to 200 mm long, disc up to 30 mm diameter.

**Distribution**
West and South Coasts of South Africa. Deep-water species 800-4 000 m.

**Similar species**
*Coronaster vosellatus*, but *Stegnobrisinga splendens* is more rigid and calcified and has raised, ridged markings traversing arms. *Brisinga cricophora* also occurs in the region and appears very similar to *S. splendens*. Microscopic examination required to distinguish.

**References**
Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
Henricia abyssalis (HerAbs)

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Spinulosida  
**Family:** Echinasteridae  
**Genus:** Henricia  
**Species:** abyssalis  
**Common name:** Apricot puffy-arm star

**Distinguishing features**
Small disc; long, tapering, ‘puffy’ arms. Whitened arm tips that often curl in at ends. Arms and disc inflated (puffy). Small papillae cover entire disc and arms. Aboral surface appears covered in very fine mesh work. Madreporite located midway between centre and arm edge. Two rows of tube feet.

**Colour**
Pale yellow, pale orange, apricot or bright orange.

**Size**
Average 80 mm diameter; up to 175 mm diameter.

**Distribution**
West and South Coasts of South Africa, 56-408 m.

**Similar species**
Henricia ornata, but H. abyssalis more common and distinguished by the white tips.

**References**
**Henricia ornata (HenOrn)**

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<tr>
<td>Species:</td>
<td>ornata</td>
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<tr>
<td>Common name:</td>
<td>Reticulated star</td>
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</tbody>
</table>

**Distinguishing features**

Appears similar to *Henricia abyssalis*, however surface texture is described as irregular-honeycombed. Arms long and tapering, with small disc. Arms and disc inflated (puffy). Two rows of tube feet.

**Colour**

Orange to maroon.

**Size**

Up to 100 mm diameter.

**Distribution**

Occurs predominantly on South Coast, South Africa. Intertidal to 90 m.

**Similar species**

*Henricia abyssalis*, but *H. ornata* has spotted appearance (irregular-honeycombed) on aboral surface and usually deeper/darker colour.

**References**


**Gilbertaster anacanthus (GilAna)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Valvatida  
**Family:** Goniasteridae  
**Genus:** Gilbertaster  
**Species:** anacanthus  
**Common name:** Gilbert’s star

### Distinguishing features

Arms long and narrow, tapering abruptly at the base and then very slightly throughout to the blunt tip. Disc is of fair size and central part of arms often inflated. Marginal plates are well rounded in shape. No spines of any description occur on general body surface. Very large (1.5 mm), bivalved pedicellaria (claw-shaped structure) present on aboral and oral surfaces, but not on marginal plates. Each marginal plate is covered with close-set, superficially flat, large, irregular granules. Granules around the border of the plate are smaller and form in irregular patterns.

### Colour

Orange to red.

### Size

165 mm diameter and bigger.

### Distribution

One specimen collected from South Coast, South Africa (2014) at 638 m. This species is known primarily from the tropical North Pacific (Hawaiian Islands area).

### Similar species

Similar in shape to Mediaster bairdi capensis, but Gilbertaster anacanthus have large, obvious pedicellaria covering aboral and oral surfaces.

### References


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
Phylum: Echinodermata

**Calliaster acanthodes (CalAca)**

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<td>Species:</td>
<td>acanthodes</td>
</tr>
<tr>
<td>Common name:</td>
<td>Spiky sheriff star</td>
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</tbody>
</table>

**Distinguishing features**

Long, sharp and very distinct marginal spines along outer edges, with smaller spines covering the aboral surface. Distinct marginal plates separated by grooves, with long spines emerging from each aboral and oral plate. Pentagon-shaped central disc, but with elongated arms. Six to nine slender furrow spines. Strong, sharp spines on the marginal edges.

**Colour**

Orange, with brown markings on central disc.

**Size**

Up to ± 120 mm in diameter.

**Distribution**

South African endemic. South to East Coasts of South Africa. Not usually found on West Coast. Occur at depths between ~ 130 and 420 m.

**Similar species**

*Calliaster baccatus*, which has three to four furrow spines, blunt spines on surface and no sharp spines on marginal plates; and *Hippasteria phy rangiana*, which has blunt, stout marginal spines and bivalve pedicillaria.

**References**


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Calliaster baccatus (CalBac)**

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<th>Common Name</th>
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<tr>
<td>Phylum: Echinodermata</td>
<td>Blunt sheriff star</td>
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<td>Genus: Calliaster</td>
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<tr>
<td>Species: baccatus</td>
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**Distinguishing features**
Pentagon-shaped central disc, with elongated arms ending in bluntly rounded tips. Marginal plates square shaped and conspicuous. *Calliaster baccatus* has three to four furrow spines on plates lining the tube feet grooves. Blunt, bullet-shaped spines on the marginal edges and aboral surface (but no sharp spines present). Pedicellariae are rare or absent.

**Colour**
Orange, brick red to brown colouration and frequently mottled in colour.

**Size**
Up to ± 100 mm in diameter.

**Distribution**
South African endemic. South to East Coasts of South Africa. Not usually found on West Coast. Occur at depths between ~ 10 and 23 m.

**Similar species**
*Calliaster acanthodes* (has sharper pointed spines along marginal plates and aboral surface) and *Hippasteria phyrangia* (blunt, stout marginal spines and obvious bivalve pedicellariae).

**References**
Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Ceramaster patagonicus euryplax (CerGra)**

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<thead>
<tr>
<th>Phylum:</th>
<th>Echinodermata</th>
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<tr>
<td>Class:</td>
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<td>patagonicus euryplax</td>
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<tr>
<td>Common name:</td>
<td>Shiny red sheriff star</td>
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</table>

**Distinguishing features**

Well-defined marginal plates separated by grooves. Rigid body with slightly inflated areas over the midradial ridge. Pentagon-shaped with short, webbed arms. Double rows of tube feet. Tips of each arm with a white plate. Often smooth and shiny aboral surface.

**Colour**

Bright red to orange, with pale tips at end of each arm. Pale white to yellow oral surface.

**Size**

Up to 70 mm diameter.

**Distribution**

Southern African endemic. West and South Coasts of South Africa, 150-462 m.

**Similar species**

*Toraster tuberculatus* and *Odontaster australis*, but *C. granularis* is usually a bright, shiny red with a smoother aboral texture.

**References**

**Cladaster macrobrachius (ClaMac)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Valvatida  
**Family:** Goniasteridae  
**Genus:** Cladaster  
**Species:** macrobrachius  
**Common name:** Macro-clad starfish

**Distinguishing features**
Stellate-shaped with well-developed, pronounced arms tapering to rounded tips. Two rows of tube feet. Marginal plates, square in shape, are covered by widely spaced, coarse granules. In preservation, these granules rub off readily and leave pits. Body is well calcified, i.e. quite rigid. Broad-valved pedicellaria (claw-shape structure) clearly visible on oral surface.

**Colour**
Pale orange, with white areas and white pedicellaria on aboral, becoming paler to white towards edges and tips of arms.

**Size**
± 60 mm diameter.

**Distribution**
Southern African endemic. Recorded on West and South Coasts of South Africa, but rarely encountered. Depth recorded from 420 to 914 m.

**Similar species**
*Gilbertaster anacanthus*, which has large pedicellaria on both aboral and oral surfaces; *Mediaster bairdi capensis*, which do not have large pedicellaria evident.

**References**


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Hippasteria phrygiana (HipPhr)**

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<td>Class:</td>
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<td>Species:</td>
<td>phrygiana</td>
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<tr>
<td>Common name:</td>
<td>Thorny starfish</td>
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**Distinguishing features**
A pentagonal-shaped starfish with fairly short, less pronounced arms. Marginal plates are large, smooth and conspicuous in aboral view and have one or two pronounced, stout spines emerging from each marginal plate. There are no spines on the aboral surface, which has a coarsely granulated appearance. On the oral surface large, obvious clam-shaped pedicellaria are present.

**Colour**
Brick red to orange.

**Size**
Up to 260 mm diameter, but small individuals likely to occur.

**Distribution**
Mostly occur on South Coast of South Africa, from 310 to 980 m.

**Similar species**
Toraster tuberculatus.

**References**

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Hippasteria falklandica (HipFal)**

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<td>Class:</td>
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<tr>
<td>Species:</td>
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<tr>
<td>Common name</td>
<td>Falkland starfish</td>
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**Distinguishing features**

A pentagonal-shaped starfish with fairly pronounced arms. Marginal plates are large; smooth granules which are conspicuous in aboral view but do not have marginal spines. There are no spines on the aboral surface, which has a coarsely granulated appearance. On the oral and aboral surface large, obvious, clam-shaped pedicellaria are present.

**Colour**
Orange.

**Size**
Up to 130 mm diameter recorded, but small individuals likely to occur.

**Distribution**
Mostly occurring on South Coast of South Africa. Known from depths of 149-1 148 m.

**Similar species**
*Hippasteria phrygiana*, but *H. falklandica* does not have marginal spines; *Toraster tuberculatus* which have large, bald, convex tubercles covering the oral surface.

**References**


Species photographs confirmed by Dr C. Mah, Smithsonian, Washington, November 2016.
**Phylum: Echinodermata**

<table>
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<tr>
<th><strong>Mediaster bairdi capensis (MedCap)</strong></th>
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<td><strong>Phylum:</strong></td>
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<td><strong>Species:</strong></td>
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<td><strong>Common name:</strong></td>
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**Distinguishing features**
Commonly occurring inflexible, rigid star with broad disc. Marginal plates distinct, block-shaped and covered with granules, separated by grooves on upper surface. Tube feet end in a blunt sucker tip. Disc plates distinct and large, with distinct checkerboard appearance. Arms taper narrowly and immediately.

**Similar species**
*Dipsacaster sladeni capensis, Gilbertaster anacanthus, Odontaster* sp. body slightly more flexible and webbing between arms not as pronounced. Arm tips curl upwards at times. Easily confused with Odontaster australis, but *M. bairdi capensis* has more distinct marginal plates and does not have enlarged tooth surrounding mouth opening.

**Colour**
Orange to red.

**Size**
Average up to 70 mm diameter.

**Distribution**
West and South Coasts of South Africa.

**References**

**Toraster tuberculatus** (TorTub)

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Valvatida  
**Family:** Goniasteridae  
**Genus:** Toraster  
**Species:** tuberculatus  
**Common name:** Red sheriff star

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**Distinguishing features**
Commonly occurring, rigid starfish with broad disc and short arms. Pentagonal to stellate in body shape. Distinct bald tubercles cover the entire aboral surface. Marginal plates distinct, granulated and separated by grooves on upper surface. Distinct madreporite. Distal plates (towards arm tips) often swollen or enlarged. Arm tips vary from either sharply pointed to bluntly rounded. Abactinal plates larger in size along radial lines. Ventral plates covered with granules. Body of starfish sometimes inflated when landed from a trawl net, but deflates over time.

**Colour**
Red, brown, dark orange on aboral; pale cream to yellow on oral side.

**Size**
Up to 160 mm diameter.

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**Distribution**
Southern African endemic. West and South Coasts of South Africa. Has been reported from Durban area.

**Similar species**
Ceramaster granularis, Odontaster australis, Hippasteria phrygiana.

**References**


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Luidia sarsii africana (LucAfr)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Paxillosida  
**Family:** Luidiidae  
**Genus:** Luidia  
**Species:** sarsii africana  
**Common name:** Legs break easily starfish

**Distinguishing features**
Arms usually break off central disc very easily. Distinct spines protrude from aboral margin edge; arms long, flexible, flattened and tapering, strap-like. Usually five arms.

**Colour**
Brown to dark pink.

**Size**
Average up to 150 mm diameter, but can get larger individuals.

**Distribution**
Southern African endemic. West and South Coasts of South Africa, to Port Elizabeth; 54 m to 360+ m depth.

**Similar species**
Astropecten polyacanthus and Astropecten exilis, however arms of *Luidia africana* are more flattened and broader, i.e. less tapered, and break off central disc easily.

**References**
Chondraster elattosis (ChoEla)

Phylum: Echinodermata
Class: Asteroidea
Order: Valvatida
Family: Poraniidae
Genus: Chondraster
Species: elattosis
Common name: Pentagon star

Distinguishing features
Inflexible, rigid star with thick, solid, spongy disc. Pentagonal in shape. Marginal plates indistinct. Distinct madreporite. Fine raised bumps (sheaths of adambulacral spines) form distinct rows along each arm, but no spines apparent. Thick fleshy starfish with smooth aboral and oral surface. Double rows of tube feet. No marginal plates visible. Patterning on aboral surface can be very distinct when brooding (see third image).

Colour
Bright pink to orange on aboral; pale yellow on oral surface.

Size
Can reach up to 230 mm diameter.

Distribution
South African endemic. West and South Coasts of South Africa; from 400 to 1 000+ m depth.

Similar species
Spoladaster veneris, but Chondraster elattosis does not inflate and is more leathery.

References
Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Spoladaster veneris (SpoBra)**

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<td>veneris</td>
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<tr>
<td>Common name:</td>
<td>Inflated star</td>
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**Distinguishing features**

Pentagonal in shape, cushion-like body, often inflated when landed (as in photo), but slowly deflates with time out of water. Numerous papillae coat the aboral surface. Ventral smooth with fine lines.

**Colour**

Speckled brilliant orange aboral surface and pale cream smooth oral surface.

**Size**

Up to 160 mm diameter.

**Distribution**

West and South Coasts of South Africa; from 40 to 205+ m depth.

**Similar species**

*Chondraster elattosis*, but *S. brachyactis* inflates and is not as leathery.

**References**

Distinguishing features
Short-armed, stellate body form with a reticular skeleton (spiky skeleton with soft tissue covering). Distinct raised spines covering the aboral surface 1-4 mm in length. Arms fairly rigid, with ends often turning upwards or curling inwards. Two rows of tube feet. Madreporite white in colour, located off-centre halfway to base of arms. Strong spines along the base of arms.

Colour
Deep orange to red or even pure white, with spines light red to yellowish white. Pale oral surface.

Size
Average 50 up to 160 mm diameter, mostly small specimens but occasionally large too.

Distribution
South Atlantic including West Coast of South Africa.

Similar species
Lophaster quadrispinus, which has many dense raised tubercles on the aboral surface or Diplopteraster multipes, which is more cushion-like, with arms that are not as clearly defined as P. echinaster.

References


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Pseudarchaster tessellatus (PseTes)**

**Phylum:** Echinodermata  
**Class:** Asteriodea  
**Order:** Paxillosida  
**Family:** Pseudarchasteridae  
**Genus:** Pseudarchaster  
**Species:** tessellatus  
**Common name:** Dusky pink long-armed star

**Distinguishing features**
Inflexible star with broad disc and long, tapering, rigid arms. Disc plates distinct, regular oval/circular in shape. Fine texture on aboral plates, but plates begin to separate once out of water. Distinct marginal plates on both aboral and oral sides. Two rows of tube feet mostly hidden by fine clusters of spines on the inside oral margin of each arm. Madreporite midway between disc centre and marginal plate.

**Colour**
Dusky pink to white.

**Size**
Average 70 mm diameter, but up to 160 mm.

**Distribution**
West and South Coasts of South Africa.

**Similar species**
*Pseudarchaster brachyactis*, but *P. tessellatus* has longer, more tapering arms.

**References**

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Pseudarchaster brachyactis** (PseBra)

**Phylum:** Echinodermata  
**Class:** Asteriodea  
**Order:** Paxillosida  
**Family:** Pseudarchasteridae  
**Genus:** Pseudarchaster  
**Species:** brachyactis  
**Common name:** Dusky pink short-armed star

---

**Distinguishing features**

Inflexible star with broad disc similar to *Pseudarchaster tessellatus*, but has shorter, stubbier arms. Fine texture on aboral plates, but plates begin to separate once out of water. Disc plates distinct. Distinct marginal plates. Two rows of tube feet.

**Colour**  
Dusky pink to white.

**Size**  
Average 70 mm diameter.

**Distribution**  
West and South Coasts of South Africa.

---

**Similar species**

*Pseudarchaster tessellatus*, but *P. brachyactis* has shorter, stubbier arms. *P. brachyactis* currently considered same species as *P. tessellatus* by some experts, but separation currently retained in this guide.

**References**


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Diplopteraster multipes** (DipMul)

**Phylum:** Echinodermata  
**Class:** Asteriodea  
**Order:** Velatida  
**Family:** Pterasteridae  
**Genus:** Diplopteraster  
**Species:** multipes  
**Common name:** Large prickly slime cushion star

**Distinguishing features**
Large, fleshy and inflated disc with cover of skin supported by spines. Tips of arms appear upturned and white. Flesh ‘decomposes’ rapidly when on deck, resulting in mushy texture and production of a lot of mucus. Best to keep specimens in dish of water until ready to discard. Four rows of tube feet visible in wide tube foot grooves.

**Colour**
Pale orange, bright orange to red.

**Size**
Up to 200-260 mm diameter.

**Distribution**
Throughout West and South Coast region of South Africa.

**Similar species**
*Pteraster capensis* can appear similar, however *Diplopteraster multipes* rapidly disintegrates when out of water on deck and becomes mushy very quickly, while *P. capensis* is firm in texture and remains so on deck.

**References**
Phylum: Echinodermata

**Pteraster capensis** (PteCap)

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<thead>
<tr>
<th>Phylum:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
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<tr>
<td>Order:</td>
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<tr>
<td>Genus:</td>
<td>Pteraster</td>
</tr>
<tr>
<td>Species:</td>
<td>capensis</td>
</tr>
<tr>
<td>Common name:</td>
<td>Common/Brooding cushion star</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Small, puffy cushion starfish with fairly solid texture. Produce a lot of mucus when disturbed (also called Slime Stars). Plates appear as fine rosettes of holes covering aboral surface. Ends of arms turned upwards and have white tips. Specimens range in size from very tiny (20 mm diameter) to very large (150 mm diameter).

**Colour**
Wide range of colours – pink, yellow, orange, brown, mottled. In deeper waters usually white, but colour variation of orange occurs on South Coast.

**Size**
Average 20-25 mm; can be larger up to 135+ mm diameter.

**Distribution**
Southern African endemic. West and South Coasts of South Africa.

**Similar species**
*Pteraster affinis*, which has more tapering arms, otherwise similar (keep a look out).

**References**


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Lophaster quadrispinus (LopQua)**

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<thead>
<tr>
<th>Phylum:</th>
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<tbody>
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<td>Class:</td>
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<td>Species:</td>
<td>quadrispinus</td>
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<tr>
<td>Common name:</td>
<td>Four-spined starfish</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Many raised tubercles (paxillae) covering entire aboral surface in symmetric pattern. Fairly rigid star and arms usually bent stiffly when on deck. Marginal edge with extended paxillae distinct and small tufts on tips.

**Colour**

Pale to bright orange to red.

**Size**

Average 50 mm diameter, but larger specimens can occur.

**Distribution**

Southern African endemic. West and South Coasts of South Africa.

**Similar species**

*Poraniopsis echinaster*, but *Lophaster quadrispinus* does not have as spiky aboral texture and has more tubercles on aboral surface.

**References**


Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.
**Crossaster penicillatus (Blomme)**

**Phylum:** Echinodermata  
**Class:** Asteroidea  
**Order:** Valvatida  
**Family:** Solasteridae  
**Genus:** Crossaster  
**Species:** penicillatus  
**Common name:** Raspberry star/Blomme

**Distinguishing features**
Wide flattened disc with 9 to 12 arms. Bundles of spines on aboral surface. Soft-bodied starfish with flexible spines. Very common starfish occurring in dense patches and hundreds are often landed in trawls.

**Colour**
Orange-pink, white-pink, dark pink.

**Size**
Average 70 mm diameter; up to 120 mm diameter.

**Distribution**
Throughout West and South Coast region of South Africa.

**Similar species**
*Solaster* spp., which is a larger species and has a puffer appearance.

**References**

**Solaster spp. (Solast)**

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Class:</strong></td>
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<td><strong>Genus:</strong></td>
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</tr>
<tr>
<td><strong>Species:</strong></td>
<td>spp.</td>
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<tr>
<td><strong>Common name:</strong></td>
<td>Sun-shaped orange star</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Thick puffy arms, tapering gently to points. Small tubercles covering aboral surface (paxillae). Up to eight arms. Seldom occurs in South African waters.

**Colour**
Orange.

**Size**
150-200 mm diameter.

**Distribution**
West Coast of South Africa.

**Similar species**
*Crossaster penicillatus*, which is a smaller, less puffy starfish and is very abundant.

**References**
Odontaster australis (OdoAus)

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<tbody>
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<td>Class:</td>
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<td>Species:</td>
<td>australis</td>
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<tr>
<td>Common name:</td>
<td>False sheriff star</td>
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</tbody>
</table>

**Odontaster spp.** have a clearly visible, large tooth surrounding the mouth, which distinguishes it from the similar *Mediaster* spp.

**Distinguishing features**

Fairly rigid star with distinct marginal plates and slightly inflated disc and arms. Madreporite located off-centre, as a clearly distinguishable light spot. Wider marginal plates distinct; oral surface plates have spinules (rather than granules, as in *Mediaster*); fewer spines and distinct plates surrounding mouth opening.

*Odontaster* spp. have 5 x single, long, sharply tapered teeth visible on oral surface surrounding the mouth opening (see photo) = distinguishing feature between *Odontaster* spp. and *Mediaster* spp.

**Colour**

Ranging from pale yellow to orange to red.

**Size**

Average 70-80 mm diameter.

**Distribution**

Southern African endemic. Known from 320 m Saldanha Bay, West Coast of South Africa. Rarely encountered in trawl surveys.

**Similar species**

*Toraster* sp. and *Ceramaster* sp., but *Odontaster* sp. body slightly more flexible and webbing between arms not as pronounced. Arm tips curl upwards at times.

**References**


Phylum: Echinodermata

**Comanthus wahlbergii (ComWah)**

- **Phylum:** Echinodermata
- **Class:** Crinoidea
- **Order:** Comatulida
- **Family:** Comasteridae
- **Genus:** Comanthus
- **Species:** wahlbergii
- **Common name:** Common feather star/Crinoid

**Distinguishing features**

Between 10 and 22 segmented arms that originate from a small, central disc, below which are cirri which attach the animal to the seafloor or rock. Arms have a feather-like appearance with side branches or pinnules.

**Colour**

White, pink, orange to pale brown or yellow, often variegated.

**Size**

Arms can be up to 150 mm in length.

**Distribution**

South-western Cape, South Coast and southern reach of East Coast of South Africa. Shallow to ± 60 m and possibly deeper.

**Similar species**

Sea lilies, which are distinguished from feather stars (*Comanthus wahlbergii*) by the absence of a stalk in feather stars. *Tropiometra carinata* is a similar species, but usually smaller and have finer, more numerous pinnules and only 10 long arms.

**References**


**Goniocidaris indica** (GonInd)

**Phylum:** Echinodermata  
**Class:** Echinoidea  
**Order:** Cidaroida  
**Family:** Cidaridae  
**Genus:** Goniocidaris (Goniocidaris)  
**Species:** indica  
**Common name:** Umbrella urchin  

**Distinguishing features**
Robust, small urchin. Sturdy, thorny primary spines with umbrella-like structures at base. Spines readily detach from the test.

**Colour**
Pinkish-cream test, with brownish spines.

**Size**
Maximum horizontal diameter 25 mm.

**Distribution**
South Coast of South Africa, Maldives, Tanzania; 160-620 m depth range.

**Similar species**
None. Umbrella-like structures distinguish *Goniocidaris indica*.

**References**


**Stereocidaris excavata (SteSpp)**

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<td>Common name:</td>
<td>Pencil urchin</td>
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</tbody>
</table>

**Distinguishing features**

Large, robust urchin. Sturdy, long, slender, serrated, flute-like primary spines (although often easily detach from test). Darkened secondary spines encircling base of primary spines. Dark, double rows of miliary spines, extending from top to bottom of test (ambulacrum). Anal area, sunken with centrally positioned, elevated pores.

**Colour**

Beige to brown, with darkened secondary spines at base of primary spine and darkened ambulacrum. May have a green tint.

**Size**

Maximum horizontal diameter 69 mm.

**Distribution**

Endemic to the South Coast of South Africa; 120-170 m depth range.

**Similar species**

*Stereocidaris capensis*, which is smaller (up to 36 mm diameter). *S. capensis* lacks darkened secondary spines at the base of the primary spine.

**References**


**Histocidaris purpurata (HisPur)**

- **Phylum:** Echinodermata
- **Class:** Echinoidea
- **Order:** Cidaroida
- **Family:** Histocidaridae
- **Genus:** Histocidaris
- **Species:** purpurata
- **Common name:** Purple pencil urchin

### Distinguishing features
Round, robust test. Long, robust, pointy primary spines with darkened smooth base and lighter ridged extensions. Secondary spines considerably shorter, flattened, narrowing to a blunt tip.

### Colour
Brown underlying test and brown to red secondary spines. Base of primary spines deep purplish-red, with contrasting pale pink to white at tips.

### Size
Maximum horizontal diameter 28 mm.

### Distribution
South Coast of South Africa, and globally North Atlantic, Indian Ocean and New Zealand; 750-1080 m depth range.

### Similar species
*Coelopleurus* spp. have similar red to pink colouring, but spines are banded.

### References

**Hygrosoma petersii (TamSha)**

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<tr>
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</thead>
<tbody>
<tr>
<td>Class</td>
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<tr>
<td>Genus</td>
<td>Hygrosoma</td>
</tr>
<tr>
<td>Species</td>
<td>petersii</td>
</tr>
<tr>
<td>Common name</td>
<td>Grey Tam O’Shanter</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Test circular, collapsed. Large tubercles (structures bearing spines) and distinctive areoles (circular outlines around tubercles). Spines bearing poisonous glands (handle with caution). Believed to serve as a host to juvenile cusk eels.

**Colour**
Light grey/green in colour, sometimes dark violet.

**Size**
Maximum horizontal diameter 180 mm.

**Distribution**
West and South Coasts of South Africa, Atlantic; 200-3 200 m depth range.

**Similar species**
Several Echinothuriidae species occur in the region, distinguished from these by tubercle arrangement, where tubercles disappear towards mouth (peristome) in *H. petersii*.

**References**
**Phormosoma placenta africana (TamOsh)**

<table>
<thead>
<tr>
<th>Phylum:</th>
<th>Echinodermata</th>
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<tbody>
<tr>
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<td>placenta africana</td>
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<tr>
<td>Common name:</td>
<td>Beret urchin/Tam O’Shanter</td>
</tr>
</tbody>
</table>

**Distinguishing features**

**Colour**
Usually dark purple, but may also occur in other colours.

**Size**
Maximum horizontal diameter 120 mm.

**Distribution**
Endemic to the West Coast of South Africa; at 50-3 700 m depth range.

**Similar species**
*Hygrosmoa petersii*, but *P. placenta africana* differs in that both large tubercles (structure bearing spines) and areoles disappear towards mouth (peristome).

**References**

Dermechinus horridus africanus (DemHor)

**Phylum:** Echinodermata

**Class:** Echinoidea

**Order:** Camarodonta

**Family:** Echinidae

**Genus:** Dermechinus

**Species:** horridus africanus

**Common name:** Orange pumpkin urchin

**Distinguishing features**
Globular, delicate and extremely high test (pumpkin-like appearance), becoming more vertically raised with age. Slender, fragile, sparsely arranged spines that readily detach from test. Primary spines longer than secondary ones. Distinct white tubercles in rows from oral to aboral sides.

**Colour**
Bright, sometimes pale, orange to red.

**Size**
Maximum horizontal diameter 90 mm; maximum height 120 mm.

**Distribution**
West and South Coast region of South Africa, Pacific and Antarctica; 30-1 020 m depth range.

**Similar species**
Apart from the subspecies (*Dermechinus horridus horridus*), other similar species known thus far is *Pseudechinus marionus* from Marion Island.

**References**

**Echinus gilchristi** (EchGil)

<table>
<thead>
<tr>
<th>Phylum:</th>
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<tr>
<td>Class:</td>
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<tr>
<td>Genus:</td>
<td><em>Echinus</em></td>
</tr>
<tr>
<td>Species:</td>
<td><em>gilchristi</em></td>
</tr>
<tr>
<td>Common name:</td>
<td>Spiky/Common sea urchin</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Round test, dorsally compressed and wider laterally (short, squat). Thin, hollow, brittle spines readily broken in trawl net. Mouth with protruding teeth and fleshy lip around opening.

**Colour**
Test brownish to pink and sometimes greenish, primary spines uniform white, green or pale pink, secondary spines red-brownish, sometimes greenish. Distinct darker bands in double rows running from dorsal to ventral side.

**Size**
Maximum horizontal diameter 84 mm.

**Distribution**
Endemic to the West and South Coast region of South Africa; at 40-500 m depth range.

**Similar species**
*Polyechinus agulhensis*, which lacks fleshy tissue around mouth.

**References**

**Polyechinus agulhensis (ParGra)**

<table>
<thead>
<tr>
<th>Phylum:</th>
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<tr>
<td>Species:</td>
<td>agulhensis</td>
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<tr>
<td>Common name:</td>
<td>Large spiky urchin</td>
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</tbody>
</table>

**Distinguishing features**
Conically shaped test, sloping upwards (volcano-shaped), although this shape is often only evident in large specimens. Smaller specimens have similar shape to *Echinus gilchristi*. Stout but brittle, long primary spines; secondary spines shorter.

**Colour**
Variable colour – pink, green, white, purple. Distinct darker bands in double rows running from dorsal to ventral side.

**Size**
Maximum horizontal diameter 86 mm wide, 58 mm high.

**Distribution**
Endemic to the West and South Coast region of South Africa; at 200-1 080 m depth range.

**Similar species**
*Echinus gilchristi*, but *P. agulhensis* has a more tapered, sloping test in volcano shape and lacks fleshy ring around mouth.

**References**
**Clypeaster eurychorius (ClyEur)**

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<tr>
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<td>Species:</td>
<td>eurychorius</td>
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<tr>
<td>Common name:</td>
<td>Green sunhat urchin</td>
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</tbody>
</table>

**Distinguishing features**
Flattened, pentagonal-shaped test, concave edges, posterior (dorsal/top) side convex forming a raised centre, margin slightly thickened. Raised, distally opened petals.

**Colour**
Live animal yellow to green.

**Size**
Maximum horizontal diameter 190 mm.

**Distribution**
South and East Coast region of South Africa, Mediterranean and Indian Ocean; from littoral to 370 m.

**Similar species**
*Clypeaster rarispinus*, but *C. eurychorius* differs in having distally opened petals and a raised centre.

**References**


Phylum: Echinodermata

**Brissopsis lyrifera capensis** (Smouse)

<table>
<thead>
<tr>
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<tr>
<td>Class:</td>
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<td>Species:</td>
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<tr>
<td>Common name:</td>
<td>Brissopsis/Heart urchins</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Elongated, heart-shaped test, with distinct frontal notch. Petals straight, divergent, anterior ones longer than posterior. Thin, short, fragile uniform spines, generally fall off in trawl net. Some specimens with distinct darker brown/black fasciole in shape of lyre on dorsal surface, but not all individuals have this marking.

**Colour**

Brown, with some individuals (but not all) having a distinct darker line in shape of lyre.

**Size**

Maximum horizontal diameter 70 mm.

**Distribution**

Endemic to the West and South Coast region of South Africa; 5-1 400 m.

**Similar species**

*Echinocardium cordatum* which has wider petals, with conspicuous pores and deeper frontal notch.

**References**


**Echinocardium cordatum (EchCor)**

<table>
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<tr>
<th>Phylum:</th>
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<td>Class:</td>
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<td>Species:</td>
<td>cordatum</td>
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<tr>
<td>Common name:</td>
<td>Small heart urchin/Sea potato</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Moderately high, oval-shaped test, with deepened anterior notch, frequently with a red colouration. Distinctive, wide petals, with conspicuous pores containing tube feet. Anterior petals longer than posterior ones. Spines closely packed, directed backwards.

**Colour**
White to pale beige/cream, sometimes with red colouration around the frontal notch.

**Size**
Maximum horizontal diameter 90 mm.

**Distribution**
Cosmopolitan species, reported along the entire coast of South Africa; from littoral to 230 m.

**Similar species**
*Schizaster lacunosus*, which has an extremely pointed end and test very high at posterior end.

**References**


Spatangus capensis (Pheart)

**Phylum:** Echinodermata  
**Class:** Echinoidea  
**Order:** Spatangoida  
**Family:** Spatangidae  
**Genus:** Spatangus  
**Species:** capensis  
**Common name:** Purple heart urchin

**Distinguishing features**  
Large urchin, deep purple in colour. Test with anterior notch, giving a heart-shaped appearance. Narrow, distinctive paired petals. Short, dense spines.

**Colour**  
Purple, sometimes brownish-beige, cleaned test white.

**Size**  
Maximum horizontal diameter 125 mm.

**Distribution**  
Endemic to the South and West Coasts of South Africa; 37-500 m depth range.

**Similar species**  
*Spatogobrissus mirabilis*, which lacks frontal notch.

**References**  


**Ophiocreas spp. (Ophiu 6)**

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<tr>
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<tr>
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<td>Brown-skinned snake star</td>
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### Distinguishing features
Moderate in size, often attached onto other marine life when landed on deck. Arms do not branch but curl considerably, thick at bases and most of arms, thin at arm tips. Whole animal covered in thin skin, which easily tears off when damaged.

### Colour
Light brown, becoming darker towards arm tips. White beneath skin.

### Size
Disc diameter up to 30 mm. Arms very long, but tightly curled.

### Distribution
Unknown. Only two specimens encountered to date. Further specimens and taxonomy required.

### Similar species
None.

### References
Phylum: Echinodermata

Astrothorax waitei (AstWai)

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<td>waitei</td>
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<td>Apricot basket star</td>
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</table>

**Distinguishing features**

Small size, often attached onto other marine life (sea fans or sponges) when landed on deck. Disc swollen (tumid), dorsal surface and arms banded. Both dorsal and ventral sides covered in coarse and fine tubercles intermixed, ventral tubercles abruptly finer. Jaws also covered by fine tubercles. Arms five, long, do not branch, but may be tightly coiled dorso-ventrally. Arm spines, up to ten, with shape changing from thorny-tipped stumps proximally to F-shaped hooks distally.

**Colour**

Pale orange, apricot.

**Size**

Considerably smaller than other basket stars, disc diameter up to 20 mm.

**Distribution**

West Coast of South Africa to East Coast, Durban; 0-1 005 m depth.

**Similar species**

None.

**References**


Olbers JM. 2016. *Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa*. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 149-150. (434pp.).
Astrocladus euryale (AstEur)

Phylum: Echinodermata
Class: Ophiuroidea
Order: Euryalida
Family: Gorgonocephalidae
Genus: Astrocladus
Species: euryale
Common name: Black and white basket star

Distinguishing features
Disc round, smooth. Radial shields armed with moderate to large round tubercles, which continue down arms but are absent at arm tips. Arms branch at disc margin. Arms readily detach and a tangled mass of arms may be the only parts retained. Ventral disc smooth and naked, including jaws and oral area. Oral papillae spiniform, fringe oral area including distal notches. Arm spines on ventral side of arms, conical, becoming hook-shaped towards arm tips.

Colour
Mainly black and white and/or grey with black surrounding tubercles on disc and arms, disc colour sometimes olive green.

Size
Disc diameter up to 75 mm.

Distribution
Endemic. West Coast, off Cape Town to East Coast, central KwaZulu-Natal; 11-555 m depth.

Similar species
Astrodendrum capensis, which is purple to pink in colour, with tubercles that do not extend down arms.

References
Olbers JM. 2016. Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 143-144. (434pp.).
**Astrodendrum capensis (AstCap)**

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<td>Purple basket star</td>
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**Distinguishing features**
Disc round, few scattered tubercles in between radial shields. Radial shields armed with small to moderate tubercles, which are fat at their bases but pointed at their tips. Tubercles do not continue down arms. Arms branch extensively from disc margin. Ventral disc smooth and naked, sometimes with small tubercles. Oral papillae spinniform, fringe oral area excluding in distal notches.

**Colour**
Purple or reddish, may have a few white speckles on main area of disc.

**Size**
Disc diameter up to 95 mm.

**Distribution**
Southern African endemic. West Coast, off Orange River to East Coast, Kosi Bay, South Africa. Depth range 161-420 m.

**Similar species**
Gorgonocephalus chilensis and Astrocladus euryale. Tubercles are wide at base in comparison to G. chilensis and Astrodendrum capensis is purple to red in colour.

**References**
Olbers JM. 2016. *Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa*. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 146-147. (434pp.).
**Gorgonocephalus chilensis** (GorChi)

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**Distinguishing features**
Disc slightly inflated; dorsal areas between radial shields slightly indented. Radial shields conspicuous, narrow, densely covered in conical tubercles; remainder of disc covered in skin with numerous scattered tubercles, sometimes smaller in size. Disc margin with few larger tubercles. Ventral interradial areas covered in skin with small, scattered, low tubercles, few scattered tubercles towards oral area. Five arms, branching from or within disc. Arms readily detach and tangled mass of arms may be the only parts retained. Oral papillae and teeth spiniform, fringe oral frame, but absent in distal notches.

**Colour**
Brick red, pink to light brown in colour, with white speckles.

**Size**
Up to 64 mm disc diameter.

**Distribution**
West Coast, off Cape Town to East Coast, Port Edward; 22-900 m depth.

**Similar species**
*Gorgonocephalus pustulatum* and *Astrodendrum capensis*, but *G. chilensis* has more tubercles on radial shields and is red or pink in colour.

**References**
Olbers JM. 2016. *Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa*. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 151-152. (434pp.).
Distinguishing features
Dorsal disc covering variable, sometimes naked interradially, while others with many tubercles, conical or almost spine-like. Radial shields narrow, with irregular tubercles. Ventral surface flat, covered in tubercles or may be naked. Oral papillae and teeth slender, spiniform, forming continuous fringe, but not within distal notches. Arms, five, branching from or within disc. Arms readily detach and tangled mass of arms may be the only parts retained.

Colour
Brown to pink-brown with white speckles. Centre of disc dark.

Size
Up to 54 mm disc diameter.

Distribution
West Coast of South Africa to beyond East London; 78-860 m depth.

Similar species
Gorgonocephalus chilensis and Astrodendrum capensis. G. pustulatum has fewer tubercles on radial shields and is usually darker in the centre.

References
**Cryptopelta aster (Ophiu5)**

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<td>Common name:</td>
<td>Red and white banded brittle star</td>
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**Distinguishing features**

Distinct red-and-white-banded arms with a red floret-patterned (flower-patterned) central disc. Disc pentagonal, flat, covered both dorsally and ventrally in fine granules extending onto first few arm segments. Arm spines up to seven, sometimes eight, less than half segment length.

**Colour**

Floret pattern red to orange and white, arms banded.

**Size**

Disc diameter up to 13 mm. Arms relatively short, three times disc diameter in length.

**Distribution**

Endemic. West and South Coasts of South Africa, reaching to East Coast, north of Durban; 75-421 m depth.

**Similar species**

None. Distinctive red-and-white-banded arms make this species unmistakable.

**References**


**Distinguishing features**

Disc round or pentagonal, disc scales on the central disc are more or less obscured by spines, spinelets or thorny stumps. Radial shields triangular, large and naked. Arms are mainly horizontally flexible (side-to-side movement) and have minimal dorso-ventral (up and down) movement. Distinct white stripe down arms. Arm spines, up to ten, usually long (six times arm segment length), glassy, more or less serrated and tapering, lower spines short and often just stumps. Species very active on deck, readily flipping from dorsal to ventral sides. Frequently associated with sponges.

**Colour**

Disc usually darker than arms, colours vary from orange, grey, red to pink. Arms with light white longitudinal line, sometimes with pink or red stripes bordering the line.

**Size**

Disc diameter up to 16 mm. Arms long, nine times disc diameter in length.

**Distribution**

West Coast, off Orange River to East Coast, Sodwana Bay; usually more than 200 m depth.

**Similar species**

*Ophiothrix fragilis*, which has shorter arms, spines on radial shields and does not have the distinctive white stripe along arms.

**References**


**Ophiothrix fragilis** (Ophiu4)

**Phylum:** Echinodermata  
**Class:** Ophiuroidea  
**Order:** Ophiurida  
**Family:** Ophiothrichidae  
**Genus:** Ophiothrix  
**Species:** fragilis  
**Common name:** Bristly brittle star

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**Distinguishing features**
Dorsal disc covered in thorny spinelets, stumps and spines; may be intermixed. Radial shields large, covered with spines. Arm spines up to ten, glassy, thorny over total length, not tapering, sometimes lowermost spine transformed into a hook, longest spine not more than three times segment length. Long spines protrude along the margins of the length of the arms, giving a ‘feathery’ appearance. Tips of the arms are readily discarded when disturbed. Shallow, abundant species.

**Colour**
Orange to red, often with darker brown, grey or purple central disc. May have various combinations of oranges, reds, greens, greys, browns, purples, yellows and pinks. Arms banded and often with dots associated with dorsal arm plates longitudinally along arms.

**Size**
Disc diameter up to 20 mm. Arms moderate in length, three to five times disc diameter.

**Distribution**
West Coast, off Orange River to East Coast, Kosi Bay; less than 100 m depth.

**Similar species**
*Ophiothrix abyssicola* and *O. aristulata*, which have longer arms and naked radial shields while *O. fragilis* has spines on radial shields and shorter arms.

**References**
**Ophiolyclus dentatus (OphDen)**

**Phylum:** Echinodermata  
**Class:** Ophiuroidea  
**Order:** Ophiurida  
**Family:** Ophiomyxidae  
**Genus:** Ophiolyclus  
**Species:** dentatus  
**Common name:** Toothed brittle star

**Distinguishing features**
Disc pentagonal, covered in thick skin. Radial shields narrow, just shorter than width of arm base, not distinct. Oral papillae spiniform, long. Teeth similar in shape, but smaller and clustered at apex of jaw. Arms five, simple, length moderate. Dorsal arm plates fragmented especially basally, covered by thick skin. Arm spines three, lowermost cigar-shaped, broad and flattened, approximately one segment length, remaining spines spiniform, uppermost being slightly longer than segment length, distal spines becoming hook-shaped. Often damaged in sample.

**Colour**
Red to orange dorsally, lighter ventrally. Colouration sometimes fades to white from trawl damage. Arms red, mottled.

**Size**
Disc diameter up to 23 mm. Arms three times disc diameter in length.

**Distribution**
Southern African endemic. West Coast (Groen river) to East Coast (Sodwana Bay) of South Africa; 129-450 m depth.

**Similar species**
*Ophiomyxa vivipara capensis* is glossier in appearance and *Ophiolyclus dentatus* has larger, more obvious arm spines and many spine-shaped oral papillae.

**References**
**Ophiomyxa vivipara capensis (Ophiu2)**

**Phylum:** Echinodermata  
**Class:** Ophiuroidea  
**Order:** Ophiurida  
**Family:** Ophiuridae  
**Genus:** Ophiomyxa  
**Species:** vivipara capensis  
**Common name:** Bright red disc brittle star

**Distinguishing features**
Bright red/orange in colour. Disc pentagonal, covered with thick, smooth, glossy skin. Radial shields short, but not distinct in fresh specimens. Oral papillae three to four, broad, serrated, flattened, with transparent edges. Teeth similar, four to five. Arms five, moderately long, flexible and tapered, mottled in colouration, also covered in thick skin. Arm spines slender, serrated and rugose at tip, up to four on free segments. Disintegrates quickly out of water and is often severely damaged in trawls.

**Colour**
Bright glossy red, yellow or orange disc, mottled red/orange/white arms.

**Size**
Disc diameter up to 23 mm. Arms three to four times disc diameter in length.

**Distribution**
Endemic. West Coast off Orange River to East Coast, East London; 101-450 m depth.

**Similar species**
Ophiolycus dentatus, but Ophiomyxa vivipara capensis has a smoother appearance, arm spines are shorter (not obvious) and thorny but often covered in skin. Teeth flat and glassy.

**References**
Olbers JM. 2016. Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 159-160. (434pp.).
**Ophiocten affinis simulans** (OphAff)

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<td>affinis simulans</td>
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<tr>
<td>Common name:</td>
<td>Stepping stone brittle star</td>
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**Distinguishing features**
Small species. Disc scales large circular plates, all encircled by smaller scales. Radial shields separated by scales. Edge of disc slightly indented at arms. Arm combs present. Oral papillae three each side of apical papillae, distalmost broad. Three slender and pointed arm spines.

**Colour**
Light brown to grey.

**Size**
Disc diameter up to 4 mm. Arms three times disc diameter in length.

**Distribution**
Endemic. West Coast, off Lamberts Bay to South Coast, Port Alfred; depth range 55-273 m.

**Similar species**
None.

**References**

Ophiomisidium pulchellum (Ophiu)

**Phylum:** Echinodermata  
**Class:** Ophiuroidea  
**Order:** Ophiurida  
**Family:** Ophiuridae  
**Genus:** Ophiomisidium  
**Species:** pulchellum  
**Common name:** Spiky orange brittle star

**Distinguishing features**
Very small species, seldom encountered. Disc round, disc scales large, thick and taking up most of dorsal disc. Radial shields oval. Oral papillae two, fused each side of triangular apical papillae. Arms rigid, short, consisting of approximately 15 segments only. Spiky in appearance due to spines on arms and disc. Arm spines three, enlarged, flattened, blunt, and rapidly decreasing in size down arm.

**Colour**
Pale orange.

**Size**
Disc diameter up to 5 mm. Arms one to two times disc diameter in length.

**Distribution**
West Coast, off Cape Town to East Coast, south of Durban; 70-3 065 m depth.

**Similar species**
None.

**References**

Ophiura trimeni (Ophiu3)

**Phylum:** Echinodermata  
**Class:** Ophiuroidea  
**Order:** Ophiurida  
**Family:** Ophiuridae  
**Genus:** Ophiura (Ophiura)  
**Species:** trimeni  
**Common name:** Orange stripe brittle star

### Distinguishing features
Disc scales covered in thin skin. Radial shields half disc radius, twice as long as wide, not touching. Mouth or oral slit usually wide open, oral papillae three, distalmost broadest, apical papillae pointed. Teeth three to five, same shape as apical papillae. Arm spines three, spines twice segment length, one segment length towards end of arms. Orange and white longitudinal striped arms. Patterned disc with orange and white shapes. Very small, fragile species. Very common and abundant.

### Colour
Orange and white.

### Size
Disc diameter up to 9 mm. Arms three to four times disc diameter in length.

### Distribution
Endemic. West Coast, off Orange River to East Coast, Sodwana Bay; 165-1 647 m depth.

### Similar species
None.

### References

Olbers JM. 2016. *Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa*. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 186-188. (434pp.).
**Ophiura costata costata (Ophiu1)**

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<th>Phylum:</th>
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<td>Class:</td>
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<td>Species:</td>
<td>costata costata</td>
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<td>Common name:</td>
<td>Rigid orange brittle star</td>
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**Distinguishing features**
Arms and disc inflexible (rigid), arms often broken. Disc pentagonal, disc scales distinct, thick, irregular, forming star shape on disc edged in darker orange colour. Radial shields longer than wide, oval, separated by scales. Mouth narrow or tightly closed. Arms fairly long when unbroken, can be more than four times disc diameter. Arm spines three, very short and appressed to arm.

**Colour**
Orange to orange-red.

**Size**
Disc diameter up to 23 mm. Arms often broken, but can be more than four times disc diameter.

**Distribution**
Endemic. West Coast, off Orange River to South Coast, Cape St Francis; 43-1 647 m depth.

**Similar species**
None.

**References**

Olbers JM. 2016. Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 188-189. (434pp.).
Phylum: Echinodermata

**Ophiactis abyssicola** (OphAby)

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<td>Abyss brittle star</td>
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**Distinguishing features**

Disc round, sparsely scattered conical spines on disc, concentrated on margin. Radial shields naked, oblong to rectangular. Arms five, simple, long, moniliform (like string of beads) distally. Three to four arm spines, erect, may be pointed or blunt, cylindrical, middle spine longest, half to two times longer than segment.

**Colour**

Orange arms with darker purple, grey or brown disc; some specimens with a pinkish tinge.

**Size**

Disc diameter up to 8 mm. Arms three to eight times disc diameter in length.

**Distribution**

West Coast, off Cape Columbine to South Coast off Still Bay; 167-2 743 m depth.

**Similar species**

*Ophiothrix fragilis*, *Ophiothrix aristulata* and *Ophiactis carnea*, but *Ophiactis abyssicola* is distinguished by conical spines on disc and naked radial shields.

**References**


**Ophiactis carnea (OphCar)**

**Phylum:** Echinodermata  
**Class:** Ophiuroidea  
**Order:** Ophiurida  
**Family:** Ophiuridae  
**Genus:** Ophiactis  
**Species:** carnea  
**Common name:** Fleshy brittle star

**Distinguishing features**
Arms five, simple. Disc round, covered in spines, sometimes with darkened area or blotch in centre of disc visible. Radial shields naked, elongated D-shaped, moderate in size. Three to five arm spines.

**Colour**
Reddish brown to pink, brown or orange, sometimes with white patches.

**Size**
Disc diameter up to 6 mm. Arms five to six times disc diameter in length.

**Distribution**
West Coast, beyond Lambert’s Bay, off Cape Town to East Coast, Cape St Lucia; intertidal to 220 m depth.

**Similar species**
*Ophiothrix fragilis* and *Ophiactis abyssicola*, but *Ophiactis carnea* has D-shaped radial shields.

**References**

**Ophiomitrella hamata (OphHam)**

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<td>Coal stack brittle star</td>
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**Distinguishing features**
Very small species, disc round and covered with short blunt stumps. Radial shields oval in shape, short. Five arms, usually curled under disc or attached to coral or sea fan. Five arm spines, longest not exceeding segment length.

**Colour**
Light purple or white.

**Size**
Disc diameter up to 4 mm. Arms three times disc diameter in length.

**Distribution**
Endemic. South Coast, off Mossel Bay to East Coast, Durban; 63-900 m depth.

**Similar species**
None known, although may be confused with *Astrothorax waitei* which also attach to sea fans and other biogenic species.

**References**

**Thyone venusta** (ThyVen)

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<td><strong>Species:</strong></td>
<td>venusta</td>
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<td><strong>Common name:</strong></td>
<td>Orange and white speckled sea cucumber</td>
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**Distinguishing features**
- U-shaped body, cylindrical, with posterior end turned upward. Skin smooth, but appears 'hairy' due to numerous scattered fine tube feet (podia). Speckled orange and white colour, darker dorsally.

**Colour**
- White, speckled with orange.

**Size**
- 90-100 mm in length, width 8-10 mm.

**Distribution**
- South Coast of South Africa, extending to southern East Coast.

**Similar species**
- Juvenile *Thyone aurea* on West Coast, which are more uniform orange/pink in colour and not U-shaped.

**References**
- Species identification by Ahmed Thandar.
**Hemiocnus insolens (PselIns)**

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<td>Red-chested sea cucumber (sometimes other colours)</td>
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**Distinguishing features**
Small, solid sea cucumber distinguished by its bright colours red or yellow, although white variations are also common, especially on the West Coast. Solid, slightly gelatinous texture. Tube feet scattered all round. Ten irregularly branched tentacles. Usually occurs in dense colonies, especially on the West Coast.

**Colour**
Usually bright red, yellow or white, but can vary.

**Size**
25-60 mm in length.

**Distribution**
Endemic. West and South Coasts of South Africa as far east as Port Elizabeth. Intertidal to 110 m.

**Similar species**
*Pseudocnella sykion* and *P. sinorbis* in shallow intertidal waters.

**References**


Species identification by Ahmed Thandar.
Psolus griffithsi (PsoGri)

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<tr>
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<td>griffithsi</td>
</tr>
<tr>
<td>Common name:</td>
<td>Scaled sea cucumber</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Distinct species identifiable by the dorsal scales covering the body and the sucker-like ventral surface forming a sole. Scales overlapping and covered with minute granules. Tentacles are bushy when visible. Tube feet (podia) present on ventral sole in two rows; outer row minute and inner row much larger.

**Colour**

Beige scales with orange/brown centres, ventral sole grey to brown.

**Size**

20-25 mm length.

**Distribution**

Endemic. West Coast of South Africa.

**Similar species**

*Psolus agulhasicus.*

**References**

**Pseudostichopus langeae (Mesoth)**

| Phylum: | Echinodermata |
| Class: | Holothuroidea |
| Order: | Aspidochirotida |
| Family: | Synallactidae |
| Genus: | Pseudostichopus |
| Species: | langeae |
| Common name: | Sand covered sea cucumber |

**Distinguishing features**

Cylindrical body form with ventral surface slightly flattened and dorsal surface slightly arched. Thick, leathery and smooth body wall, usually encrusted with sand grains, broken shells, coral debris, echinoid spines and foraminifera, but no pteropod shells or sponge spicules. Tiny tube feet (podia) mostly along dorso-lateral edges. Retains firm shape out of water. Mouth located on ventral surface with between 18 and 20 peltate (leaf- or shield-shaped) projecting tentacles, cream to brown in colour. Anus located sub-ventrally in a distinct pygal (posterior) furrow.

**Size**

Up to 70 mm in length, 8-10 mm diameter.

**Distribution**

Endemic. West and South Coasts of South Africa, ranging in depth from ± 100-400 m.

**Similar species**

*Pseudostichopus echinatus* from the East Coast.

**References**


Species identification by Ahmed Thandar.
**Zygothuria lactea (MesLac)**

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>Common name:</td>
<td>Slimy deep-water sea cucumber</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Very slimy, soft body wall with folded outer skin that readily disintegrates off main body. Has 20 pink to orange-coloured tentacles visible at mouth. Tube feet greatly reduced and difficult to detect.

**Colour**

Light brown to mud-coloured outer skin layer, with pale pink to white body wall.

**Size**

Up to 140 mm in length.

**Distribution**

Deeper waters – three individual specimens captured at 369, 617 and 907 m on West coast of South Africa.

**Similar species**

*Mesothuria murrayi* on the East Coast.

**References**


Species identification by Ahmed Thandar.
**Synallactes mollis (SynMol)**

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<thead>
<tr>
<th><strong>Phylum:</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Class:</strong></td>
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<td><strong>Family:</strong></td>
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<td><strong>Genus:</strong></td>
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</tr>
<tr>
<td><strong>Species:</strong></td>
<td>mollis</td>
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<tr>
<td><strong>Common name:</strong></td>
<td>South coast purple sea cucumber</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Gelatinous, slimy body wall with thin outer brown skin layer (frequently torn) covering pale purple body wall beneath. Maintains shape on trawl deck but not rigid. Tube feet variable in size, decreasing in size posteriorly. A double ring of 16 to 22 tentacles present.

**Colour**

Brown outer skin to purple body wall with darker tube feet.

**Size**

Up to 120-185 mm in length.

**Distribution**

Endemic. South Coast of South Africa.

**Similar species**

*Synallactes viridilimus*, which is larger in size and usually occurs on West Coast.

**References**


Species identification by Ahmed Thandar.
**Synallactes viridilimus** *(PurCuc)*

<table>
<thead>
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<th>Phylum:</th>
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<tbody>
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<td>Class:</td>
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<td>Species:</td>
<td>viridilimus</td>
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<td>Common name:</td>
<td>Purple sea cucumber</td>
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</tbody>
</table>

**Distinguishing features**

Large gelatinous body, often slimy. Thin body wall. Mouth with 20 peltate (leaf- or shield-shaped) crown of tentacles, orange to yellow in colour. Upper tentacles in single row, lower tentacles in double row. Ventro-lateral tube feet (podia) more prominent and longer than mid-ventral tube feet.

**Colour**

Brown to pale purple in colour. Tube feet darker purple.

**Size**

Up to 450 mm in length.

**Distribution**

Endemic. West Coast of South Africa.

**Similar species**

*Synallactes mollis* is smaller in size and usually occurs on the South Coast.

**References**


Species identification by Ahmed Thandar.
**Synallactes sp. (Synall)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<td>Genus</td>
<td><em>Synallactes</em></td>
</tr>
<tr>
<td>Species</td>
<td>sp.</td>
</tr>
<tr>
<td>Common name</td>
<td>Large lilac sea cucumber</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Large gelatinous body wall coated in substantial slime that is readily rubbed off along with body wall tissue. Retains shape out of water, but body wall tissue not very robust to handling and is easily damaged. Only one specimen recorded to date.

**Colour**

Pale purple/lilac colour with darker oral and anal areas.

**Size**

Approximately 300 mm in length.

**Distribution**

Only one specimen recorded from trawl 710 m depth on West Coast of South Africa.

**Similar species**

*Benthodytes* spp.

**References**

Tentative generic identification by Ahmed Thandar, but may be a species of *Benthodytes*. Further taxonomic study is required, hence all specimens found should be retained.
PHYLUM: CHORDATA

Authors

Shirley Parker-Nance¹ and Lara Atkinson²

Citation


¹ South African Environmental Observation Network, Elwandle Node, Port Elizabeth
² South African Environmental Observation Network, Egagasini Node, Cape Town
Urochordates, commonly known as tunicates or sea squirts, are a subphylum of the Chordata, which includes all animals with dorsal, hollow nerve cords and notochords (including humans). At some stage in their life, all chordates have slits at the beginning of the digestive tract (pharyngeal slits), a dorsal nerve cord, a notochord and a post-anal tail. The adult form of Urochordates does not have a notochord, nerve cord or tail and are sessile, filter-feeding marine animals. They occur as either solitary or colonial organisms that filter plankton. Seawater is drawn into the body through a branchial siphon, into a branchial sac where food particles are removed and collected by a thin layer of mucus which is pulled into the intestinal tract. The excess water is pumped out along with any waste matter through the atrial siphon or opening. The subphylum Tunicata is divided into three classes, two of which commonly occur in South African waters, namely Ascidiacea (sea squirts) and Thaliacea (salps).

**Class Thaliacea (Salps)**

In contrast with ascidians, salps are free-swimming in the water column. These organisms also filter microscopic particles using a pharyngeal mucous net. They move using jet propulsion and often form long chains by budding off new individuals or blastozooids (asexual reproduction). These colonies, or an aggregation of zooids, will remain together while continuing feeding, swimming, reproducing and growing. Salps can range in size from 15-190 mm in length and are often colourless. These organisms can be found in both warm and cold oceans, with a total of 52 known species that include South Africa within their broad distribution. No endemic species are known from the region.

**Collection and preservation**

Tunicates require microscopic examination for identification beyond genus level. Tunicates should be relaxed in seawater with menthol crystals for 2 to 4 hours and then preserved by adding 5-10% buffered formalin to the relaxed specimen without disturbing the animal. Ascidians have muscular bodies and characteristics of the branchial sac are an essential tool in classification to genus and species level. When specimens – of both colonial and solitary species – are not relaxed and gently anesthetised in formalin, essential characteristics important in the description of new species are obscured by contraction of the specimen caused by the traumatic death. This results in a specimen that cannot be used in species identification or description.

For molecular studies a small section of colonial species (containing a few zooids) should be preserved in 96% ethanol and the rest relaxed and preserved as above. In the case of solitary species, place piece of the atrial siphon (inner tissue only) in 96% ethanol. Then keep the specimen from which the tissue was removed, along with a whole similar specimen (if possible), relax and preserve as above.

The most recent checklist compiled for this group indicates 147 reported species for South Africa. Global estimates indicate more than 2 800 species.

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**Phylum: CHORDATA**

**Subphylum: Tunicata**

Sea squirts and salps
References


Phylum: Chordata

A) Sea squirt general body plan:

- Branchial siphon or buccal aperture (water in)
- Atrial siphon or aperture (water out)
- Branchial sac with stigmata
- Intestine
- Gonads
- Oesophagus
- Stomach
- Heart
- Projections of tunic for anchorage

B) Salp general body plan:

- Buccal aperture (water in)
- Endostyle
- Muscle bands
- Gill bar
- Heart
- Stomach
- Atrial aperture (water out)
- Projections of tunic – aids floatation
Phylum: Chordata

**Ascidia incrassata** (AsInc)

<table>
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<tr>
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<tbody>
<tr>
<td>Subphylum:</td>
<td>Tunicata</td>
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<tr>
<td>Class:</td>
<td>Ascidiacea (sea squirts)</td>
</tr>
<tr>
<td>Order:</td>
<td>Phlebobranchia</td>
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<tr>
<td>Family:</td>
<td>Ascididae</td>
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<tr>
<td>Genus:</td>
<td>Ascidia</td>
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<tr>
<td>Species:</td>
<td>incrassata</td>
</tr>
<tr>
<td>Common name:</td>
<td>Orange sea squirt</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Characteristic red bands between each of the eight branchial siphon lobes. Colouration of lobes may be obscured when the siphons are closed and retracted. Both siphons, situated on the anterior part of the elongated globular body, may be covered in varying degrees of mud and sand. Body colour varies from red to orange and yellow. If no bands occur, photograph and retain specimen.

**Colour**

Orange to red or even purple tunic (outer body wall), with red bands on inside of siphon.

**Size**

Up to 140 mm.

**Distribution**

Southern African endemic. West and South Coasts of South Africa to Mozambique. Recorded as invasive off the Pacific Coast of Panama. Intertidally to a depth of 114 m.

**Similar species**

*Pyura stolonifera* (red bait) is yellow brown and has a tough, leathery tunic but no red bands on siphons.

**References**


**Pyura stolonifera (Red bait)**

<table>
<thead>
<tr>
<th>Phylum:</th>
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<td>Subphylum:</td>
<td>Tunicata</td>
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<td>Class:</td>
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<td>Family:</td>
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<td>Genus:</td>
<td>Pyura</td>
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<tr>
<td>Species:</td>
<td>stolonifera</td>
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<tr>
<td>Common name:</td>
<td>Red bait</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Large, solitary ascidian, commonly found in aggregations or groups. Leathery, slightly wrinkled tunic, beige to brown to dark slate coloured, bare or with various attached epibionts. Siphons large, anteriorly placed, with distinct, slightly scalloped edges forming four lobes. Pointy papillae NOT present at the base of the siphons.

**Colour**

Beige to slate black, with sides or areas more brown orange in colour. May be heavily overgrown with algae, sponges and other ascidians. Interior test whitish, with orange to red viscera.

**Size**

Large, typically 150 mm in height, but can grow considerably larger than this.

**Distribution**

West and South Coasts, very widespread off southern Africa.

**Similar species**

*Pyura herdmani*, which has large, pointed papillae on the tunic particularly around the siphons. Not as abundant as *P. stolonifera* and occurs in sheltered areas.

**References**


**Gynandrocarpa placenta (GynPla)**

<table>
<thead>
<tr>
<th>Phylum:</th>
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</thead>
<tbody>
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<td>Subphylum:</td>
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<tr>
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<tr>
<td>Genus:</td>
<td>Gynandrocarpa</td>
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<tr>
<td>Species:</td>
<td>placenta</td>
</tr>
<tr>
<td>Common name:</td>
<td>Elephant’s ears ascidian</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Short wrinkled stalk or peduncle supporting an oval to large, laterally flatted disc-shaped head. Test of the head is cartilaginous and firm, tunic white, cream or pink in colour. Siphon apertures of embedded zooids distinctly visible on colony surface. Stalk often encrusted with epibionts, especially hydroids.

**Colour**

White to pink tunic; zooids pink in life; pale orange brown peduncle.

**Size**

Colonies can reach up to 200 mm in length, but mostly small individuals retained in trawls. May also be found on the carapace of crabs, e.g. *Pseudodromia latens*.

**Distribution**

South Coast, South Africa.

**Similar species**

None known.

**References**


### Pseudodistoma spp. (AscBul)

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<th>Phylum:</th>
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<tr>
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<td>spp.</td>
</tr>
<tr>
<td>Common name:</td>
<td>Soft lightbulb ascidian</td>
</tr>
</tbody>
</table>

#### Distinguishing features
Soft gelatinous body with distinct stalk, lightly impregnated with fine sand particles visible through the milky transparent test. Zooids visible through the test of globular head, patterned arrangement may or may not be visible. Stalk attached by root-like structures to the substrate.

#### Colour
Translucent/opaque white and light brown (due to the presence of sand particles within test of stalk). White zooids are visible through milky test, brown dots are faecal matter contained within the zooid gut.

#### Size
Variable, from 20-100 mm in length.

#### Distribution
West and South Coasts of South Africa. Wide distribution.

#### Similar species
*Pseudodistoma delicaturn, P. fragile and P. obscurum*, however microscopic examination is required to distinguish further.

#### References
**Aplidium spp. (AscSan)**

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<th>Phylum:</th>
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<td>Genus:</td>
<td>Aplidium</td>
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<tr>
<td>Species:</td>
<td>spp.</td>
</tr>
<tr>
<td>Common name:</td>
<td>Sandy club ascidian</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Soft, gelatinous head with or without small amount of fine sand particles. Long, thin but firmer sandy stalk; may be slightly enlarged; attaches to substrate. Elongated head more gelatinous than the stalk, which is covered with fine sand particles.

**Colour**

Light yellow to brown.

**Size**

Stalk 50 mm, head 40 mm in length.

**Distribution**

West and South Coasts of South Africa. Wide distribution.

**Similar species**

*Aplidium coleloides* (Herdman, 1886) off Cape of Good Hope (Miller, 1962); *Aplidium australiense* Kott, 1963 West and South Australia.

**References**


Phylum: Chordata

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**Distaplia spp. (AscSta)**

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<td>Common name:</td>
<td>Stalked ascidian</td>
</tr>
</tbody>
</table>

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**Distinguishing features**

Soft gelatinous body with distinct stalk and attachment “roots” forming a club-type shape. Firm opaque stalk, no sand externally or internally. Attachment may carry several stalked heads. Broader, softer, slightly elongated head.

**Colour**

Whitish zooids, arranged into systems that may or may not be visible. Orange colouration may be visible through semi-transparent test of the head at times when developing ova and larvae are present during the breeding season.

**Size**

Variable, from 20 mm in length.

---

**Distribution**

West and South Coasts of South Africa. Wide distribution.

**Similar species**

*Distaplia durbanensis* Millar, 1964 (collected off Durban, 411 m, sandy mud habitat).

**References**

**Synoicum spp. (BbBat)**

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<tr>
<td>Common name:</td>
<td>Baseball bat ascidian</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Gelatinous sandy body, with distinct stalk and attachment “roots” forming a baseball club-type shape. More rigid and firm structure than other club-shaped ascidians. Sandy texture, with grains of sand coating the outer body wall.

**Colour**
Translucent/opaque brown to pink, often covered with fine sediment.

**Size**
Variable, up to 70 mm in length.

**Distribution**
West and South Coasts, South Africa.

**Similar species**
*Synoicum capense* Millar, 1962 (False Bay, South Africa).

**References**
**Molgula scutata** (SanCol)

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<td>Species:</td>
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<tr>
<td>Common name:</td>
<td>Sand ascidian</td>
</tr>
</tbody>
</table>

**Distinguishing features**
Sand-covered globules of gelatinous mass together forming clusters. Attach to each other and to many other structures, even to polychaete tubes anchored in the sediment. Often attach to the carapace of *Exodromidia* sp.

**Colour**
When washed and free of sand, the body is opaque/transparent.

**Size**
Individuals about 20 mm diameter, but together form larger clusters up to 150 mm diameter.

**Distribution**
Southern African endemic. West and South Coasts, South Africa.

**Similar species**
*Molgula cryptica* Millar, 1962 (False Bay, South Africa); *Molgula conchata* Sluiter, 1898 (South West Indian Ocean); *Molgula manhattensis* (invasive), however microscopic examination is required to distinguish further.

**References**


**Pyrosoma spp. (Pyrosm)**

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<td>Species:</td>
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<tr>
<td>Common name:</td>
<td>Fire roller</td>
</tr>
</tbody>
</table>

**Distinguishing features**

Planktonic colonial tunicates, cylindrical, globular or conical shaped. Made up of thousands of zooids embedded in gelatinous tunic. Distinct bumps (zooids) form on the outside of the colony, but the inside is much smoother.

**Colour**

Mottled brown-orange or paler pink, with translucent/opaque body.

**Size**

Variable, ranging from 50 mm to 300 mm.

**Distribution**

West and South Coasts of South Africa throughout water column, very widespread.

**Similar species**

*Pyrosoma aherniosum; Pyrosoma atlanticum*, however microscopic examination is required to distinguish further.

**References**


**Translucent salp (Salps)**

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</table>

**Distinguishing features**

Pelagic tunicates, often cylindrical. Can be colonial or solitary, but colonies usually break apart in trawl net. Very thin body wall, transparent and slimy, with brown globular intestinal tract and stomach visible.

**Colour**

Transparent or translucent, but with digestive organs or other parts of the musculature visible within the transparent body.

**Size**

Individuals usually up to 60 mm in length.

**Distribution**

West and South Coasts of South Africa throughout water column, very widespread.

**Similar species**

Many species of salps occur in the region and further identification requires dissection and a microscope. Brooksia, Cyclosalpa, Helocosalpa, Ihlea, Metcalfina, Pegea, Ritteriella, Salpa, Soestia, Thalia, Thetys, Traustedtia and Weelia spp.

**References**


PHYLUM: HEMICHORDATA

Authors

Lara Atkinson

Citation


1 South African Environmental Observation Network, Egagasini Node, Cape Town
Hemichordates form a small phylum of only a few hundred species, most commonly known being the acorn worms. Some DNA-based studies of evolution suggest that hemichordates are actually closer to echinoderms than to true chordates.

The Hemichordate phylum currently consists of two classes: Enteropneusta (acorn worms, not dealt with in this guide) and Graptolithoidea (previously Pterobranchia). Graptolithoidea consist of seven orders, of which only Cephalodiscoidea is addressed in this guide, represented by a single species, *Cephalodiscus gilchristi*.

Approximately 100 hemichordates have been described with at least 11 species recorded in South Africa.

Graptolithoidea mostly form colonies in which the individuals are interconnected by stems or stolons. Almost all species create and live within a network of tubes. These tubes are made up of collagen protein, secreted by special glands. Individuals, or zooids, that live within the tubes are often less than one millimeter long.

**Collection and preservation**
Specimens should be frozen immediately with a portion (± 30 mm) of the animal preserved in 96% ethanol. Care should be taken to ensure the minute zooids are retained with the tube network.

**References**


**Potential VME**

**Cephalodiscus gilchristi (AGAMAL)**

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**Distinguishing features**

Very little is known about this unusual animal. Colonial species harbouring polypides (zooids) within the branched tubes make up the structure of the animal. Tubes joined together at base are thought to provide attachment to substratum. Base larger in diameter than tubes and without spines. Zooids reside in cavities of the branched tubes (tubarium). Juveniles are believed to move through the structures to form new branches. Solid spines occur on the tubarium along with ostia (apertures). *Cephalodiscus* means ‘disk-head’.

**Colour**

Red-orange to brown.

**Size**

Largest recorded 190 mm in length and 110 mm wide.

**Distribution**

South African endemic. Mostly South Coast of South Africa but specimens have been recorded from West Coast.

**Similar species**

None.

**References**


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