



FIELD GUIDE TO THE OFFSHORE MARINE INVERTEBRATES OF SOUTH AFRICA



agriculture, forestry and fisheries
environmental affairs
science and technology

REPUBLIC OF SOUTH AFRICA



SAEON
South African Environmental
Observation Network

SANBI
Biodiversity for Life
South African National Biodiversity Institute

FIELD GUIDE TO THE

OFFSHORE MARINE INVERTEBRATES

OF SOUTH AFRICA

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FOREWORD BY THE MINISTER OF SCIENCE AND TECHNOLOGY



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

‘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.’

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.

Naledi Pandor

Naledi Pandor

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

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PURPOSE AND APPLICATION OF THIS GUIDE

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 $\pm 27^\circ$ 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.

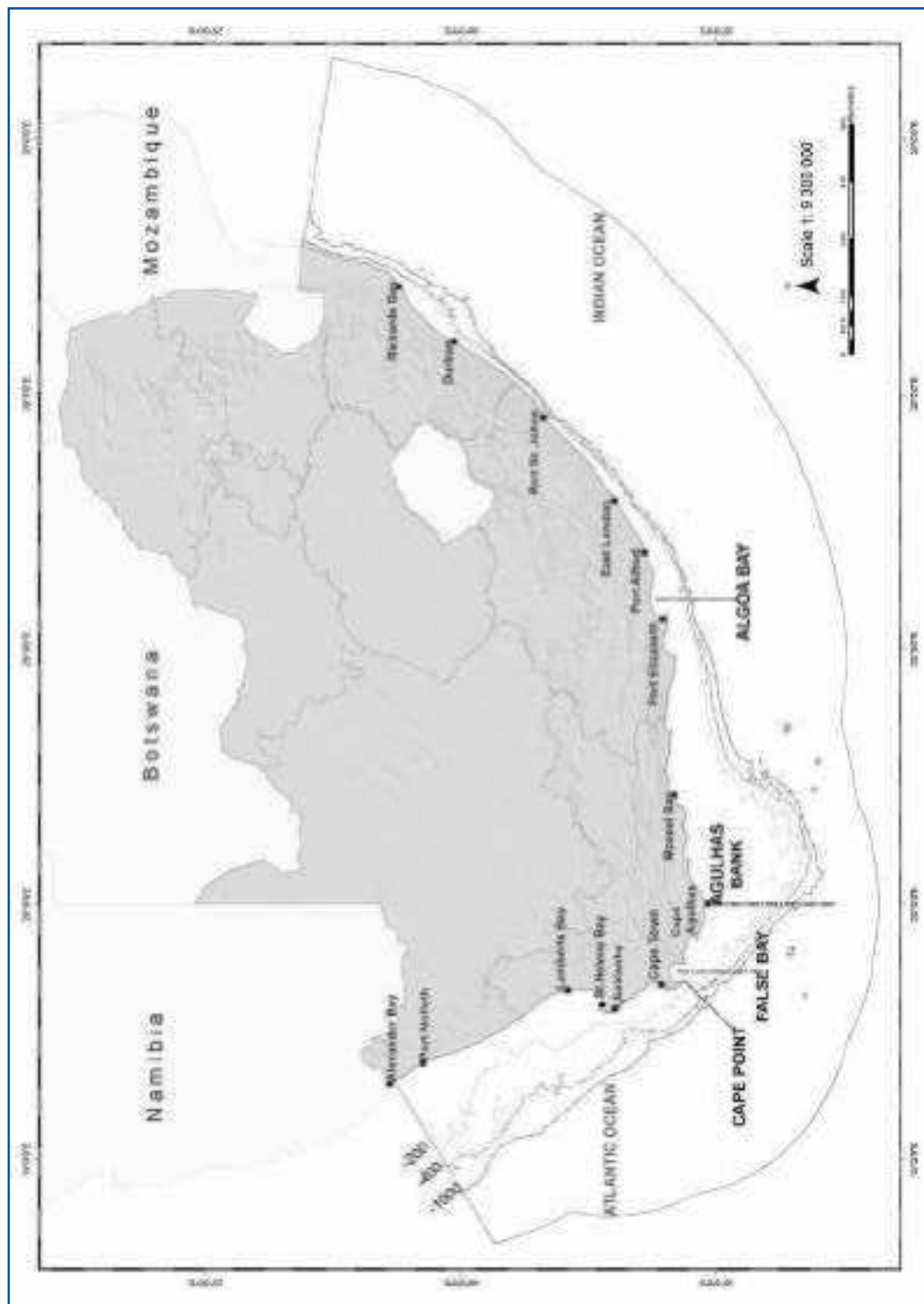


Figure 1. Map of South Africa showing key locations and features relevant to this invertebrate identification guide.

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:

Dorsal	Ventral	Lateral
<p>The anterior (front) of the specimen should be facing the top of the image frame (except for brachiopods).</p> <p>The specimen should be face-down, with the dorsal aspect of the head visible.</p>	<p>The anterior (front) of the specimen should be facing the top of the image frame (except for brachiopods).</p> <p>The specimen should be face-up, with the ventral aspect of the head visible.</p>	<p>The anterior of the specimen should be facing the left side of the image frame.</p> <p>The specimen should be oriented with the feet/ventral surface towards the bottom of the image.</p>
		

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 snails, 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 (\pm 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.

ACKNOWLEDGEMENTS

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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.

Photo credits: Robin Leslie, Jock Currie, Kerry Sink, Lara Atkinson, Rob Tarr, Georgina Jones, Charles Griffiths, Charles von der Meden, Jannes Landschoff, Jennifer Olbers, Wayne Florence, Mark Gibbons, Dai Herbert, Megan Laird, Sharon du Plessis, Shirley Parker-Nance, Jim and Shirley Knight, Helen Lockhart and Heidi Skrypzeck.





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PHYLA OVERVIEW











PHYLA OVERVIEW


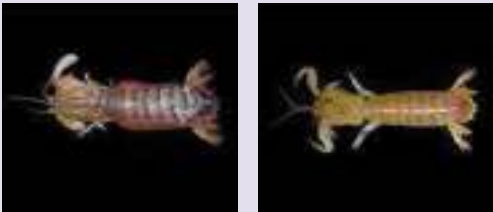



Phylum Porifera (Sponges)		See page 37
General code for unknown Porifera species:		<i>Sponge</i>
		<ul style="list-style-type: none"> • No distinct body parts. • Variable body form: massive, ovoid, fans, tubular, encrusting. • May be stalked. • Texture may be spongy, slimy, stony or prickly. • May be 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:		<i>Alcyon</i>
General code for unknown sea fan:		<i>Seafan</i>
		<ul style="list-style-type: none"> • 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:		<i>Pennat</i>
		<ul style="list-style-type: none"> • 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:		<i>Anemon</i>
		<ul style="list-style-type: none"> • Cup-shaped polyp. • No hard skeleton. • Radial symmetry. • Tentacles present. • Column smooth or slightly ridged. • Texture smooth to slightly granular/corrugated. • Sometimes slimy.






Phylum Cnidaria (Anemones, Corals, Hydroids and Jellyfish)		See page 65
Order: Scleractinia (corals)		See page 89
General code for unknown reef-building coral:		<i>Caryo1</i>
General code for other unknown coral:		<i>Coral</i>
		<ul style="list-style-type: none"> • 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).
Order: Anthoathecata (hydrocorals)		See page 98
General code for unknown Stylasteridae:		<i>Stylas</i>
		<ul style="list-style-type: none"> • 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.
Class: Hydrozoa (hydroids)		See page 103
General code for unknown hydroids:		<i>Hydroid</i>
		<ul style="list-style-type: none"> • 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.
Class: Hydrozoa and Scyphozoa (jellyfish)		See page 104
General code for unknown jellyfish:		<i>Jelly</i>
		<ul style="list-style-type: none"> • Gelatinous, soft texture. • Often slimy. • Radial body plan. • Disc-, saucer- or dome-shaped bell with tentacles.

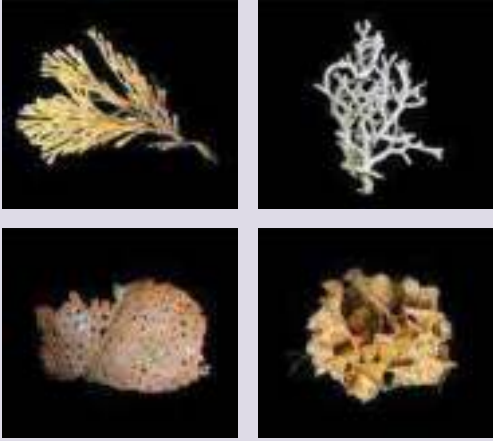
Phylum Sipuncula (Peanut Worms)		See page 119
General code for all peanut worms:		Sipunc
		<ul style="list-style-type: none">• Smooth, unsegmented worm-like animals.• Elongated to oval shape, with anterior tubular process (introvert).• Bilateral symmetry.• Tough body wall with no bristles or tube feet.• May have sediment particles attached.• Tentacles seldom visible and not feathery.


Phylum Annelida (Segmented Worms)		See page 121
Class: Polychaeta (bristle worms)		See page 124
General code for unknown Polychaetes:		PolW
		<ul style="list-style-type: none">• Segmented worms with distinct head.• Fleshy leg-like lobes (parapodia) on each segment bearing bristles.• Worm tubes may appear as calcareous, horny or parchment-like (never jelly-like, see phylum Hemichordata).• Worms may be visible if tubes broken open.
		


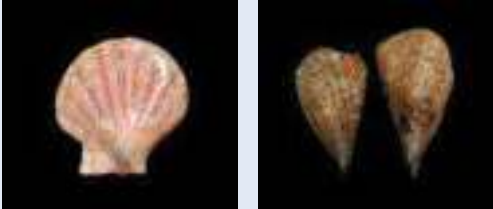

Phylum Arthropoda		See page 133
Subphylum: Chelicerata		
Class: Pycnogonida (sea spiders)		See page 137
		<ul style="list-style-type: none">• Usually four pairs of long, jointed walking legs but species with five or six pairs may occur.• Body usually very small with tiny conical abdomen.• Tiny appendages on head (palps and sometimes chelifores).• Feeding tube usually visible.
Subphylum: Crustacea		
General code for unknown crustacean:		Crust
Class: Ostracoda (seed shrimps)		See page 138
		<ul style="list-style-type: none">• Small, body enclosed in an oval or round, bivalved carapace.• Carapace hinged along centre of the back.• Tiny projecting limbs may be visible.





Phylum Arthropoda		See page 133
Subphylum: Crustacea		
General code for unknown crustacean:		<i>Crust</i>
Class: Hexanauplia (barnacles)		See page 139
General code for unknown barnacle:		<i>Barnic</i>
		<ul style="list-style-type: none"> 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)		See page 142
		<ul style="list-style-type: none"> 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		See page 144
		<ul style="list-style-type: none"> 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		See page 145
		<ul style="list-style-type: none"> 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)		See page 146
		<ul style="list-style-type: none"> 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.




Phylum Arthropoda		See page 133
Subphylum: Crustacea		
Order: Decapoda (shrimps and prawns)		See page 152
General code for unknown penaid shrimp/prawn:		<i>Penaid</i>
	<p>Penaid (swimming prawns):</p> <ul style="list-style-type: none"> • Small crustaceans adapted to swimming. • Sides of the second abdominal segment overlap only third segment. • Last abdominal segment usually keeled. • First three pairs of walking legs end in claws. 	
General code for unknown carid shrimp/prawn:		<i>Carid</i>
	<p>Carid (benthic prawns):</p> <ul style="list-style-type: none"> • Small crustaceans adapted to living on the seabed. • Sides of the second abdominal segment overlap those of first and third segment. • Last abdominal segment usually smooth (no keel). • Third walking legs do not have claws. • Abdomen usually with bend/hump. 	
Order: Decapoda Infraorder: Anomura (hermit crabs)		See page 176
General code for unknown hermit crab:		<i>Hcrab</i>
	<ul style="list-style-type: none"> • Decapods (five pairs of jointed legs) that live within shell, colonial anemone or zooanthid. • First pair of legs with claws (called chelipeds), left and right often unequal in size. • Fourth and fifth pair of legs reduced and adapted to hold onto shell (usually not visible when in shell). • Soft pleon (abdomen) modified and twisted to fit in shell. 	
Order: Decapoda Infraorder: Anomura (stone crabs)		See page 187
General code for unknown stone crab:		<i>Lithod</i>
	<ul style="list-style-type: none"> • Large decapods with five pairs of jointed legs, but fourth and fifth are greatly modified and flexed under carapace. • First pair of legs with claws (called chelipeds), right usually slightly larger. • Round to pear-shaped carapace with spines of variable length. 	
Order: Decapoda Infraorder: Brachyura (true crabs)		See page 190
General code for unknown crab:		<i>Crab</i>
	<ul style="list-style-type: none"> • Five pairs of jointed legs with first pair clawed (i.e. with nippers called chelipeds). • Abdomen tucked beneath thorax. • Fifth leg may be modified to hold sponge on carapace or into swimming paddles. • No tail fan. 	

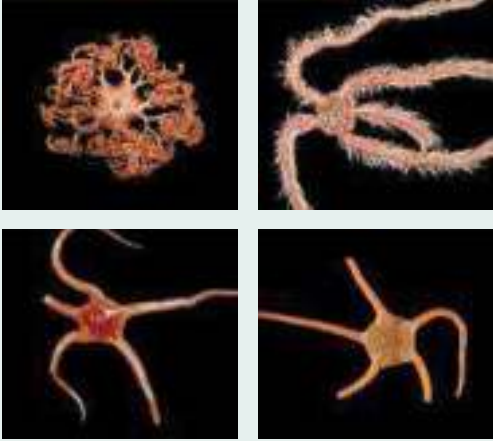

Phylum Bryozoa (Moss Animals)		See page 227
General code for unknown bryozoan:		<i>Bryzoa</i>
		<ul style="list-style-type: none"> • Variable body form: encrusting, coral-like, mossy, seaweed-like or bushy colonies. • Colonies of minute animals (<1 mm) enclosed in a skeleton crowned with filter-feeding 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:		<i>BraPod</i>
		<ul style="list-style-type: none"> • 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.

Phylum Mollusca		See page 249
Class: Gastropoda (sea snails, slugs, limpets, nudibranchs)		See page 253
General code for unknown gastropod:		<i>Snail</i>
General code for unknown nudibranch:		<i>Nudibr</i>
		<ul style="list-style-type: none"> • 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.
Class: Bivalves (mussels, clams, scallops and oysters)		See page 308
General code for unknown bivalve (incl. mussels):		<i>Muss</i>
		<ul style="list-style-type: none"> • Defined by two lateral shells (lampshells [Brachiopoda] enclose dorso-ventrally). • Shell valves hinged together.
Class: Polyplacophora (chitons)		See page 320
		<ul style="list-style-type: none"> • Eight articulating dorsal plates and surrounding fleshy girdle. • Girdle may be hairy or spiny.

Phylum Mollusca	See page 321
Class: Cephalopoda (cuttlefish, squids, octopods)	See page 326
General code for unknown cephalopod:	<i>Ceph</i>
General code for unknown cuttlefish:	<i>Sepia</i>
General code for unknown squid:	<i>Squid</i>
General code for unknown octopod:	<i>OctopS</i>
<div>     </div> <ul style="list-style-type: none"> • 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:		<i>StarFs</i>
		<ul style="list-style-type: none"> • 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:		<i>Crinoi</i>
		<ul style="list-style-type: none"> • 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:		<i>Urchin</i>
		<ul style="list-style-type: none"> • 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:		<i>Ophiur</i>
		<ul style="list-style-type: none"> • 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:		<i>Cumber</i>
		<ul style="list-style-type: none"> • 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.

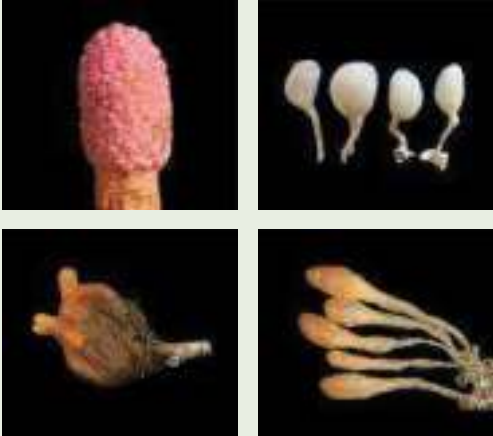


Phylum Chordata		See page 477
Class: Ascidiacea (sea squirts)		See page 481
General code for unknown ascidian:		<i>Asidan</i>
		<ul style="list-style-type: none"> • Attached solitary or colonial animals, often resembling sponges but are incompressible. • Body wall (tunic) usually tough, sometimes leathery, 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
		<ul style="list-style-type: none"> • 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
		<ul style="list-style-type: none"> • Most often described as worm-like, but the only species in this guide (<i>Cephalodiscus gilchristi</i>) 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



TABLE OF TAXA IN FIELD GUIDE

Porifera

PORIFERA

Class	Order	Family	Genus (Subgenus)	Species	Common name	Authority	FB Code	Page
Demospongiae	Haplosclerida	Chalinidae	<i>Haliclona</i> (<i>Haliclona</i>)	<i>anonyma</i>	Tubular fan sponge	(Stephens, 1915)	HalAno	41
Demospongiae	Haplosclerida	Chalinidae	<i>Haliclona</i>	<i>submonilifera</i>	Bubble bead sponge	Uriz, 1988	HalSub	42
Demospongiae	Merliida	Hamacanthidae	<i>Hamacantha</i> (<i>Vomerula</i>)	<i>esperoides</i>	Fibrous sponge	(Ridley & Dendy, 1886)	HamEsp	43
Demospongiae	Poecilosclerida	Coelosphaeridae	<i>Inflatella</i>	<i>belli</i>	Gooseberry sponge	(Kirkpatrick, 1907)	Goose	44
Demospongiae	Poecilosclerida	Dendoricellidae	<i>Fibulia</i>	<i>ramosa</i>	Columnar sponge	(Ridley & Dendy, 1886)	FibRam	45
Demospongiae	Poecilosclerida	Hymedesmiidae	<i>Phorbas</i>	<i>pustulosus</i>	Baseball glove sponge	(Carter, 1882)	PhoPus	46
Demospongiae	Poecilosclerida	Latrunculiidae	<i>Latrunculia</i> (<i>Latrunculia</i>)	<i>biformis</i>	Mud-clump sponge	Kirkpatrick, 1908	LatBif	47
Demospongiae	Poecilosclerida	Microcionidae	<i>Antho</i> (<i>Acarnia</i>)	<i>prima</i>	Orange fan sponge	(Brøndsted, 1924)	AntPri	48
Demospongiae	Poecilosclerida	Microcionidae	<i>Clathria</i> (<i>Clathria</i>)	<i>pachystyla</i>	Orange finger sponge	Lévi, 1963	ClaPac	49
Demospongiae	Poecilosclerida	Microcionidae	<i>Clathria</i> (<i>Thalysias</i>)	<i>lissoclada</i>	Triangular blade sponge	(Burton, 1934)	ClaLis	50
Demospongiae	Poecilosclerida	Microcionidae	<i>Echinoclathria</i>	<i>dichotoma</i>	Orange tree sponge	Lévi, 1963	EchDic	51
Demospongiae	Poecilosclerida	Mycalidae	<i>Mycale</i> (<i>Mycale</i>)	<i>anisochela</i>	Brain sponge	Lévi, 1963	MycAni	52
Demospongiae	Poecilosclerida	Myxillidae	<i>Ectyonopsis</i>	<i>pluridentata</i>	Fused branch sponge	(Lévi, 1963)	EctPlu	53
Demospongiae	Polymastiida	Polymastiidae	<i>Polymastia</i>	<i>bouryesnaultae</i>	Knobbly sponge	Samaai & Gibbons, 2005	Polyma	54
Demospongiae	Suberitida	Suberitidae	<i>Suberites</i>	<i>dandelenae</i>	Amorphous solid sponge	Samaai & Maduray, 2017	Suber	55
Demospongiae	Suberitida	Suberitidae	<i>Suberites</i>	sp.	Hermit encrusting sponge	Nardo, 1833	SubHer	56
Demospongiae	Tethyida	Tethyidae	<i>Tethya</i>	sp. 1	Hedgehog sponge		Teth1	57
Demospongiae	Tethyida	Tethyidae	<i>Tethya</i>	sp. 2	Prickly pear sponge		Teth2	58
Demospongiae	Tetractinellida	Ancorinidae	<i>Stelletta</i>	cf. <i>agulhana</i>	Globular sponge	Lendenfeld, 1907	SteAng	59
Demospongiae	Tetractinellida	Astophorina	<i>Penares</i>	<i>sphaera</i>	Crater sponge	(Lendenfeld, 1907)	PenSph	60
Demospongiae	Tetractinellida	Tetillidae	<i>Tetilla</i>	<i>capillosa</i>	Furry sponge	Lévi, 1967	TetCap	61
Demospongiae	Tetractinellida	Tetillidae	<i>Tetilla</i>	<i>casula</i>	Volcano sponge	(Carter, 1871)	TetCas	62
Demospongiae	Trachycladida	Trachycladidae	<i>Trachycladus</i>	<i>spinispirulifer</i>	Encrusting solid sponge	(Carter, 1879)	TruSpi	63
Hexactinellida	Lyssacosinida	Rossellidae	<i>Rossella</i>	cf. <i>antarctica</i>	Glass sponge	Carter, 1872	RosAnt	64

Cnidaria

Class	Order	Family	Genus	Species	Common name	Authority	FB Code	Page
Anthozoa	Alcyonacea	Alcyoniidae	<i>Eleutherobia</i>	<i>variabile</i>	Mushroom soft coral	Puetter, 1900	EleVar	69
Anthozoa	Alcyonacea	Nephtheidae	<i>Gersemia</i>	<i>liltvedi</i>	Stalked cauliflower soft coral	Verseveldt & Williams, 1988	EunThy	70
Anthozoa	Alcyonacea	Alcyoniidae	<i>Anthomastus</i>	<i>giganteus</i>	Gigantic soft coral	Tixier-Durivault, 1954	AntGig	71
Anthozoa	Alcyonacea	Melithaeidae	<i>Melithaea</i>	spp.	Colourful sea fan	Gray, 1870	Melith	72
Anthozoa	Alcyonacea	Primnoidae	<i>Thouarella</i>	spp.	Bottlebrush soft coral	Gray, 1870	ThoSpp	73
Anthozoa	Alcyonacea	Isididae			Bamboo coral	Lamoureux, 1812	Bamboo	74
Anthozoa	Pennatulacea	Anthoptilidae	<i>Anthoptilum</i>	<i>grandiflorum</i>	Large sea pen	(Verrill, 1879)	Virgil	75
Anthozoa	Pennatulacea	Umbellulidae	<i>Umbellula</i>	<i>lindhali</i>	Umbrella sea pen	Kölliker, 1875	UmbLin	76
Anthozoa	Pennatulacea	Virgulariidae	<i>Halipteris</i>	<i>africana</i>	Whip sea pen	Studer, 1878	Virgul	77
Anthozoa	Pennatulacea	Echinoptilidae	<i>Actinoptilum</i>	<i>molle</i>	Radial sea pen	(Kükenthal, 1902)	ActMol	78
Anthozoa	Pennatulacea	Veretillidae	<i>Cavernularia</i>	spp.	Small sea pen	Valenciennes in Milne - Edwards & Haime, 1850	SeaPen	79
Anthozoa	Spirularia	Cerianthidae	Cerianthid	spp.	Burrowing anemone	Delle Chiaje, 1830	Cerran	80
Anthozoa	Actiniaria	Actiniidae	<i>Bolocera</i>	<i>keruelensis</i>	Blush/Coral anemone	Studer 1879	Anemo2	81
Anthozoa	Actiniaria	Hormathiidae	<i>Actinauge</i>	<i>granulata</i>	White anemone	Carlgren, 1928	ActRic	82
Anthozoa	Actiniaria	Actinoscyphiidae	<i>Actinoscyphia</i>	<i>plebeia</i>	Maroon mouth anemone	(McMurrich, 1893)	Anemo3	83
Anthozoa	Actiniaria	Actinostolidae	<i>Actinostola</i>	<i>capensis</i>	Pink/Orange jelly anemone	(Carlgren, 1928)	Anemo1	84
Anthozoa	Actiniaria	Actinostolidae	<i>Anthosactis</i>	<i>capensis</i>	Small cup/Rose anemone	Carlgren, 1928	AntCap	85
Anthozoa	Actiniaria	Isophellidae	<i>Isophellia</i>	<i>algoaensis</i>	Rugby ball anemone	Carlgren, 1928	IsoAlg	86
Anthozoa	Actiniaria	Amphianthidae	<i>Amphianthus</i>	<i>capensis</i>	Rock/Volcano/Splitting anemone	Carlgren, 1928	AmpCap	87
Anthozoa	Actiniaria	Halcuriidae	<i>Halcurias</i>	<i>capensis</i>	Ridged anemone	Carlgren, 1928	HalCap	88
Anthozoa	Scleractinia	Caryophylliidae	<i>Lophelia</i>	<i>pertusa</i>	Reef-building cold water coral	(Linnaeus, 1758)	LopPer	89
Anthozoa	Scleractinia	Caryophylliidae	<i>Solenosmilia</i>	cf. <i>variabilis</i>	Thicket coral	Duncan, 1873	Solen	90
Anthozoa	Scleractinia	Caryophylliidae	<i>Goniocorella</i>	<i>dumosa</i>	Fine bridge coral	(Alcock, 1902)	Gonio	91
Anthozoa	Scleractinia	Caryophylliidae	<i>Caryophyllia/Trochocyathus</i>		Small solitary tusk coral	Lamarck, 1801/Milne-Edwards & Haime, 1848	Caryo	92
Anthozoa	Scleractinia	Various	<i>Desmophyllum, Caryophyllia and others</i>		Cup coral	Dana, 1846/Gray, 1847	Caryo2	93
Anthozoa	Scleractinia	Dendrophylliidae	<i>Cladopsammia/Eguchipsammia</i>		Right angled corals	Gray, 1847	CorDen	94
Anthozoa	Scleractinia	Dendrophyllida	<i>Enallopsammia</i>	<i>rostrata</i>	Zigzag coral	Sismonda, 1871	Enallo	95
Anthozoa	Scleractinia	Dendrophylliidae	Unknown	spp.	Deep daisy coral		Tubas	96
Anthozoa	Scleractinia	Flabellidae	<i>Flabellum (Ulocyathus)</i>	<i>messum</i>	Folded cup coral	Alcock, 1902	Flabel	97
Hydrozoa	Anthoathecata	Stylasteridae	<i>Stylaster</i>	<i>nobilis</i>	Noble coral	(Saville-Kent, 1871)	Allopo	98
Hydrozoa	Anthoathecata	Stylasteridae	<i>Stylaster</i>	spp.	Fine branching hydrocoral	Gray, 1831	Stylas	99
Hydrozoa	Anthoathecata	Stylasteridae	<i>Errina</i>	spp.	Red hydrocoral	Gray, 1835	Errina	100
Hydrozoa	Anthoathecata	Stylasteridae	<i>Errinopsis</i> cf.	spp.	Fenestrate hydrocoral	Broch, 1951	Errin	101
Hydrozoa	Anthoathecata	Stylasteridae	<i>Inferiolabiata</i> cf.	spp.	Spiny lace coral	Broch, 1951	Inferi	102
Hydrozoa			<i>Hydroid</i>	spp.	Hydroid	Owen, 1843	Hydrod	103
Hydrozoa	Leptothecata	Aequoreidae	<i>Aequorea</i>	spp.	Mag jellyfish	Péron & Lesueur, 1810	AeqSpp	104
Hydrozoa	Leptothecata	Aequoreidae	<i>Zygocanna</i>	<i>vagans</i>	Warty jellyfish	Bigelow, 1912	ZygVeg	105
Scyphozoa	Semaeostomeae	Drymonematidae	<i>Drymonema</i>	spp.	Pink meany jellyfish	Haeckel, 1880	Drymon	106
Scyphozoa	Semaeostomeae	Pelagiidae	<i>Chrysaora</i>	<i>fulgida</i>	Benguela compass jellyfish	(Reynaud, 1830)	ChrFul	107
Scyphozoa	Semaeostomeae	Pelagiidae	<i>Chrysaora</i>	<i>africana</i>	West African compass jellyfish	(Vanhöffen, 1902)	ChrAfr	108
Scyphozoa	Semaeostomeae	Pelagiidae	<i>Chrysaora</i>	<i>agulhensis</i>	Agulhas Bank compass jellyfish		ChrAgu	109
Scyphozoa	Semaeostomeae	Pelagiidae	<i>Pelagia</i>	<i>noctiluca</i>	Pink stripe/stinger jellyfish	(Forsskål, 1775)	PeINoc	110
Scyphozoa	Rhizostomeae	Cepheidae	<i>Cephea</i>	sp.	Blue crown jellyfish	Péron & Leseur, 1810	CepBlu	111
Scyphozoa	Rhizostomeae	Rhizostomatidae	<i>Eupilema</i>	<i>inexpectata</i>	Root mouthed jellyfish	Pages, Gili & Bouillon, 1992	Euplne	112
Scyphozoa	Rhizostomeae	Rhizostomatidae	<i>Rhizostoma</i>	spp.	Barrel jellyfish	Cuvier, 1799	Rhizo	113
Scyphozoa	Rhizostomeae	Thysanostomatidae	<i>Thysanostoma</i>	spp.	Purple branching canal jellyfish	Gegenbauer, 1857	Thysan	114
Scyphozoa	Coronatae	Periphyllidae	<i>Periphylla</i>	<i>periphylla</i>	Purple helmet jellyfish	Péron & Lesueur, 1810	PerPer	115

Sipuncula

Class	Order	Family	Genus	Species	Common name	Authority	FB Code	Page
Sipuncula					Peanut worm		Sipunc	119

Annelida

ANNELIDA

Class	Order	Family	Genus	Species	Common name	Authority	FB Code	Page
Polychaeta	Amphinomida	Amphinomidae	<i>Chloeia</i>	<i>inermis</i>	Bristle worm	Quatrefages, 1866	Euphr1	124
Polychaeta	Eunicida	Onuphidae	<i>Hyalinoecia</i>	<i>tubicola</i>	Quill worm	(O.F. Müller, 1776)	QuilWm	125
Polychaeta	Phyllodocida	Aphroditidae	<i>Aphrodita</i>	<i>alta</i>	Sea mouse	Kinberg, 1856	AphrSp	126
Polychaeta	Phyllodocida	Aphroditidae	<i>Laetmonice</i>	<i>benthaliana</i>	Naked scale worm	McIntosh, 1885	Aphro2	127
Polychaeta	Phyllodocida	Polynoidae	<i>Euphione</i>	<i>elisabethae</i>	Scale worm	McIntosh, 1885	Aphro1	128
Polychaeta	Phyllodocida	Polynoidae	<i>Macellicephala</i>	<i>mirabilis</i>	Purple scale worm	McIntosh, 1885	MacMir	129
Polychaeta	Sabellida	Serpulidae	<i>Filograna</i>	<i>implexa</i>	Coral/Lacy tube worm	Berkeley, 1835	Fillmp	130
Polychaeta			<i>Polychaete</i>	<i>worms</i>			PolW	131
Polychaeta			<i>Polychaete</i>	<i>tubes (only)</i>			PolTub	132

Arthropoda

ARTHROPODA

Class	Order	Family	Genus (Subgenus)	Species	Common name	Authority	FB Code	Page
(Chelicerata) Pycnogonida			Pycnogonid	spp.	Sea spider	Latreille, 1810	Pycnog	137
(Crustacea) Ostracoda			Ostracods	spp.	Ostracods	Latreille, 1802	Ostra	138
(Crustacea) Hexanauplia	Lepadiformes		Stalked barnacles		Stalked barnacles	Buckeridge & Newman, 2006	BarSta	139
(Crustacea) Hexanauplia	Sessilia		Sessile barnacles		Sessile barnacles	Lamarck, 1818	BarSes	140
(Crustacea) Hexanauplia	Rhizocephala (Superorder)		Parasitic barnacles		Parasitic barnacles	Müller, 1862	BarPar	141
Malacostraca	Stomatopoda	Squillidae	<i>Pterygosquilla</i>	<i>capensis</i>	Cape mantis shrimp	Manning, 1969	Mantis	142
Malacostraca	Tanaidacea		Tanaids		Tanaids		Tanaid	143
Malacostraca	Isopoda		Isopods		Isopods		Isopod	144
Malacostraca	Amphipoda		Amphipods		Amphipods	Latreille, 1816	Amph	145
Malacostraca	Decapoda	Palinuridae	<i>Jasus</i>	<i>landii</i>	West Coast rock lobster	(H. Milne Edwards, 1837)	JasLal	146
Malacostraca	Decapoda	Palinuridae	<i>Palinurus</i>	<i>gilchristi</i>	South Coast rock lobster	Stebbing, 1900	PalGil	147
Malacostraca	Decapoda	Palinuridae	<i>Palinurus</i>	<i>delagoae</i>	Natal spiny/Deep-sea lobster	Barnard, 1926	PalDel	148
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Malacostraca	Decapoda	Majidae	<i>Maja</i>	<i>cornuta</i>	Agulhas spider crab	(Linnaeus, 1758)	MamCap	197
Malacostraca	Decapoda	Inachoididae	<i>Pyromaia</i>	<i>tuberculata</i>	Tuberculate pear crab	(Lockington, 1877)	PyrSpp	198
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Malacostraca	Decapoda	Dromiidae	<i>Dromidia</i>	<i>aegibotus</i>	Sponge crab	Stimpson, 1858	DroPer	202
Malacostraca	Decapoda	Dromiidae	<i>Dromidia</i>	<i>hirsutissima</i>	Shaggy sponge crab	(Lamarck, 1818)	DroHir	203
Malacostraca	Decapoda	Dromiidae	<i>Speodromia</i>	<i>platyarthodes</i>	Boxer/Muscle crab	(Stebbing, 1905)	SpePla	204
Malacostraca	Decapoda	Dromiidae	<i>Pseudodromia</i>	<i>rotunda</i>	Rounded sponge crab	(MacLeay, 1838)	PsuRot	205
Malacostraca	Decapoda	Dromiidae	<i>Pseudodromia</i>	spp.	Cloaked ascidian crab	Stimpson, 1858	Psddrm	206
Malacostraca	Decapoda	Homolidae	<i>Homola</i>	<i>barbata</i>	Periscope eye crab	(Fabricius, 1793)	HomBar	207
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Malacostraca	Decapoda	Geryonidae	<i>Chaceon</i>	<i>chuni</i>	Red crab	(Macpherson, 1983)	ChaChu	212
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Malacostraca	Decapoda	Polybiidae	<i>Macropipus</i>	<i>australis</i>	Painted swimming crab	Guinot, 1961	MacAus	215
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Malacostraca	Decapoda	Ovalipidae	<i>Ovalipes</i>	<i>trimaculatus</i>	Three-spot swimming crab	(De Haan, 1833)	Tssc	217
Malacostraca	Decapoda	Polybiidae	<i>Bathynectes</i>	<i>piperitus</i>	Red and white legged swimming crab	Manning & Holthuis, 1981	BatPip	218
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Malacostraca	Decapoda	Atelecyclidae	<i>Atelecyclus</i>	<i>rotundatus</i>	Round sand crab/Old man's face crab	(Olivi, 1792)	AteRot	220
Malacostraca	Decapoda	Calappidae	<i>Mursia</i>	<i>cristiata</i>	Red spotted crab/ Masked crab	H. Milne Edwards, 1837	MurCri	221
Malacostraca	Decapoda	Goneplacidae	<i>Goneplax</i>	<i>clevai</i>	Angular/Waveline crab	Guinot & Castro, 2007	GonAng	222
Malacostraca	Decapoda	Goneplacidae	<i>Carcinoplax</i>	<i>longimanus</i>	Long-arm pebble crab	(De Haan, 1833)	CarLon	223
Malacostraca	Decapoda	Leucosiidae	<i>Afrophila</i>	<i>punctata</i>	Pebble crab	(Bell, 1855)	AfrPun	224
Malacostraca	Decapoda	Leucosiidae	<i>Ebalia</i>	<i>tuberculosa</i>	Speckled orange crab	(A. Milne-Edwards, 1873)	EbaTub	225
Malacostraca	Decapoda	Leucosiidae	<i>Tanaoa</i>	<i>pustulosus</i>	Tail spike crab	(Wood-Mason in Wood-Mason & Alcock, 1891)	TanSpp	226

Bryozoa

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Stenolaemata	Cyclostomatida	Horneridae	<i>Hornera</i>	<i>erugata</i>	Brittle tree bryozoan	Hayward & Cook, 1983	HorEru	229
Gymnolaemata	Ctenostomatida	Alcyonidiidae	<i>Alcyonidium</i>	<i>rhomboidale</i>	Rubbery bryozoan	O'Donoghue, 1924	AlcSpp	230
Gymnolaemata	Cheilostomatida	Microporellidae	<i>Flustramorpha</i>	<i>marginata</i>	Green strappy-tree bryozoan	Krauss, 1837	Bryo3	231
Gymnolaemata	Cheilostomatida	Microporellidae	<i>Flustramorpha</i>	<i>angusta</i>	Fragile strappy-tree bryozoan	Hayward & Cook, 1979	FluAng	232
Gymnolaemata	Cheilostomatida	Microporellidae	<i>Securiflustra</i>	sp. 1	Paper tree bryozoan	(Pallas, 1766)	SecPap	233
Gymnolaemata	Cheilostomatida	Candidae	<i>Menipea</i>	<i>triseriata</i>	Spiral bush bryozoan	Busk, 1852	MenTri	234
Gymnolaemata	Cheilostomatida	Candidae	<i>Menipea</i>	<i>crispa</i>	Claw-like bryozoan	(Pallas, 1766)	MenCri	235
Gymnolaemata	Cheilostomatida	Candidae	<i>Menipea</i>	<i>marionensis</i>	Spiral tree bryozoan	Busk, 1884	MenSpp	236
Gymnolaemata	Cheilostomatida	Calwellidae	<i>Onchoporella</i>	<i>buskii</i>	Elastic band bryozoan		OncBus	237
Gymnolaemata	Cheilostomatida	Celleporidae	<i>Turbicellepora</i>	<i>valligera</i>	False stag-horn bryozoan	Hayward & Cook, 1983	TurVal	238
Gymnolaemata	Cheilostomatida	Adeonellidae	<i>Adeonella</i>	spp.	Sabre bryozoan	Busk, 1884	Adeon	239
Gymnolaemata	Cheilostomatida	Adeonellidae	<i>Laminopora</i>	<i>jellyae</i>	Bladed bryozoan	(Levinsen, 1909)	LamJel	240
Gymnolaemata	Cheilostomatida	Chaperiidae	<i>Chaperiopsis</i>	<i>multifida</i>	Furry bryozoan	(Busk, 1884)	ChaMul	241
Gymnolaemata	Cheilostomatida	Aspidostomatidae	<i>Aspidostoma</i>	sp. 1	Pore-plated bryozoan		Asp1	242
Gymnolaemata	Cheilostomatida	Phidoloporidae	Phidoloporida	spp.	Honeycomb false lace coral	(Busk, 1884)	Lace	243

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Brachiopoda

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Rhynchonellata	Terebratulida	Kraussinidae	<i>Megerlina</i>	<i>capensis</i>	Ribbed Lamp shell	Adams & Reeve, 1850	MegCap	247
Rhynchonellata	Terebratulida	Dyscoliidae	<i>Xenobrochus</i>	sp.	Smooth Lamp shell	Cooper, 1981	Xenobr	248

Mollusca

Class	Subclass	Order	Family	Genus	Species	Common name	Authority	FB Code	Page
Gastropoda	Vetigastropoda	Seguenziida	Calliotropidae	<i>Calliotropis</i>	<i>granolirata</i>	Cape cog shell	(G. B. Sowerby III, 1903)	Topshl	253
Gastropoda	Vetigastropoda	Trochida	Calliostomatidae	<i>Calliostoma</i>	<i>perfragile</i>	Agulhas calliostoma	G. B. Sowerby III, 1903	CaScot	254
Gastropoda	Caenogastropoda	unassigned Caenogastropoda	Turritellidae	<i>Turritella</i>	<i>declivis</i>	Zebra turret shell/ Bokhoring	Adams & Reeve in Reeve, 1849	TurDec	255
Gastropoda	Caenogastropoda	unassigned Caenogastropoda	Turritellidae	<i>Turritella</i>	<i>ferruginea</i>	Speckled turret shell	Reeve, 1849	TurFer	256
Gastropoda	Caenogastropoda	unassigned Caenogastropoda	Turritellidae	<i>Turritella</i>	<i>sanguinea</i>	Mottled turret shell	Reeve, 1849	TurSan	257
Gastropoda	Caenogastropoda	Littorinimorpha	Cypraeidae	<i>Cypraeovula</i>	<i>iutsui</i>	Globular Cape cowrie	Shikama, 1974	TesPul	258
Gastropoda	Caenogastropoda	Littorinimorpha	Triviidae	<i>Triviella</i>	spp.	Smooth pearl cowries	Jousseaume, 1884	TriMil	259
Gastropoda	Caenogastropoda	Littorinimorpha	Velutinidae	<i>Velutinid</i> (<i>Lamellaria</i> / <i>Coriocella</i>)	-	Velutinid	Gray, 1840	Opisbr	260
Gastropoda	Caenogastropoda	Littorinimorpha	Naticidae	<i>Euspira</i>	<i>napus</i>	Moon shell	(E.A. Smith, 1904)	EusNap	261
Gastropoda	Caenogastropoda	Littorinimorpha	Cassidae	<i>Semicassis</i>	<i>labiata</i>	Helmet/Lipped bonnet shell	(Perry, 1811)	Phalab	262
Gastropoda	Caenogastropoda	Littorinimorpha	Tonnidae	<i>Eudolium</i>	<i>bairdii</i>	Baird's bonnet shell	(Verrill & S. Smith [in Verrill], 1881)	EndBai	263
Gastropoda	Caenogastropoda	Littorinimorpha	Tonnidae	<i>Tonna</i>	<i>dunkeri</i>	Boxing-glove shell	(Hanley, 1860)	TonVar	264
Gastropoda	Caenogastropoda	Littorinimorpha	Ranellidae	<i>Charonia</i>	<i>lampas</i>	Pink lady	(Linnaeus, 1758)	ChaLam	265
Gastropoda	Caenogastropoda	Littorinimorpha	Ranellidae	<i>Fusitriton</i>	<i>magellanicus</i>	Waffle whelk	(Röding, 1798)	FusMur	266
Gastropoda	Caenogastropoda	Neogastropoda	Buccinidae	<i>Afrocominella</i>	<i>capensis simoniana</i>	Variable Agulhas whelk	(Petit de la Saussaye, 1852)	AfrCap	267
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Africolaria</i>	<i>rutila</i>	Smooth horse conch	(Watson, 1882)	FasRut	268
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Africolaria</i>	<i>thersites</i>	Varicose horse conch	(Reeve, 1847)	AfrThe	269
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Crassibougia</i>	<i>clausicaudata</i>	Tsitsikamma spindle shell	(Hinds, 1844)	Fusin	270
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Fusinus</i>	<i>africanae</i>	Africana spindle shell	(Barnard, 1959)	FusAfr	271
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Fusinus</i>	<i>bonaespei</i>	Good Hope spindle shell	(Barnard, 1959)	FusBon	272
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Fusinus</i>	<i>hayesi</i>	Hayes' spindle shell	Snyder, 1996	FusHay	273
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Fusinus</i>	<i>ocelliferus</i>	Spotted spindle shell	(Lamarck, 1816)	FusOce	274
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Granulifusus</i>	<i>rubrolineatus</i>	Red-striped spindle shell	(G. B. Sowerby II, 1870)	GraRub	275
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Kilburnia</i>	<i>heyneimanni</i>	Agulhas horse conch	(Dunker, 1876)	FasLug	276
Gastropoda	Caenogastropoda	Neogastropoda	Fasciariidae	<i>Kilburnia</i>	<i>scholvieni</i>	Cape horse conch	(Strebel, 1911)	FasSch	277
Gastropoda	Caenogastropoda	Neogastropoda	Nassariidae	<i>Nassarius</i>	<i>speciosus</i>	Shouldered dog-whelk	(A. Adams, 1852)	PerFor	278
Gastropoda	Caenogastropoda	Neogastropoda	Nassariidae	<i>Nassarius</i>	<i>vinctus</i>	Violet-mouthed dog-whelk	(Marrat, 1877)	BurNup	279
Gastropoda	Caenogastropoda	Neogastropoda	Muricidae	<i>Pteropurpura</i>	spp.	Stag shell	Jousseaume, 1880	PteTra	280
Gastropoda	Caenogastropoda	Neogastropoda	Marginellidae	<i>Marginella</i>	<i>musica</i>	Musical margin shell	Hinds, 1844	MarMus	281
Gastropoda	Caenogastropoda	Neogastropoda	Marginellidae	<i>Afrivoluta</i>	<i>pringlei</i>	Giant orange margin shell	Tomlin, 1947	Afrivo	282
Gastropoda	Caenogastropoda	Neogastropoda	Turbinellidae	<i>Coluzea</i>	<i>radialis</i>	Benguela pagoda shell	(Watson, 1882)	ColRad	283
Gastropoda	Caenogastropoda	Neogastropoda	Turbinellidae	<i>Coluzea</i>	<i>rotunda</i>	Rounded pagoda shell	(Barnard, 1959)	Fusinu	284
Gastropoda	Caenogastropoda	Neogastropoda	Volutidae	<i>Athleta</i>	<i>abyssicola</i>	Yellow-foot hatch shell	(Adams & Reeve, 1848)	VolBos	285
Gastropoda	Caenogastropoda	Neogastropoda	Volutidae	<i>Athleta</i>	<i>lutosa</i>	Pink-foot hatch shell	(Koch, 1948)	VolAby	286
Gastropoda	Caenogastropoda	Neogastropoda	Volutidae	<i>Fusivoluta</i>	<i>pyrrhostoma</i>	Flame-mouthed volute	(Watson, 1882)	FusPyr	287

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Gastropoda	Caenogastropoda	Neogastropoda	Volutidae	<i>Neptuneopsis</i>	<i>gilchristi</i>	Gilchrist's volute	Sowerby III, 1898	Neptun	288
Gastropoda	Caenogastropoda	Neogastropoda	Olividae	<i>Amalda</i>	<i>bullioides</i>	Bullet amalda	(Reeve, 1864)	AlmBul	289
Gastropoda	Caenogastropoda	Neogastropoda	Borsoniidae	<i>Pulsarella</i>	<i>fultoni</i>	Humbug turrid	(G.B. Sowerby III, 1888)	PulFul	290
Gastropoda	Caenogastropoda	Neogastropoda	Pseudomelatomidae	<i>Comitas</i>	<i>saldanhae</i>	Benguela comitas	(Barnard, 1958)	ComSal	291
Gastropoda	Caenogastropoda	Neogastropoda	Pseudomelatomidae	<i>Comitas</i>	<i>stolida</i>	Agulhas comitas	(Hinds, 1843)	ComSto	292
Gastropoda	Caenogastropoda	Neogastropoda	Conidae	<i>Conus</i>	<i>gradatulus</i>	Agulhas cone shell	Weinkauff, 1875	DenAlg	293
Gastropoda	Heterobranchia	Cephalaspidea	Aglajidae	<i>Philine</i>	<i>aperta</i>	Headshield/Shelled sand slug	(Linnaeus, 1767)	PhiApe	294
Gastropoda	Heterobranchia	Cephalaspidea	Scaphanderidae	<i>Scaphander</i>	<i>punctostriatus</i>	Giant canoe bubble	(Mighels & Adams, 1842)	Scapha	295
Gastropoda	Heterobranchia	Nudibranchia	Aglajidae	<i>Philinopsis</i>	<i>capensis</i>	Slipper/Philip's slug	(Bergh, 1907)	PhiCap	296
Gastropoda	Heterobranchia	Pleurobranchomorphia	Pleurobranchaeidae	<i>Pleurobranchaea</i>	<i>bubala</i>	Warty pleurobranch	Ev. Marcus & Gosliner, 1984	PleBub	297
Gastropoda	Heterobranchia	Nudibranchia	Polyceridae	<i>Kaloplocamus</i>	<i>ramosus</i>	Tassled/Orange flame nudibranch	(Cantraine, 1835)	NudFla	298
Gastropoda	Heterobranchia	Nudibranchia	Dorididae	<i>Aphelodoris</i>	sp. 1	Chocolate-chip nudibranch	Bergh, 1879	AphDot	299
Gastropoda	Heterobranchia	Nudibranchia	Discodorididae	<i>Paradoris</i>	sp.	Small-spot nudibranch	Bergh, 1884	Parador	300
Gastropoda	Heterobranchia	Nudibranchia	Chromodorididae	<i>Ceratosoma</i>	<i>ingozi</i>	Inkspot nudibranch	Gosliner, 1996	CerIng	301
Gastropoda	Heterobranchia	Nudibranchia	Mandeliidae	<i>Mandelia</i>	<i>mirocomata</i>	Mandela's nudibranch	Valdés & Gosliner, 1999	ManMir	302
Gastropoda	Heterobranchia	Nudibranchia	Scyllaeidae	<i>Notobryon</i>	<i>thompsoni</i>	Iridescent bluespot nudibranch	Pola, Camacho-Garcia & Gosliner, 2012	NotTho	303
Gastropoda	Heterobranchia	Nudibranchia	Arminidae	<i>Armina</i>	sp.	Striped sand slug/Pierre's armina	Rafinesque, 1814	ArmSpp	304
Gastropoda	Heterobranchia	Nudibranchia	Arminidae	<i>Dermatobranchus</i>	<i>albineus</i>	White-ridged nudibranch	Gosliner & Fahey, 2011	DerAlb	305
Gastropoda	Heterobranchia	Nudibranchia	Arminidae	<i>Dermatobranchus</i>	<i>arminus</i>	Brown-ridged nudibranch	Gosliner & Fahey, 2011	DerArm	306
Gastropoda	Heterobranchia	Nudibranchia	Charcotiidae	<i>Leminda</i>	<i>millecra</i>	Friiled nudibranch	Griffiths, 1985	LemMil	307
Bivalvia	Protobranchia	Nuculida	Nuculidae	<i>Nucula</i>	<i>nucleus</i>	Common nut clam	(Linnaeus, 1758)	Tellin	308
Bivalvia	Protobranchia	Nuculanida	Nuculanidae	<i>Lembulus</i>	<i>belcheri</i>	Agulhas ridged nut clam	(Hinds, 1843)	VenSpp	309
Bivalvia	Protobranchia	Solemyida	Solemyidae	<i>Solemya</i>	<i>togata</i>	Mediterranean awning clam	(Poli, 1791)	SolTog	310
Bivalvia	Pteriomorphia	Arcida	Limopsidae	<i>Limopsis</i>	<i>chuni</i>	Cape limopsis	Thiele, 1931	Dosini	311
Bivalvia	Pteriomorphia	Ostreida	Pinnidae	<i>Atrina</i>	<i>squamifera</i>	Scaly horse-mussel	(G. B. Sowerby I, 1835)	AtrSqu	312
Bivalvia	Pteriomorphia	Ostreida	Ostreidae	<i>Ostrea</i>	<i>atherstonei</i>	Cape brooding oyster	Newton, 1913	OstAth	313
Bivalvia	Pteriomorphia	Pectinida	Pectinidae	<i>Pecten</i>	<i>sulcostatus</i>	Agulhas ridged scallop	Sowerby II, 1842	PecMax	314
Bivalvia	Pteriomorphia	Pectinida	Pectinidae	<i>Pseudamussium</i>	<i>gilchristi</i>	Gilchrist's scallop	(Sowerby III, 1904)	Pecten	315
Bivalvia	Heterodonta	Lucinida	Lucinidae	<i>Lucinoma</i>	<i>capensis</i>	Cape lucina	(Jaeckel & Thiele, 1931)	LucCap	316
Bivalvia	Heterodonta	Venerida	Veneridae	<i>Pitar</i>	<i>medipictus</i>	Agulhas pitar venus	Lamprell & Kilburn, 1999	PitAbb	317
Bivalvia	Heterodonta	Anomalodesmata	Cuspidariidae	<i>Cuspidaria</i>	<i>capensis</i>	Cape cuspidaria	(E. A. Smith, 1885)	CusSpp	318
Scaphopoda		Dentalida	Dentaliidae	<i>Schizodentalium</i>	<i>plurifissuratum</i>	Multi-fissured tusk shell	Sowerby, 1894	SchPlu	319
Polyplocophora		Lepidopleurida	Leptochitonidae	<i>Leptochiton</i>	<i>sykesi</i>	Sykes's chiton	(G. B. Sowerby III, 1903)	LepSyk	320

Mollusca Cephalopoda

Class	Order	Family	Genus (Subgenus)	Species	Common name	Authority	FB Code	Page
Cephalopoda	Octopoda	Argonautidae	<i>Argonauta</i>	<i>argo</i>	Greater argonaut	Linnaeus, 1758	ArgArg	326
Cephalopoda	Octopoda	Argonautidae	<i>Argonauta</i>	<i>hians</i>	Lesser argonaut	Lightfoot, 1786	ArgHia	327
Cephalopoda	Octopoda	Argonautidae	<i>Argonauta</i>	<i>nodosus</i>	Knobbed argonaut	Lightfoot, 1786	ArgNod	328
Cephalopoda	Octopoda	Bathypolypodidae	<i>Bathypolypus</i>	<i>valdiviae</i>	Deepwater octopus	(Thiele, in Chun, 1915)	BatVal	329
Cephalopoda	Octopoda	Octopodidae	<i>Benthoctopus</i>	<i>berryi</i>		Robson, 1924	BenBer	330
Cephalopoda	Octopoda	Octopodidae	<i>Enteroctopus</i>	<i>magnificus</i>	Southern giant octopus	(Villanueva, Sanchez & Compagno Roeleveld, 1992)	OctMag	331
Cephalopoda	Octopoda	Octopodidae	<i>Octopus</i>	<i>vulgaris</i>	Common octopus	Cuvier, 1797	OctVul	332
Cephalopoda	Octopoda	Opisthoteuthidae	<i>Opisthoteuthis</i>	<i>massyae</i>	Umbrella octopus	(Grimpe, 1920)	Opisto	333
Cephalopoda	Vampyromorpha	Vampyroteuthidae	<i>Vampyroteuthis</i>	<i>infernalis</i>	Vampire squid	Chun, 1903	VamInf	334
Cephalopoda	Spirulida	Spirulidae	<i>Spirula</i>	<i>spirula</i>	Ram's horn squid	(Linnaeus, 1758)	Spirul	335
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>angulata</i>		Roeleveld, 1972	SepAng	337
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>australis</i>	Southern cuttlefish	Quoy & Gaimard, 1832	SepAus	338
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>dubia</i>		Adam & Rees, 1966	SepDub	339
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>faurei</i>		Roeleveld, 1972	SepFau	340
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>hieronis</i>		(Robson, 1924)	SepHie	341
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>papillata</i>		Quoy & Gaimard, 1832	SepPap	342
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>robsoni</i>		(Massy, 1927)	SepRob	343
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>simoniana</i>		Thiele, 1920	SepSim	344
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	sp. A		(undescribed species)	Sep001	345
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>tuberculata</i>		Lamarck, 1798	SepTub	346
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	cf. <i>typica</i>		(Steenstrup, 1875)	SepTyp	347
Cephalopoda	Sepiida	Sepiidae	<i>Sepia</i>	<i>vermiculata</i>		Quoy & Gaimard, 1832	SepVer	348
Cephalopoda	Sepiida	Sepiolidae	<i>Austrorossia</i>	<i>enigmatica</i>	Bobtail squid	(Robson, 1924)	RosEni	349
Cephalopoda	Sepiida	Sepiolidae	<i>Inioteuthis</i>	<i>capensis</i>		Voss, 1962	Inio	350
Cephalopoda	Sepiida	Sepiolidae	<i>Stoloteuthis</i>		Eye-ball squid	Verrill, 1881	Stolot	351
Cephalopoda	Myopsida	Loliginidae	<i>Afrololigo</i>	<i>mercatoris</i>	African thumbstall squid	(Adam, 1941)	Lollig	352
Cephalopoda	Myopsida	Loliginidae	<i>Loligo</i>	<i>reynaudii</i>	Chokka squid	d'Orbigny [in Férussac & d'Orbigny], 1839-1841	CHOK	353
Cephalopoda	[unassigned]	Ctenopterygidae	<i>Ctenopteryx</i>	<i>sicula</i>	Comb-finned squid	(Vérany, 1851)	CteSic	354
Cephalopoda	Oegopsida	Ancistrocheiridae	<i>Ancistrocheirus</i>	<i>lesueurii</i>	Sharpear enope squid	(d'Orbigny [in Férussac & d'Orbigny], 1842)	AncLes	355
Cephalopoda	Oegopsida	Brachioteuthidae	<i>Brachioteuthis</i>	<i>picta</i>	Ornate arm squid	Chun, 1910	BraPic	356
Cephalopoda	Oegopsida	Brachioteuthidae	<i>Brachioteuthis</i>	sp. A		(undescribed species)	Brachi	357

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Cephalopoda	Oegopsida	Chroteuthidae	<i>Chroteuthis</i>	<i>mega</i>	Atlantic long-arm squid	(Joubin, 1932)	ChrCap	358
Cephalopoda	Oegopsida	Cranchiidae	<i>Cranchia</i>	<i>scabra</i>	Rough cranch squid	Leach, 1817	CrnScb	359
Cephalopoda	Oegopsida	Cranchiidae	<i>Leachia</i>	<i>cyclura</i>	Leach's cranch squid	Lesueur, 1821	LeaCyc	360
Cephalopoda	Oegopsida	Cranchiidae	<i>Liocranchia</i>	<i>reinhardtii</i>	Reinhardt's cranch squid	(Steenstrup, 1856)	LioRei	361
Cephalopoda	Oegopsida	Cranchiidae	<i>Liocranchia</i>	<i>valdiviae</i>	Valdivia cranch squid	Chun, 1910	LioVal	362
Cephalopoda	Oegopsida	Cranchiidae	<i>Megalocranchia</i>	<i>maxima</i>	Large cranch squid	Pfeffer, 1884	Megalo	363
Cephalopoda	Oegopsida	Cranchiidae	<i>Sandalops</i>	<i>melancholicus</i>	Melancholy cranch squid	Chun, 1906	SanMel	364
Cephalopoda	Oegopsida	Cranchiidae	<i>Taonius</i>	<i>pavo</i>	Peacock cranch squid	(Lesueur, 1821)	Taonis	365
Cephalopoda	Oegopsida	Cranchiidae	<i>Teuthowenia</i>	<i>pellucida</i>		(Chun, 1910)	Teuthw	366
Cephalopoda	Oegopsida	Cycloteuthidae	<i>Discoteuthis</i>	<i>discus</i>	Discus squid	Young & Roper, 1969	DisDis	367
Cephalopoda	Oegopsida	Enoploteuthidae	<i>Abraliopsis</i> (<i>Micrabralia</i>)	<i>gilchristi</i>	Gilchrist's enope squid	Robson, 1924	AbrGil	368
Cephalopoda	Oegopsida	Histioteuthidae	<i>Histioteuthis</i>	<i>bonnellii</i>	Ornate/Bonnelli's jewel squid	(Férussac, 1835)	HisBon	370
Cephalopoda	Oegopsida	Histioteuthidae	<i>Histioteuthis</i>	<i>macrohista</i>	Plain jewel squid	N. Voss, 1969	HisMac	371
Cephalopoda	Oegopsida	Histioteuthidae	<i>Histioteuthis</i>	<i>meleagroteuthis</i>	Crested jewel squid	(Chun, 1910)	HisMel	372
Cephalopoda	Oegopsida	Histioteuthidae	<i>Histioteuthis</i>	<i>miranda</i>	Common jewel squid	(Berry, 1918)	HisMir	373
Cephalopoda	Oegopsida	Histioteuthidae	<i>Histioteuthis</i>	<i>reversa</i>	Reverse jewel squid	(Verrill, 1880)	HisRev	374
Cephalopoda	Oegopsida	Joubiniteuthidae	<i>Joubiniteuthis</i>	<i>portieri</i>	Joubin's squid	(Joubin, 1916)	JouPor	375
Cephalopoda	Oegopsida	Lycoteuthidae	<i>Lycoteuthis</i>	<i>lorigera</i>	Crowned firefly squid	(Steenstrup, 1875)	Lycote	376
Cephalopoda	Oegopsida	Mastigoteuthidae	<i>Mastigopsis</i>	<i>hjorti</i>	Hjort's whiplash squid	(Chun, 1913)	MashJo	377
Cephalopoda	Oegopsida	Octopoteuthidae	<i>Octopoteuthis</i>	<i>sicula</i>	Rüppell's octopus squid	Rüppell, 1844	Octhis	378
Cephalopoda	Oegopsida	Octopoteuthidae	<i>Taningia</i>	<i>danae</i>	Taning's octopus squid	Joubin, 1931	TanDan	379
Cephalopoda	Oegopsida	Ommastrephidae	<i>Ommastrephes</i>	<i>bartramii</i>	Neon flying squid	(Lesueur, 1821)	OmmBar	380
Cephalopoda	Oegopsida	Ommastrephidae	<i>Ornithoteuthis</i>		Bird squids	Okada, 1927	Ornith	381
Cephalopoda	Oegopsida	Ommastrephidae	<i>Ornithoteuthis</i>	<i>antillarum</i>	Atlantic bird squid	Adam, 1957	OrnAnt	382
Cephalopoda	Oegopsida	Ommastrephidae	<i>Ornithoteuthis</i>	<i>volatilis</i>	Shiny bird squid	(Sasaki, 1915)	OrnVol	
Cephalopoda	Oegopsida	Ommastrephidae	<i>Todarodes</i>	<i>angolensis</i>	Angola flying squid	Adam, 1962	Toddes	383
Cephalopoda	Oegopsida	Ommastrephidae	<i>Todarodes</i>	<i>filippovae</i>	Antarctic flying squid	Adam, 1975	TodFil	384
Cephalopoda	Oegopsida	Ommastrephidae	<i>Todaropsis</i>	<i>ebblanae</i>	Lesser flying squid	(Ball, 1841)	Todrop	385
Cephalopoda	Oegopsida	Onychoteuthidae	<i>Notonykia</i>	<i>africanae</i>	Benguela clubhook squid	Nesis, Roeleveld & Nikitina, 1998	NotAfr	386
Cephalopoda	Oegopsida	Onychoteuthidae	<i>Onychoteuthis</i>	<i>banksii</i>	Common clubhook squid	(Leach, 1817)	OnyBan	387
Cephalopoda	Oegopsida	Onychoteuthidae	<i>Onykia</i>	<i>robsoni</i>	Warty squid	(Adam, 1962)	MorRob	388
Cephalopoda	Oegopsida	Pyroteuthidae	<i>Pyroteuthis</i>	<i>margaritifera</i>	Jewel enope squid	(Rüppell, 1844)	Pyrote	389
Cephalopoda	Oegopsida	Thysanoteuthidae	<i>Thysanoteuthis</i>	<i>rhombus</i>	Rhombic squid	Troschel, 1857	ThyRho	390

Echinodermata

ECHINODERMATA

Class	Order	Family	Genus (Subgenus)	Species	Common name	Authority	FB Code	Page
Asteroidea	Forcipulatida	Asteriidae	<i>Coronaster</i>	<i>volsellatus</i>	False brisingid/Spiny pom-pom starfish	Perrier, 1885	CorVol	398
Asteroidea	Forcipulatida	Stichasteridae	<i>Cosmasterias</i>	<i>felipes</i>	Indistinct star	(Sladen, 1889)	Sticha	399
Asteroidea	Forcipulatida	Asteriidae	<i>Marthasterias</i>	<i>africana</i>	African spiny starfish	Müller & Troschel, 1842	Mart	400
Asteroidea	Forcipulatida	Asteriidae	<i>Sclasterias</i>	spp.	Small spiny starfish	Perrier, 1891	SclEus	401
Asteroidea	Forcipulatida	Stichasteridae	<i>Perissasterias</i>	<i>polyacantha</i>	Very large orange star	Clark, 1923	Cosmas	402
Asteroidea	Valvatida	Asterinidae	<i>Anseropoda</i>	<i>grandis</i>	Pancake/Goosefoot star	Mortensen, 1933	AnsGra	403
Asteroidea	Valvatida	Asterinidae	<i>Callopatiria</i>	<i>granifera</i>	Red starfish	(Gray, 1847)	CalGra	404
Asteroidea	Valvatida	Asterinidae	<i>Callopatiria</i>	<i>formosa</i>	Purple starfish	(Mortensen, 1933)	CalFor	405
Asteroidea	Paxillosida	Astropectinidae	<i>Astropecten</i>	<i>irregularis pontoporeus</i>	Astropecten orange trim	Sladen, 1883	AstPan	406
Asteroidea	Paxillosida	Astropectinidae	<i>Astropecten</i>	<i>cingulatus</i>	Shallow water Astropecten	Sladen, 1883	AstAnt	407
Asteroidea	Paxillosida	Astropectinidae	<i>Astropecten</i>	<i>exilis</i>	Long-arm Astropecten	Mortensen, 1933	AstrLa	408
Asteroidea	Paxillosida	Astropectinidae	<i>Dipsacaster</i>	<i>sladeni capensis</i>	Coarse-grained orange star	Clark, 1952	PerAga	409
Asteroidea	Paxillosida	Astropectinidae	<i>Persephonaster</i>	sp.	Coarse-grained pale star	Wood-Mason & Alcock, 1891	PerCou	410
Asteroidea	Paxillosida	Astropectinidae	<i>Psilaster</i>	<i>acuminatus</i>	Pale orange fine-grained star	Sladen, 1889	PleAga	411
Asteroidea	Paxillosida	Astropectinidae	<i>Plutonaster</i>	cf. <i>intermedius</i>	Intermediate starfish	(Perrier, 1881)	PluAga	412
Asteroidea	Notomyotida	Benthopectinidae	<i>Cheiraster</i>	<i>hirsutus</i>	Spiky orange centre star	(Studer, 1884)	Astrop	413
Asteroidea	Brisingida	Brisingidae	<i>Stegnobrisinga</i>	<i>splendens</i>	Brisingid rigid	Clark, 1926	SteSpl	414
Asteroidea	Spinulosida	Echiniasteridae	<i>Henricia</i>	<i>abyssalis</i>	Apricot puffy-arm star	(Perrier, 1894)	HerAbs	415
Asteroidea	Spinulosida	Echiniasteridae	<i>Henricia</i>	<i>ornata</i>	Reticulated star	(Perrier, 1869)	HenOrn	416
Asteroidea	Valvatida	Goniasteridae	<i>Gilbertaster</i>	<i>anacanthus</i>	Gilbert's star	Fisher, 1906	GilAna	417
Asteroidea	Valvatida	Goniasteridae	<i>Calliaster</i>	<i>acanthodes</i>	Spiky sheriff star	Clark, 1923	CalAca	418
Asteroidea	Valvatida	Goniasteridae	<i>Calliaster</i>	<i>baccatus</i>	Blunt sheriff star	Sladen, 1889	CalBac	419
Asteroidea	Valvatida	Goniasteridae	<i>Ceramaster</i>	<i>patagonicus euryplax</i>	Shiny red sheriff star	Clark, 1923	CerGra	420
Asteroidea	Valvatida	Goniasteridae	<i>Cladaster</i>	<i>macrobrachius</i>	Macro-clad starfish	Clark, 1923	ClaMac	421
Asteroidea	Valvatida	Goniasteridae	<i>Hippasteria</i>	<i>phrygiana</i>	Thorny starfish	(Parelius, 1768)	HipPhr	422
Asteroidea	Valvatida	Goniasteridae	<i>Hippasteria</i>	<i>falklandica</i>	Falkland starfish	Fisher, 1940	HipFal	423
Asteroidea	Valvatida	Goniasteridae	<i>Mediaster</i>	<i>bairdi capensis</i>	Orange sheriff star	Clark, 1923	MedCap	424
Asteroidea	Valvatida	Goniasteridae	<i>Toraster</i>	<i>tuberculatus</i>	Red sheriff star	(Gray, 1847)	TorTub	425
Asteroidea	Paxillosida	Luidiidae	<i>Luidia</i>	<i>sarsii africana</i>	Legs break easily starfish	Sladen, 1889	LucAfr	426
Asteroidea	Valvatida	Poraniidae	<i>Chondraster</i>	<i>elattosis</i>	Pentagon star	Clark, 1923	ChoEla	427
Asteroidea	Valvatida	Poraniidae	<i>Spoladaster</i>	<i>veneris</i>	Inflated star	Perrier, 1879	SpoBra	428
Asteroidea	Valvatida	Poraniidae	<i>Poraniopsis</i>	<i>echinaster</i>	Spiky cushion star	Perrier, 1891	PorEch	429
Asteroidea	Paxillosida	Astropectinidae	<i>Pseudarchaster</i>	<i>tessellatus</i>	Dusky pink long-armed star	Sladen, 1889	PseTes	430
Asteroidea	Paxillosida	Astropectinidae	<i>Pseudarchaster</i>	<i>brachyactis</i>	Dusky pink short-armed star		PseBra	431
Asteroidea	Velatida	Pterasteridae	<i>Diplopteraster</i>	<i>multipes</i>	Large prickly slime cushion star	Sars, 1866	DipMul	432
Asteroidea	Velatida	Pterasteridae	<i>Pteraster</i>	<i>capensis</i>	Common/Brooding cushion star	Gray, 1847	PteCap	433
Asteroidea	Valvatida	Echiniasteridae	<i>Lophaster</i>	<i>quadrispinus</i>	Four-spined starfish	Clark, 1923	LopQua	434
Asteroidea	Valvatida	Solasteridae	<i>Crossaster</i>	<i>penicillatus</i>	Raspberry star/Blomme	Sladen, 1889	Blomme	435
Asteroidea	Valvatida	Solasteridae	<i>Solaster</i>	spp.	Sun-shaped orange star	Forbes, 1839	Solast	436
Asteroidea	Valvatida	Odontasteridae	<i>Odontaster</i>	<i>australis</i>	False sheriff star	Clark, 1926	OdoAus	437
Crinoidea	Comatulida	Cosmasteridae	<i>Comanthus</i>	<i>wahlbergii</i>	Common feather star/Crinoid	(Müller, 1843)	ComWah	438
Echinoidea	Cidaroida	Cidaridae	<i>Goniocidaris (Goniocidaris)</i>	<i>indica</i>	Umbrella urchin	Mortensen, 1939	GonInd	439
Echinoidea	Cidaroida	Cidaridae	<i>Stereocidaris</i>	<i>excavata</i>	Pencil urchin	Mortensen, 1932	SteSpp	440

Class	Order	Family	Genus (Subgenus)	Species	Common name	Authority	FB Code	Page
Echinoidea	Cidaroida	Histocidaridae	<i>Histocidaris</i>	<i>purpurata</i>	Purple pencil urchin	(Thomson, 1872)	HisPur	441
Echinoidea	Echinothurioida	Echinothuriidae	<i>Hygrosoma</i>	<i>petersii</i>	Grey Tam O'Shanter	Agassiz, 1880	TamSha	442
Echinoidea	Echinothurioida	Echinothuriidae	<i>Phormosoma</i>	<i>placenta africana</i>	Beret urchin/Tam O'Shanter	Mortensen, 1934	TamOsh	443
Echinoidea	Camarodonta	Echinidae	<i>Dermechinus</i>	<i>horridus africanus</i>	Orange pumpkin urchin	Döderlein, 1906	DemHor	444
Echinoidea	Camarodonta	Echinidae	<i>Echinus</i>	<i>gilchristi</i>	Spiky/Common sea urchin	Bell, 1904	EchGil	445
Echinoidea	Camarodonta	Echinidae	<i>Polyechinus</i>	<i>agulhensis</i>	Large spiky urchin	Döderlein, 1905	ParGra	446
Echinoidea	Clypeasteroidea	Clypeasteridae	<i>Clypeaster</i>	<i>eurychorius</i>	Green sunhat urchin	de Meijere, 1903	ClyEur	447
Echinoidea	Spatangoida	Brissidae	<i>Brissopsis</i>	<i>lyrifera capensis</i>	Brissopsis/Heart urchin	Mortensen, 1907	Smouse	448
Echinoidea	Spatangoida	Loveniidae	<i>Echinocardium</i>	<i>cordatum</i>	Small heart urchin/ Sea potato	(Pennant, 1777)	EchCor	449
Echinoidea	Spatangoida	Spatangidae	<i>Spatangus</i>	<i>capensis</i>	Purple heart urchin	Döderlein, 1905	Pheart	450
Ophiuroidea	Euryalida	Asteroschematidae	<i>Ophiocreas</i>	spp.	Brown-skinned snake star	Lyman, 1879	Ophiu6	451
Ophiuroidea	Euryalida	Gorgonocephalidae	<i>Astrothorax</i>	<i>waitei</i>	Apricot basket star	(Benham, 1909)	AstWai	452
Ophiuroidea	Euryalida	Gorgonocephalidae	<i>Astrocladus</i>	<i>euryale</i>	Black and white basket star	(Retzius, 1783)	AstEur	453
Ophiuroidea	Euryalida	Gorgonocephalidae	<i>Astrodendrum</i>	<i>capensis</i>	Purple basket star	(Mortensen, 1933)	AstCap	454
Ophiuroidea	Euryalida	Gorgonocephalidae	<i>Gorgonocephalus</i>	<i>chilensis</i>	Red/Chilean basket star	(Philippi, 1858)	GorChi	455
Ophiuroidea	Euryalida	Gorgonocephalidae	<i>Gorgonocephalus</i>	<i>pustulatum</i>	Brown basket star	Clark, 1916	GorEuc	456
Ophiuroidea	Ophiurida	Ophiidermatidae	<i>Cryptopelta</i>	<i>aster</i>	Red and white banded brittle star	(Lyman, 1879)	Ophiu5	457
Ophiuroidea	Ophiurida	Ophiotrichidae	<i>Ophiotrix</i>	<i>aristulata</i>	Feathery brittle star	Lyman, 1879	OphFra	458
Ophiuroidea	Ophiurida	Ophiotrichidae	<i>Ophiotrix</i>	<i>fragilis</i>	Bristly brittle star	(Abildgaard in O. F. Müller, 1789)	Ophiu4	459
Ophiuroidea	Ophiurida	Ophiomyxidae	<i>Ophiolycus</i>	<i>dentatus</i>	Toothed brittle star	(Lyman, 1878)	OphDen	460
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiomyxa</i>	<i>vivipara capensis</i>	Bright red disc brittle star	Mortensen, 1936	Ophiu2	461
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiocten</i>	<i>affinis simulans</i>	Stepping stone brittle star	(Mortensen, 1936)	OphAff	462
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiomisidium</i>	<i>pulchellum</i>	Spiky orange brittle star	(Wyville Thomson, 1878)	Ophiu	463
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiura (Ophiura)</i>	<i>trimeni</i>	Orange stripe brittle star	Bell, 1905	Ophiu3	464
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiura (Ophiuroglypha)</i>	<i>costata costata</i>	Rigid orange brittle star	(Lyman, 1878)	Ophiu1	465
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiactis</i>	<i>abyssicola</i>	Abyss brittle star	(Sars, 1861)	OphAby	466
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiactis</i>	<i>carnea</i>	Fleshy brittle star	Ljungman, 1867	OphCar	467
Ophiuroidea	Ophiurida	Ophiuridae	<i>Ophiomitrella</i>	<i>hamata</i>	Coal stack brittle star	Mortensen, 1933	OphHam	468
Holothuroidea	Dendrochirotida	Phylloporidae	<i>Thyone</i>	<i>venusta</i>	Orange and white speckled sea cucumber	Selenka, 1868	ThyVen	469
Holothuroidea	Dendrochirotida	Cucumariidae	<i>Hemioncus</i>	<i>insolens</i>	Red-chested sea cucumber	Théel, 1886	Pselsn	470
Holothuroidea	Dendrochirotida	Psolidae	<i>Psolus</i>	<i>griffithsi</i>	Scaled sea cucumber	Thandar, 2009	PsoGri	471
Holothuroidea	Aspidochirotida	Synallactidae	<i>Pseudostichopus</i>	<i>langeae</i>	Sand covered sea cucumber	Thandar, 2009	Mesoth	472
Holothuroidea	Aspidochirotida	Synallactidae	<i>Zygothuria</i>	<i>lactea</i>	Slimy deep-water sea cucumber	(Théel, 1886)	MesLac	473
Holothuroidea	Aspidochirotida	Synallactidae	<i>Synallactes</i>	<i>mollis</i>	South coast purple sea cucumber	Cherbonnier, 1952	SynMol	474
Holothuroidea	Aspidochirotida	Synallactidae	<i>Synallactes</i>	<i>viridilimus</i>	Purple sea cucumber	Cherbonnier, 1952	PurCuc	475
Holothuroidea	Aspidochirotida	Synallactidae	<i>Synallactes</i>	sp.	Large lilac sea cucumber	Ludwig, 1894	Synall	476

Chordata

CHORDATA

Class	Order	Family	Genus	Species	Common name	Authority	FB Code	Page
Asciacea	Phlebobranchia	Asciidae	<i>Ascidia</i>	<i>incrassata</i>	Orange sea squirt	Heller, 1878	AscInc	481
Asciacea	Stolidobranchia	Pyuridae	<i>Pyura</i>	<i>stolonifera</i>	Red bait	(Heller, 1878)	Rbait	482
Asciacea	Stolidobranchia	Styelidae	<i>Gynandrocarpa</i>	<i>placenta</i>	Elephants ears ascidian	(Heardman, 1886)	GynPla	483
Asciacea	Aplousobranchia	Pseudodistomidae	<i>Pseudodistoma</i>	spp.	Soft lightbulb ascidian		AscBul	484
Asciacea	Aplousobranchia	Polyclinidae	<i>Aplidium</i>	spp.	Sandy club ascidian		AscSan	485
Asciacea	Aplousobranchia	Holozoidae	<i>Distaplia</i>	spp.	Stalked ascidian		AscSta	486
Asciacea	Aplousobranchia	Polyclinidae	<i>Synoicum</i>	spp.	Baseball bat ascidian		BbBat	487
Asciacea	Stolidobranchia	Molgulidae	<i>Molgula</i>	<i>scutata</i>	Sand colonial ascidian	Millar, 1955	SanCol	488
Thaliacea	Pyrosomatida	Pyrosomatidae	<i>Pyrosoma</i>	spp.	Fire roller	Péron, 1804	Pyrosm	489
Thaliacea	Salpida	Salpidae	<i>Salpa</i>	spp.	Translucent salps	Lahille, 1888	Salps	490

Hemichordata

Class	Order	Family	Genus	Species	Common name	Authority	FB Code	Page
Graptolithoidea	Cephalodiscoidea	Cephalodiscidae	<i>Cephalodiscus</i>	<i>gilchristi</i>	Agar animal	Latreille, 1810	AGAMAL	493



PHYLUM: PORIFERA

Authors

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Citation

Samaai T, Payne RP, Maduray S and Janson L. 2018. Phylum Porifera In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates of South Africa, Malachite Marketing and Media, Pretoria, pp. 37-64.

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Phylum: PORIFERA

Sponges (The 'Pore-Bearers')

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 (oscles). 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/or host for associated species. They also enable benthic-pelagic coupling and primary production through microbial symbionts. Furthermore, sponges may act as bio-eroders 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 spongin 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

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
- Date

- Depth
- Collector(s)
- Method of collection
- Habitat/substrate type

Other observations used to aid sponge identification:

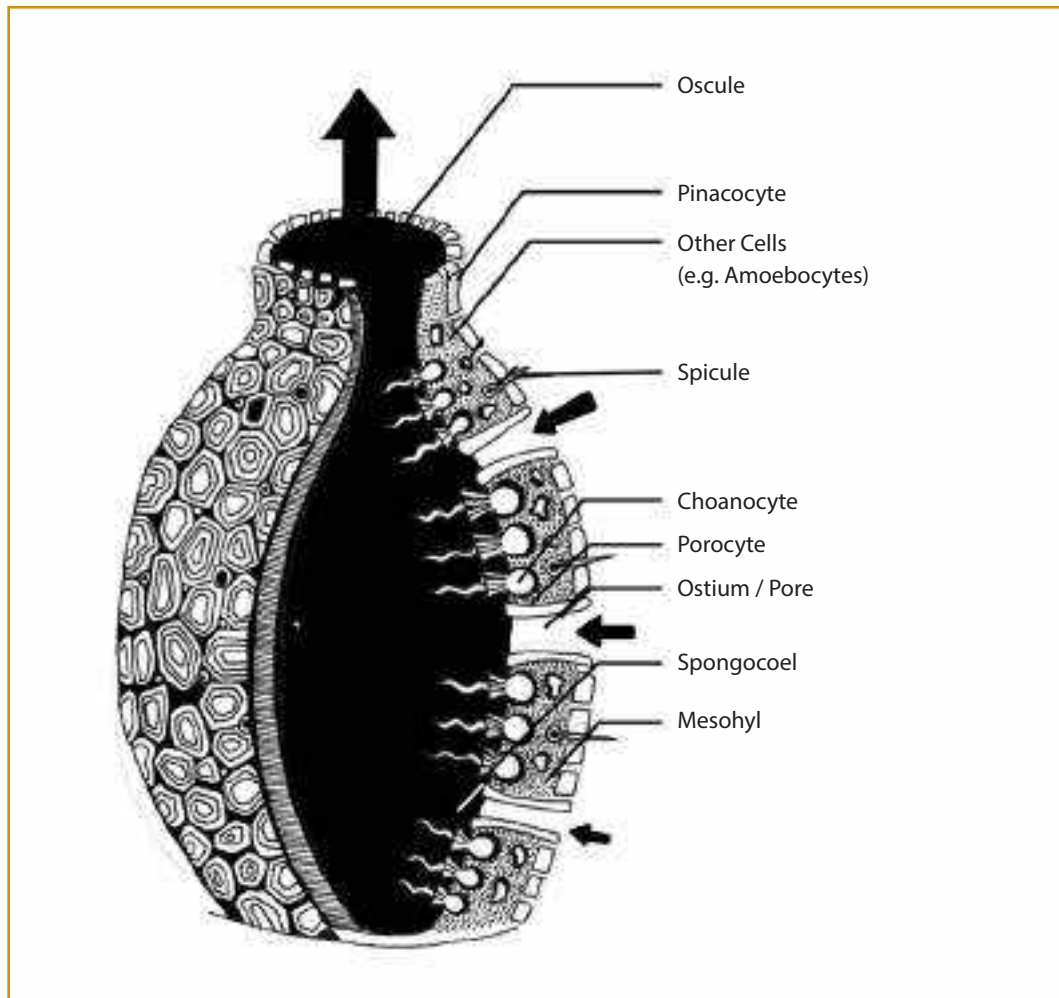
- Form – note if whole or fragmented
- Size
- Colour – record immediately after removal from sea
- Surface ornamentation (ridges, stalks, etc.)
- Distribution and shape of surface pores (ostia) and oscules
- Texture/consistency
- Mucus
- Smell
- Associated fauna

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

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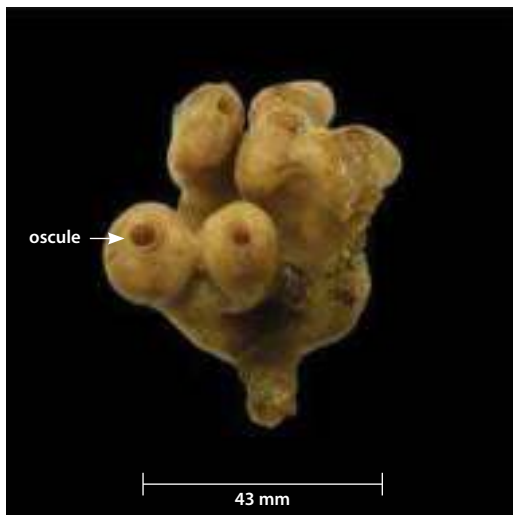
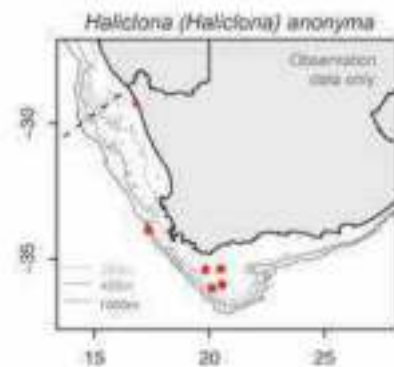
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Basic Poriferan body plan



***Haliclona (Haliclona) anonyma* (HalAno)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Haplosclerida
Family:	Chalinidae
Genus:	<i>Haliclona (Haliclona)</i>
Species:	<i>anonyma</i>
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.

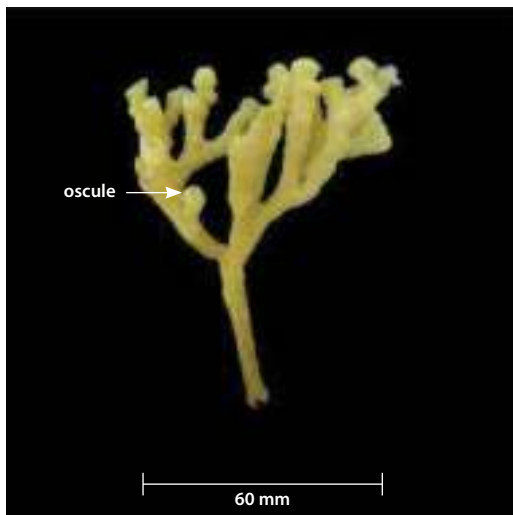
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***Haliclona submonilifera* (HaSub)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Haplosclerida
Family:	Chalinidae
Genus:	<i>Haliclona</i>
Species:	<i>submonilifera</i>
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

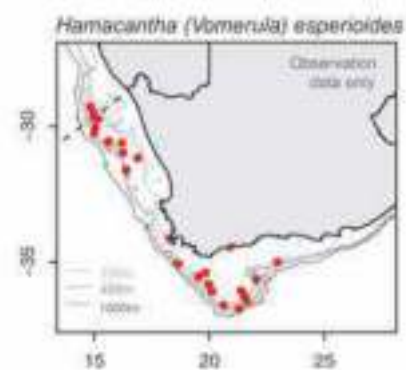
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***Hamacantha (Vomerula) esperioides* (HamEsp)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Merliida
Family:	Hamacanthidae
Genus:	<i>Hamacantha (Vomerula)</i>
Species:	<i>esperoides</i>
Common name:	Fibrous sponge

**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 (Río de la Plata); 17–1 110 m depth.

Similar species

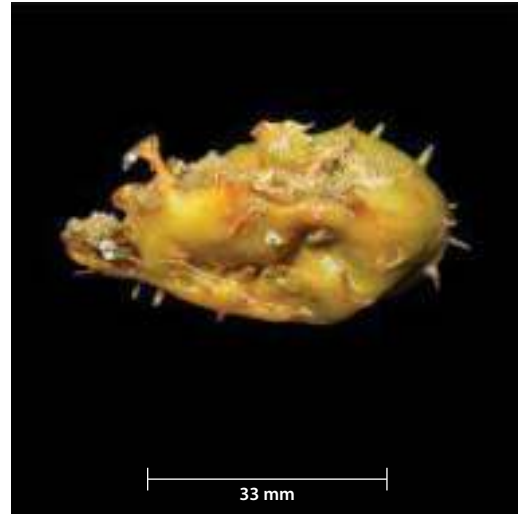
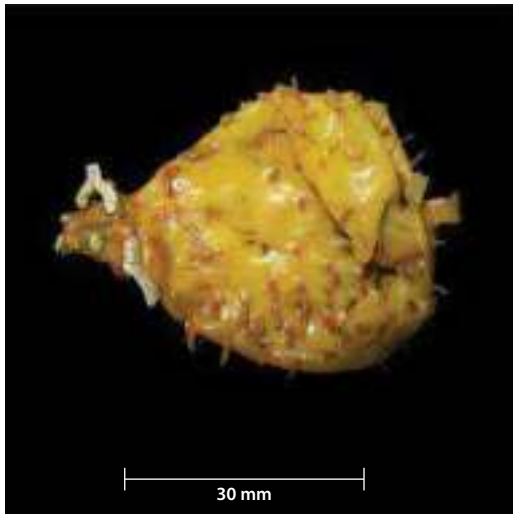
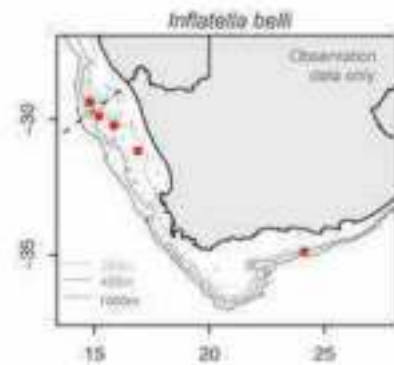
None.

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***Inflatella belli* (Goose)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Coelosphaeridae
Genus:	<i>Inflatella</i>
Species:	<i>belli</i>
Common name:	Gooseberry sponge



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.

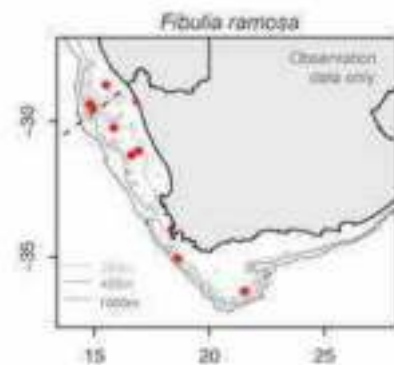
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Uriz MJ. 1988. Deep-water sponges from the continental shelf and slope off Namibia (Southwest Africa): Classes Hexactinellida and Demospongia. *Monografías de Zoología Marina* 3: 9-157. pp. 82-83.

***Fibulia ramosa* (FibRam)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Dendoricellidae
Genus:	<i>Fibulia</i>
Species:	<i>ramosa</i>
Common name:	Columnar sponge

**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

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Phorbastus pustulosus (PhoPus)

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Hymedesmiidae
Genus:	<i>Phorbastus</i>
Species:	<i>pustulosus</i>
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.

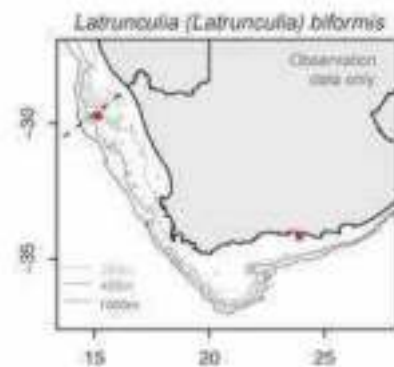
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***Latrunculia (Latrunculia) biformis* (LatBif)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Latrunculiidae
Genus:	<i>Latrunculia (Latrunculia)</i>
Species:	<i>biformis</i>
Common name:	Mud-clump sponge

**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

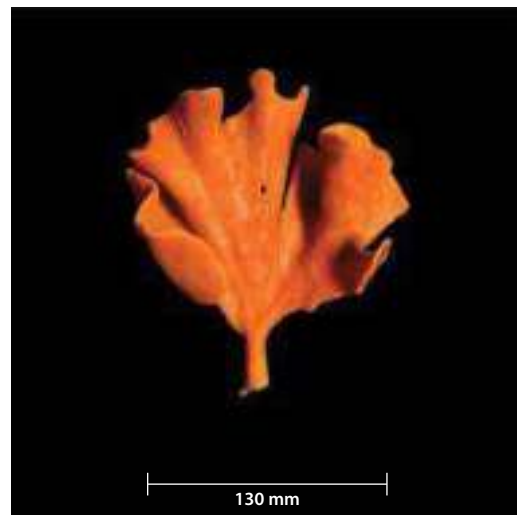
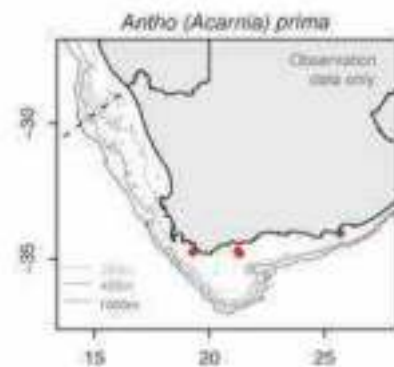
None.

References

- Kirkpatrick R. 1908. Porifera (Sponges). II. Tetraxonida, Dendy. National Antarctic Expedition, 1901-1904 Natural History 4, *Zoology*: 1-56, pls VIII-XXVI. p. 14.
- Samaai T, Gibbons MJ, Kelly MJ and Davies-Coleman M. 2003. South African Latrunculiidae (Porifera: Demospongiae: Poecilosclerida): descriptions of new species of *Latrunculia* du Bocage, *Strongylodesma* Lévi, and *Tsitsikamma* Samaai & Kelly. *Zootaxa* 371: 1-26. pp. 6-7.
- Samaai T, Gibbons MJ and Kelly M. 2006. Revision of the genus *Latrunculia* du Bocage, 1869 (Porifera: Demospongiae: Latrunculiidae) with descriptions of new species from New Caledonia and the Northeastern Pacific. *Zootaxa* 1127: 1-71. pp. 19-27.

Antho (Acarnia) prima (AntPri)

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Microcionidae
Genus:	<i>Antho (Acarnia)</i>
Species:	<i>prima</i>
Common name:	Orange fan sponge



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.

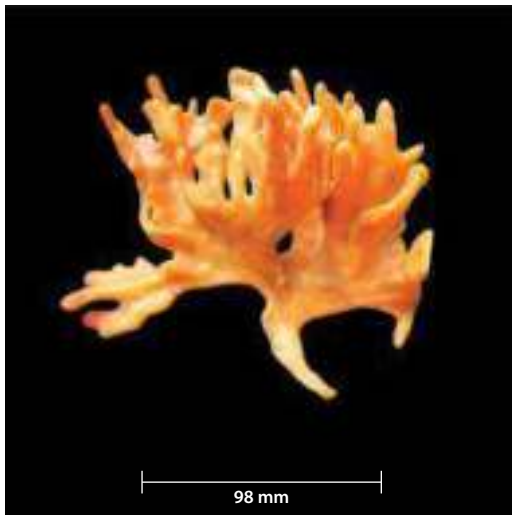
References

Brøndsted HV. 1924. Papers from Dr. Th. Mortensen's Pacific Expedition 1914-16. XXIII. Sponges from New Zealand. Part I. *Videnskabelige Meddelelser fra Dansk naturhistorisk Forening i Kjøbenhavn* 77: 435-483. pp. 470-471.

Lévi C. 1963. Spongiaires d'Afrique du Sud. (1) Poeciloscélérides. *Transactions of the Royal Society of South Africa* 37(1): 1-72, pls I-X. pp. 63-64.

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

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Microcionidae
Genus:	<i>Clathria (Clathria)</i>
Species:	<i>pachystyla</i>
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

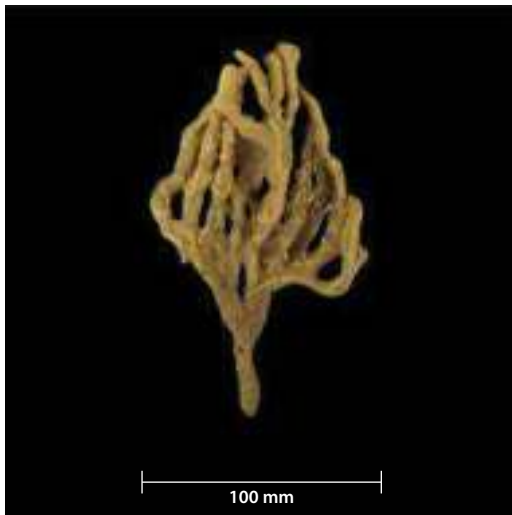
Clathria (Thalysias) lissoclada.

References

Lévi C. 1963. Spongiaires d'Afrique du Sud. (1) Poecilosclérides. *Transactions of the Royal Society of South Africa* 37(1): 1-72, pls I-X. p. 56.

***Clathria (Thalysias) lissoclada* (ClalIs)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Microcionidae
Genus:	<i>Clathria (Thalysias)</i>
Species:	<i>lissoclada</i>
Common name:	Triangular blade sponge



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.

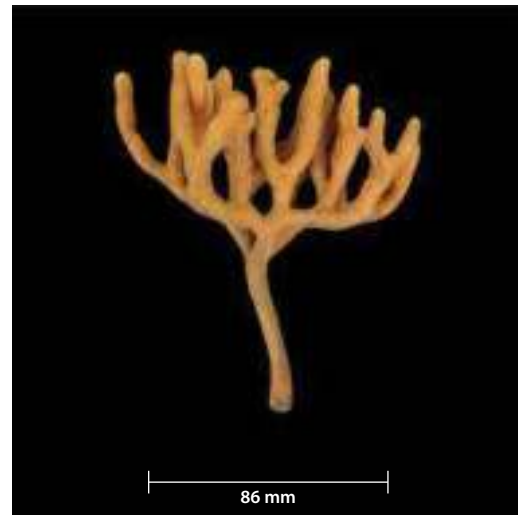
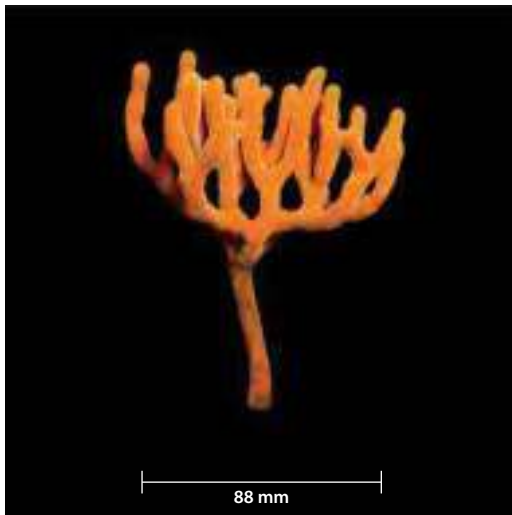
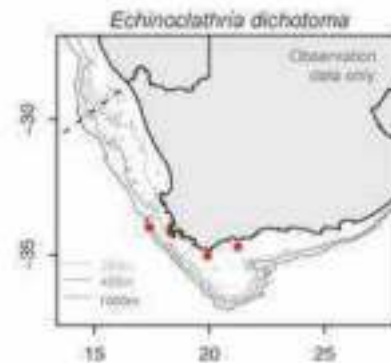
References

Burton M. 1934. Sponges. pp. 1-58, pls I-VIII. In: *Further Zoological Results of the Swedish Antarctic Expedition 1901-03 under the Direction of Dr. Otto Nordenskjöld*. 3(2). (Norstedt & Söner: Stockholm). pp. 32-33.

Lévi C. 1963. Spongiaires d'Afrique du Sud. (1) Poecilosclérides. *Transactions of the Royal Society of South Africa* 37(1): 1-72, pls I-X. p. 62.

***Echinoclathria dichotoma* (EchDic)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Microcionidae
Genus:	<i>Echinoclathria</i>
Species:	<i>dichotoma</i>
Common name:	Orange tree sponge

**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.

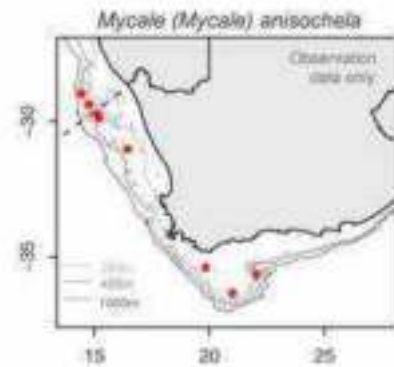
References

Lévi C. 1963. Spongiaires d'Afrique du Sud. (1) Poecilosclérides. *Transactions of the Royal Society of South Africa* 37(1): 1-72, pls I-X. p. 59.

Samaai T and Gibbons MJ. 2005. Demospongiae taxonomy and biodiversity of the Benguela region on the west coast of South Africa. *African Natural History* 1: 1-96. pp. 48-51.

Mycale (Mycale) anisochela (MycAni)

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Mycalidae
Genus:	<i>Mycale (Mycale)</i>
Species:	<i>anisochela</i>
Common name:	Brain sponge



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.

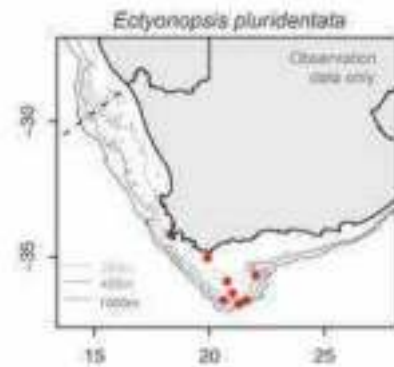
References

Lévi C. 1963. Spongiaires d'Afrique du Sud. (1) Poecilosclérides. *Transactions of the Royal Society of South Africa* 37(1): 1-72, pls I-X. pp. 8-9.

Uriz MJ. 1988. Deep-water sponges from the continental shelf and slope off Namibia (Southwest Africa): Classes Hexactinellida and Demospongia. *Monografías de Zoología Marina*. 3: 9-157. pp. 57-58.

***Ectyonopsis pluridentata* (EctPlu)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Poecilosclerida
Family:	Myxillidae
Genus:	<i>Ectyonopsis</i>
Species:	<i>pluridentata</i>
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

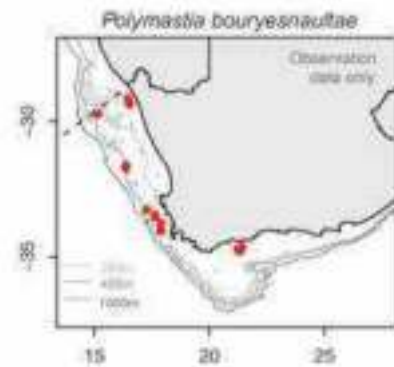
Ectyonopsis flabellata, which superficially appears less folded and more in a single plane, however spicule examination is needed to distinguish accurately.

References

Lévi C. 1963. Spongiaires d'Afrique du Sud. (1) Poecilosclérides. *Transactions of the Royal Society of South Africa* 37(1): 1-72, pls I-X. p. 38.

***Polymastia bouryesnaultae* (Polyma)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Polymastiida
Family:	Polymastiidae
Genus:	<i>Polymastia</i>
Species:	<i>bouryesnaultae</i>
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

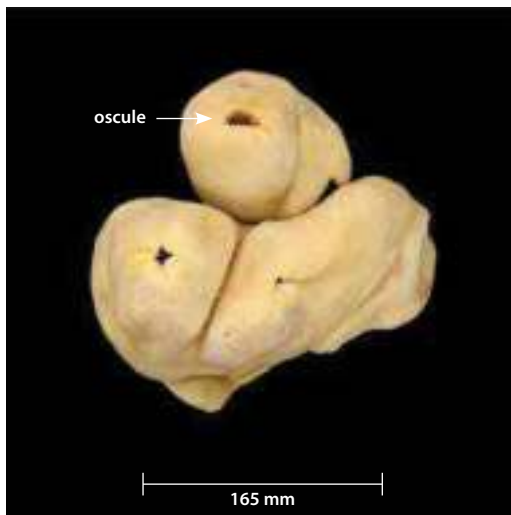
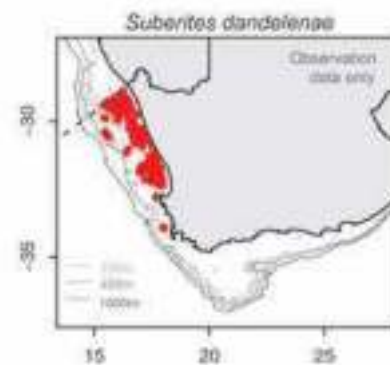
None.

References

Samaai T and Gibbons MJ. 2005. Demospongiae taxonomy and biodiversity of the Benguela region on the west coast of South Africa. *African Natural History* 1: 1-96. pp. 21-22.

Potential VME***Suberites dandelenae* (Suber)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Suberitida
Family:	Suberitidae
Genus:	<i>Suberites</i>
Species:	<i>dandelenae</i>
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.

Similar species

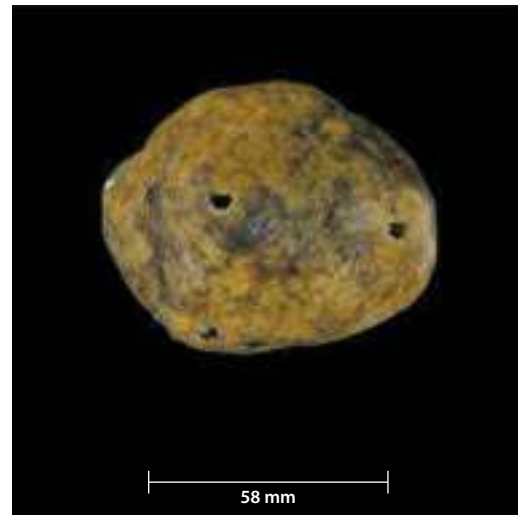
Several other *Suberites* species occur. Spicule examination required for further identification.

References

Samaai T, Maduray S, Janson L, Gibbons MJ, Ngwakum B and Teske PR. 2017. A new species of habitat-forming *Suberites* (Porifera, Demospongiae, Suberitida) in the Benguela upwelling region (South Africa). *Zootaxa* 4254(1), pp. 49–81.

Suberites sp. (SubHer)

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Suberitida
Family:	Suberitidae
Genus:	<i>Suberites</i>
Species:	sp.
Common name:	Hermit encrusting sponge



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

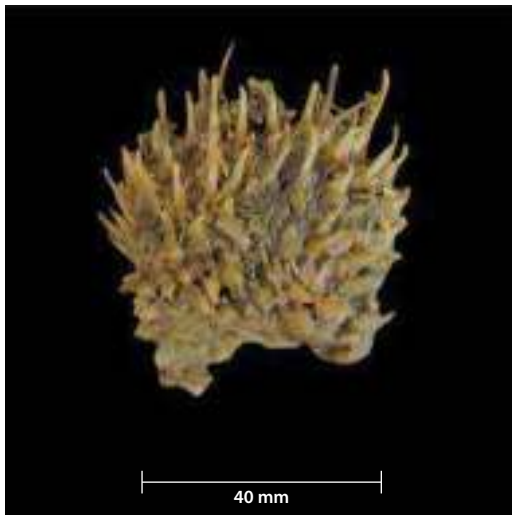
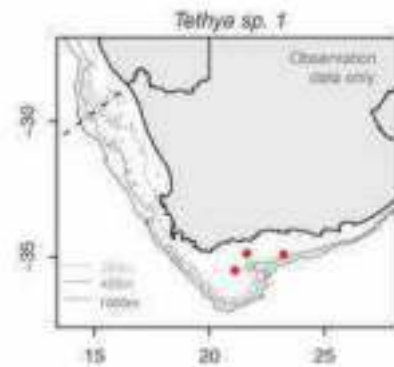
Sponge appears similar to other *Suberites* species, however this species is specific to encrusting the hermit crab *Pagurus liochele*. Formal taxonomic description under way.

References

Van Soest RWM. 2002. Family Suberitidae. In: Hooper JNA and Van Soest RWM. eds. *Systema Porifera: A Guide to the Classification of Sponges*. Kluwer Academic/Plenum Publishers, New York, NY (USA). ISBN 0-306-47260-0. xix, pp.1-1101, 1103-1706 (2 volumes).

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

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Tethyida
Family:	Tethyidae
Genus:	<i>Tethya</i>
Species:	sp. 1
Common name:	Hedgehog sponge

**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

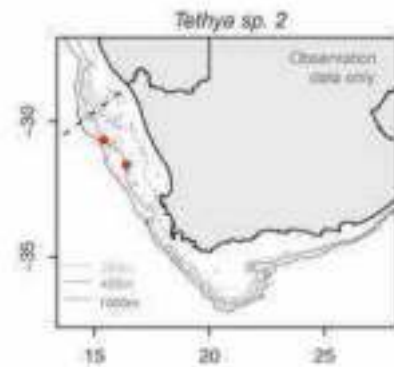
Tethya aurantium and *Tethya* sp. 2, but *Tethya* sp. 1 has elongated projections/tubercles giving it a 'hedgehog'-like appearance.

References

Sarà M. 2002. Family Tethyidae Gray, 1848. pp. 245-267. In: Hooper JNA and Van Soest RWM. eds. *Systema Porifera: A Guide to the Classification of Sponges*. Kluwer Academic/Plenum Publishers: New York, NY (USA). ISBN 0-306-47260-0. xix, pp.1-1101, 1103-1706 (2 volumes).

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

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Tethyida
Family:	Tethyidae
Genus:	<i>Tethya</i>
Species:	sp. 2
Common name:	Prickly pear sponge



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

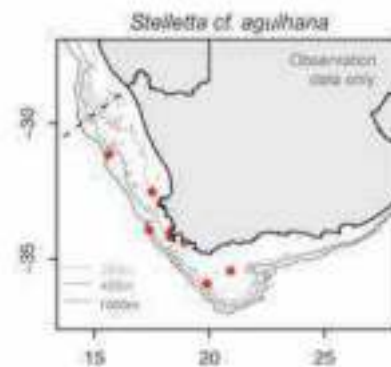
Tethya aurantium, *Tethya* sp. 1, but *Tethya* sp. 2 has semi-elongated projections/tubercles that are longer than *Tethya aurantium* and shorter than *Tethya* sp. 1.

References

Sarà M. 2002. Family Tethyidae Gray, 1848. pp. 245-267. In: Hooper JNA and Van Soest RWM. eds. *Systema Porifera: A Guide to the Classification of Sponges*. Kluwer Academic/Plenum Publishers: New York, NY (USA). ISBN 0-306-47260-0. xix, pp.1-1101, 1103-1706 (2 volumes).

***Stelletta cf. agulhana* (SteAng)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Tetractinellida
Family:	Ancorinidae
Genus:	<i>Stelletta</i>
Species:	<i>cf. agulhana</i>
Common name:	Globular sponge

**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

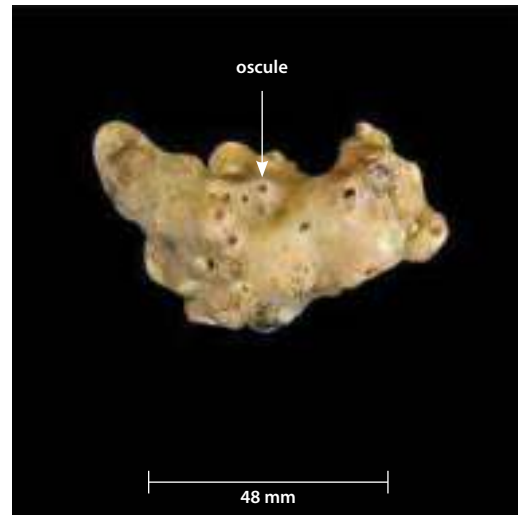
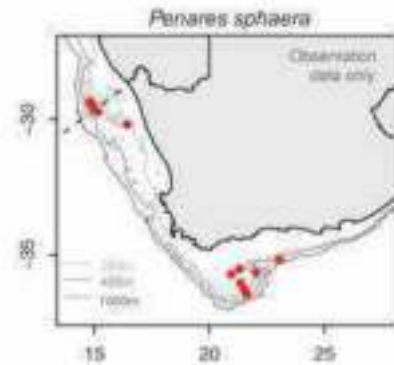
Tethya spp., however *Stelletta cf. agulhana* is more globular, larger in size and has large bumps.

References

- Burton M. 1926. Description of South African sponges collected in the South African Marine Survey. Part I. Myxospongia and Astrotetraxonida. *Fisheries Bulletin*. Fisheries and Marine Biological Survey Division, Union of South Africa Rept. 4 (Special Report 9): 1-29, 6 pls. pp. 4-6.
- Lendenfeld R Von. 1907. Die Tetraxonia. *Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf der Dampfer Valdivia 1898-1899*. 11 (1-2): i-iv, 59-374, pls IX-XLVI. pp. 213-218.
- Lévi C. 1967. Spongiaires d'Afrique du Sud. (3) Tetractinellides. *Transactions of the Royal Society of South Africa* 37: 227-256, pls XVII-XIX. pp. 232-234.
- Samaai T and Gibbons, MJ. 2005. Demospongiae taxonomy and biodiversity of the Benguela region on the west coast of South Africa. *African Natural History* 1: 1-96. pp. 12-14.

***Penares sphaera* (PenSph)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Tetractinellida
Family:	Geodiidae
Genus:	<i>Penares</i>
Species:	<i>sphaera</i>
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

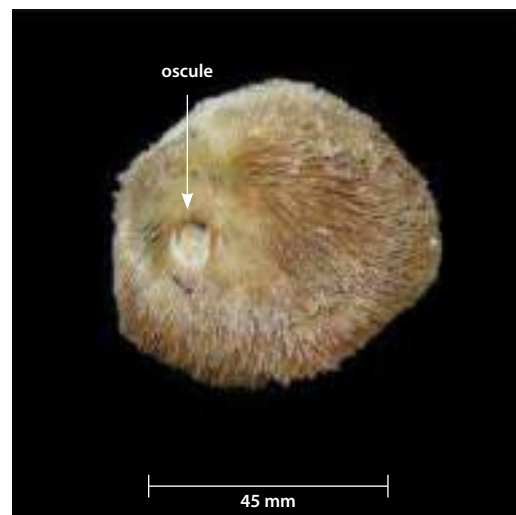
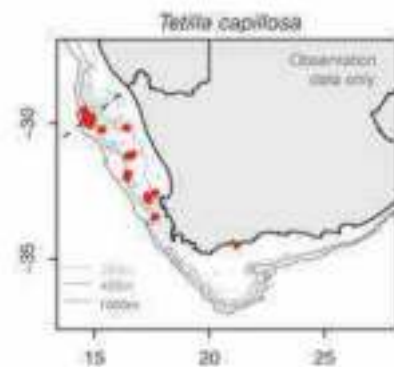
Lendenfeld R Von. 1907. Die Tetraxonia. *Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf der Dampfer Valdivia 1898-1899*. 11 (1-2): i-iv, 59-374, pls IX-XLVI. pp. 227-229.

Lévi C. 1967. Spongiaires d'Afrique du Sud. (3) Tetractinellides. *Transactions of the Royal Society of South Africa* 37: 227-256, pls XVII-XIX. p. 246.

Uriz MJ. 1988. Deep-water sponges from the continental shelf and slope off Namibia (Southwest Africa): Classes Hexactinellida and Demospongia. *Monografías de Zoología Marina* 3: 9-157. pp. 31-32.

***Tetilla capillosa* (TetCap)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Tetractinellida
Family:	Tetillidae
Genus:	<i>Tetilla</i>
Species:	<i>capillosa</i>
Common name:	Furry sponge

**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

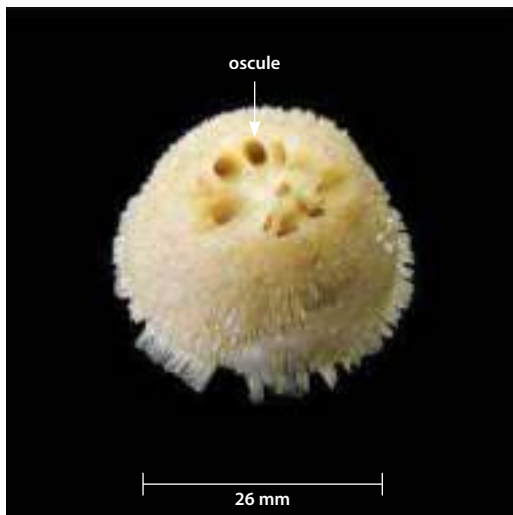
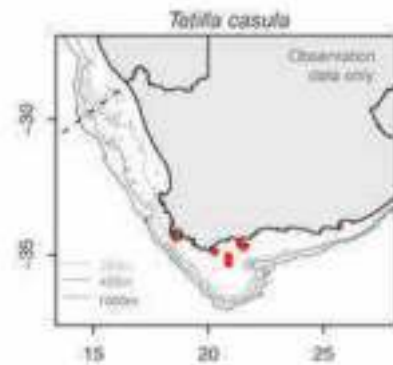
Tetilla casula, which has a flat base and is dome-shaped. Projecting spicules of *T. capillosa* are soft and fuzzy, hence commonly called “furry”. *T. capillosa* has a single oscule slightly offset from centre, while *T. casula* has a cluster of oscules at the apex centre.

References

- Lévi C. 1967. Spongiaires d'Afrique du Sud. (3) Tetractinellides. *Transactions of the Royal Society of South Africa* 37: 227-256, pls XVII-XIX. pp. 250-251.
- Uriz MJ. 1987. Sponges from the South-West of Africa: description of species. pp. 54-73. In: Jones WC. Ed. *European Contributions to the Taxonomy of Sponges*. Sherkin Island Marine Station: Sherkin Island, County Cork: 1-140. p. 55.
- Uriz MJ. 1988. Deep-water sponges from the continental shelf and slope off Namibia (Southwest Africa): Classes Hexactinellida and Demospongia. *Monografias de Zoología Marina* 3: 9-157. p. 36.

Tetilla casula (TetCas)

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Tetractinellida
Family:	Tetillidae
Genus:	<i>Tetilla</i>
Species:	<i>casula</i>
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

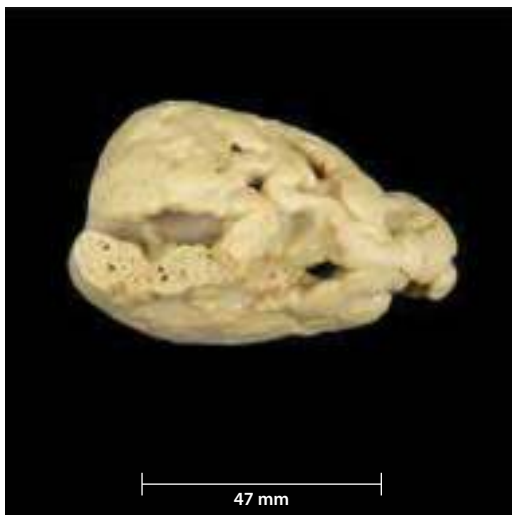
Tetilla capillosa, however *T. casula* has a more distinctly flattened base and dome-shape with softer spicules. *T. capillosa* has a single oscule slightly offset from centre, while *T. casula* has a cluster of oscules at the apex centre.

References

- Carter HJ. 1871. Description and Illustrations of a new Species of *Tethya*, with Observations on the Nomenclature of the Tethyadae. *Annals and Magazine of Natural History* (4) 8(44): 99-105, pl. IV. pp. 99-103.
- Kirkpatrick R. 1902. Descriptions of South African Sponges. Part I. *Marine Investigations in South Africa* 1: 219-232, pls I-III. pp. 226-227.
- Lévi C. 1967. Spongiaires d'Afrique du Sud. (3) Tetractinellides. *Transactions of the Royal Society of South Africa* 37: 227-256, pls XVII-XIX. pp. 248-249.

***Trachycladus spinispirulifer* (TruSpi)**

Phylum:	Porifera
Class:	Demospongiae
Subclass:	Heteroscleromorpha
Order:	Trachycladida
Family:	Trachycladidae
Genus:	<i>Trachycladus</i>
Species:	<i>spinispirulifer</i>
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

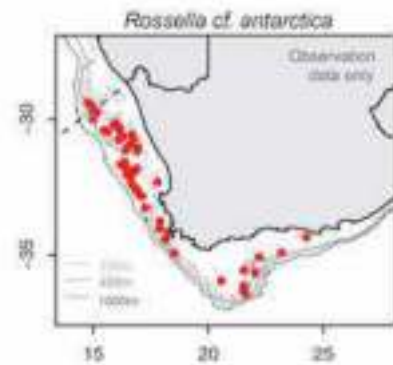
- Carter HJ. 1879. Contributions to our Knowledge of the Spongida. *Annals and Magazine of Natural History* (5) 3: 284-304, 343-360, pls XXV-XXVII. pp. 345-346.
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- Uriz MJ. 1988. Deep-water sponges from the continental shelf and slope off Namibia (Southwest Africa): Classes Hexactinellida and Demospongia. *Monografias de Zoología Marina* 3: 9-157. p. 47.

Phylum: Porifera

Potential VME

***Rossella cf. antarctica* (RosAnt)**

Phylum:	Porifera
Class:	Hexactinellida
Subclass:	Hexasterophora
Order:	Lyssacinosida
Family:	Rossellidae
Genus:	<i>Rossella</i>
Species:	<i>cf. antarctica</i>
Common name:	Glass sponge



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.

Similar species

None.

References

Carter HJ. 1872. On two new sponges from the Antarctic Sea, and on a new species of *Tethya* from Shetland; together with observations on the reproduction of sponges commencing from zygosis of the sponge animal. *Annals and Magazine of Natural History* (4) 9(54): 409-435, pls XX-XXII. pp. 414-417.

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PHYLUM: CNIDARIA

Authors

Kerry Sink¹, Mark Gibbons², Megan Laird³, and Lara Atkinson⁴

Citation

Sink KJ, Gibbons MJ, Laird MC and Atkinson LJ. 2017. Phylum Cnidaria In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates of South Africa, Malachite Marketing and Media, Pretoria, pp. 65-115.

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Phylum: CNIDARIA

Anemones, corals, sea fans, sea pens, hydroids and jellyfish

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 medusa (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 menthyl 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 Hexacorallia (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 menthyl crystal solution to allow the polyps to expand. The colony should also be photographed in good light. If the colony is large, preserve a small portion in 96% ethanol and dry remaining specimen with a label attached.

Black corals (Order Antipatharia of subclass Hexacorallia) are not included in the guide currently, but may be encountered and recognised by their dark spiny or sandpapery 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 $MgCl_2$ 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.

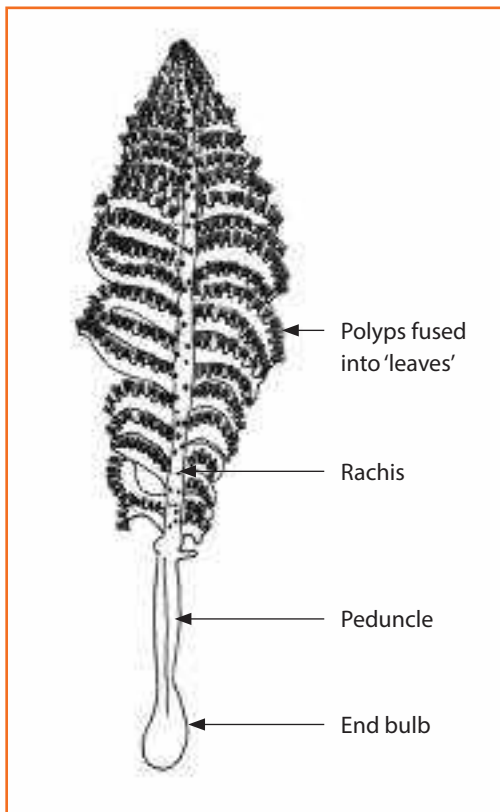
Collection and preservation

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

References

- Cairns SD. 2007. Deep-water corals: an overview with special reference to diversity and distribution of deep-water scleractinian corals. *Bulletin of Marine Science*, 81(3), pp. 311-322.
- Cairns SD. 2011. Global Diversity of the Stylasteridae (Cnidaria: Hydrozoa: Athecatae). *PLoS ONE* 6(7): e21670. doi:10.1371/journal.pone.0021670.
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- Williams GC. 2011. The Global Diversity of Sea Pens (Cnidaria: Octocorallia: Pennatulacea). *PLoS ONE* 6(7): e22747. doi:10.1371/journal.pone.0022747.
- Zhang Z-Q. 2011. Animal biodiversity: An introduction to higher-level classification and taxonomic richness. *Zootaxa* 3148: 7–12.

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

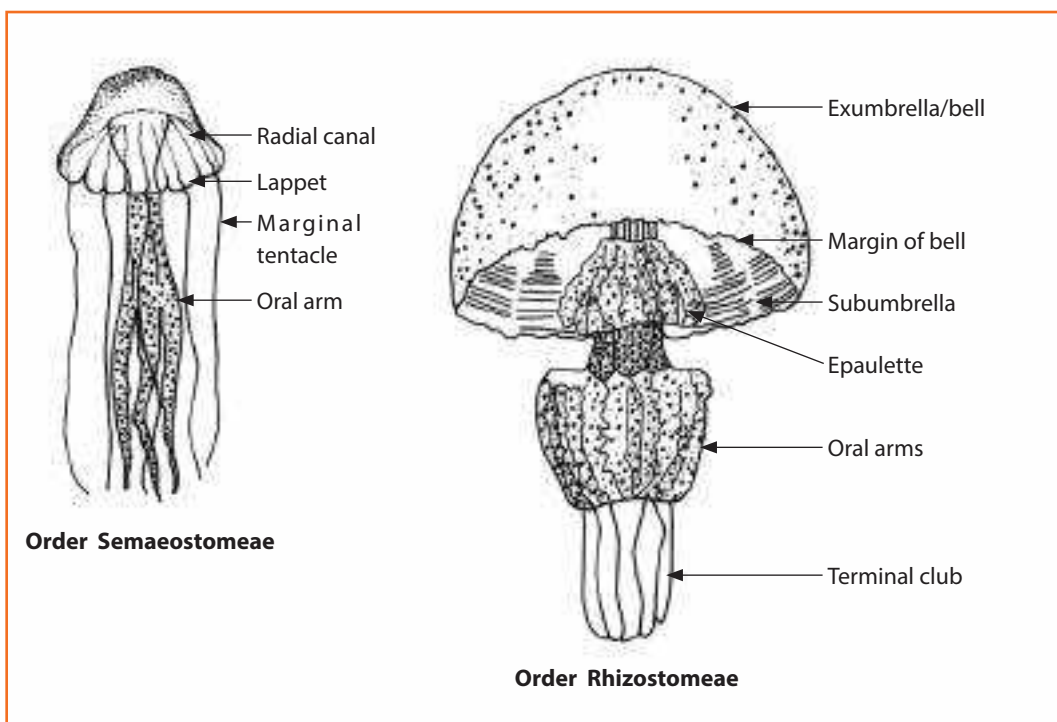
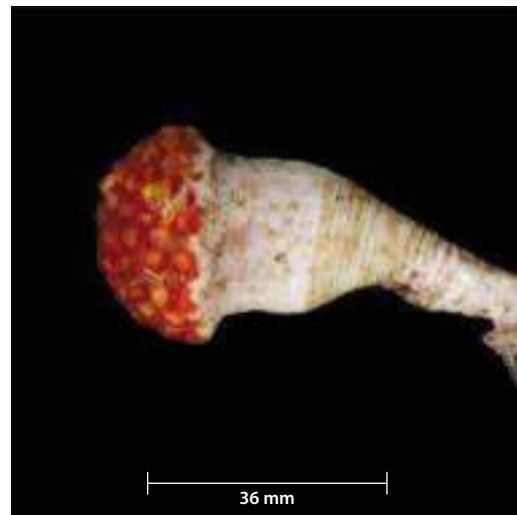
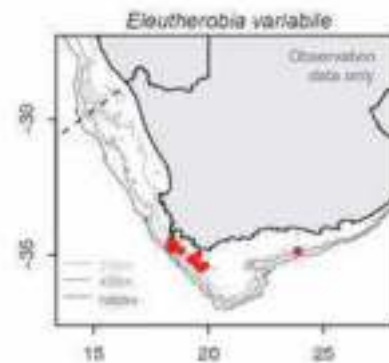


Diagram adapted from Cornelius, 1997, with permission.

***Eleutherobia variable* (EleVar)**

Phylum:	Cnidaria
Class:	Anthozoa Subclass: Octocorallia
Order:	Alcyonacea
Suborder:	Alcyoniina
Family:	Alcyoniidae
Genus:	<i>Eleutherobia</i>
Species:	<i>variable</i>
Common name:	Mushroom soft coral

**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

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

References

Fabricius KE and Alderslade P. 2001. *Soft corals and sea fans: a comprehensive guide to the tropical shallow water genera of the central-west Pacific, the Indian Ocean and the Red Sea*. Australian Institute of Marine Science (AIMS). pp. 100-101.

McFadden CS and Ofwegen LP. 2013. Molecular phylogenetic evidence supports a new family of octocorals and a new genus of Alcyoniidae (Octocorallia, Alcyoniidae). *ZooKeys* 346:59-83.

Williams GC. 1986. A new species of the octocorallian genus *Alcyonium* (Anthozoa: Alcyonacea) from southern Africa, with a revised diagnosis of the genus. *Journal of Natural History* 20(1), pp. 53-63.

Williams GC. 1992. The Alcyonacea of Southern Africa: Stoloniferous Octocorals and Soft Corals (Coelenterata, Anthozoa). *Annals of the South African Museum* 100:3. p. 295.

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

Gersemia liltvedi (EunThy)

Phylum:	Cnidaria
Class:	Anthozoa Subclass: Octocorallia
Order:	Alcyonacea
Suborder:	Alcyoniina
Family:	Nephtheidae
Genus:	<i>Gersemia</i>
Species:	<i>liltvedi</i>
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

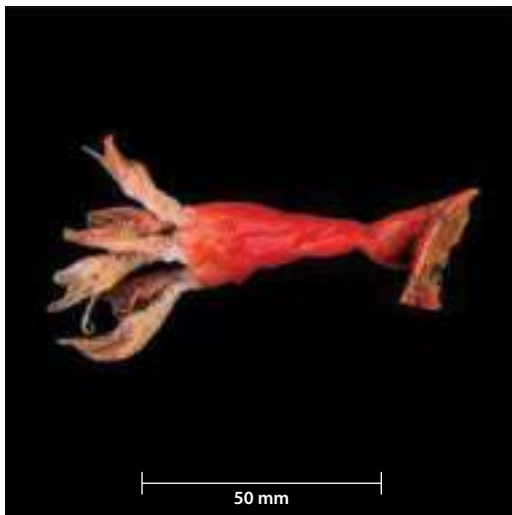
McFadden CS and Ofwegen LP. 2012. A revision of the soft coral genus, *Eunephthya* Verrill, 1869 (Anthozoa: Octocorallia: Nephtheidae), with a description of four new species from South Africa. *Zootaxa* 3485(1):1-25.

Williams GC and Lundsten L. 2009. The nephtheid soft coral genus *Gersemia* Marenzeller, 1878, with the description of a new species from the northeast Pacific and a review of two additional species (Octocorallia: Alcyonacea). *Zoologische Mededelingen* 83: 1067-1081.

Identification confirmed by Prof. Phil Alderslade, June 2015.

***Anthomastus giganteus* (AntGig)**

Phylum:	Cnidaria
Class:	Anthozoa Subclass: Octocorallia
Order:	Alcyonacea
Suborder:	Alcyoniina
Family:	Alcyoniidae
Genus:	<i>Anthomastus</i>
Species:	<i>giganteus</i>
Common name:	Gigantic soft coral

**Distinguishing features**

Large, fleshy, erect polyps arising from one elongate stalk. Polyps of one type (autozooids) 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 *Gersemia* spp. have smaller polyps and colonies are more tree- or cauliflower-like.

References

Williams GC. 1992. The Alcyonacea of Southern Africa: Stoloniferous Octocorals and Soft Corals (Coelenterata, Anthozoa). *Annals of the South African Museum* 100:3. p. 302.

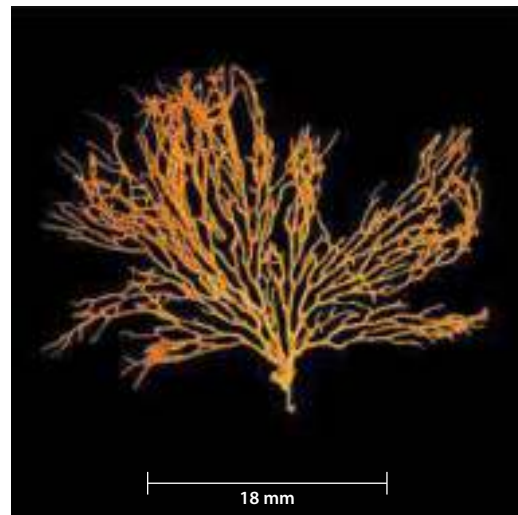
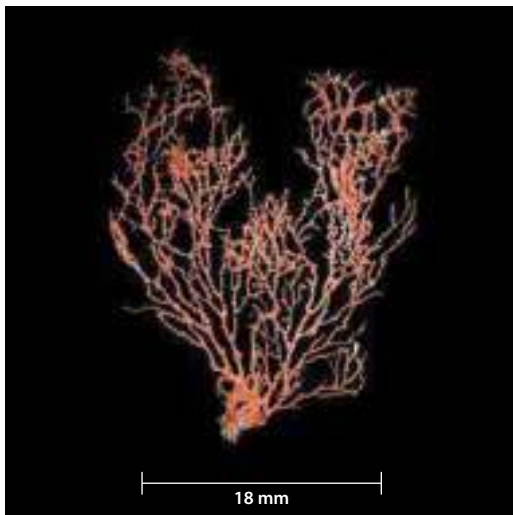
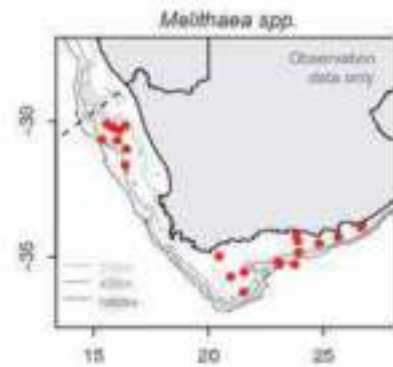
Identification confirmed by Prof. Phil Alderslade, June 2015.

Phylum: Cnidaria

Potential VME

Melithaea spp. (Melith)

Phylum:	Cnidaria
Class:	Anthozoa Subclass: Octocorallia
Order:	Alcyonacea
Suborder:	Scleraxonia
Family:	Melithaeidae
Genera:	<i>Melithaea</i>
Species:	spp.
Common name:	Colourful sea fan



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 sclerites 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*, *Melitheia* 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

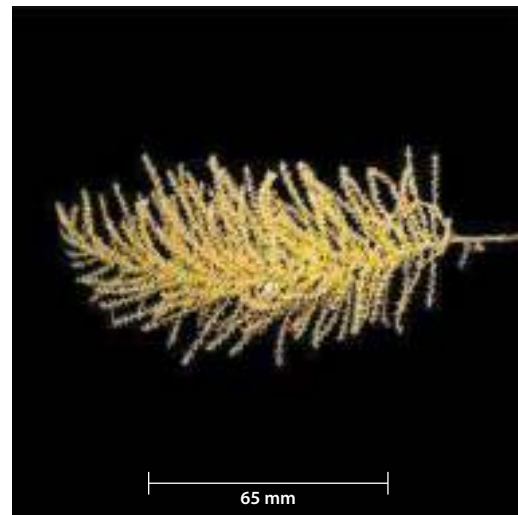
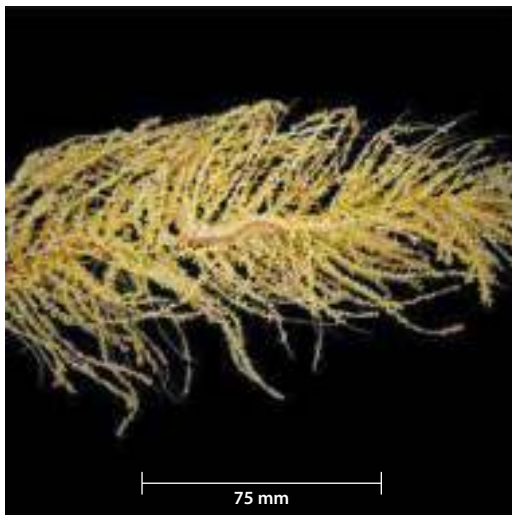
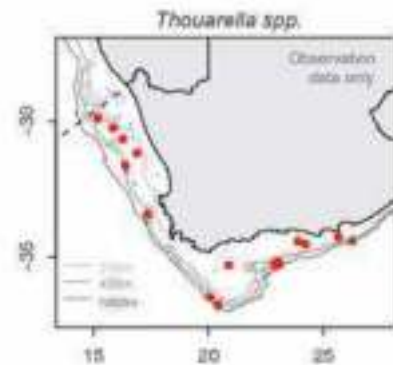
Sea fans can be confused with hydroids, bamboo corals or black corals. The stem is woodier than the darker pricklier stem of black corals. Hydroids are usually brown, grey or yellow, lack the bright colour of sea fans and their stem is usually woodier than that of live sea fans. Bamboo corals have white,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

References

Williams GC. 1992. The Alcyonacea of Southern Africa. Gorgonian octocorals (Coelenterata, Anthozoa). *Annals of the South African Museum* 101 (8).

Potential VME***Thouarella* spp. (ThoSpp)**

Phylum:	Cnidaria
Class:	Anthozoa Subclass: Octocorallia
Order:	Alcyonacea
Suborder:	Calcaxonia
Family:	Primnoidae
Genera:	<i>Thouarella</i>
Species:	spp.
Common name:	Bottlebrush sea fan

**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

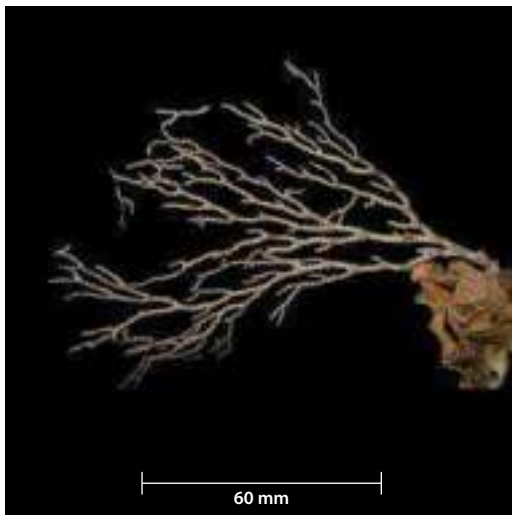
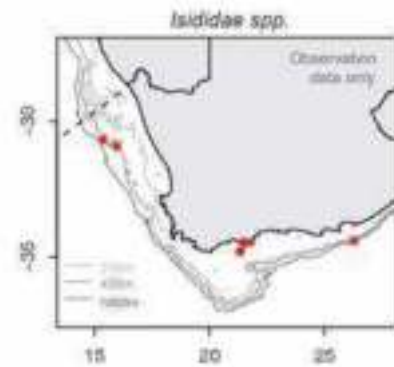
Taylor ML, Cairns SD, Agnew DJ and Rogers AD. 2013. A revision of the genus *Thouarella* Gray, 1870 (Octocorallia: Primnoidae), including an illustrated dichotomous key, a new species description, and comments on *Plumarella* Gray, 1870 and *Dasystenella*, Versluys, 1906. *Zootaxa* 3602 (1) 1-105.

Williams GC. 1992. The Alcyonacea of Southern Africa. Gorgonian octocorals (Coelenterata, Anthozoa). *Annals of the South African Museum* 101 (8).

Potential VME

Bamboo coral (Bamboo)

Phylum:	Cnidaria
Class:	Anthozoa Subclass: Octocorallia
Order:	Alcyonacea
Suborder:	Calcaxonia
Family:	Isididae
Genera:	-
Species:	-
Common name:	Bamboo coral



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 sandpapery 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.

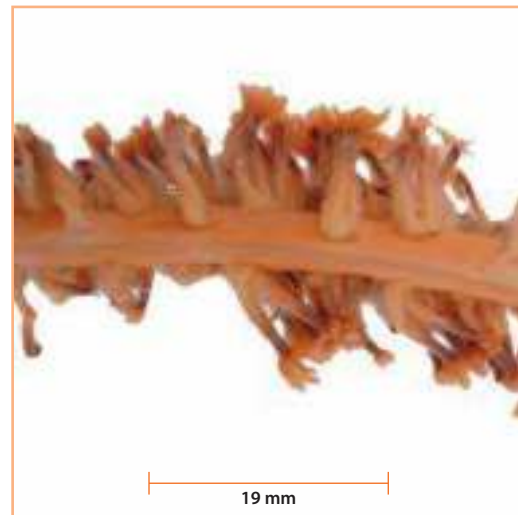
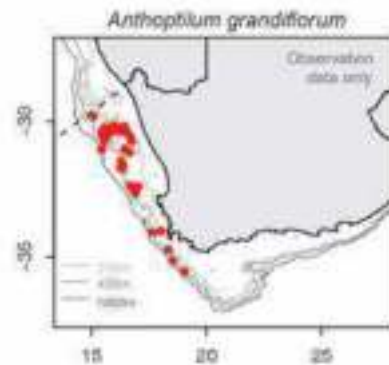
References

Fabricius KK and Alderslade PP. 2001. *Soft corals and sea fans: a comprehensive guide to the tropical shallow water genera of the central-west Pacific, the Indian Ocean and the Red Sea*. Australian Institute of Marine Science. p. 64.

Williams GC. 1992. The Alcyonacea of Southern Africa. Gorgonian octocorals (Coelenterata, Anthozoa). *Annals of the South African Museum* 101 (8).

Potential VME***Anthoptilum grandiflorum* (Virgil)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Octocorallia
Order:	Pennatulacea
Family:	Anthoptilidae
Genus:	<i>Anthoptilum</i>
Species:	<i>grandiflorum</i>
Common name:	Large sea pen

**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

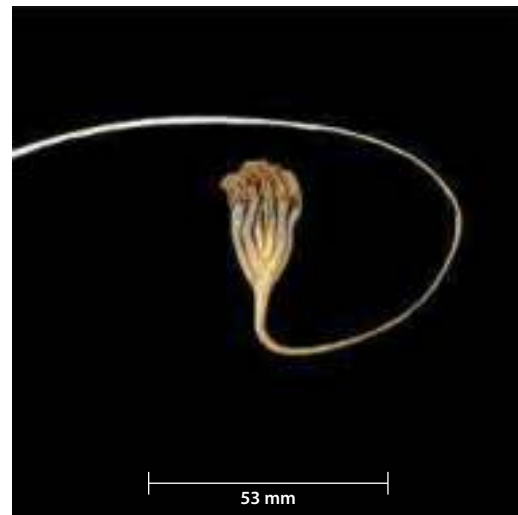
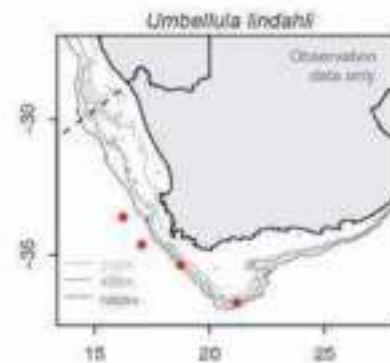
None.

References

Williams GC. 1990. The Pennatulacea of Southern Africa (Coelenterata, Anthozoa). *Annals of the South African Museum* 99 (4).

Umbellula lindahli (UmbLin)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Octocorallia
Order:	Pennatulacea
Family:	Umbellulidae
Genus:	<i>Umbellula</i>
Species:	<i>lindahli</i>
Common name:	Umbrella sea pen



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

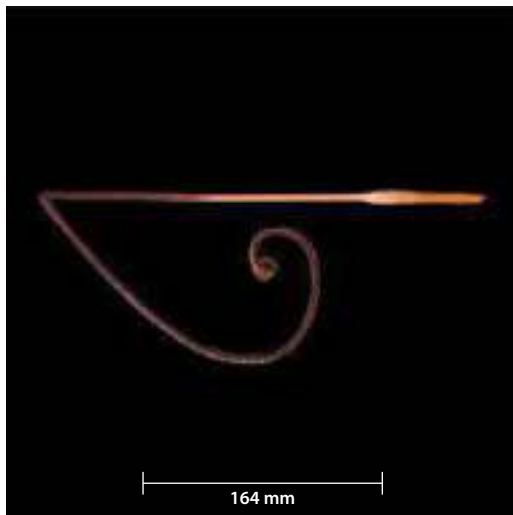
Umbellula thompsoni (10 autozooids of 10-15 mm length) and other species may be present in South Africa. Please retain potential new records.

References

- Williams GC. 1990. The Pennatulacea of Southern Africa (Coelenterata, Anthozoa). *Annals of the South African Museum* 99 (4).
- Williams GC. 2011. The Global Diversity of Sea Pens (Cnidaria: Octocorallia: Pennatulacea). *PLoS ONE* 6(7): e22747. doi:10.1371/journal.pone.0022747.

***Halipteris africana* (Virgul)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Octocorallia
Order:	Pennatulacea
Family:	Halipteridae
Genus:	<i>Halipteris</i>
Species:	<i>africana</i>
Common name:	Whip sea pen

**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.

Similar species

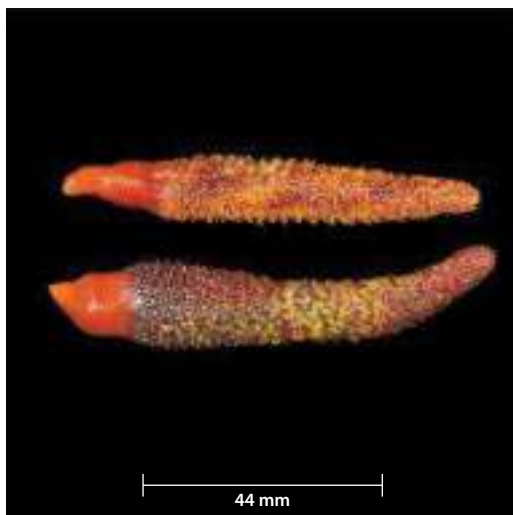
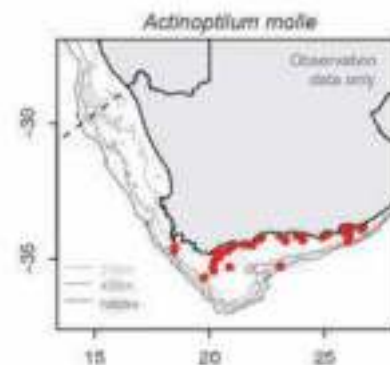
Virgularia species from South Africa are generally shorter with fleshier polyps and are more common in shallower water. There are other unidentified *Halipteris* species known from South Africa.

Reference

Williams GC. 1990. The Pennatulacea of Southern Africa (Coelenterata, Anthozoa). *Annals of the South African Museum* 99 (4).

Actinoptilum molle (ActMol)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Octocorallia
Order:	Pennatulacea
Family:	Echinoptilidae
Genus:	<i>Actinoptilum</i>
Species:	<i>molle</i>
Common name:	Radial sea pen



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

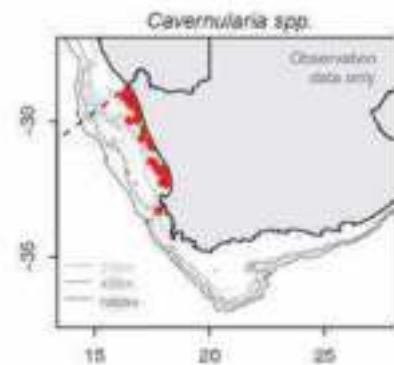
Cavernularia spp., but polyps distributed over more of body and polyps usually retracted on deck. Compared to *Veretillum* spp., *A. molle* has a radially symmetrical rachis.

References

- Williams GC. 1990. The Pennatulacea of Southern Africa (Coelenterata, Anthozoa). *Annals of the South African Museum* 99 (4).
- Williams GC. 2011. The Global Diversity of Sea Pens (Cnidaria: Octocorallia: Pennatulacea). *PLoS ONE* 6(7): e22747. doi:10.1371/journal.pone.0022747.

***Cavernularia* spp. (SeaPen)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Octocorallia
Order:	Pennatulacea
Family:	Veretillidae
Genus:	<i>Cavernularia</i>
Species:	spp.
Common name:	Small sea pen

**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

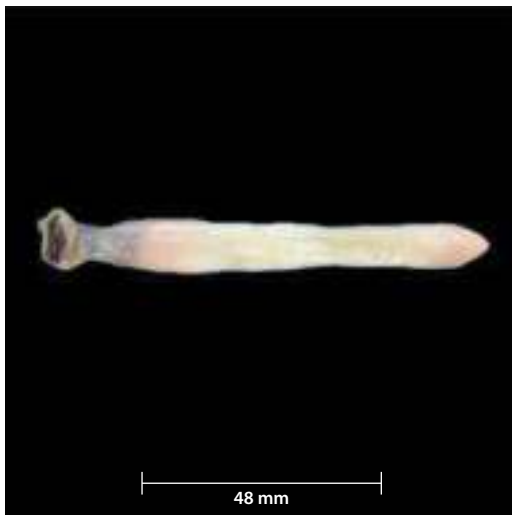
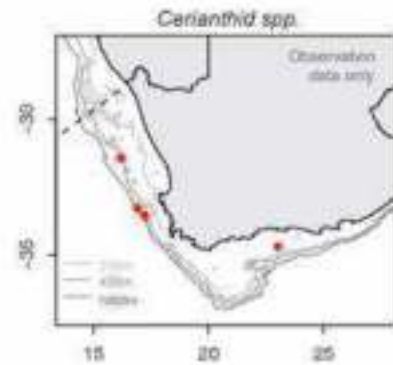
Actinoptilum molle, but *Cavernularia* spp. has polyps projecting along only half of the body whereas *A. molle* has polyps over about three quarters of the colony.

Reference

Williams GC. 1990. The Pennatulacea of Southern Africa (Coelenterata, Anthozoa). *Annals of the South African Museum* 99 (4).

Cerianthid spp. (Cerran)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Ceriantharia
Order:	Spirularia
Family:	Cerianthidae
Genus:	Cerianthid
Species:	spp.
Common name:	Burrowing anemone



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.

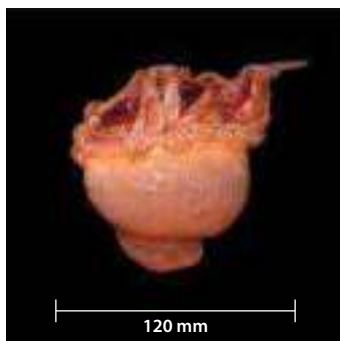
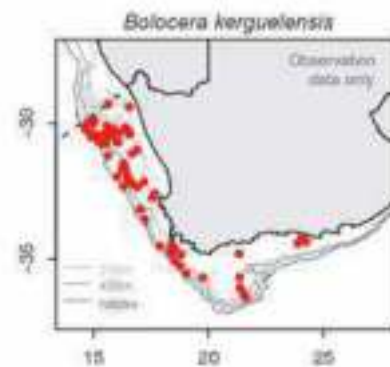
References

Hartog JC den. 1977. Descriptions of two new Ceriantharia from the Caribbean region, *Pachycerianthus curacaoensis* n. sp. and *Arachnanthus nocturnus* n. sp., with a discussion of the cnidom and of the classification of the Ceriantharia. *Zoologische Mededelingen* 51(14): 211-242.

Molodtsova TN, Griffiths CL and Acuña FH. 2011. A new species of shallow-water cerianthid (Cnidaria: Anthozoa) from South Africa, with remarks on the genus *Ceriantheopsis*. *African Natural History* 7(1) pp.1-8.

***Bolocera kerguelensis* (Anemo2)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Actiniidae
Genus:	<i>Bolocera</i>
Species:	<i>kerguelensis</i>
Common name:	Blush/Coral anemone

**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.

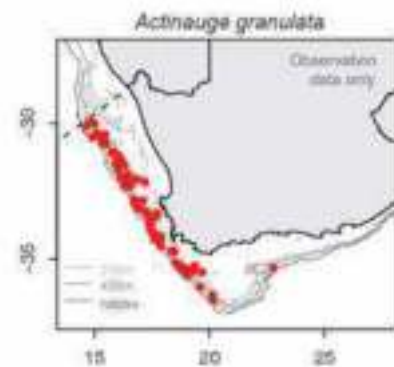
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actiniaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1): 15-37.

Actinauge granulata (ActRic)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Hormathiidae
Genus:	<i>Actinauge</i>
Species:	<i>granulata</i>
Common name:	White anemone



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.

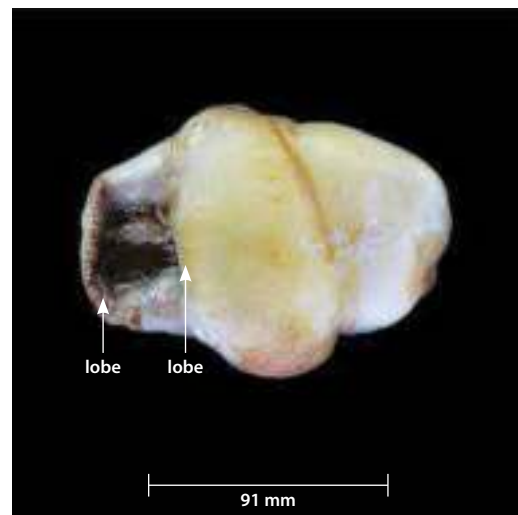
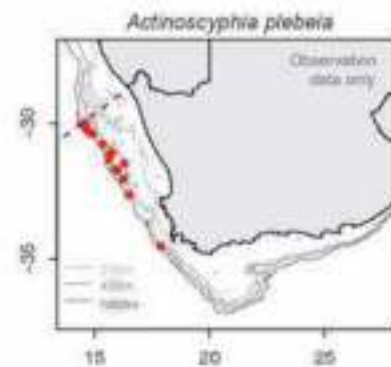
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actiniaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1) 15-37.

***Actinoscyphia plebeia* (Anemo3)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Actinoscyphiidae
Genus:	<i>Actinoscyphia</i>
Species:	<i>plebeia</i>
Common name:	Maroon anemone

**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.

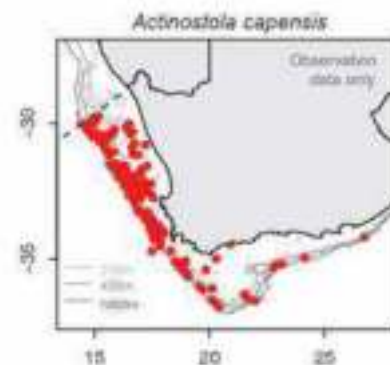
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actiniaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1) 15-37.

Actinostola capensis (Anemo1)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Actinostolidae
Genus:	<i>Actinostola</i>
Species:	<i>capensis</i>
Common name:	Pink/Orange jelly anemone



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.

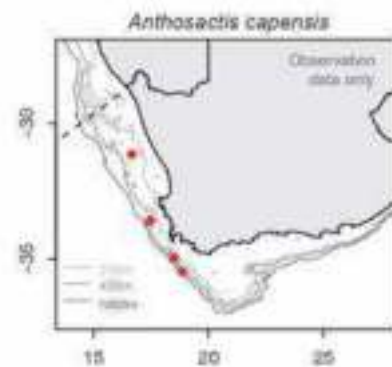
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actinaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1) 15-37.

***Anthosactis capensis* (AntCap)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Amphianthidae
Genus:	<i>Anthosactis</i>
Species:	<i>capensis</i>
Common name:	Small cup/Rose anemone

**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 algaensis* due to lack of acontia. Broad, cup-shaped oral disc distinguishable from that of *Actinostola capensis* and *Halcurias capensis*.

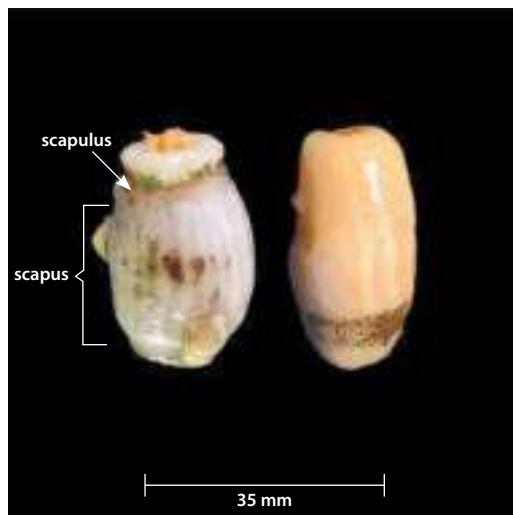
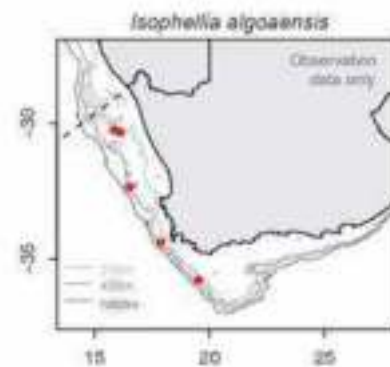
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actiniaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1) 15-37.

Isophellia algaensis (IsoAlg)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Isophelliidae
Genus:	<i>Isophellia</i>
Species:	<i>algaensis</i>
Common name:	Rugby ball anemone



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 - 240 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.

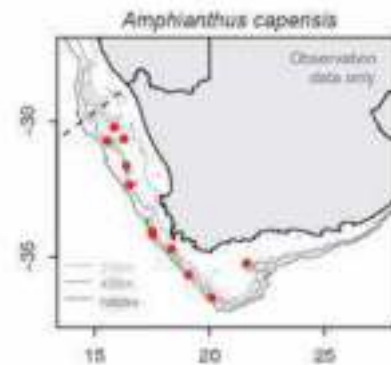
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actinaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1) 15-37.

***Amphianthus capensis* (AmpCap)**

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

**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.

Similar species

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

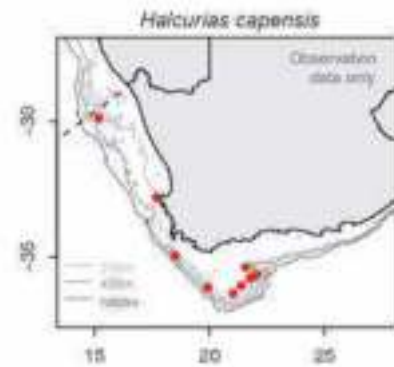
References

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Laird MC. and Griffiths CL. 2016. Additions to the South African sea anemone (Cnidaria, Actiniaria) fauna, with expanded distributional ranges for known species. *African Invertebrates* 57(1) 15-37.

Halcurias capensis (HalCap)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Actiniaria
Family:	Halcuriidae
Genus:	<i>Halcurias</i>
Species:	<i>capensis</i>
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

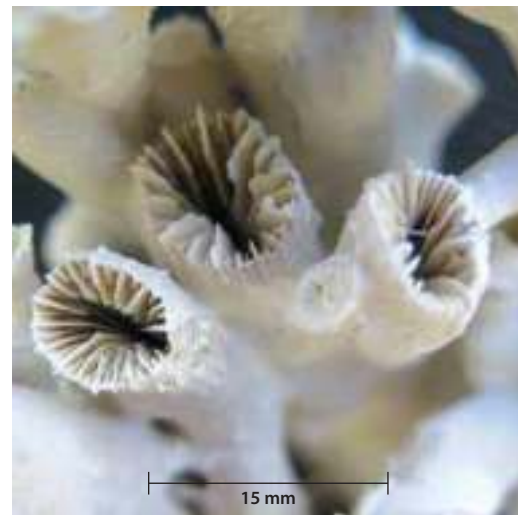
Anthosactis capensis which is broader, has a cup-shaped oral disc and lacks ridges. Unlike *Actinostola capensis*, *Halcurias capensis* does not release slime.

Reference

Laird MC. 2013. *Taxonomy, Systematics and Biogeography of South African Actiniaria and Corallimorpharia*. Unpublished PhD thesis. University of Cape Town.

Potential VME***Lophelia pertusa* (LopPer)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Caryophylliidae
Genus:	<i>Lophelia</i>
Species:	<i>pertusa</i>
Common name:	Reef-building cold water coral

**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 39-2 775 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 extratentacular 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.

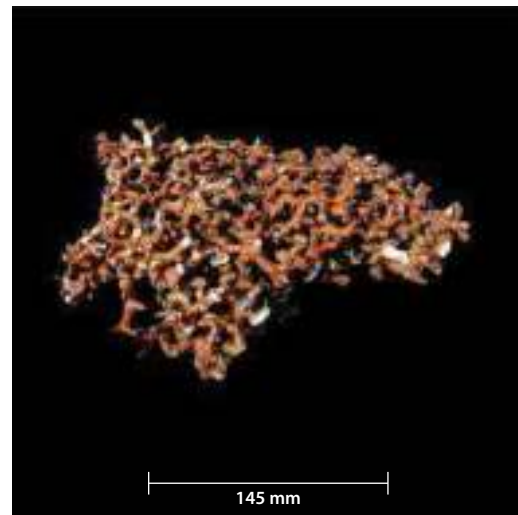
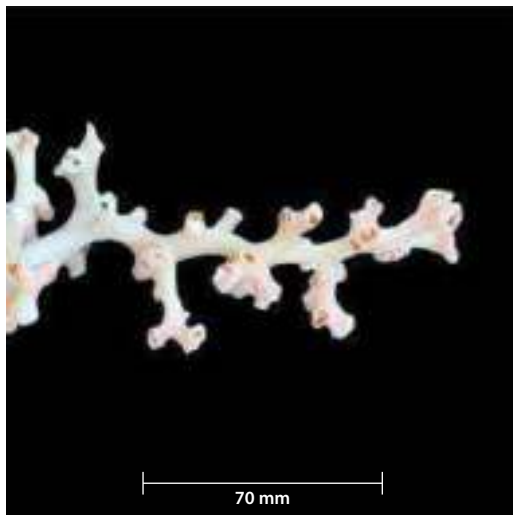
References

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612.

Potential VME

Solenosmilia cf. *variabilis* (Solen)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Caryophylliidae
Genus:	<i>Solenosmilia</i>
Species:	cf. <i>variabilis</i>
Common name:	Thicket coral



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 Pourtales 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.

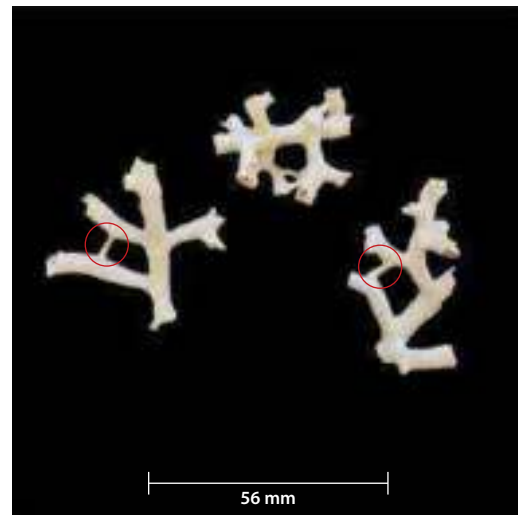
References

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612. p. 23.

Cairns SD and Polonio V. 2013. New records of deep-sea Scleractinia off Argentina and the Falkland Islands. *Zootaxa* 3691(1): 58-86.

Potential VME***Goniocorella dumosa* (Gonio)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Caryophylliidae
Genus:	<i>Goniocorella</i>
Species:	<i>dumosa</i>
Common name:	Fine bridge coral

**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.

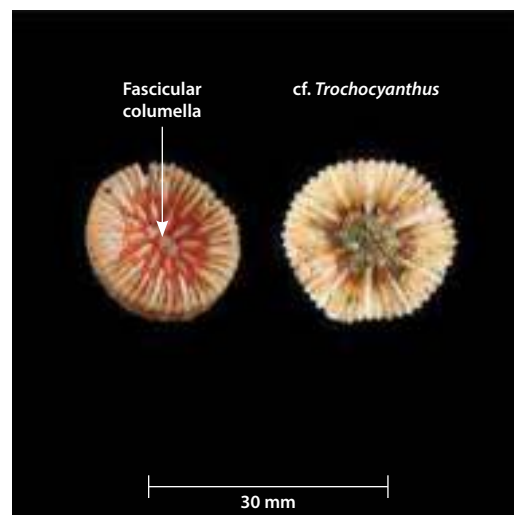
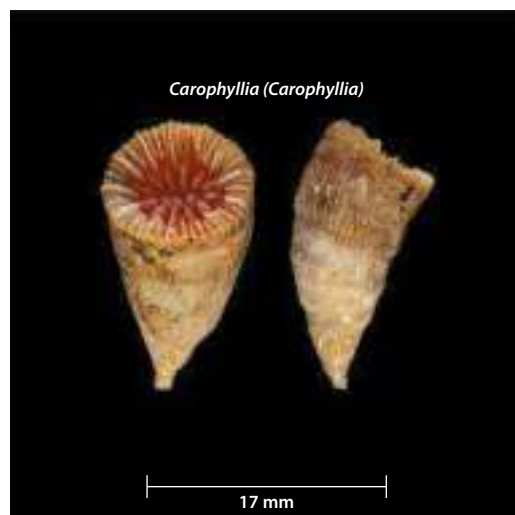
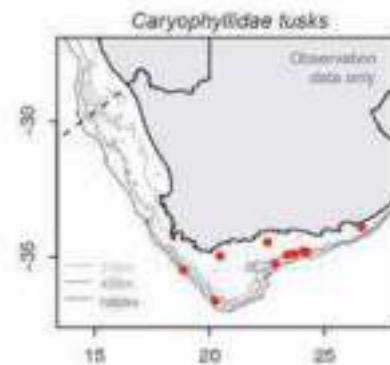
References

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612. p. 23.

Roberts JM, Wheeler A, Freiwald A and Cairns SD. 2009. *Cold-Water Corals: The Biology and Geology of Deep-Sea Coral Habitats*. p. 32. Cambridge University Press.

Caryophyllidae tusks (Caryo)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Caryophyllidae
Genera:	<i>Caryophyllia</i> / <i>Trochocyathus</i>
Species:	spp.
Common name:	Small solitary tusk (conical) corals



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 (fascicular) 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. fascicular), 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

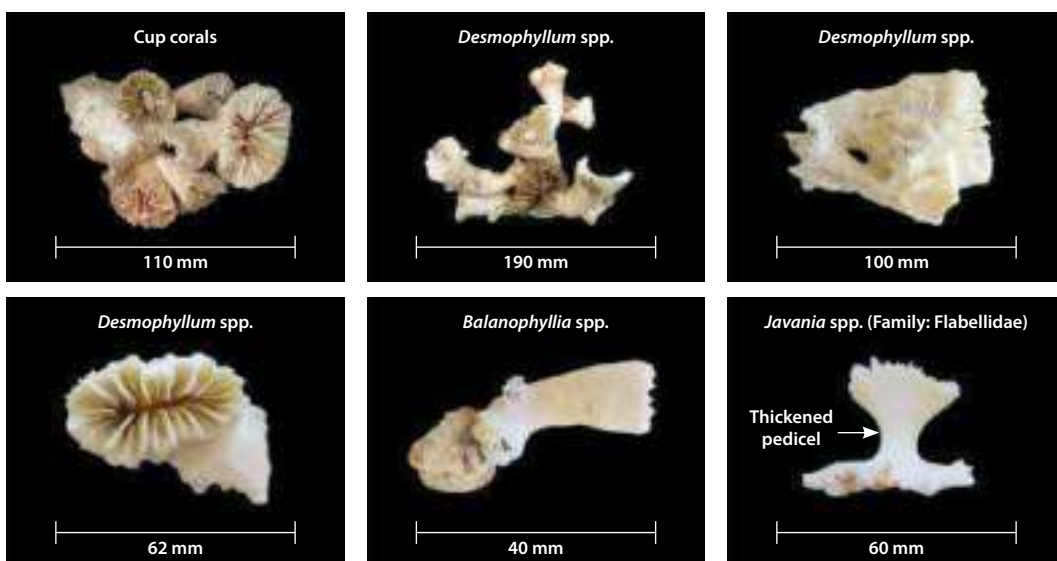
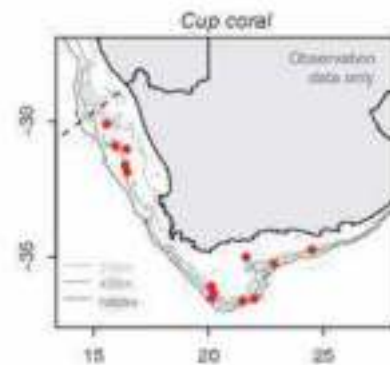
Other small solitary cup corals such as *Conotrochus* (Caryophyllidae, also with a fascicular columella) lack a firm attachment point. Identification requires careful examination of septa. *Sphenotrochus* (Family Turbinoliidae) are usually smaller, with a rounded base and seem to be seldom collected 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 (Pourtales plan). *Javania* (Flabellidae) has a reinforced pedicel (area just above base).

References

- Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612. p. 23.
- 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:	<i>Desmophyllum</i> , <i>Caryophyllia</i> , <i>Balanophyllia</i> , <i>Rhizosmilia</i> , <i>Rhizopsammia</i> 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).

Colour

White.

Size

Up to 200 mm in diameter.

Distribution

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

Similar species

Rhizotrochus 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 sandpaper texture of the 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 (papillose) in *Trochocyathus* and a set of twisted plates (fascicular) in *Carophyllia* (*Carophyllia*).

References

Cairns SD and Keller NB. 1993. New taxa and distributional records of azooxanthellate scleractinia (Cnidaria, Anthozoa) from the tropical South-west Indian Ocean, with comments on their zoogeography and ecology. *Annals of the South African Museum* Volume 103(5), pp. 213-292.

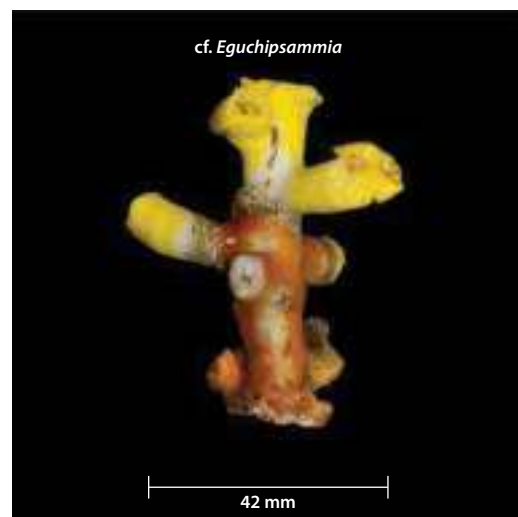
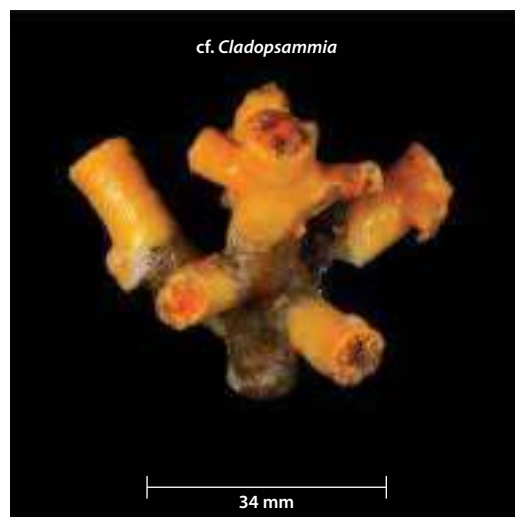
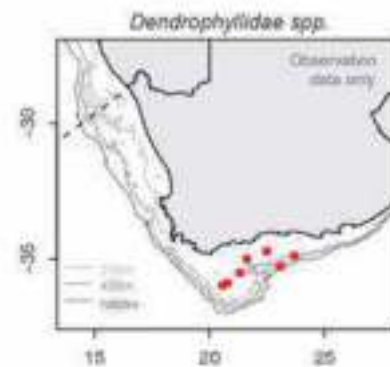
Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612.

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

Potential VME

Dendrophyllidae spp. (CorDen)

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Dendrophylliidae
Genus:	<i>Cladopsammia</i> and <i>Eguchipsammia</i>
Species:	cf. spp.
Common name:	Right angled corals



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

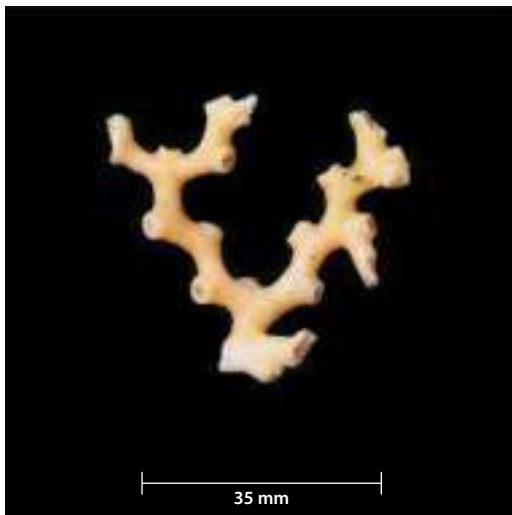
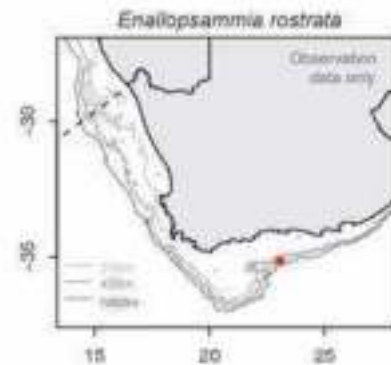
Tubastraea spp. have normally arranged rather than fused septa and are usually from shallower water (<110m). *Dendrophyllia* spp. also have septa arranged in a Pourtalès plan and have multiple successive generations of budding that form an erect colony (arborescent or tree-like rather than bushy) or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

Reference

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612.

Potential VME***Enallopsammia rostrata* (Enallo)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Dendrophyllidae
Genus:	<i>Enallopsammia</i>
Species:	<i>rostrata</i>
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.

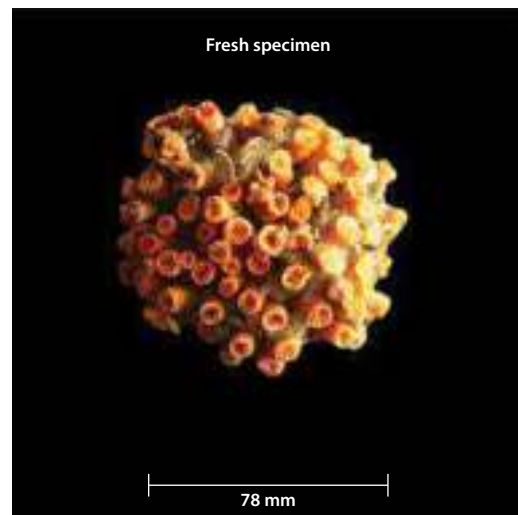
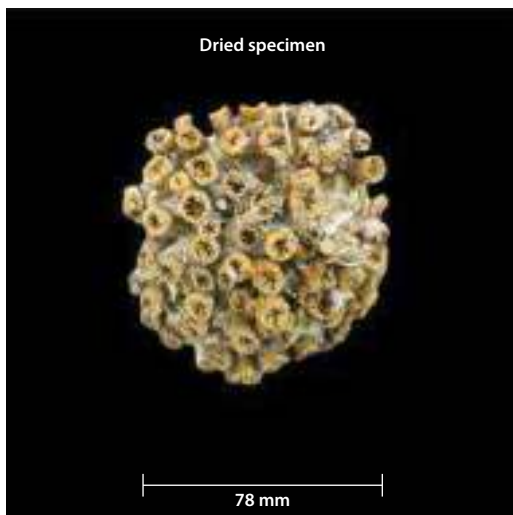
References

Cairns SD and Keller NB. 1993. New taxa and distributional records of azooxanthellate scleractinia (Cnidaria, Anthozoa) from the tropical South-west Indian Ocean, with comments on their zoogeography and ecology. *Annals of the South African Museum* Volume 103 Part 5.

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612.

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

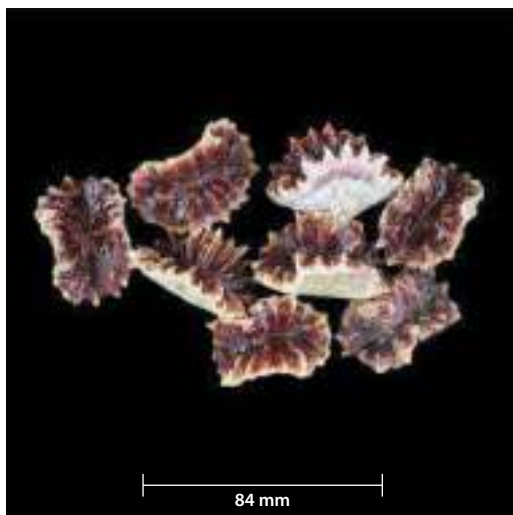
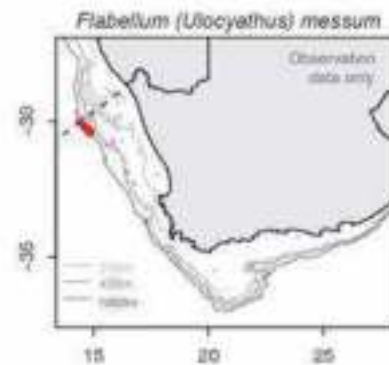
Tubastrea known only from less than 110 m.

Reference

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227. 1-47 doi:10.3897/zookeys.227.3612. p. 23.

***Flabellum (Ulocyathus) messum* (Flabel)**

Phylum:	Cnidaria
Class:	Anthozoa
Subclass:	Hexacorallia
Order:	Scleractinia
Family:	Flabellidae
Genera:	<i>Flabellum (Ulocyathus)</i>
Species:	<i>messum</i>
Common name:	Folded cup corals

**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

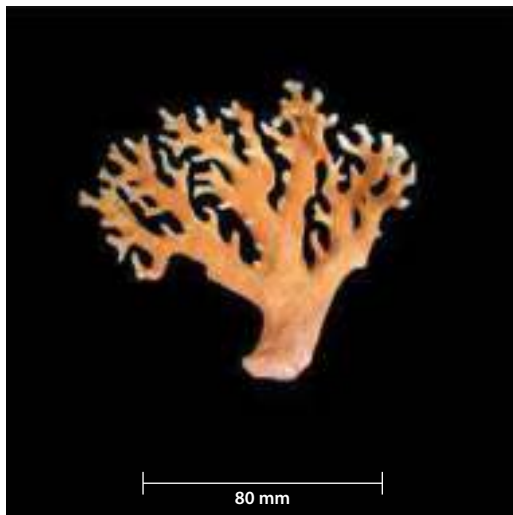
Cairns SD and Keller NB. 1993. New taxa and distributional records of azooxanthellate Scleractinia (Cnidaria, Anthozoa) from the tropical south-west Indian Ocean, with comments on their zoogeography and ecology. *Annals of the South African Museum*, 103(5):213-292.

Cairns SD and Kitahara MV. 2012. An illustrated key to the genera and subgenera of the Recent azooxanthellate Scleractinia (Cnidaria, Anthozoa), with an attached glossary. *ZooKeys* 227: 1-47 doi:10.3897/zookeys.227.3612.

Potential VME

Stylaster nobilis (Allopo)

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Anthoathecata Suborder: Filifera
Family:	Stylasteridae
Genus:	<i>Stylaster</i>
Species:	<i>nobilis</i>
Common name:	Noble coral



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.

Colour

Usually light pink to rose, or bright pink with characteristic white tips.

Size

Colonies can be up to 500 mm in size, but trawled specimens likely to be in pieces of varying size.

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.

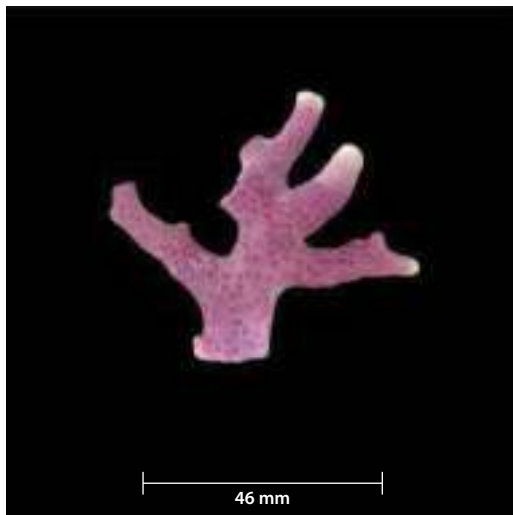
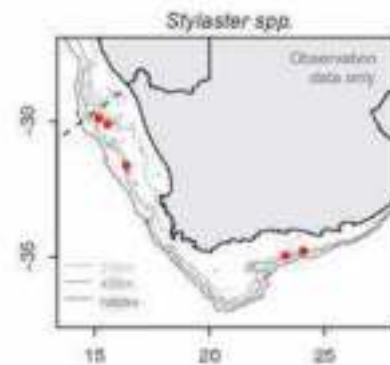
Reference

Cairns SD and Zibrowius H. 2013. Stylasteridae (Cnidaria, Hydrozoa, Filifera) from South Africa. *Zootaxa* 3691 (1):001-057.

Potential VME

Stylaster spp. (Stylas)

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Anthoathecata Suborder: Filifera
Family:	Stylasteridae
Genera:	<i>Stylaster</i>
Species:	spp.
Common name:	Fine branching hydrocoral

**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.

Colour

These species range from white to grey brown and pink. *Stylaster subviolacea* is light violet or purple with pale tips. *S. griseus* is light grey to light brown when live and chalky white when dead. *S. bithalamus* is also brown. *S. amphiheloides* is uniformly white.

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*, *Cryptelia* and *Stenohelia* also occur in South Africa. Microscopic examination is needed to confirm identification. Please dry and retain other stylasterids.

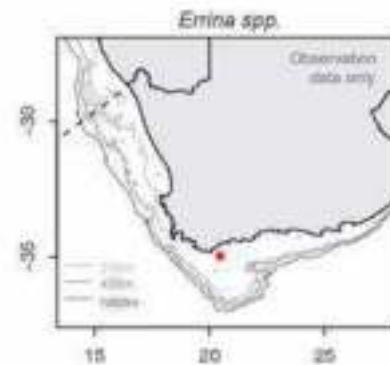
References

Cairns SD and Zibrowius H. 2013. Stylasteridae (Cnidaria, Hydrozoa, Filifera) from South Africa. *Zootaxa* 3691 (1):001-057.

Potential VME

Errina spp. (Errina)

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Anthoathecata
Family:	Stylasteridae
Genus:	<i>Errina</i> cf.
Species:	spp.
Common name:	Red hydrocoral



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

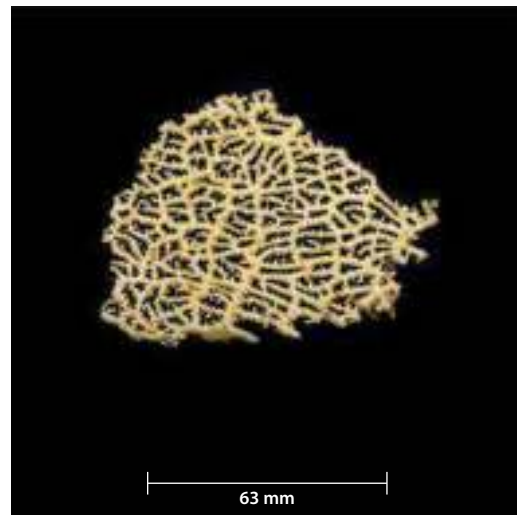
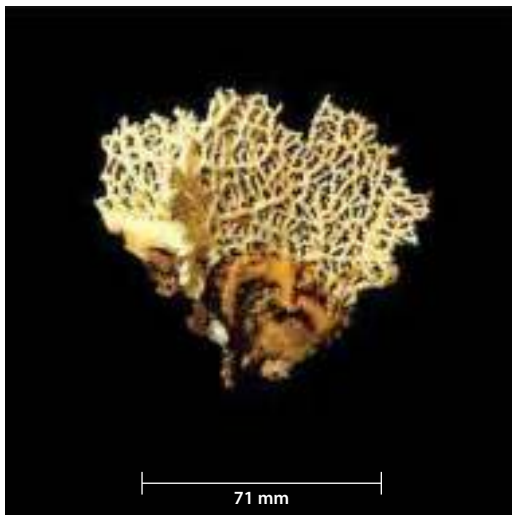
Errina spp. are finely branched in only one plane, but does not have anastomosis (i.e. branches do not rejoin as in *Errinopsis* spp.). Many Stylasterids are macroscopically similar and difficult to distinguish to genus or species level. Some bryozoans may appear similar looking but *Stylaster* and *Errina* 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

- Cairns SD and Zibrowius H. 2013. Stylasteridae (Cnidaria, Hydrozoa, Filifera) from South Africa. *Zootaxa* 3691 (1):001-057.
- Tracey DM, Anderson OF and Naylor JR. 2011. A guide to common deepsea invertebrates in New Zealand waters. *New Zealand Aquatic Environment and Biodiversity Report No. 86*. (317pp.).

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

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Anthoathecata
Family:	Stylasteridae
Genus:	<i>Errinopsis</i> cf.
Species:	spp.
Common name:	Fenestrate hydrocoral

**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).

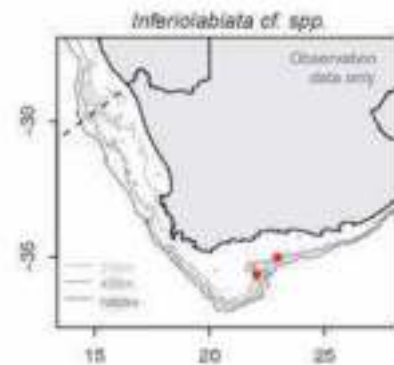
Reference

Cairns SD and Zibrowius H. 2013. Stylasteridae (Cnidaria, Hydrozoa, Filifera) from South Africa. *Zootaxa* 3691 (1):001-057.

Potential VME

Inferiolabiata cf. spp. (Inferi)

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Anthoathecata
Family:	Stylasteridae
Genus:	<i>Inferiolabiata</i> cf.
Species:	spp.
Common name:	Spiny lace coral



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

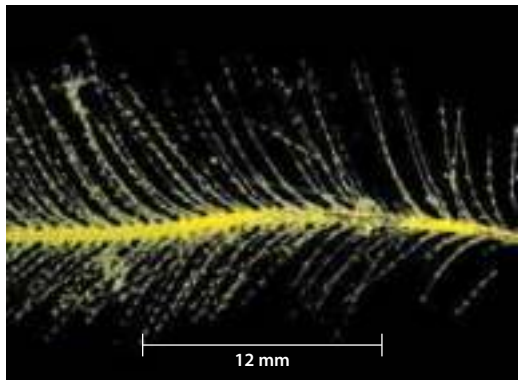
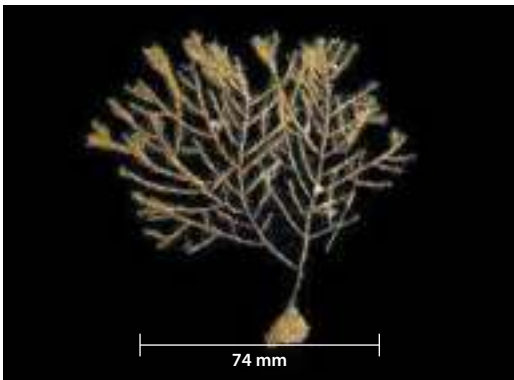
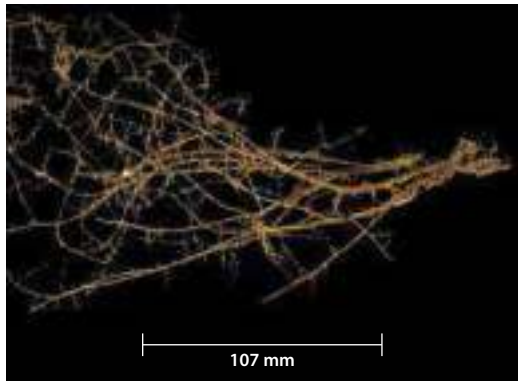
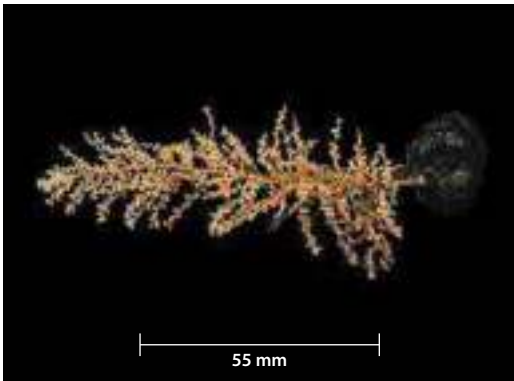
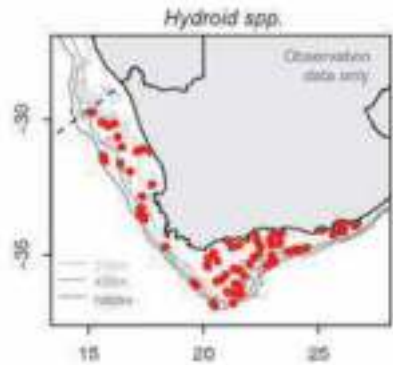
Stylaster species do not have a spiny texture. Robust, very hard, almost cylindrical branches. Many stylasterids are macroscopically similar and difficult to distinguish to genus or species level. *Lepidopora* spp. have a similar surface texture.

Reference

Cairns SD and Zibrowius H. 2013. Stylasteridae (Cnidaria, Hydrozoa, Filifera) from South Africa. *Zootaxa* 3691 (1):001-057.

Hydroid spp. (Hydroid)

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	-
Order:	-
Family:	-
Genus:	-
Species:	-
Common name:	Hydroid



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

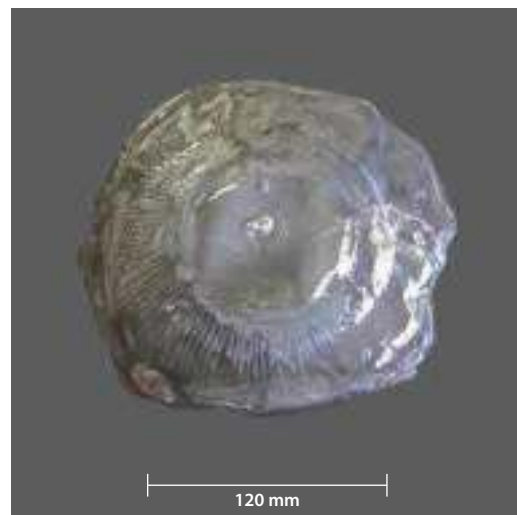
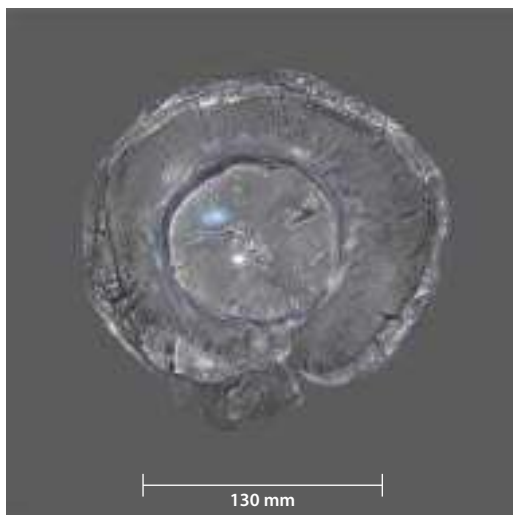
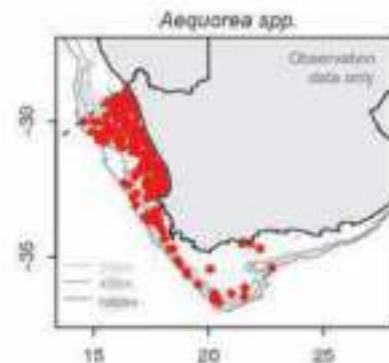
Often confused with small specimens of black corals, whose tissue is usually more slimy (and skeleton sandpapery), and seafans, which are usually more rigid (except for that of the woody hydroid), are often brightly coloured or white and have distinct polyps.

Reference

Millard NAH. 1975. Monograph on the Hydroida of southern Africa. *Annals of the South African Museum* 68: 1-513.

Aequorea spp. (AeqSpp)

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Leptothecata
Family:	Aequoreidea
Genus:	<i>Aequorea</i>
Species:	spp.
Common name:	Mag jellyfish



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

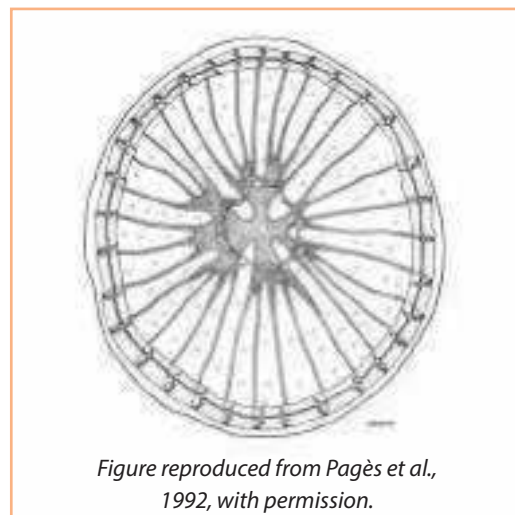
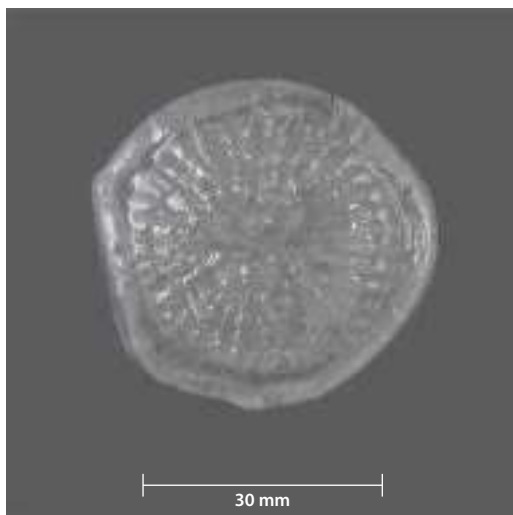
Zygocana vegans, from which it can be distinguished by its larger size, thicker bell and by the fact that the radial canals are uniform and do not start at disc centre. NOTE: there are many species of *Aequorea* present in the region that are difficult to separate from each other unless in pristine condition.

References

- Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.
- Pagès F, Gili JM and Bouillon J. 1992. Medusae (Hydrozoa, Scyphozoa, Cubozoa) of the Benguela Current (southeastern Atlantic). *Scientia Marina* 56, pp. 1–64.

***Zygocanna vagans* (ZygVeg)**

Phylum:	Cnidaria
Class:	Hydrozoa
Subclass:	Hydroidolina
Order:	Leptothecata
Family:	Aequoreidae
Genus:	<i>Zygocanna</i>
Species:	<i>vagans</i>
Common name:	Warty jellyfish

**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

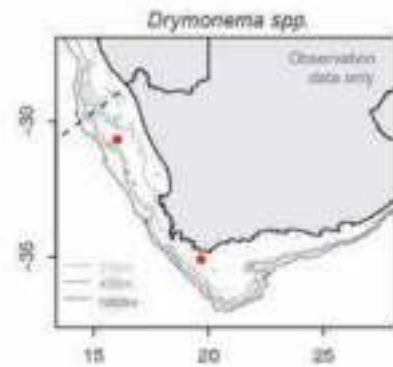
Aequorea spp., from which it can be distinguished by smaller size, thinner bell, radially distributed papillae on subumbrella, and irregularly fusing network of radial canals that originate from centre of lens.

References

- Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.
- Pagès F, Gili JM and Bouillon J. 1992. Medusae (Hydrozoa, Scyphozoa, Cubozoa) of the Benguela Current (southeastern Atlantic). *Scientia Marina* 56, pp. 1–64.

***Drymonema* spp. (Drymon)**

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Semaeostomae
Family:	Drymonematidae
Genus:	<i>Drymonema</i>
Species:	spp.
Common name:	Pink meany jellyfish



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.

Colour

Base colour opaque white to transparent with pink, purple or brown branching canals.

Size

Up to 1 000 mm in diameter.

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.

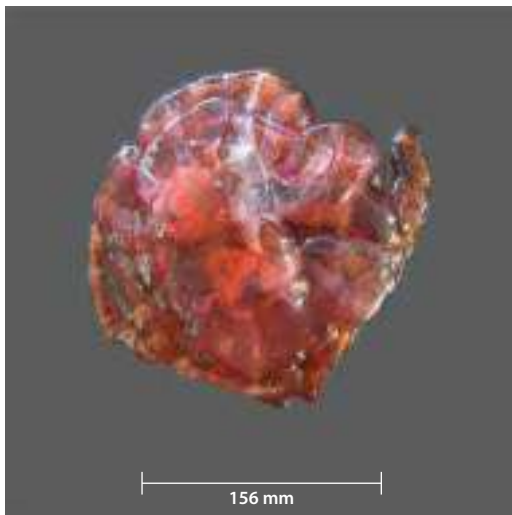
References

Bayha KM and Dawson MN. 2010. New Family of Allomorphic Jellyfishes Drymonematidae (Scyphozoa, Discomedusae), emphasises evolution in the functional morphology and trophic ecology of gelatinous zooplankton. *The Biological Bulletin* 219 (3): 249-267.

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1-469.

***Chrysaora fulgida* (ChrFul)**

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Semaeostomeae
Family:	Pelagiidae
Genus:	<i>Chrysaora</i>
Species:	<i>fulgida</i>
Common name:	Benguela compass jellyfish

**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

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.

Morandini AC and Marques AC. 2010. Revision of the genus *Chrysaora* Péron & Lesuer, 1810 (Cnidaria: Scyphozoa). *Zootaxa*, 2464: 1–97.

Neethling S. 2010. Re-descriptions of some South African scyphozoa: out with the old and 1532 in with the new. Unpublished MSc thesis, University of the Western Cape.

Chrysaora africana (ChrAfr)

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Semaeostomeae
Family:	Pelagiidae
Genus:	<i>Chrysaora</i>
Species:	<i>africana</i>
Common name:	West African compass jellyfish

Not yet recorded in South Africa, but known to occur in the broader region.



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

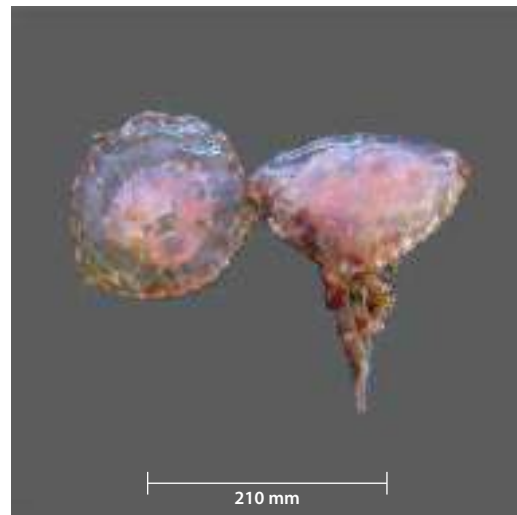
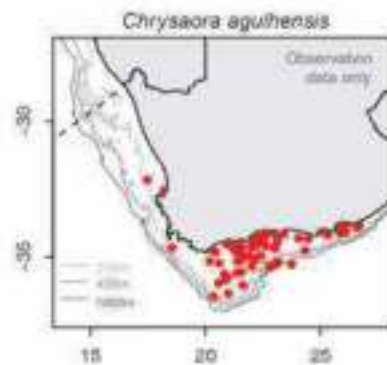
Chrysaora fulgida and *C. agulhensis*, from which it can be distinguished by colour, and tentacle number and form.

Reference

Neethling S. 2010. Re-descriptions of some South African scyphozoa: out with the old and 1532 in with the new. Unpublished MSc thesis, University of the Western Cape.

***Chrysaora agulhensis* (ChrAgu)**

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Semaeostomeae
Family:	Pelagiidae
Genus:	<i>Chrysaora</i>
Species:	<i>agulhensis</i>
Common name:	Agulhas Bank compass jellyfish

**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

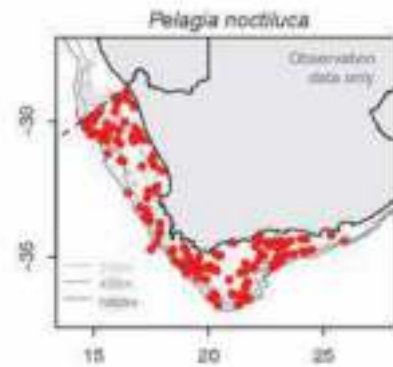
Chrysaora fulgida and *C. africana*, from which it can be distinguished by colour, and tentacle number and form.

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.

Pelagia noctiluca (PelNoc)

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Semaeostomeae
Family:	Pelagiidae
Genus:	<i>Pelagia</i>
Species:	<i>noctiluca</i>
Common name:	Pink stripe jellyfish/Pink stinger



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.

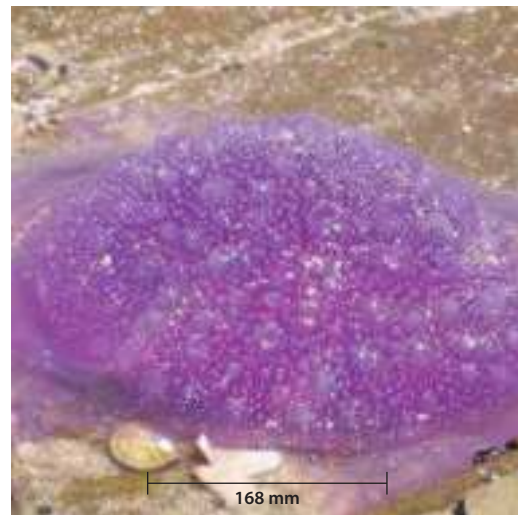
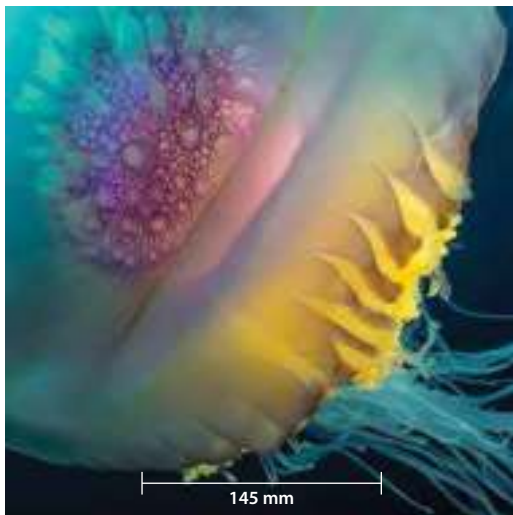
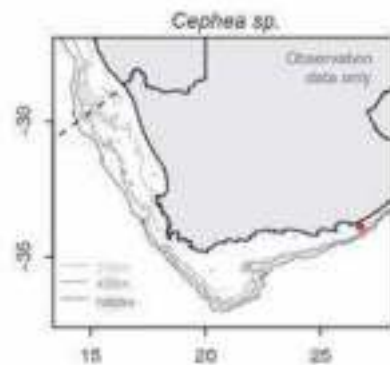
References

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.

Russell FS. 1970. *The medusae of the British Isles II. Pelagic Scyphozoa* with a supplement to the first volume on hydromedusae. Cambridge: Cambridge University Press.

***Cephea* sp. (CepBlu)**

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Rhizostomeae
Family:	Cepheidae
Genus:	<i>Cephea</i>
Species:	sp.
Common name:	Blue crown jellyfish

**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

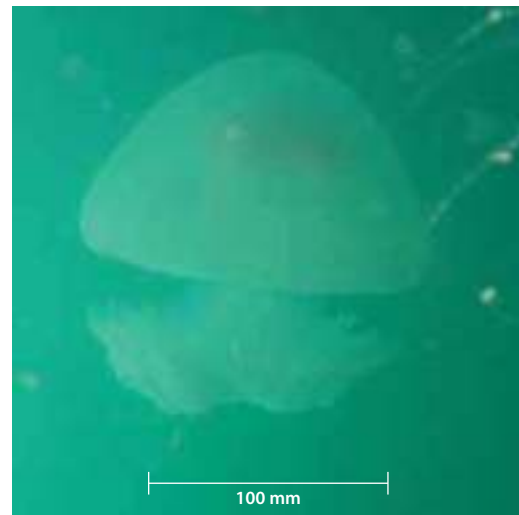
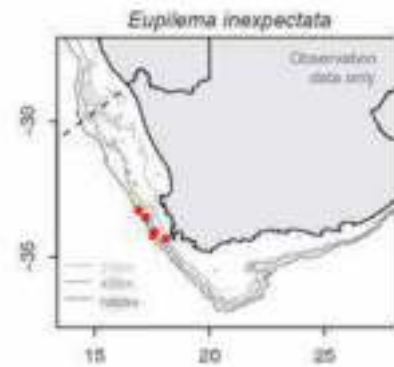
None.

Reference

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.

Eupilema inexpectata (Euplne)

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Rhizostomeae
Family:	Rhizostomatidae
Genus:	<i>Eupilema</i>
Species:	<i>inexpectata</i>
Common name:	Root mouthed jellyfish



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

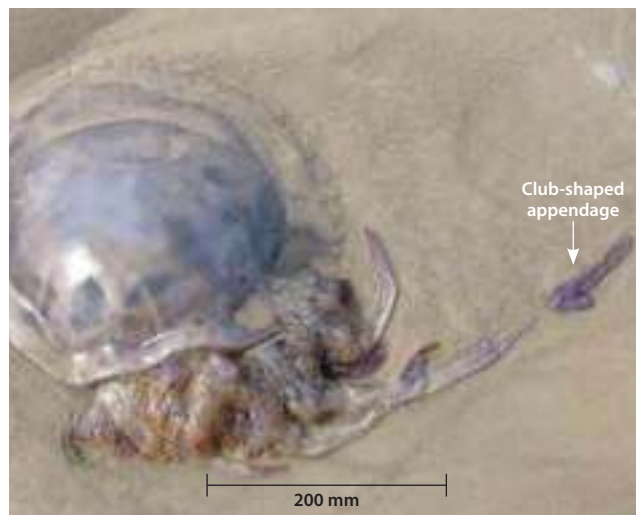
Rhizostoma spp., from which it can be distinguished by the relatively short, stiff oral arms that lack terminal appendages or frills.

Reference

Pagès F, Gili JM and Bouillon J. 1992. Medusae (Hydrozoa, Scyphozoa, Cubozoa) of the Benguela Current (southeastern Atlantic). *Scientia Marina* 56, pp. 1–64.

***Rhizostoma* spp. (Rhizo)**

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Rhizostomeae
Family:	Rhizostomatidae
Genus:	<i>Rhizostoma</i>
Species:	spp.
Common name:	Barrel jellyfish

**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" epaulettes 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

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.

Russell FS. 1970. *The medusae of the British Isles II. Pelagic Scyphozoa* with a supplement to the first volume on hydromedusae. Cambridge: Cambridge University Press.

Thysanostoma spp. (Thysan)

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Discomedusae
Order:	Rhizostomeae
Family:	Thysanostomatidae
Genus:	<i>Thysanostoma</i>
Species:	spp.
Common name:	Purple branching canal jellyfish



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

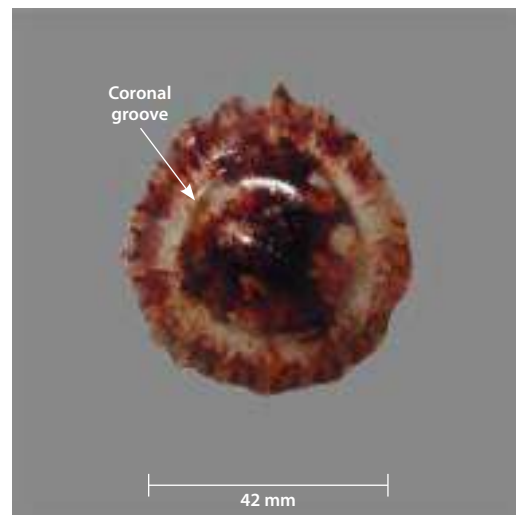
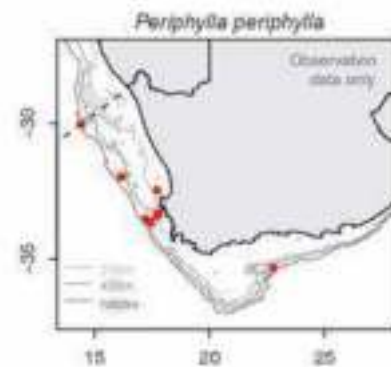
Drymonema spp. also have pattern of branching canals visible on the bell, however *Thysanostoma* spp. have canals originating from the centre of the bell.

Reference

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.

***Periphylla periphylla* (PerPer)**

Phylum:	Cnidaria
Class:	Scyphozoa
Subclass:	Coronamedusae
Order:	Coronatae
Family:	Periphyllidae
Genus:	<i>Periphylla</i>
Species:	<i>periphylla</i>
Common name:	Purple helmet jellyfish

**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.

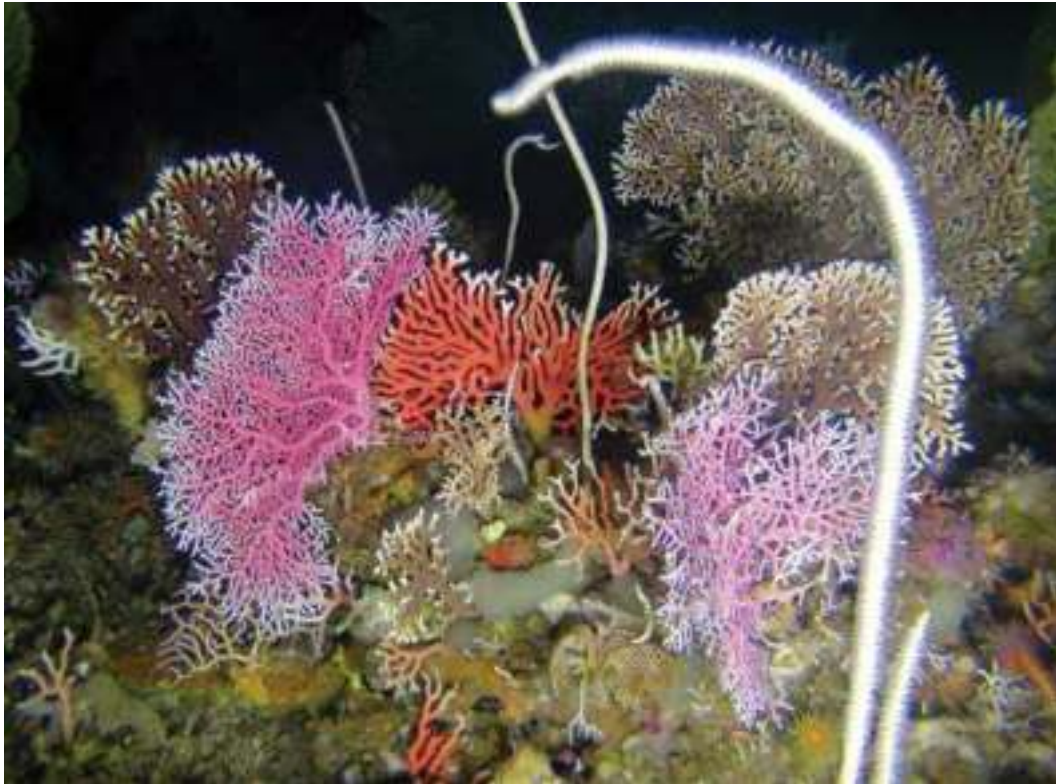
Similar species

None – monospecific genus.

References

Kramp PL. 1961. Synopsis of the medusae of the world. *Journal of Marine Biological Association of the United Kingdom* 40, pp. 1–469.

Pagès F, Gili JM and Bouillon J. 1992. Medusae (Hydrozoa, Scyphozoa, Cubozoa) of the Benguela Current (southeastern Atlantic). *Scientia Marina* 56, pp. 1–64.



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 Atkinson¹

Citation

Atkinson LJ. 2018. Phylum Sipuncula In: Atkinson LJ and Sink KJ (eds)
Field Guide to the Offshore Marine Invertebrates of South Africa,
Malachite Marketing and Media, Pretoria, pp. 117-119.

¹ South African Environmental Observation Network, Egagasini Node, Cape Town

Phylum: SIPUNCULA

Peanut worms

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

- Cutler EB. 1994. *The Sipuncula: Their systems, biology and evolution*. Cornell University Press. New York.
- Huang D-Y, Chen J-Y, Vannier J and Saiz Salinas JI. 2004. Early Cambrian sipunculan worms from southwest China. *Proceedings of the Royal Society B: Biological Sciences* 271 (1549): 1671. doi:10.1098/rspb.2004.2774.

Sipuncula (Sipunc)

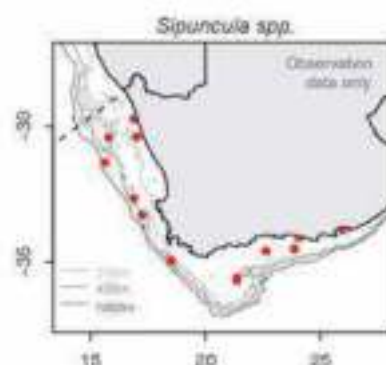
Peanut worms

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.

Class: Phascolosomatidea
Order: Aspidosiphoniformes
 • Family Aspidosiphonidae
Order: Phascolosomatiformes
 • Family Phascolosomatidae

Class: Sipunculidea
Order: Golfingiida
 • Family Golfingiidae
 • Family Phascolionidae
 • Family Themistidae
 • Family Sipunculidae

Common name: Peanut worm



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

Cutler EB. 1994. *The Sipuncula: Their systems, biology and evolution*. Cornell University Press. New York.

Huang D-Y, Chen J-Y, Vannier J and Saiz Salinas JI. 2004. Early Cambrian sipunculan worms from southwest China. *Proceedings of the Royal Society B: Biological Sciences* 271 (1549): 1671. doi:10.1098/rspb.2004.2774.

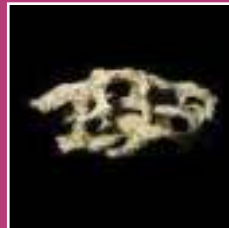
Phylum: Sipuncula



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 Karenyi¹ and Lara Atkinson²

Citation

Karenyi N and Atkinson LJ. 2018. Phylum Annelida In: Atkinson LJ and Sink KJ (eds)
Field Guide to the Offshore Marine Invertebrates of South Africa,
Malachite Marketing and Media, Pretoria, pp. 121-132.

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

Phylum: ANNELIDA

Polychaetes

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

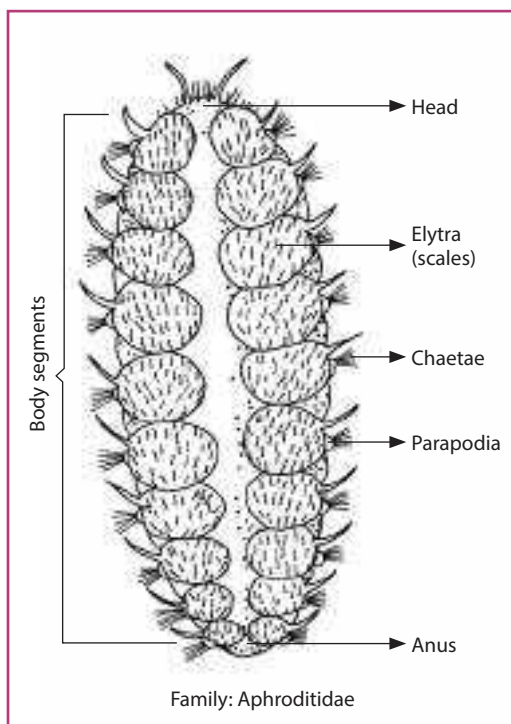
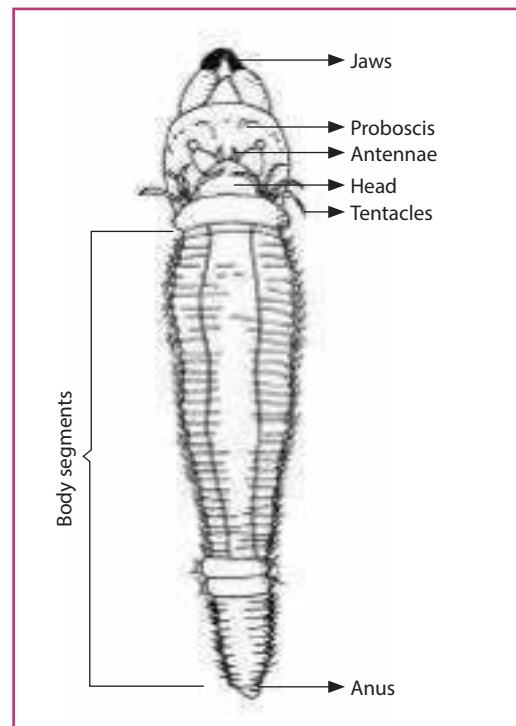
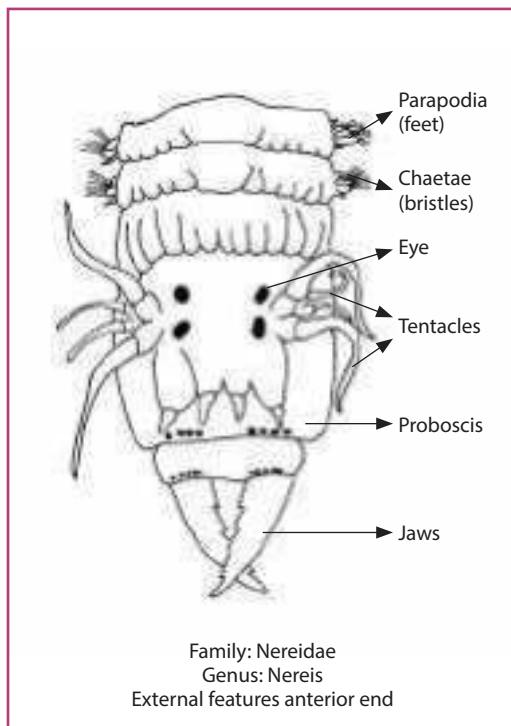
Polychaete specimens should be placed in 10% buffered formalin for 24 hours before preserving in 96% ethanol. For genetic or molecular studies, specimens should be placed directly in 96% ethanol, which should be changed after 24 hours. If necessary, specimens can be relaxed using 7% MgCl₂ solution or 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

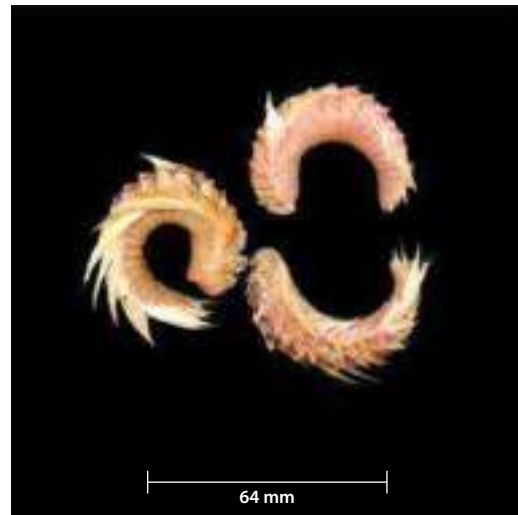
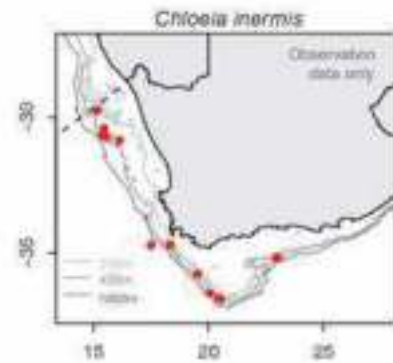
- Campbell NA, Reece JB and Mitchell LG. 1999. *Biology* (5th Ed.) Benjamin-Cummings Publishing Company Inc. Menlo Park, CA.
- Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. 878pp.
- Raven PH and Johnson GB. 2002. *Biology* (6th Ed.), Chapter 45: Mollusks and Annelids. The McGraw Hill Companies, Boston.
- Rouse GW and Fauchald K. 1998. Recent views on the status, delineation, and classification of the Annelida. *American Zoologist* 38 (6): 953–964.doi:10.1093/icb/38.6.953.
- Tracey DM, Anderson OF and Naylor JR. 2011. A guide to common deepsea invertebrates in New Zealand waters. *New Zealand Aquatic Environment and Biodiversity Report* No. 86. 317pp.

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



Chloeia inermis (Euphr1)

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Errantia
Order:	Amphinomida
Family:	Amphinomidae
Genus:	<i>Chloeia</i>
Species:	<i>inermis</i>
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

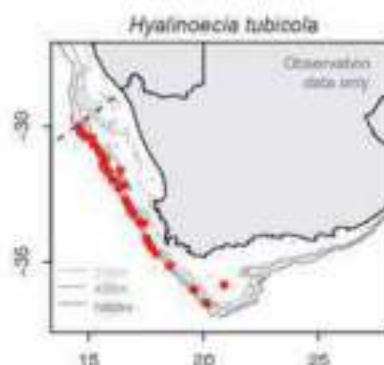
Several large bristle worms occur in South African waters. *Chloeia* genus fairly distinct as described. *C. inermis* has no distinct colour pattern on the dorsal surface.

Reference

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. pp 123-125. (878pp.).

Hyalinoecia tubicola (QuillWm)

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Errantia
Order:	Eunicida
Family:	Onuphidae
Genus:	<i>Hyalinoecia</i>
Species:	<i>tubicola</i>
Common name:	Quill worm



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

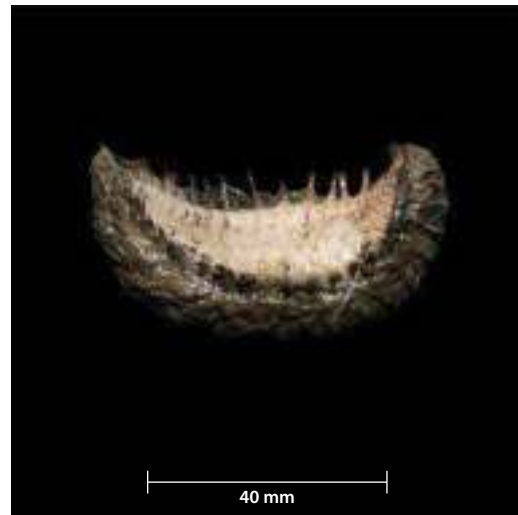
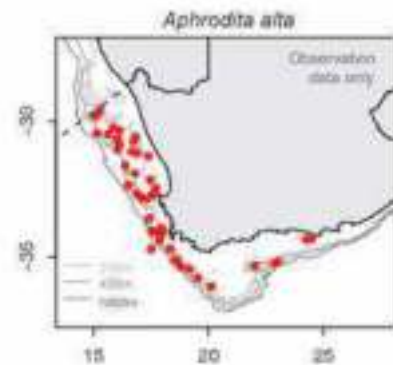
None – straw-like tubes are distinctive.

Reference

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. pp 411-412. (878pp.).

Aphrodita alta (AphrSp)

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Errantia
Order:	Phyllodocida
Family:	Aphroditidae
Genus:	<i>Aphrodita</i>
Species:	<i>alta</i>
Common name:	Sea mouse



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

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. p. 35. (878pp.).

***Laetmonice benthaliana* (Aphro2)**

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Errantia
Order:	Phyllodocida
Family:	Aphroditidae
Genus:	<i>Laetmonice</i>
Species:	<i>benthaliana</i>
Common name:	Naked scale worm

**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

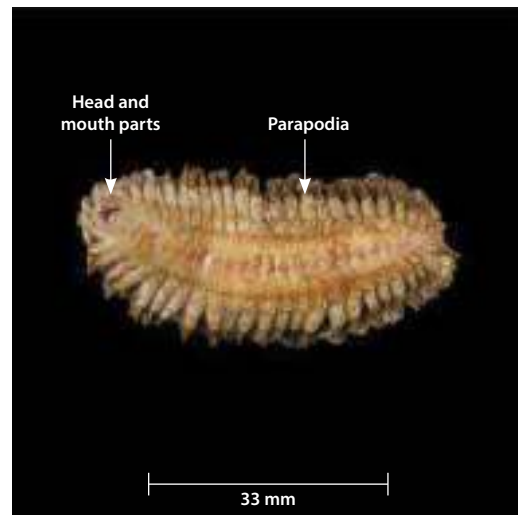
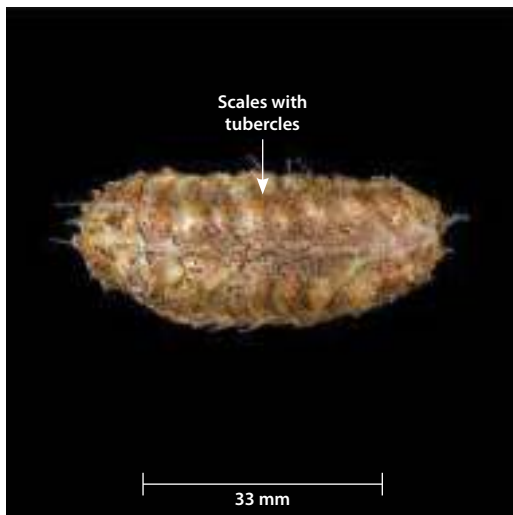
Similar to scale worm *Euphione elisabethae*, but scales of *Laetmonice benthaliana* have no tubercles and are soft and transparent.

Reference

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. p. 33. (878pp.).

Euphione elisabethae (Aphro1)

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Errantia
Order:	Phyllodocida
Family:	Aphroditidae
Genus:	<i>Euphione</i>
Species:	<i>elisabethae</i>
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

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. p. 77. (878pp.).

***Macellicephala mirabilis* (MacMir)**

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Errantia
Order:	Phyllodocidae
Family:	Polynoidae
Genus:	<i>Macellicephala</i>
Species:	<i>mirabilis</i>
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

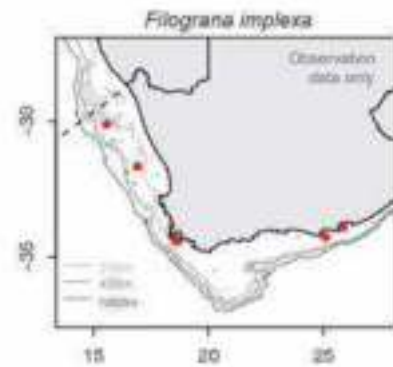
Several large scale worms occur in South African waters. The *Macellicephala* genus is fairly distinct due to its colour and deciduous scales.

Reference

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. pp. 44-45. (878pp.).

Filograna implexa (Fillmp)

Phylum:	Annelida
Class:	Polychaeta
Subclass:	Sedentaria
Order:	Sabellida
Family:	Serpulidae
Genus:	<i>Filograna</i>
Species:	<i>implexa</i>
Common name:	Coral worm/Lacy tubeworm



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.

Colour

Tube: white calcareous, grey to brown in colour if old. Worm: pink/orange body with white/translucent tentacles that protrude when *in situ* but are seldom seen.

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

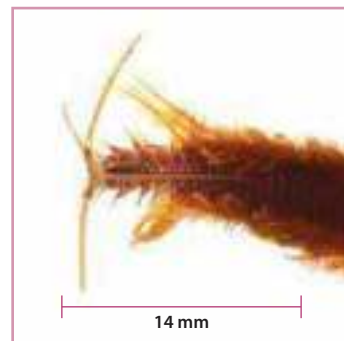
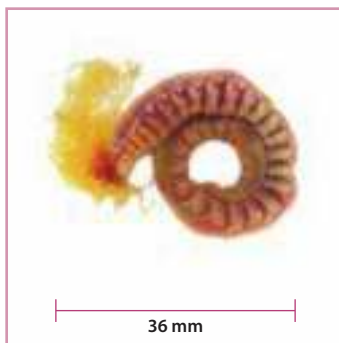
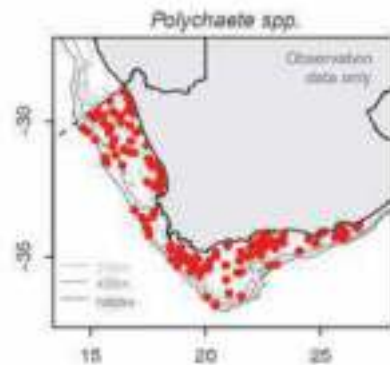
None.

Reference

Day JH. 1967. *A Monograph on the Polychaeta of Southern Africa*. Trustees of the British Museum (Natural History), London. pp. 817-818. (878pp.).

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

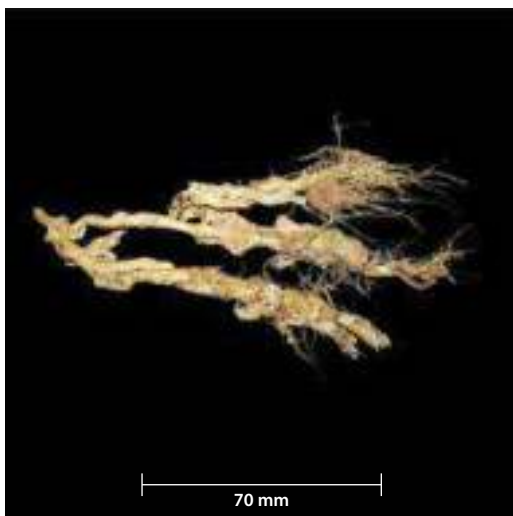
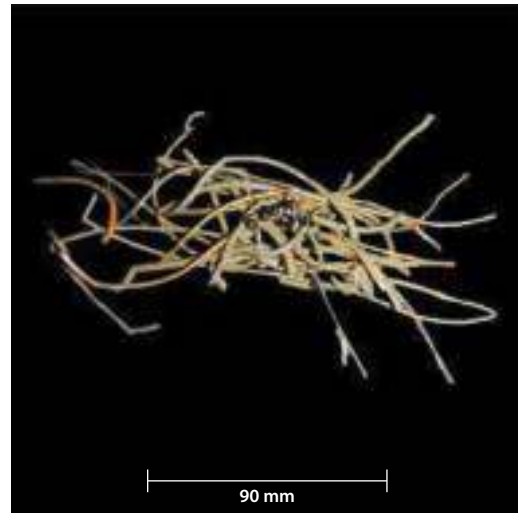
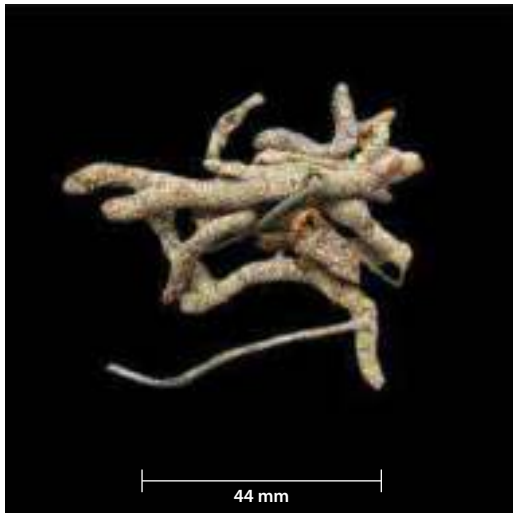
Varied.

Size

Varied, but usually no more than 150 mm in length and 5 mm in width.

Polychaete tubes (PolTub)

Phylum:	Annelida
Class:	Polychaeta
Common name:	Polychaete tubes (only)



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

Griffiths CL, Landschoff J and Atkinson LJ. 2018. Phylum Arthropoda
In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates
of South Africa, Malachite Marketing and Media, Pretoria, pp. 133-226.

¹ Marine Research Institute and Department of Biological Science, University of Cape Town

² South African Environmental Observation Network, Egagasini Node, Cape Town

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

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837.

Bianchi G, Carpenter KE, Roux J-P, Molloy FJ, Boyer D and Boyer HJ. 1999. *FAO species identification field guide for fishery purposes. Field guide to the living marine resources of Namibia* ISSN 1020-6868 Norwegian Agency for International Development, Food and Agriculture Organization of the United Nations, Rome.

Biccard A and Griffiths CL. 2016. Additions to the barnacle (Crustacea: Cirripedia) fauna of South Africa. *African Zoology* 51(2): 99-116.

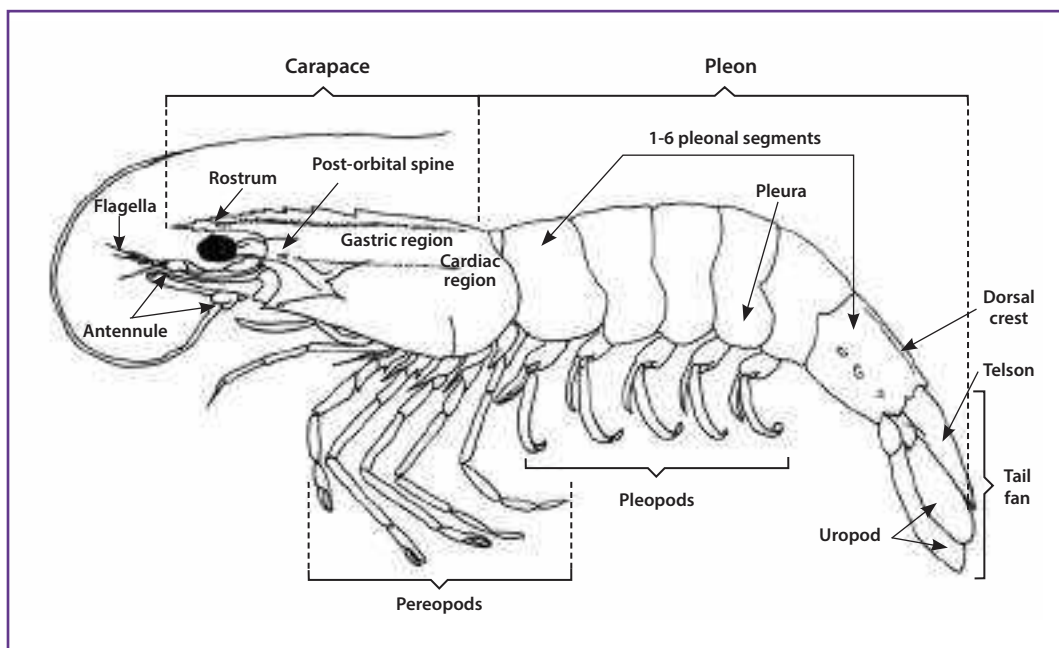
Debelius D. 1999. *Crustacea: Guide of the World*. IKAN, Frankfurt. 321pp.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. (3 volumes).

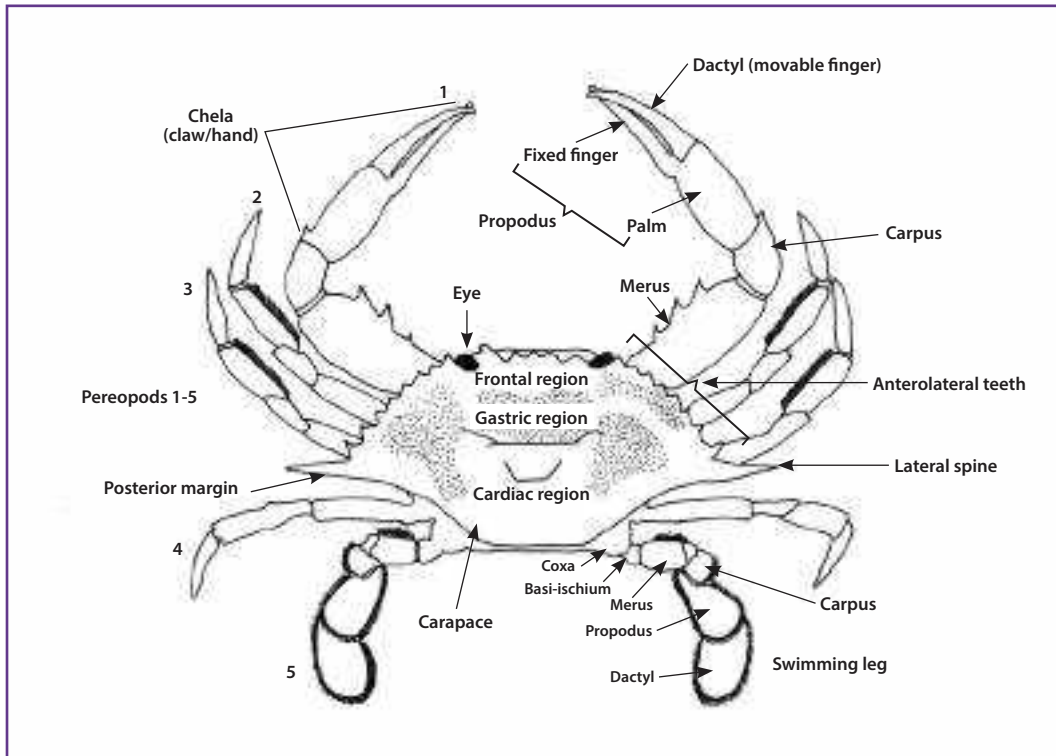
Griffiths CL. 1976. *Guide to the Benthic Marine Amphipods of Southern Africa*. Trustees of the South African Museum, Cape Town, 106pp.

Kensley B. 1978. *Guide to the Marine Isopods of Southern Africa*. Trustees of the South African Museum, Cape Town, 173pp.

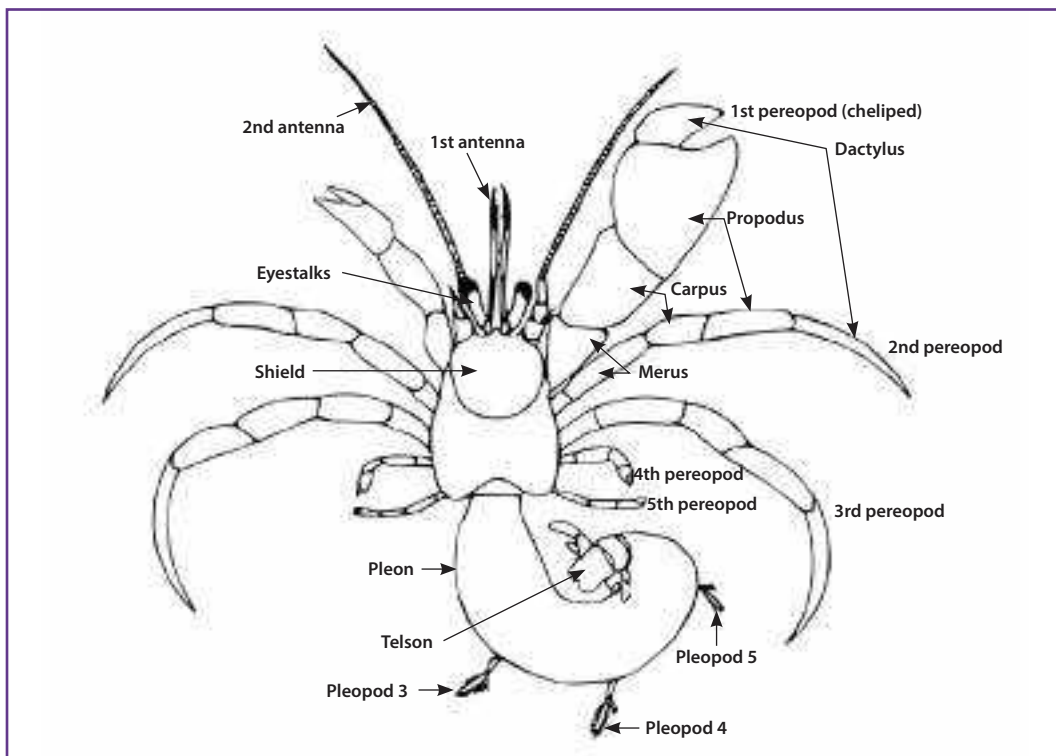
Prawn external anatomy terminology

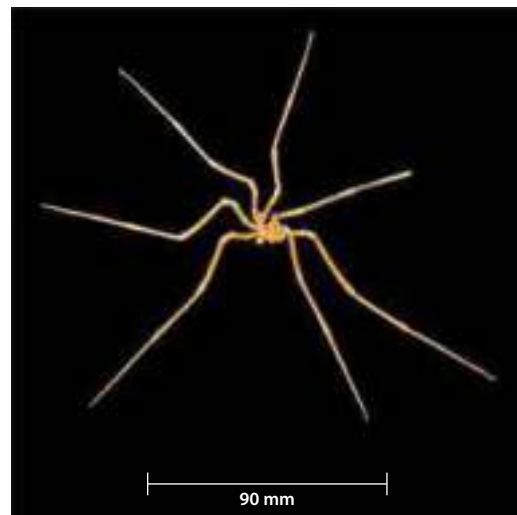
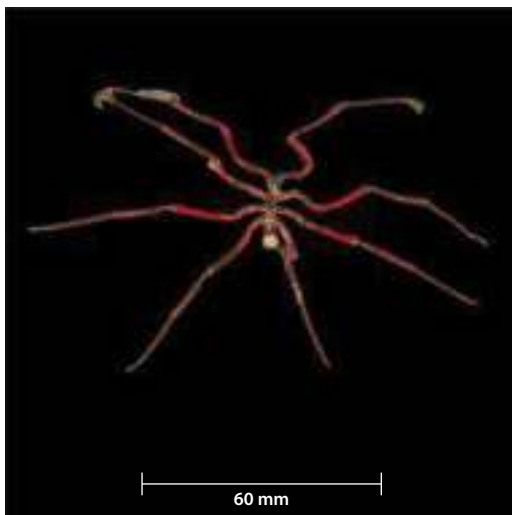
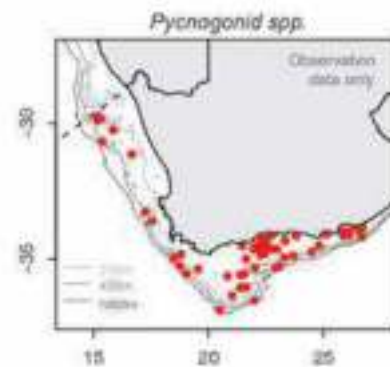


Crab (Brachyura) external anatomy terminology



Hermit crab external anatomy terminology



Pycnogonid spp. (Pycnog)**Phylum:** Arthropoda**Subphylum:** Chelicerata**Class:** Pycnogonida**Order:** Pantopoda**Suborder:** -**Family:** Various**Genus:** 'Pycnogonid'**Species:** -**Common name:** Sea spiders**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

Bamber RN, El Nagar A and Arango CP. (eds). 2018. *Pycnobase: World Pycnogonida Database*. Accessed at <http://www.marinespecies.org/pycnobase> on 2018-03-01.

Barnard KH. 1954. South African Pycnogonida. *Annals of the South African Museum* 41: 81-159.

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.

Colour

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

Size

Up to 15 mm diameter, mostly much smaller (<5 mm).

Distribution

Ubiquitous in benthic and pelagic habitats.

Similar species

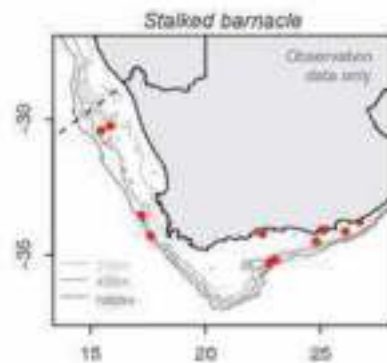
South African benthic marine ostracods are poorly known and in urgent need of revision.

Reference

Stebbing TRR. 1910. General Catalogue of South African Crustacea. *Annals of the South African Museum* 6: 281-593.

Stalked barnacles (BarSta)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Hexanauplia
Order:	Lepadiformes
Suborder:	-
Family:	Various
Genus:	'Stalked barnacles'
Species:	-
Common name:	Stalked barnacles

**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.

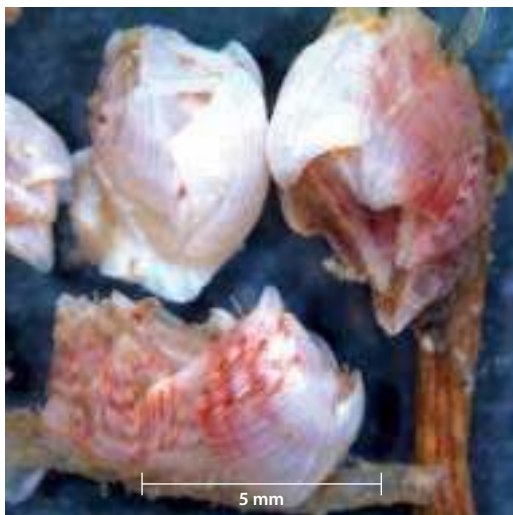
References

Biccard A. 2012. *Taxonomy, systematics and biogeography of South African Cirrepedia (Thoracica)*. MSc Thesis, University of Cape Town.

Biccard A and Griffiths CL. 2016. Additions to the barnacle (Crustacea: Cirripedia) fauna of South Africa. *African Zoology* 51(2): 99-116.

Sessile barnacles (BarSes)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Hexanauplia
Order:	Sessilia
Suborder:	-
Family:	Various
Genus:	'Sessile barnacles'
Species:	-
Common name:	Sessile barnacles



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.

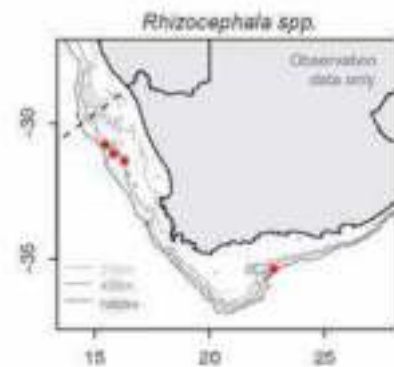
References

Biccard A. 2012. *Taxonomy, systematics and biogeography of South African Cirrepedia (Thoracica)*. MSc Thesis, University of Cape Town.

Biccard A and Griffiths CL. 2016. Additions to the barnacle (Crustacea: Cirripedia) fauna of South Africa. *African Zoology* 51(2): 99-116.

Parasitic barnacles (BarPar)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Hexanauplia
Order:	Rhizocephala (Superorder)
Suborder:	-
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

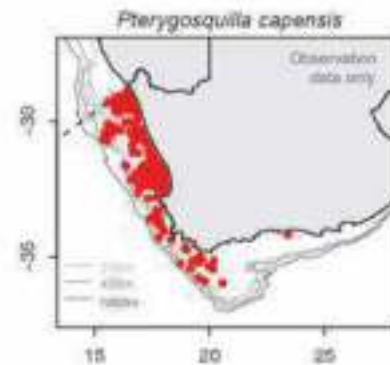
Only six species recorded from South Africa, three of them still to be described and most known only from a single specimen, so without doubt many other species await discovery.

References

Walker G. 2001. Introduction to the Rhizocephala (Crustacea: Cirripedia). *Journal of Morphology* 249: 1-8.

Pterygosquilla capensis (Mantis)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Stomatopoda
Suborder:	Unipeltata
Family:	Squillaidae
Genus:	<i>Pterygosquilla</i>
Species:	<i>capensis</i>
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

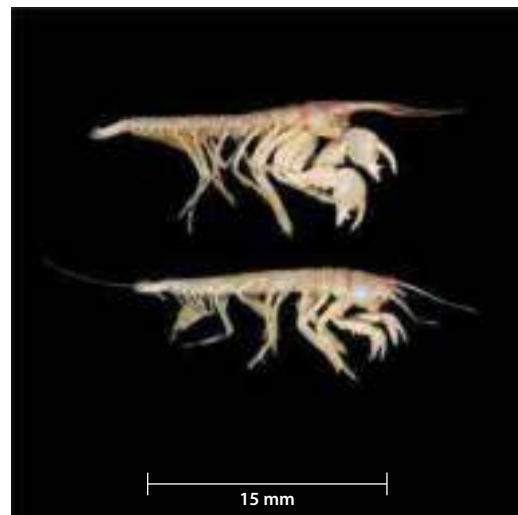
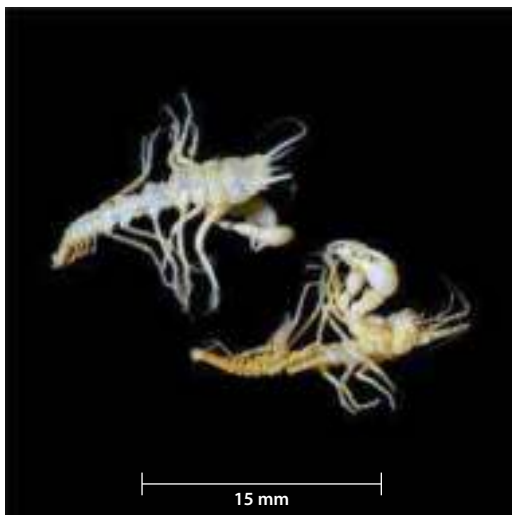
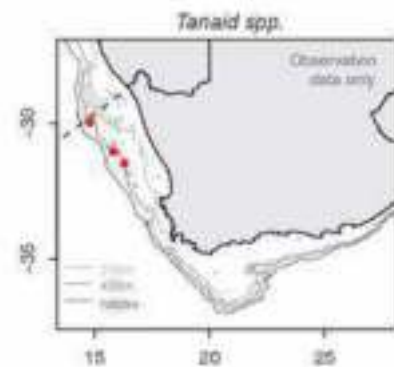
Widespread species. Namibia to southern KwaZulu-Natal.

Similar species

None on West Coast, several on South and East Coasts.

References

- Abelló P and Macpherson E. 1990. Influence of environmental conditions on the distribution of *Pterygosquilla armata capensis* (Crustacea: Stomatopoda) off Namibia. *South African Journal of Marine Science* 9(1): 169-175.
- Griffiths CL and Blaine MJ. 1988. Distribution, population structure and biology of stomatopod Crustacea off the west coast of South Africa. *South African Journal of Marine Science* 7(1): 45-50.

Tanaids (Tanaid)**Phylum:** Arthropoda**Subphylum:** Crustacea**Class:** Malacostraca**Order:** Tanaidacea**Suborder:** -**Family:** Various**Genus:** 'Tanaids'**Species:** -**Common name:** Tanaids**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 *Carpapseudes 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:

Day JH. 1969. *A Guide to Marine Life on South African Shores*. AA Balkema, Cape Town, pp. 92-93 (300pp.).

Isopods (Isopod)

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Isopoda

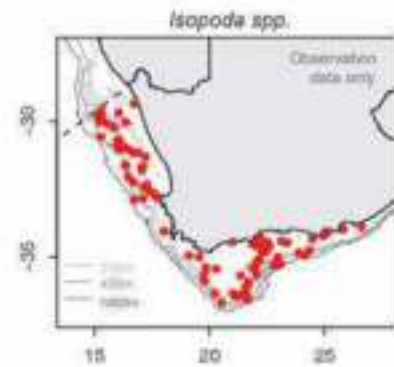
Suborder: -

Family: Various

Genus: 'Isopods'

Species: -

Common name: Isopods



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.

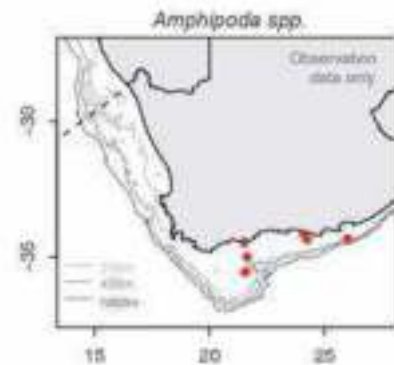
Similar species

Potentially confused with amphipods, which are characteristically laterally flattened.

Reference

Kensley B. 1978. *Guide to the Marine Isopods of Southern Africa*. Trustees of the South African Museum, Cape Town, 173pp.

<i>Amphipods (Amph)</i>	
Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Amphipoda
Suborder:	-
Family:	Various
Genus:	'Amphipods'
Species:	-
Common name:	Amphipods



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 macrophthalma*, right).

Colour

Variable, most often white, but some brightly coloured. Specimens from trawls usually less colourful.

Size

Small, most species 5-20 mm.

Distribution

Ubiquitous, from shore to deep ocean in all habitats.

Similar species

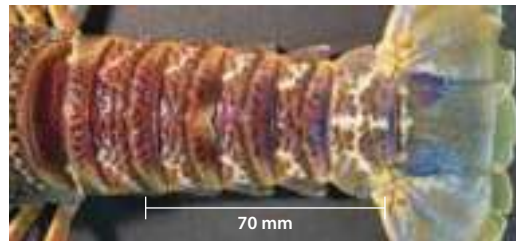
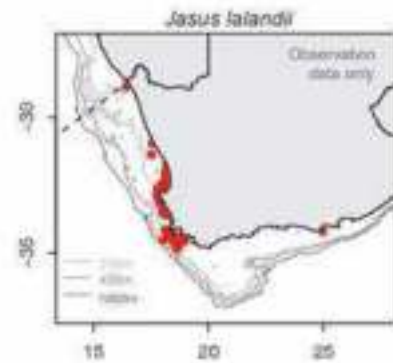
Potentially confused with isopods, which are characteristically dorso-ventrally flattened.

Reference

Griffiths CL. 1976. *Guide to the Benthic Marine Amphipods of Southern Africa*. Trustees of the South African Museum, Cape Town, 106pp.

Jasus lalandii (JasLal)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Pleocyemata
Family:	Palinuridae
Genus:	<i>Jasus</i>
Species:	<i>lalandii</i>
Common name:	West Coast rock lobster



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

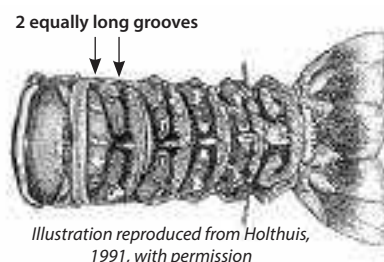
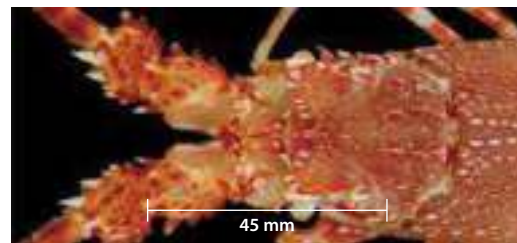
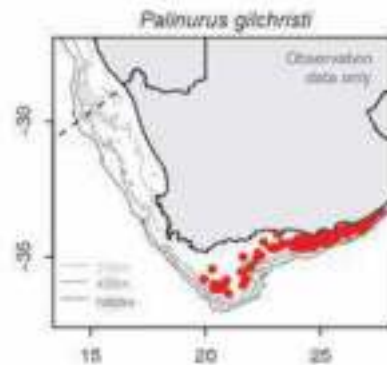
Palinurus gilchristi has banded orange-and-white legs and overall is more orange in colour than *J. lalandii*.

References

- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 407- 415.
- Heydorn AEF. 1969. The rock lobster of the South African west coast *Jasus lalandii* (H. Milne-Edwards). 2. Population studies, behaviour, reproduction, moulting, growth and migration. *Investigational Report Division of Sea Fisheries South Africa* 71: 1-52.
- Holthuis LB. 1991. *FAO Species Catalogue Vol. 13 Marine Lobsters of the World. An Annotated and Illustrated Catalogue of Species of Interest to Fisheries Known to Date*. Food and Agriculture Organization of the United Nations, Rome, 1991.

***Palinurus gilchristi* (PalGil)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Pleocyemata
Family:	Palinuridae
Genus:	<i>Palinurus</i>
Species:	<i>gilchristi</i>
Common name:	South Coast rock lobster

**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).

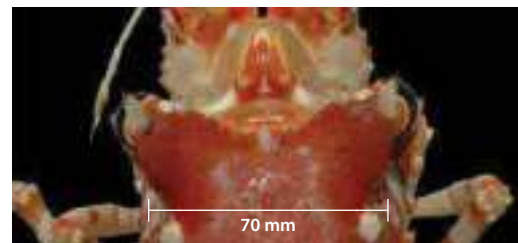
References

- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 445-450.
- Groeneveld JC. 1997. Growth of spiny lobster *Palinurus gilchristi* (Decapoda: Palinuridae) off South Africa. *South African Journal of Marine Science* 18 (1): 19-29.
- Holthuis LB. 1991. *FAO Species Catalogue Vol. 13 Marine Lobsters of the World. An Annotated and Illustrated Catalogue of Species of Interest to Fisheries Known to Date*. Food and Agriculture Organization of the United Nations, Rome, 1991.
- Pollock DE and Augustyn CJ. 1982. Biology of the rock lobster *Palinurus gilchristi* with notes on the South African fishery. *Fisheries Bulletin South Africa* 16: 57-73.

Palinurus delagoae (PalDel)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Pleocyemata
Family:	Palinuridae
Genus:	<i>Palinurus</i>
Species:	<i>delagoae</i>
Common name:	Natal spiny/Deep-sea lobster

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



2 grooves, the anterior short

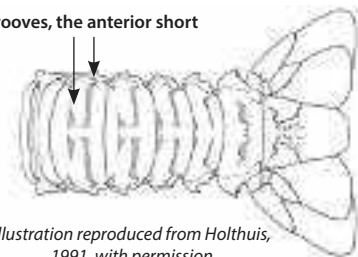


Illustration reproduced from Holthuis, 1991, with permission

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

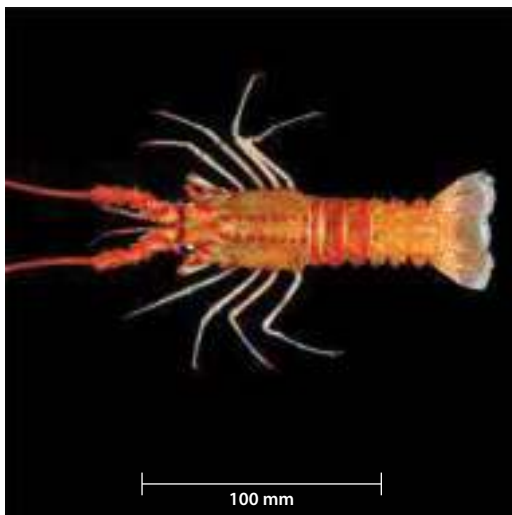
Berry PF. 1973. The biology of the spiny lobster *Palinurus delagoae* Barnard, off the coast of Natal, South Africa. *Oceanographic Research Institute, Investigational Report* 31: 1-27.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 438-445.

Holthuis LB. 1991. FAO Species Catalogue Vol. 13 *Marine Lobsters of the World. An Annotated and Illustrated Catalogue of Species of Interest to Fisheries Known to Date*. Food and Agriculture Organization of the United Nations, Rome, 1991.

***Projasus parkeri* (ProPar)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Pleocyemata
Family:	Palinuridae
Genus:	<i>Projasus</i>
Species:	<i>parkeri</i>
Common name:	Cape jagged lobster

**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*.

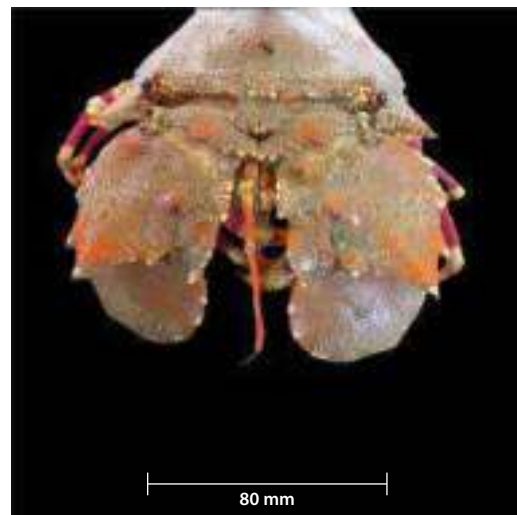
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 540-541.

Melville-Smith R. 1990. A first record of *Projasus parkeri* (Stebbing, 1902) (Decapoda, Palinuridae) in the Atlantic Ocean. *Crustaceana* 59(3): 314-316.

Scyllarides elisabethae (ScyLar)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Pleocyemata
Family:	Scyllaridae
Genus:	<i>Scyllarides</i>
Species:	<i>elisabethae</i>
Common name:	Shovel-nosed/Slipper lobster



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.

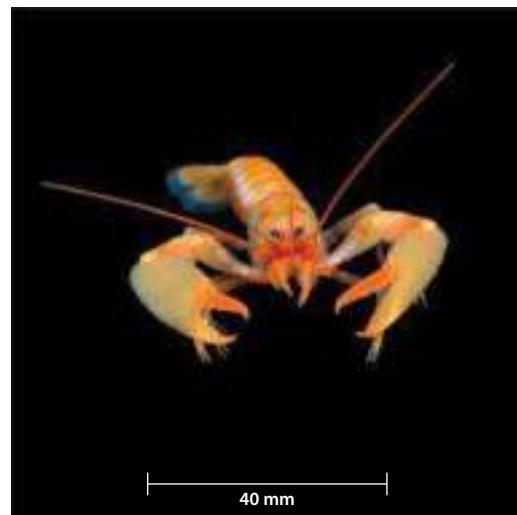
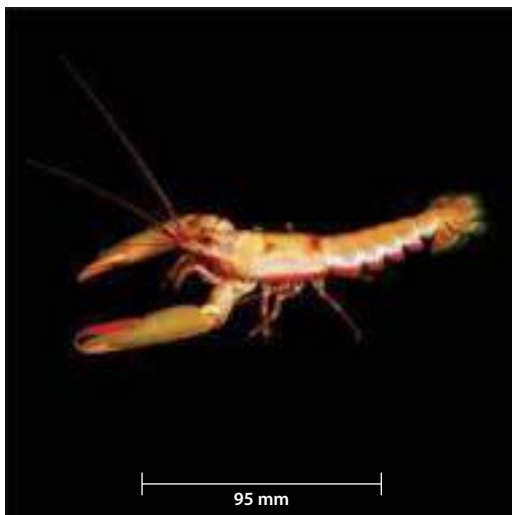
References

- Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 562-563.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 495- 498.
- Groeneveld JC, Cockcroft AC and Cruywagen GC. 1995. Relative abundances of spiny lobster *Palinurus delagoae* and slipper lobster *Scyllarides elisabethae* off the east coast of South Africa. *South African Journal of Marine Science* 16(1): 19-24.

***Homarinus capensis* (HomCap)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Pleocyemata
Family:	Nephropidae
Genus:	<i>Homarinus</i>
Species:	<i>capensis</i>
Common name:	Cape lobster/Pygmy lobster

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

**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.

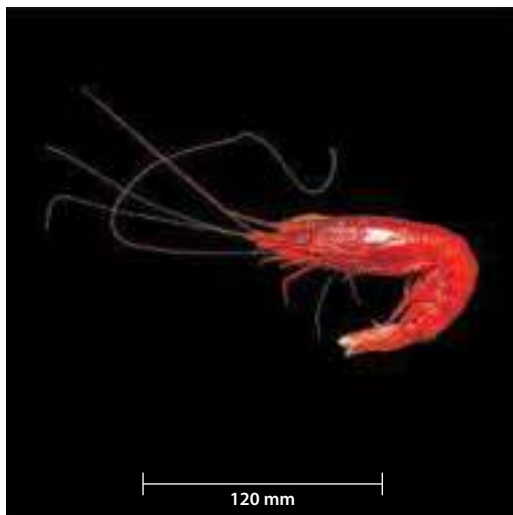
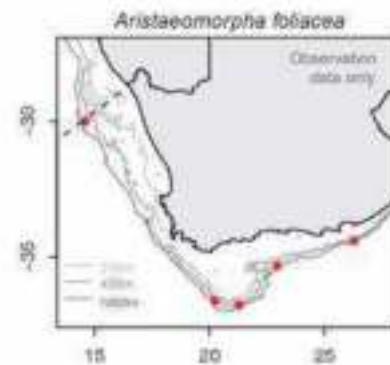
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 526-527 (Fig 98, as *Astacus capensis*).

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 356-360.

Aristaeomorpha foliacea (ArsFol)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Aristeidae
Genus:	<i>Aristaeomorpha</i>
Species:	<i>foliacea</i>
Common name:	Giant/Royal red prawn



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.

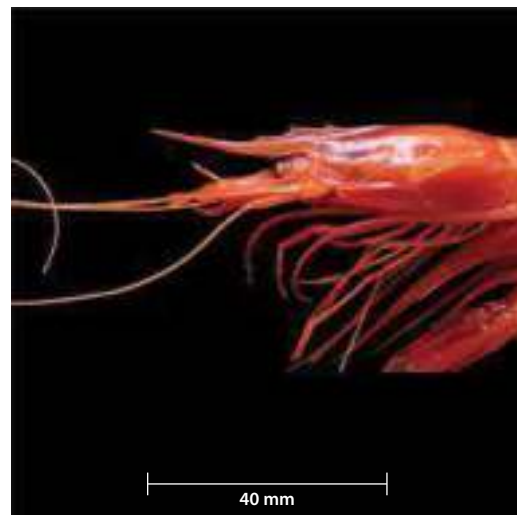
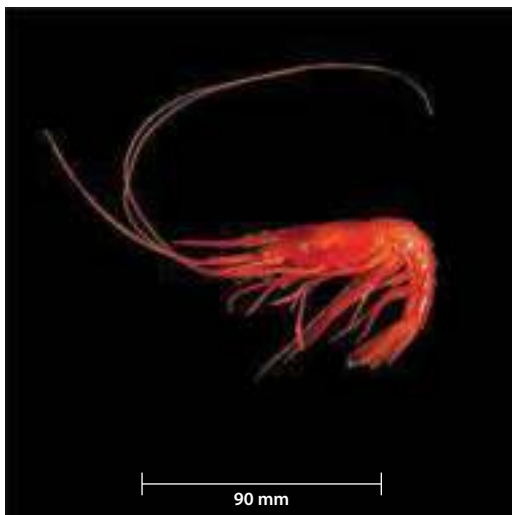
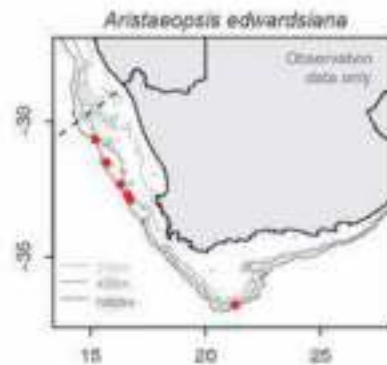
References

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 6-8.

Papaconstantinou C and Kapiris K. 2003. The biology of the giant red shrimp (*Aristaeomorpha foliacea*) at an unexploited fishing ground in the Greek Ionian Sea. *Fisheries Research* 62: 37-51.

***Aristaeopsis edwardsiana* (Plesed)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Aristeidae
Genus:	<i>Aristaeopsis</i>
Species:	<i>edwardsiana</i>
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

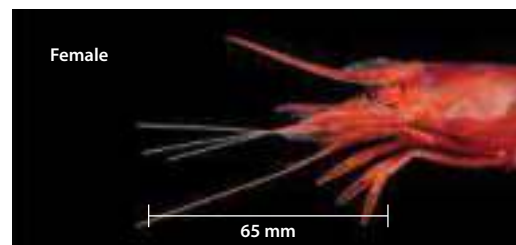
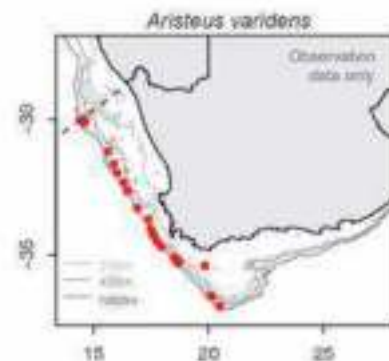
Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 624-625 (as *Plesiopenaeus edwardsianus*).

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 9-12.

Ganga U, Rajool Shanis CP, Manjebayakath H and Akhilesh KV. 2012. Account on the deepsea shrimp *Aristaeopsis edwardsiana* (Johnson, 1867) from the Indian EEZ. *Indian Journal of Fisheries* 59(1): 29-31.

Aristeus varidens (ArsVar)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Aristeidae
Genus:	<i>Aristeus</i>
Species:	<i>varidens</i>
Common name:	Striped red prawn



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

- Bianchi G, Carpenter KE, Roux J-P, Molloy FJ, Boyer D and Boyer HJ. 1999. *FAO species identification field guide for fishery purposes. Field guide to the living marine resources of Namibia* ISSN 1020-6868. Norwegian Agency for International Development, Food and Agriculture Organization of the United Nations, Rome.
- Burukovskii RN. 1978. Biology of the shrimp *Aristeus varidens*. *Soviet Journal of Marine Biology* 4: 690-697.

Gennadas spp. (Gennad)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Benthescymidae
Genus:	<i>Gennadas</i>
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 \pm 50 mm, carapace 15 mm.

Distribution

West Coast of South Africa.

Similar species

Thirteen closely related species occur in southern African waters.

References

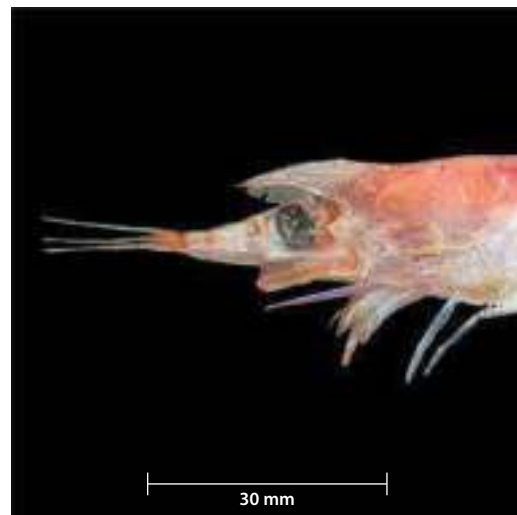
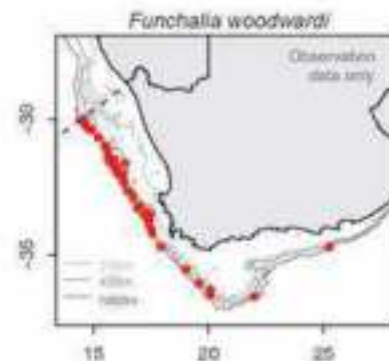
Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 628-634.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 20-23.

Kensley B. 1978. *Shrimps and Prawns of Southern Africa*. South African Museum, Cape Town. p. 12. (65pp.).

Funchalia woodwardi (FunWoo)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Penaeidae
Genus:	<i>Funchalia</i>
Species:	<i>woodwardi</i>
Common name:	Woodward's large pink prawn



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 triarthrus, which has a much more pronounced, enlarged leaf-shaped rostrum.

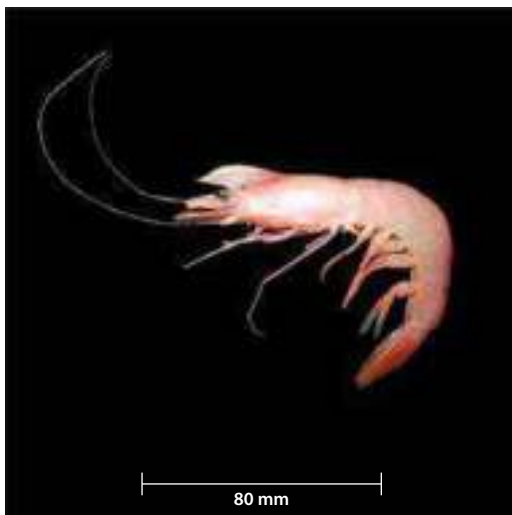
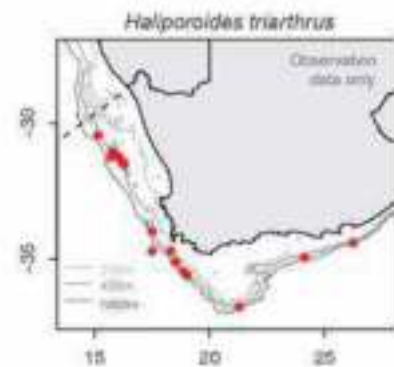
References

Bianchi G, Carpenter KE, Roux J-P, Molloy FJ, Boyer D and Boyer HJ. 1999. *FAO species identification field guide for fishery purposes. Field guide to the living marine resources of Namibia* ISSN 1020-6868. Norwegian Agency for International Development, Food and Agriculture Organization of the United Nations, Rome.

Miller DGM, Augustyn CJ and Hampton I. 1983. An unusual record of the prawn *Funchalia woodwardi* Johnson (Crustacea: Decapoda), *South African Journal of Marine Science* 1(1), pp.175-180.

***Haliporoides triarthrus* (HalTri)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Solenoceridae
Genus:	<i>Haliporoides</i>
Species:	<i>triarthrus</i>
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.

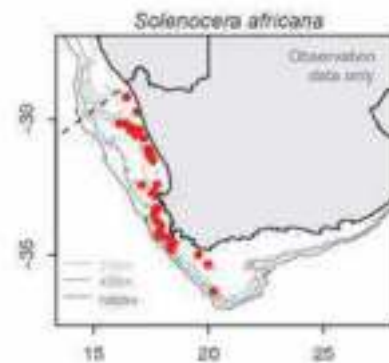
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 619-621.

Robey J, Fennessy ST, Everatt BI and Santos J. 2013. Patterns in abundance, population structure and biology of knife prawn *Haliporoides triarthrus* on deep-water trawl grounds off eastern South Africa. *African Journal of Marine Science* 35(4): 565-577.

Solenocera africana (SolAfr)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Solenoceridae
Genus:	<i>Solenocera</i>
Species:	<i>africana</i>
Common name:	African mud shrimp Orange-back prawn



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 mm 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.

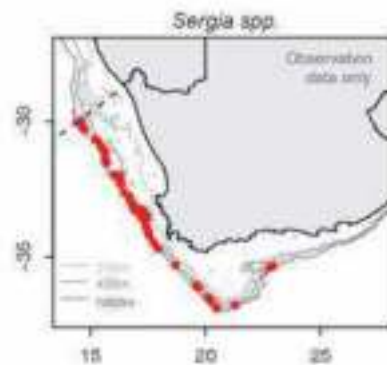
References

Bianchi G, Carpenter KE, Roux J-P, Molloy FJ, Boyer D and Boyer HJ. 1999. *FAO species identification field guide for fishery purposes. Field guide to the living marine resources of Namibia* ISSN 1020-6868. Norwegian Agency for International Development, Food and Agriculture Organization of the United Nations, Rome.

Kensley B. 2006. Pelagic shrimp (Crustacea: Decapoda) from shelf and oceanic waters in the southeastern Atlantic Ocean off South Africa. *Proceedings of the Biological Society of Washington* 119(3): 384-394.

***Sergia* spp. (Sergia)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Suborder:	Dendrobranchiata
Family:	Sergestidae
Genus:	<i>Sergia</i>
Species:	spp.
Common name:	Scarlet prawn

**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

Bianchi G, Carpenter KE, Roux J-P, Molloy FJ, Boyer D and Boyer HJ. 1999. *FAO species identification field guide for fishery purposes. Field guide to the living marine resources of Namibia* ISSN 1020-6868. Norwegian Agency for International Development, Food and Agriculture Organization of the United Nations, Rome.

Vereshchaka AL, Olesen J and Lunina AA. 2014. Global diversity and phylogeny of pelagic shrimps of the former genera *Sergestes* and *Sergia* (Crustacea, Dendrobranchiata, Sergestidae), with definition of eight new genera. *PLoS ONE* 9(11): e112057.

Merhippolyte agulhasensis (MerAgu)

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Decapoda

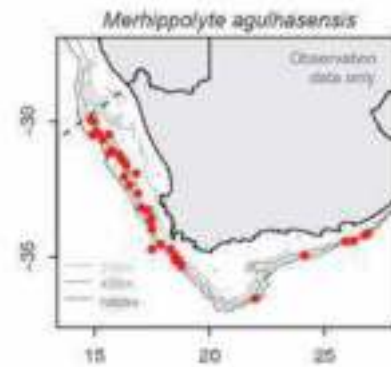
Infraorder: Caridea

Family: Hippolytidae

Genus: *Merhippolyte*

Species: *agulhasensis*

Common name: Banded-leg red shrimp



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

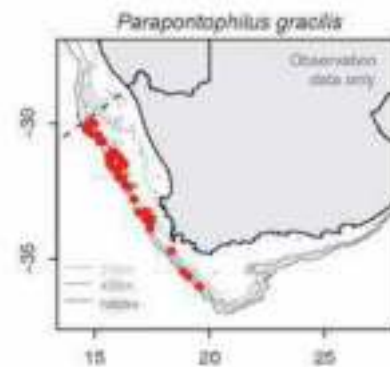
M. calmani has only three dorsal teeth on rostrum and ventral teeth grouped at base of rostrum.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 690-692.

***Parapontophilus gracilis* (ParaGG)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Crangonidae
Genus:	<i>Parapontophilus</i>
Species:	<i>gracilis</i>
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

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 806-808 (as *Pontophilus gracilis*).

Komai T. 2008. A world-wide review of species of the deep-water crangonid genus *Parapontophilus* Christoffersen, 1988 (Crustacea, Decapoda, Caridea), with descriptions of ten new species. *Zoosystema* 30(2): 261-332.

***Philocheras sculptus* (PonAff)**

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Decapoda

Infraorder: Caridea

Family: Crangonidae

Genus: *Philocheras*

Species: *sculptus*

Common name: Sculpted prawn



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

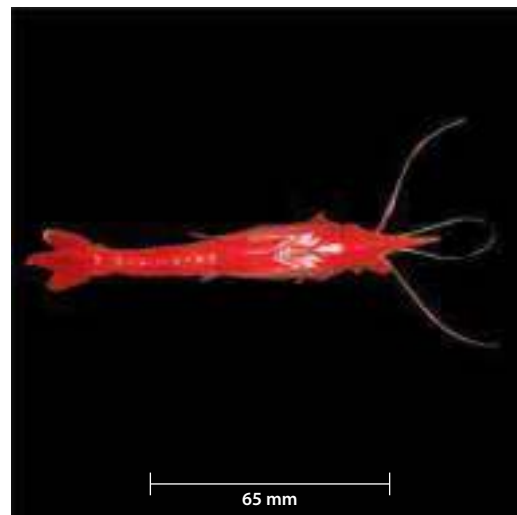
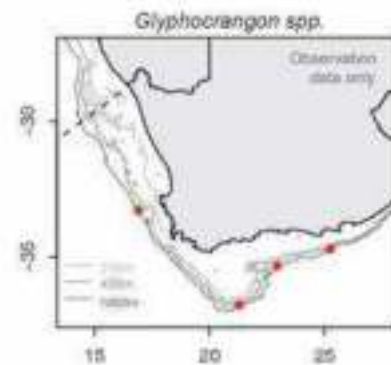
None.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 810-811 (as *Pontophilus sculptus*).

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

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Glyphocrangonidae
Genus:	<i>Glyphocrangon</i>
Species:	spp.
Common name:	Armoured shrimps

**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.

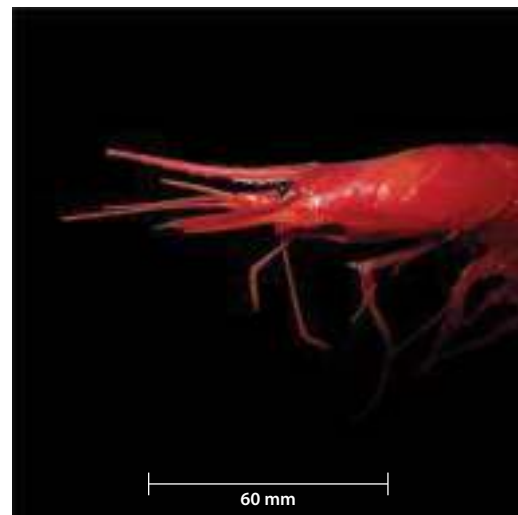
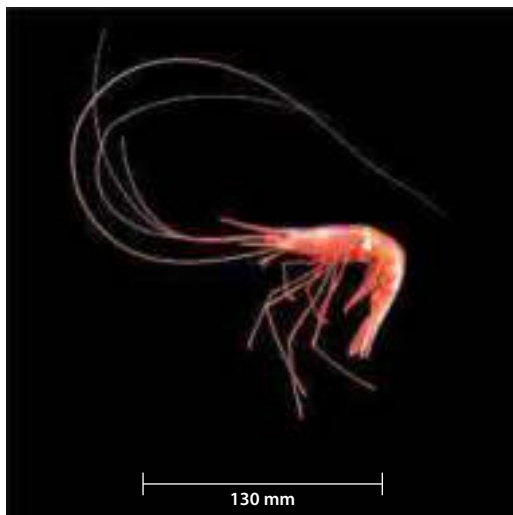
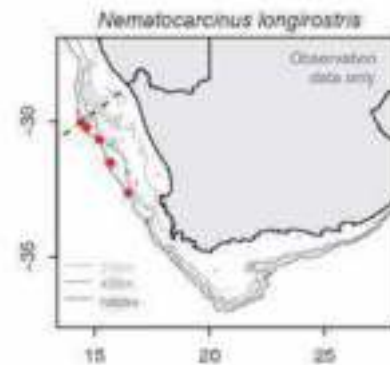
References

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 334-340.

Komai T. 2010. A new species of the deep-sea shrimp genus *Glyphocrangon* A. Milne-Edwards (Crustacea: Decapoda: Caridea: Glyphocrangonidae) from the southeastern Atlantic off southern Africa. *African Natural History* 6: 83-90.

Nematocarcinus longirostris (NemLon)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Nematocarcinidae
Genus:	<i>Nematocarcinus</i>
Species:	<i>longirostris</i>
Common name:	Long-rostrum prawn



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 \pm 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.

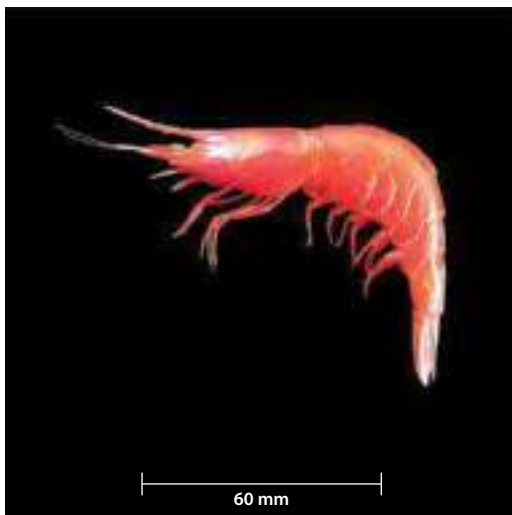
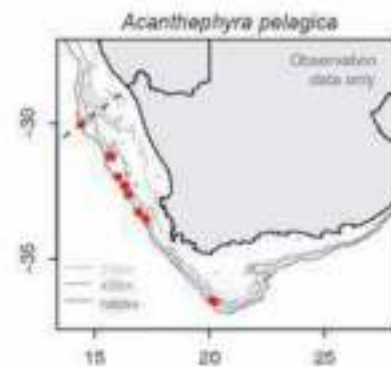
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 671-674.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 185-187; listed as a synonym of *N. sigmoideus*.

***Acantheephyra pelagica* (AcaPel)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Acantheephyridae
Genus:	<i>Acantheephyra</i>
Species:	<i>pelagica</i>
Common name:	Red pelagic prawn

**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) \pm 60 mm length.

Distribution

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

Similar species

Oplophorus novaezeelandiae, 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

Burukovsky RN and Andreeva VM. 2010. On the biology of *Acantheephyra pelagica* (Decapoda: Natantia: Oplophoridae) of the North Atlantic subtropical convergence zone. *Journal of Siberian Federal University* 3:303-321.

Kensley B. 1978. *Shrimps and Prawns of Southern Africa*. South African Museum, Cape Town, 38pp.

Notostomus elegans (NotWes)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Acanthephyridae
Genus:	<i>Notostomus</i>
Species:	<i>elegans</i>
Common name:	Dark red double-keeled prawn



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 rostrum and lateral ridges on carapace.

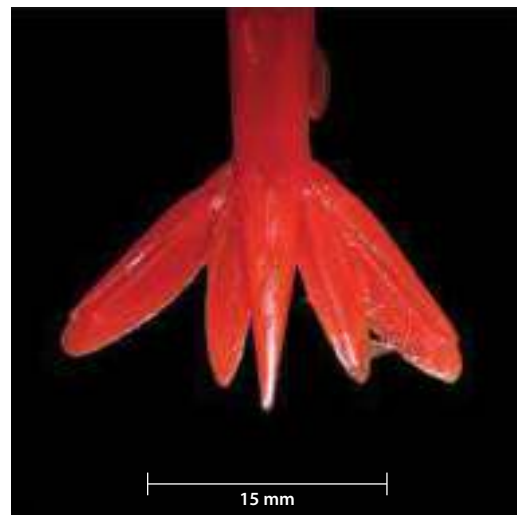
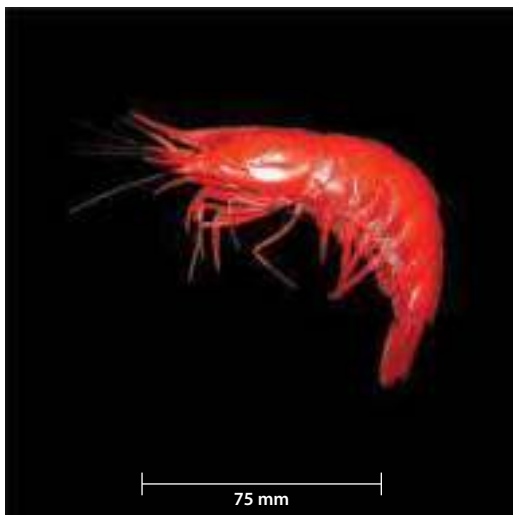
References

Kensley B. 1978. *Shrimps and Prawns of Southern Africa*. South African Museum, Cape Town. 38pp. (as *N. westergreni*).

Retamal M and Ulloa P. 2015. A new record of *Notostomus elegans* Milne Edwards, 3883 in Chilean waters (Decapoda, Pleocyemata, Oplophoridae). *Wulfenia* 22(5): 233-235.

***Oplophorus novaezeelandiae* (OpINov)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Oplophoridae
Genus:	<i>Oplophorus</i>
Species:	<i>novaezeelandiae</i>
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.

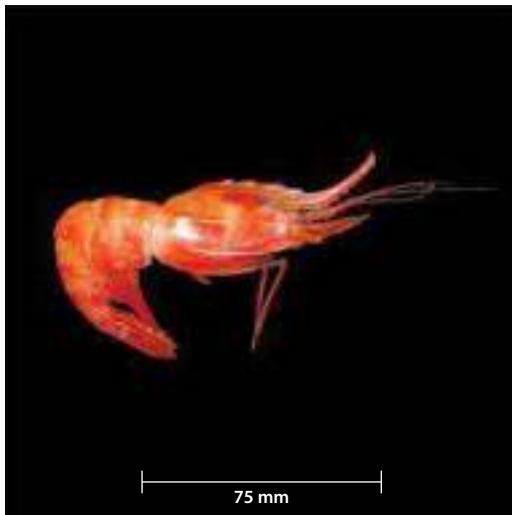
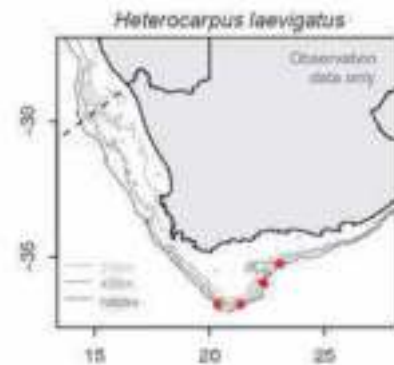
References

Burokovsky RN. 2011. Pelagic shrimps of Namibia. *Zoologicheskyy Zhurnal* 90(4): 412–419.

Kensley B. 1978. *Shrimps and Prawns of Southern Africa*. South African Museum, Cape Town: 38pp.

Heterocarpus laevigatus (HetLae)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Pandalidae
Genus:	<i>Heterocarpus</i>
Species:	<i>laevigatus</i>
Common name:	Smooth nylon shrimp



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

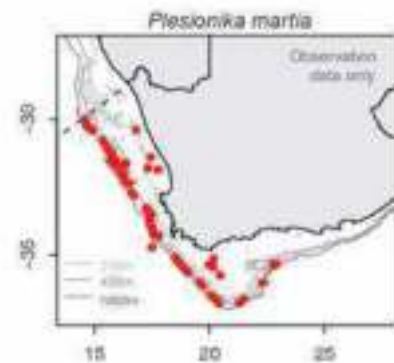
None.

References

- Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 684.
- Dailey MD and Ralston S. 1986. Aspects of the reproductive biology, spatial distribution, growth, and mortality of the deepwater caridean shrimp, *Heterocarpus laevigatus* in Hawaii. *Fishery Bulletin* 84 (4): 915-925.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 315- 319.

***Plesionika martia* (PleMar)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Pandalidae
Genus:	<i>Plesionika</i>
Species:	<i>martia</i>
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

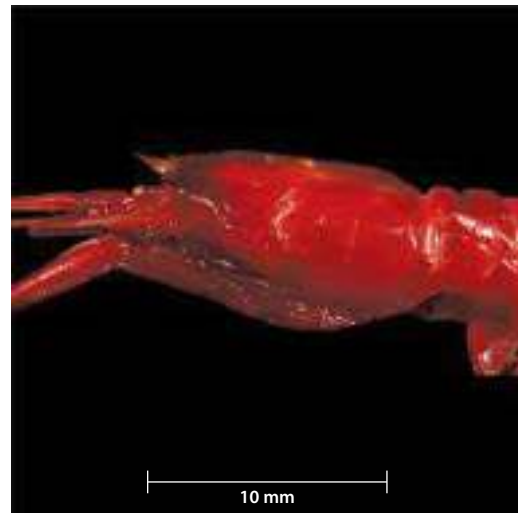
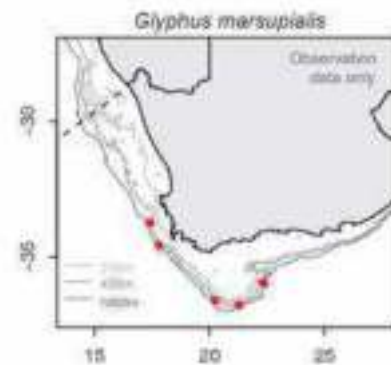
One of 14 species from this genus in the region, these being distinguished mostly by numbers and arrangement of teeth on rostrum.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837, pp. 679-681.

Glyphus marsupialis (GlyMar)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Pasiphaeidae
Genus:	<i>Glyphus</i>
Species:	<i>marsupialis</i>
Common name:	Kangaroo shrimp



Distinguishing features

Large red shrimp. Carapace with dorsal ridge terminating in a short triangular rostrum. Two pairs of scissor-like chelae with fingers bearing numerous sharp, toothlike scales. Abdomen of female swollen (hence common name). Known to bioluminesce. Carnivorous.

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

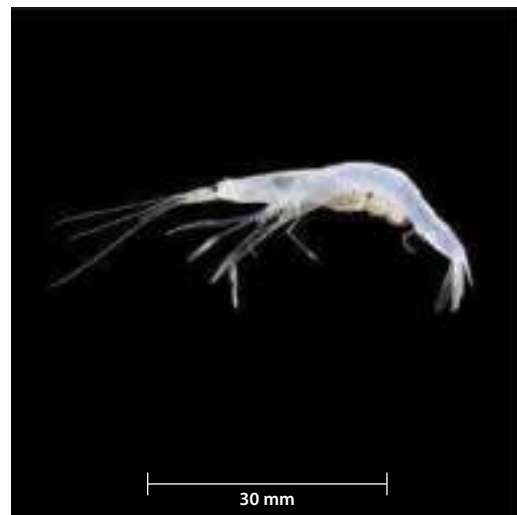
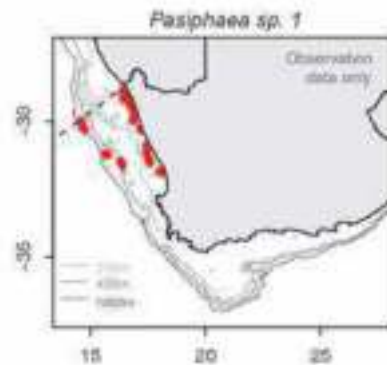
None.

References

Not detailed in any previous regional guide, but listed (from Namibia) by: Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 3, p. 425.

***Pasiphaea* sp. 1 (Pasiph)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Pasiphaeidae
Genus:	<i>Pasiphaea</i>
Species:	sp. 1
Common name:	Glass shrimp

**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.

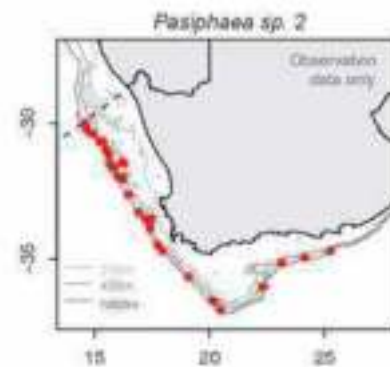
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 648-650.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 132-140.

Pasiphaea sp. 2 (Pasip2)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Caridea
Family:	Pasiphaeidae
Genus:	<i>Pasiphaea</i>
Species:	sp. 2
Common name:	Ventrally flattened shrimp



Distinguishing features

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 *Pasiphaea* sp. 1.

Colour

Often red thorax with white tail. Can have orange-red colouration around edges, or be completely white, or completely red to orange.

Size

Average 160 mm total length including rostrum.

Distribution

West and South Coasts of South Africa.

Similar species

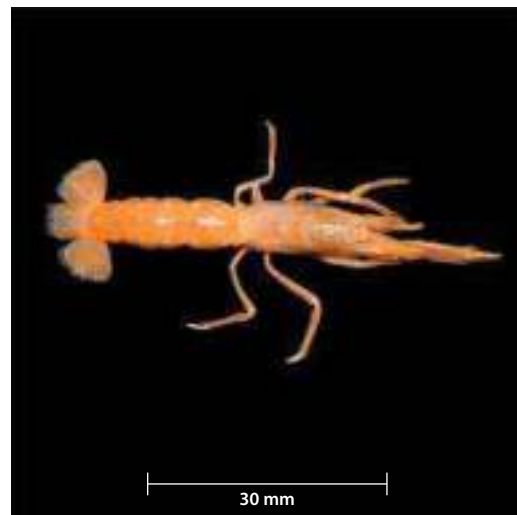
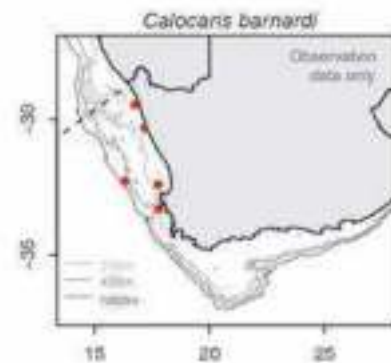
There are nine species of this genus reported from Southern African waters. All are delicate shrimps with rostrum reduced or absent and first two pairs of pereopods chelate, with characteristic comb-like hairs on finger. Larger and more ventrally flattened than *Pasiphaea* sp. 1.

References

- Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 648-650.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, pp. 132-140.

***Calocaris barnardi* (SnapSh)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Axiidea
Family:	Axiidae
Genus:	<i>Calocaris</i>
Species:	<i>barnardi</i>
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.

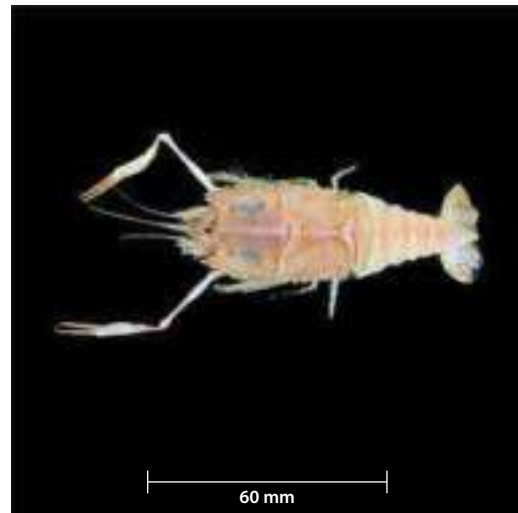
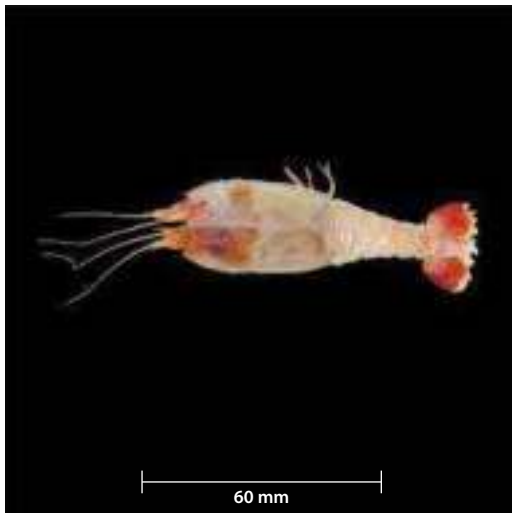
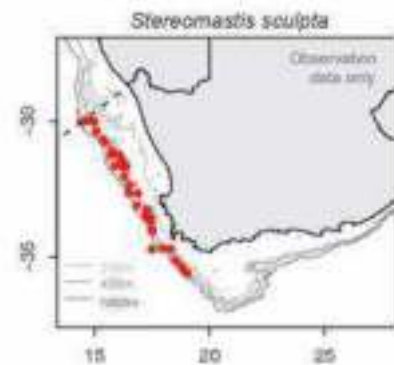
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 501-503.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, p. 382.

Stereomastis sculpta (SteScu)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Polychelida
Family:	Polychelidae
Genus:	<i>Stereomastis</i>
Species:	<i>sculpta</i>
Common name:	Deep-sea blind lobster/Sea cockroach



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

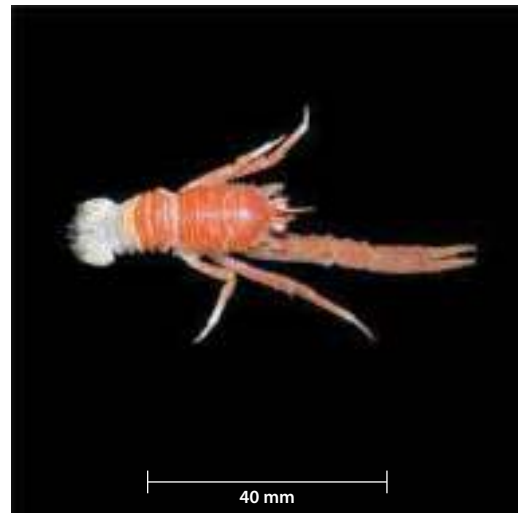
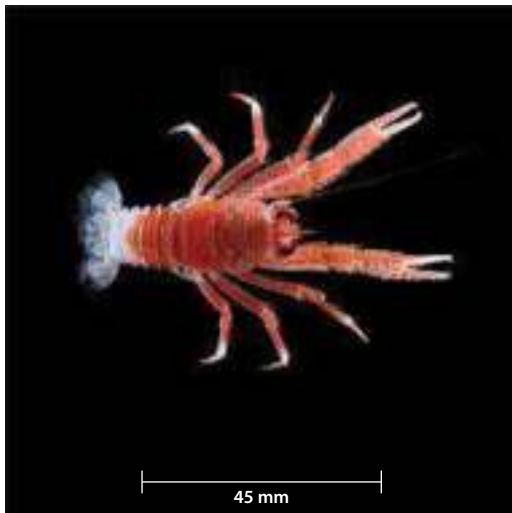
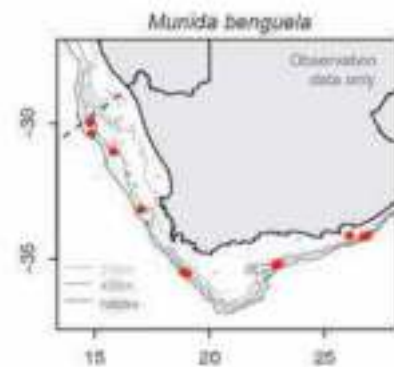
Polycheles typhlops has similar body shape, but is orange red and lacks spines on medial keel of carapace.

References

- Abelló P and Cartes JE. 1992. Population characteristics of the deep-sea lobsters *Polycheles typhlops* and *Stereomastis sculpta* (Decapoda: Polychelidae) in a bathyal mud community of the Mediterranean Sea. *Marine Biology* 114(1): 109-117.
- Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 501-503.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, 382pp.

***Munida benguela* (Muninc)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Munididae
Genus:	<i>Munida</i>
Species:	<i>benguela</i>
Common name:	Striped squat lobster

**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

de Saint Laurent M and Macpherson E. 1988. *Munida benguela*, espèce nouvelle d'Afrique du Sud. Comparaison avec *Munida sanctipauli* Henderson, 1885 (Crustacea: Decapoda: Galatheidae). *Bulletin du Muséum National d'Histoire Naturelle*, Paris, 4, pp. 105-115.

Dardanus arrosor (PagAro)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Diogenidae
Genus:	<i>Dardanus</i>
Species:	<i>arrosor</i>
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

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 1, 382pp.

McLaughlin PA, Rahayu DL, Komai T and Chan TY. 2007. *A Catalogue of the Hermit Crabs (Paguroidea) of Taiwan*, National Taiwan Ocean University, Keelung, Taiwan, 365pp.

***Paguristes* sp. (PaguSp)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Diogenidae
Genus:	<i>Paguristes</i>
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)

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Decapoda

Infraorder: Anomura

Family: Paguridae

Genus: *Anapagurus*

Species: *hendersoni*

Common name: Blue-lined hermit crab



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

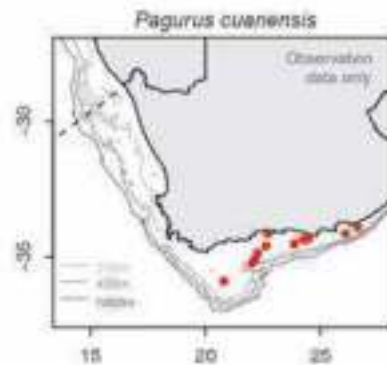
Goreopagurus poorei, but *A. hendersoni* has distinct colour markings (blue stripes and maroon dot).

Reference

García-Gómez J. 1994. The systematics of the genus *Anapagurus* Henderson, 1886, and a new genus for *Anapagurus drachi* Forest, 1966 (Crustacea: Decapoda: Paguridae). *Zoologische Verhandelingen* 295: 1-131.

***Pagurus cuanensis* (PagCua)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Paguridae
Genus:	<i>Pagurus</i>
Species:	<i>cuanensis</i>
Common name:	Hairy hermit crab

**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. Eystalks 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

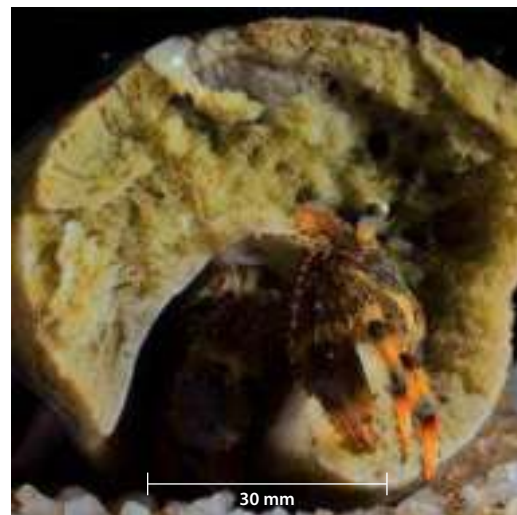
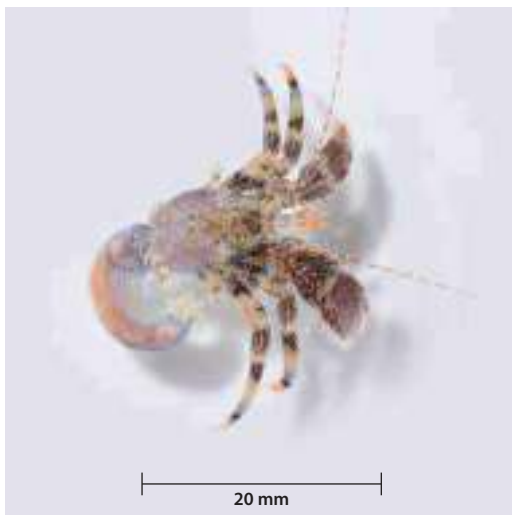
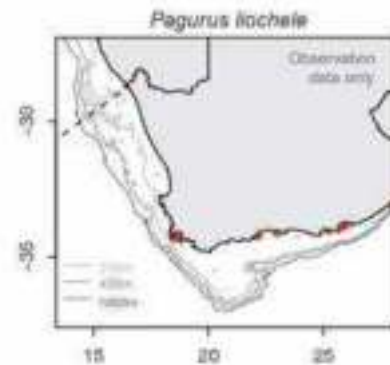
Pagurus liochele, but *P. cuanensis* distinguished by strongly spined and very hairy chelae and does not have blue colouration of *P. liochele*. At least six other specimens of the genus occur in the region. *Propagurus deprofundis* occurs in greater depths.

Reference

McLaughlin PA and Forest J. 1999. Hermit crabs of the genus *Pagurus* Fabricius (Crustacea, Decapoda, Paguridae) from south-eastern South Africa. *Annals of the South African Museum* 105: 297-344.

Pagurus liochele (PagLio)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Paguridae
Genus:	<i>Pagurus</i>
Species:	<i>liochele</i>
Common name:	Blue-faced hermit



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.

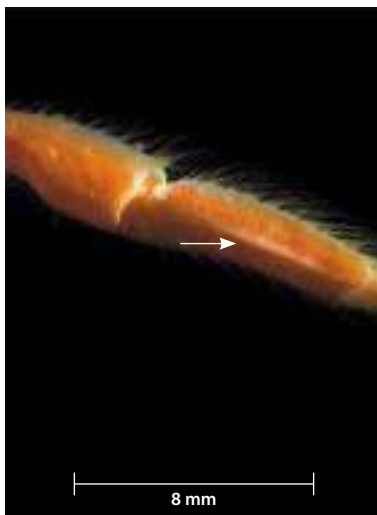
References

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 169-172.

McLaughlin PA and Forest J. 1999. Hermit crabs of the genus *Pagurus* Fabricius (Crustacea, Decapoda, Paguridae) from south-eastern South Africa. *Annals of the South African Museum* 105: 297-344.

***Propagurus deprofundis* (ProDep)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Paguridae
Genus:	<i>Propagurus</i>
Species:	<i>deprofundis</i>
Common name:	Orange keeled hermit

**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

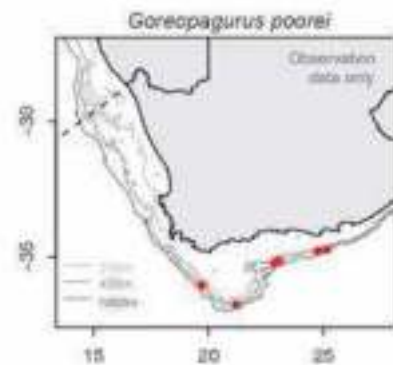
Potentially confused with the parapagurid species *Sympagurus*, *Parapagurus* and *Paragiopagurus*, which can also be orange, but longitudinal keel on second walking legs and spiny chelae of *P. deprofundis* are distinctive. *Pagurus cuanensis* occurs in shallower waters.

Reference

McLaughlin PA and Forest J. 1999. Hermit crabs of the genus *Pagurus* Fabricius (Crustacea, Decapoda, Paguridae) from south-eastern South Africa. *Annals of the South African Museum* 105: 297-344.

***Goreopagurus poorei* (Goreo)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Paguridae
Genus:	<i>Goreopagurus</i>
Species:	<i>poorei</i>
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

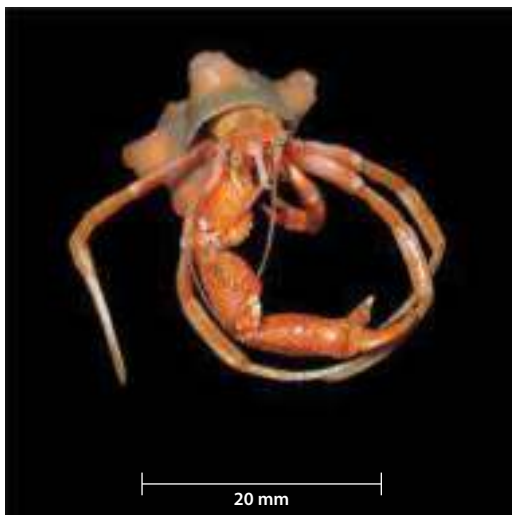
Could be confused with *Anapagurus hendersoni*, which has a similar appearance, but *G. poorei* occurs much deeper and has a light orange colouration with black eyes. *G. poorei* co-occurs with *Propagurus deprofundis*, but is easily distinguishable from the latter by the smooth claw.

References

- Landschoff J and Lemaitre R. 2017. Crossing the Indian Ocean: a range extension for *Goreopagurus poorei* Lemaitre & McLaughlin, 2003 (Crustacea: Decapoda: Paguridae). *Zootaxa*, 4306(2): 271-278.
- Lemaitre R and McLaughlin PA. 2003. New species of *Goreopagurus* (Decapoda: Anomura: Paguridae) from Tasmania and re-evaluation of sexual tubes in hermit crab systematics. *Memoirs of Museum Victoria* 60(2): 221-227.

***Paragiopagurus atkinsonae* (ParAtk)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Parapaguridae
Genus:	<i>Paragiopagurus</i>
Species:	<i>atkinsonae</i>
Common name:	Green-eyed hermit

**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 tubercles 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

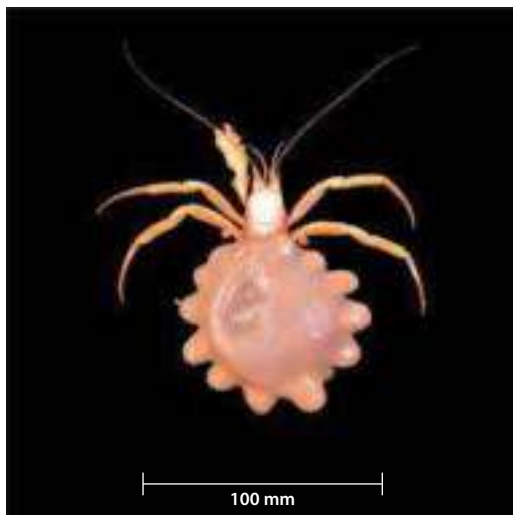
Sympagurus dimorphus and *Parapagurus bouvieri*, but distinctive colouration and green eyes of *P. atkinsonae* are distinguishing characters. Adults half the size of fully-grown *S. dimorphus* or *P. bouvieri*.

Reference

Landschoff J and Lemaitre R. 2017. Differentiation of three common deep-water hermit crabs (Crustacea: Decapoda: Anomura: Parapaguridae) from the South African demersal abundance surveys, including the description of a new species of *Paragiopagurus* Lemaitre, 1996. *Zookeys* 676: 21-45.

Parapagurus andreui (ParAnd)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Parapaguridae
Genus:	<i>Parapagurus</i>
Species:	<i>andreui</i>
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

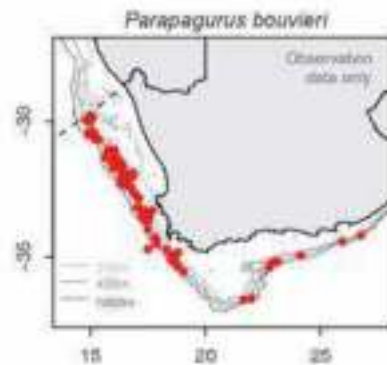
Parapagurus bouvieri, but *P. andreui* has well-calcified legs and even more densely setose chelipeds. It also occupies a different type of zooanthid.

Reference

Lemaitre R. 1999. Crustacea Decapoda: a review of the species of the genus *Parapagurus* Smith, 1879 (Parapaguridae) from the Pacific and Indian Oceans. *Mémoires du Muséum National D'Histoire Naturelle* 180: 303-378.

***Parapagurus bouvieri* (ParPil)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Parapaguridae
Genus:	<i>Parapagurus</i>
Species:	<i>bouvieri</i>
Common name:	Hairy-clawed hermit crab

**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. Zooanthid polyps arranged around bottom margin of pseudoshell (unlike evenly-distributed polyps of the epizooanthid 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.

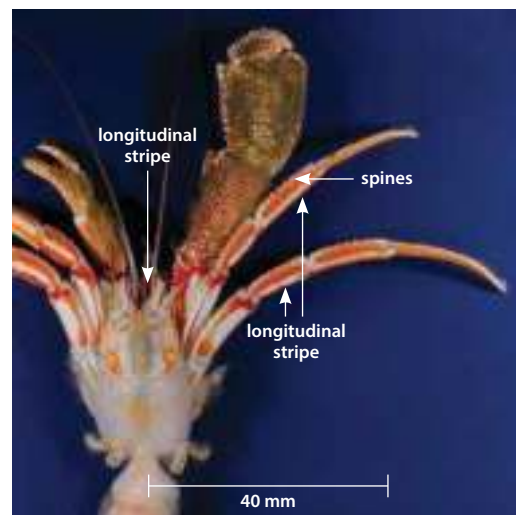
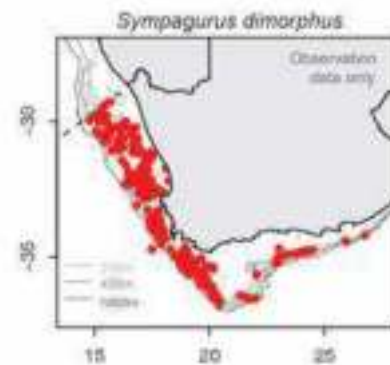
References

Landschoff J and Lemaitre R. 2017. Differentiation of three common deep-water hermit crabs (Crustacea: Decapoda: Anomura: Parapaguridae) from the South African demersal abundance surveys, including the description of a new species of *Paragiopagurus* Lemaitre, 1996. *Zookeys* 676: 21-45.

Lemaitre R. 1999. Crustacea Decapoda: a review of the species of the genus *Parapagurus* Smith, 1879 (Parapaguridae) from the Pacific and Indian Oceans. *Mémoires du Muséum National D'Histoire Naturelle* 180: 203-378.

Sympagurus dimorphus (ParDim)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Parapaguridae
Genus:	<i>Sympagurus</i>
Species:	<i>dimorphus</i>
Common name:	Dimorphic hermit crab



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

Landschoff J and Lemaitre R. 2017. Differentiation of three common deep-water hermit crabs (Crustacea: Decapoda: Anomura: Parapaguridae) from the South African demersal abundance surveys, including the description of a new species of *Paragiopagurus* Lemaitre, 1996. *Zookeys* 676: 21-45.

Lemaitre R. 2004. A worldwide review of hermit crab species of the genus *Sympagurus* Smith, 1883 (Crustacea: Decapoda: Parapaguridae). *Tropical Deep-Sea Benthos* 23: 85-149.

***Lithodes ferox* (LitFer)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Lithodidae
Genus:	<i>Lithodes</i>
Species:	<i>ferox</i>
Common name:	Fierce king crab

**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

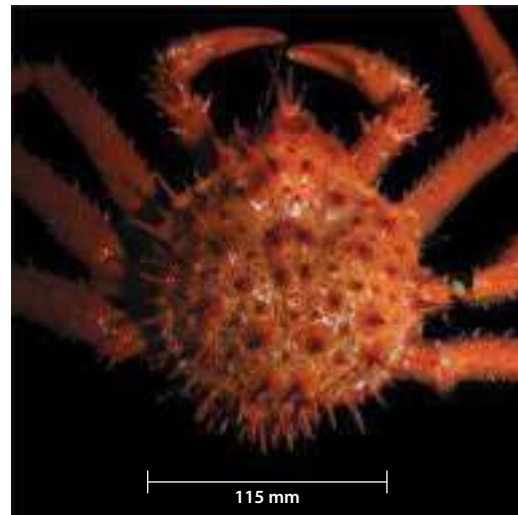
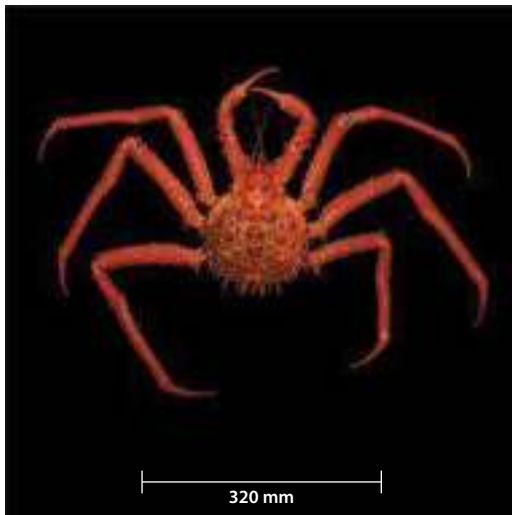
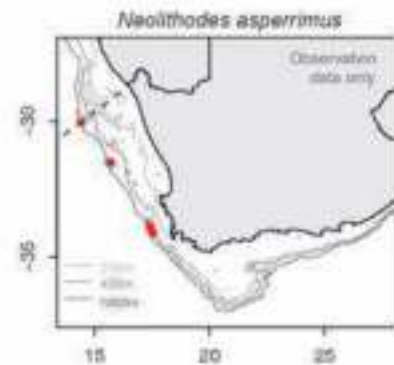
Neolithodes asperrimus, but *L. ferox* is considerably smaller and has a long projecting double-pronged two-spined rostrum.

References

- Abelló P and Macpherson E. 1991. Distribution patterns and migration of *Lithodes ferox* (Filhol) (Anomura: Lithodidae) off Namibia. *Journal of Crustacean Biology* 11: 261-268.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing. Vol 2, pp. 85-89.

***Neolithodes asperrimus* (NeoAsp)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Lithodidae
Genus:	<i>Neolithodes</i>
Species:	<i>asperrimus</i>
Common name:	Rough stone crab



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.

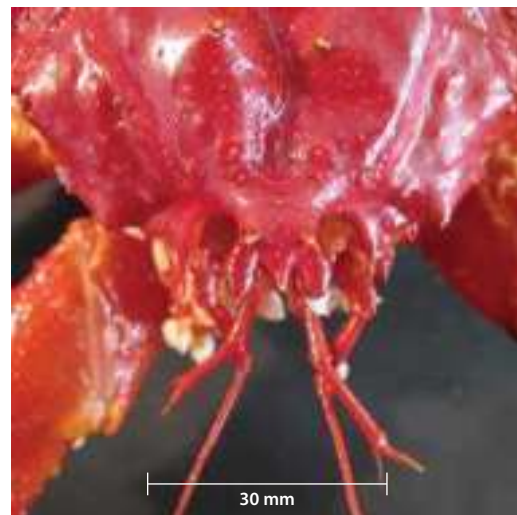
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 408-413.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing. Vol 2, pp. 90-93.

***Neolithodes capensis* (NeoCap)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Anomura
Family:	Lithodidae
Genus:	<i>Neolithodes</i>
Species:	<i>capensis</i>
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

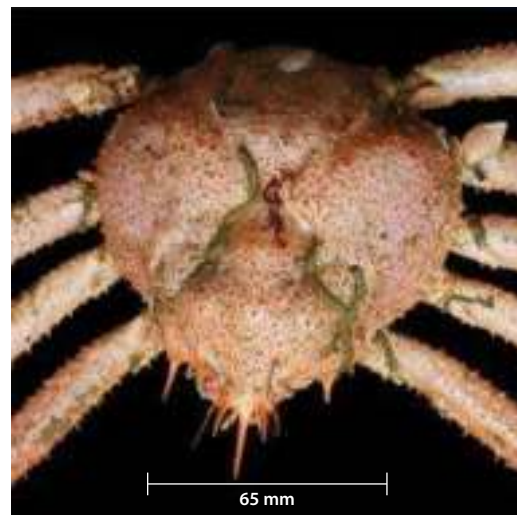
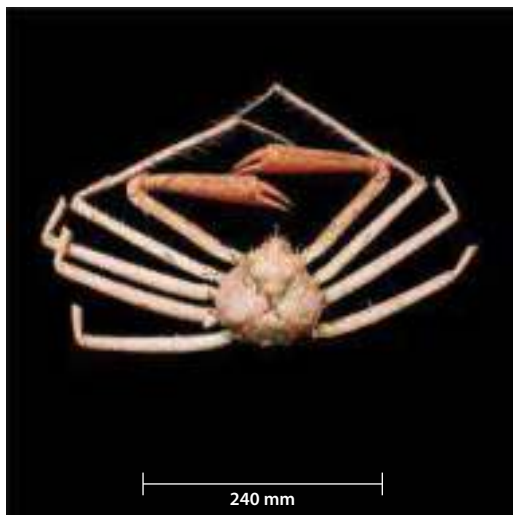
Lithodes ferox and *Neolithodes asperrimus*, but *N. capensis* lacks the distinct double-pronged projecting rostrum of *L. ferox* and the heavily prickly legs of *N. asperrimus*.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 408-410.

Vitjazmaia latidactyla (VitJaz)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachidae
Genus:	<i>Vitjazmaia</i>
Species:	<i>latidactyla</i>
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).

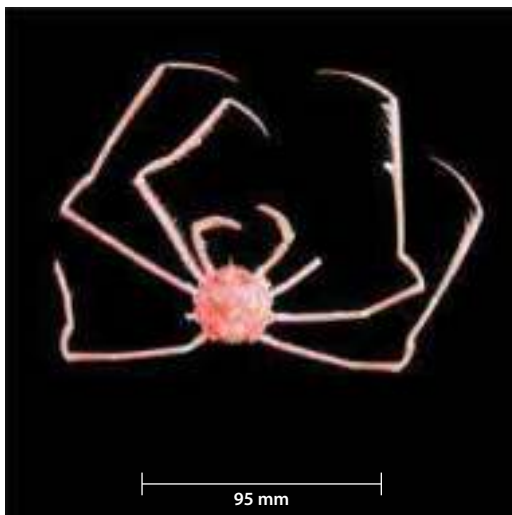
References

Naylor JR, Webber WR and Booth JD. 2005. A guide to common offshore crabs in New Zealand waters. *New Zealand Aquatic Environmental and Biodiversity Report No 2*, Ministry of Fisheries, Wellington, ISSN 1176-9440, 47pp.

Webber R. 1995. Deep sea Majidae. *Journal of the Royal Society of New Zealand*, 25: 502-506.

***Platymaia turbynei* (PlaTur)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachidae
Genus:	<i>Platymaia</i>
Species:	<i>turbynei</i>
Common name:	Three-spined spider crab

**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.

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.

Similar species

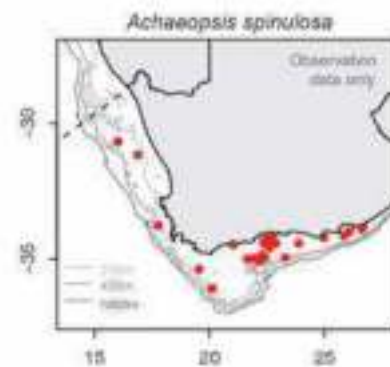
The only species of the genus recorded in South Africa, but *Platymaia alcocki* occurs in the Indian Ocean to Mozambique. It differs from *P. turbynei* by having a narrower and smoother carapace and dense hairs on the chelipeds. *Platymaia longimana* is reported from Namibia.

References

- Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 31-32.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing. Vol 2, pp. 468-469.
- Griffin DJG. 1974. Spider crabs (Crustacea: Brachyura: Majidae) from the International Indian Ocean Expedition, 1963-1964. *Smithsonian Contributions to Zoology* 182: 1-35.

Achaeopsis spinulosa (AchSpi)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachidae
Genus:	<i>Achaeopsis</i>
Species:	<i>spinulosa</i>
Common name:	Short-spined/Hotlips spider crab



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.

Colour

Orange to salmon colour when alive, with white and red mottled chelipeds. Pereopods with wide bands of orange and white (often faint).

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

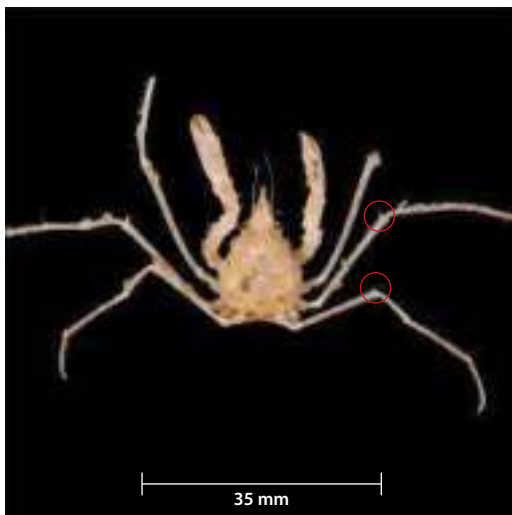
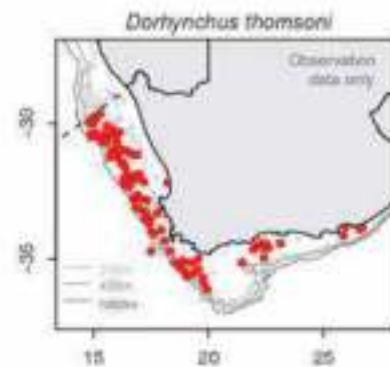
Rochinia hertwigi (flattened tubercles), *Macropodia falcifera* (more pronounced dorsal spines) and *Dorhynchus thomsoni* (longer rostral spines).

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837, pp. 23-25.

***Dorhynchus thomsoni* (AchTho)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachidae
Genus:	<i>Dorhynchus</i>
Species:	<i>thomsoni</i>
Common name:	Long-spined spider crab

**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*).

Colour

Orange to salmon when live, with white and red mottling on chelipeds. Pereopods with wide bands of orange and white (often faint).

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

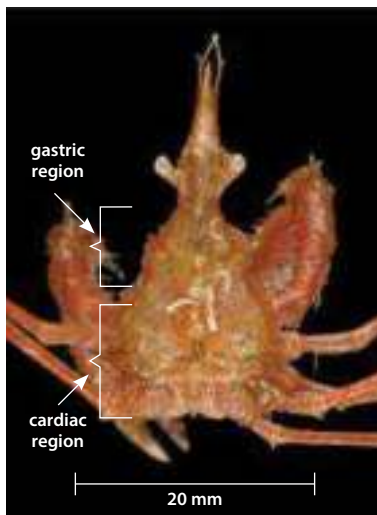
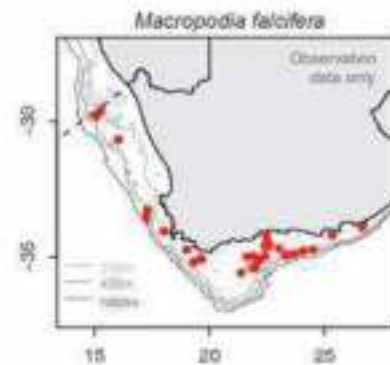
Rochinia hertwigi (flattened tubercles), *Macropodia falcifera* (more pronounced dorsal spines) and *Achaeopsis spinulosa* (shorter rostral spines).

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 23-25.

Macropodia falcifera (MacFal)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachidae
Genus:	<i>Macropodia</i>
Species:	<i>falcifera</i>
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.

Colour

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*.

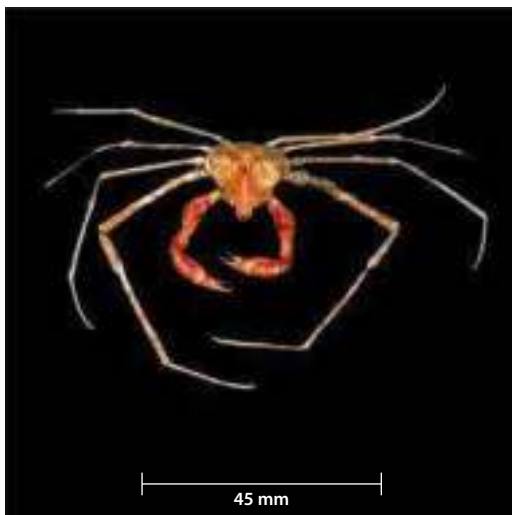
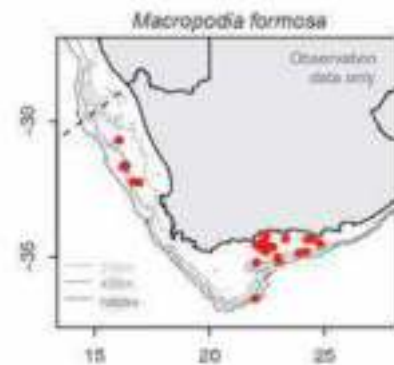
References

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 465-467.

Ng PK, Richer De Forges B, Jones G. 2013. Taxonomy and ecology of the Cape Town Spider Crab, *Macropodia falcifera* (Stimpson, 1858) (Crustacea: Decapoda: Brachyura: Inachidae). *Zootaxa* 3626: 391-396.

***Macropodia formosa* (MacFor)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachidae
Genus:	<i>Macropodia</i>
Species:	<i>formosa</i>
Common name:	Cape long-legged spider crab

**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

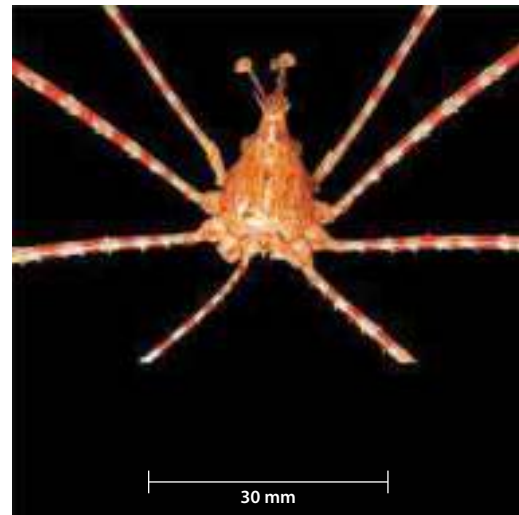
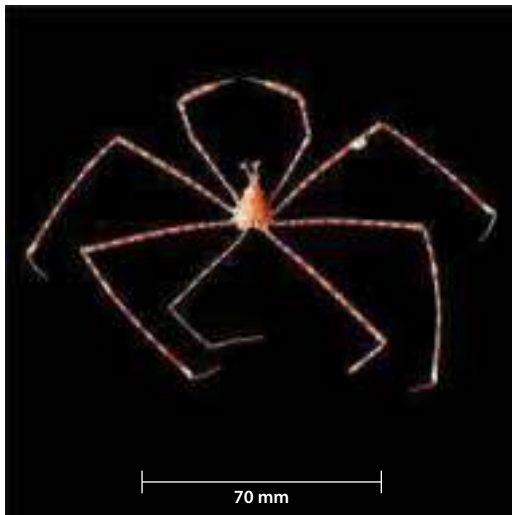
Rochinia hertwigi, *Dorhynchus thomsoni*, *Achaeopsis spinulosa* and *Macropodia falcifera*.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 13-18.

Latreillia metanesa (LatMet)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Latreilliidae
Genus:	<i>Latreillia</i>
Species:	<i>metanesa</i>
Common name:	Candycane crab



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

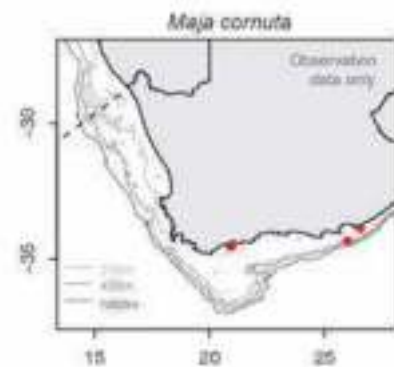
Unmistakable – *L. valide* (not depicted) also occurs in the region and has similar striped legs, but a round carapace.

Reference

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing. Vol 2, pp. 241-244 (notes in entry on *L. valide*).

***Maja cornuta* (MamCap)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Majidae
Genus:	<i>Maja</i>
Species:	<i>cornuta</i>
Common name:	Agulhas spider crab

**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.

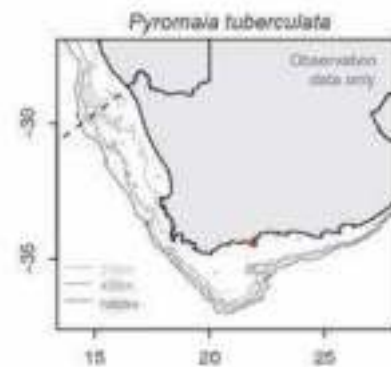
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 59-60 (as *Mamaia capensis*).

Ng PKL and Richer de Forbes B. 2015. Revision of the spider crab genus *Maja* Lamarck, 1801 (Crustacea: Brachyura: Majoidea: Majidae), with descriptions of seven new genera and 17 new species from the Atlantic and Indo-West Pacific. *Raffles Bulletin of Zoology* 63: 110-225.

Pyromaia tuberculata (PyrSpp)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Inachoididae
Genus:	<i>Pyromaia</i>
Species:	<i>tuberculata</i>
Common name:	Tuberculate pear crab



Distinguishing features

Carapace pear-shaped and convex, with four large tubercles, one anteriorly central and three larger ones posteriorly, each covered in small knobby 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

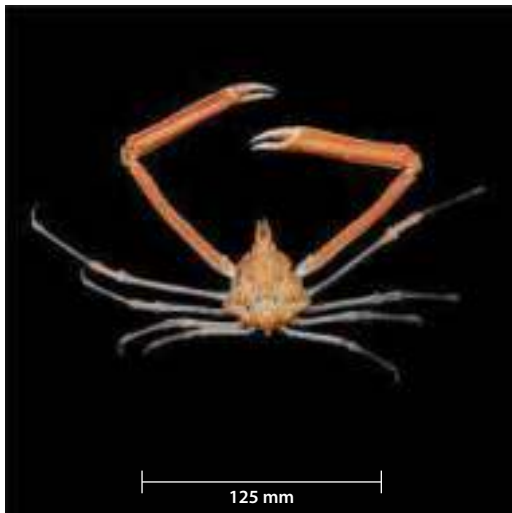
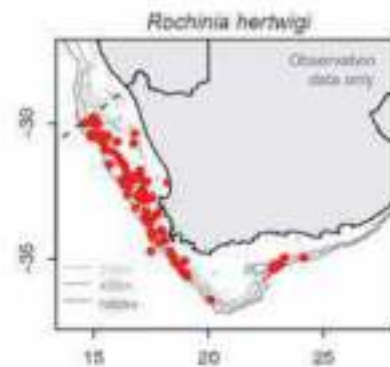
Superficially similar to *Rochinia hertwigi*, *Dorhynchus thomsoni*, *Achaeopsis spinulosa* and *Macropodia falcifera*, but distinguished by inflated tubercles.

Reference

Ahyong ST. 2005. Range extension of two invasive crab species in Eastern Australia: *Carcinus meanas* (Linnaeus) and *Pyromaia tuberculata* (Lockington). *Marine Pollution Bulletin* 50: 460-462.

***Rochinia hertwigi* (ScyHer)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Epialtidae
Genus:	<i>Rochinia</i>
Species:	<i>hertwigi</i>
Common name:	Rochinia sunday/Two prong crab

**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

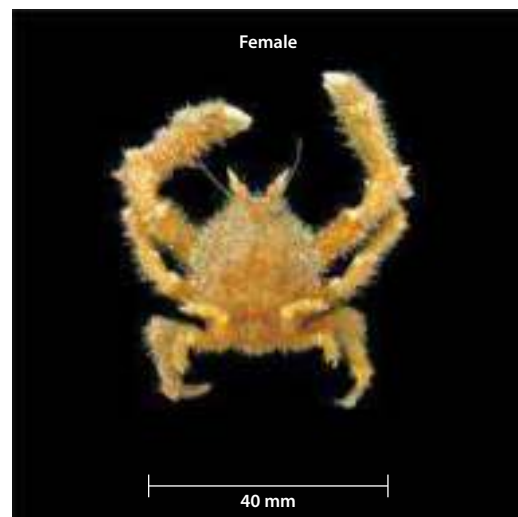
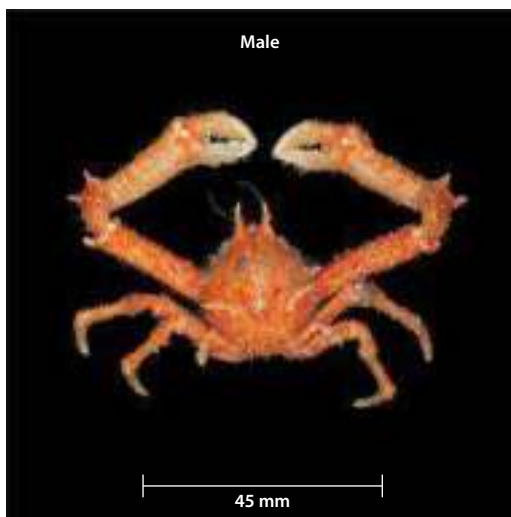
Unmistakable with the flat-topped tubercles and long tapering rostral spines. Larger and more robust than *Dorhynchus thomsoni*, *Achaeopsis spinulosa* and *Macropodia falcifera*.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 50-51 (as *Scyramathia hertwigi*).

Exodromidia spinosissima (ExoBic)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Dromiidae
Genus:	<i>Exodromidia</i>
Species:	<i>spinosissima</i>
Common name:	Horned baboon crab



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

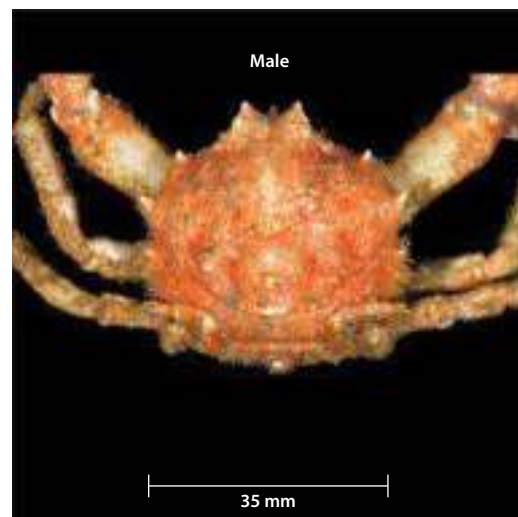
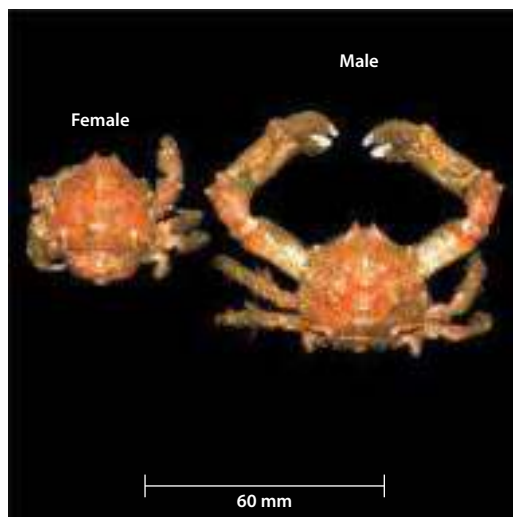
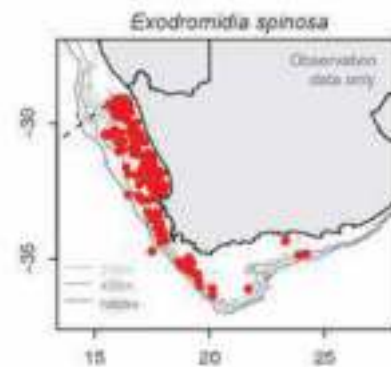
Similar to *Exodromidia spinosa*, but with longer chelipeds and pronounced anterior spines on carapace, and also less common.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. p. 327 (as *E. bicornis*).

***Exodromidia spinosa* (ExoSpi)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Dromiidae
Genus:	<i>Exodromidia</i>
Species:	<i>spinosa</i>
Common name:	Furry baboon crab

**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 spinosissima, 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

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. p. 326.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 214-216.

Dromidia aegibotus (DroPer)

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Decapoda

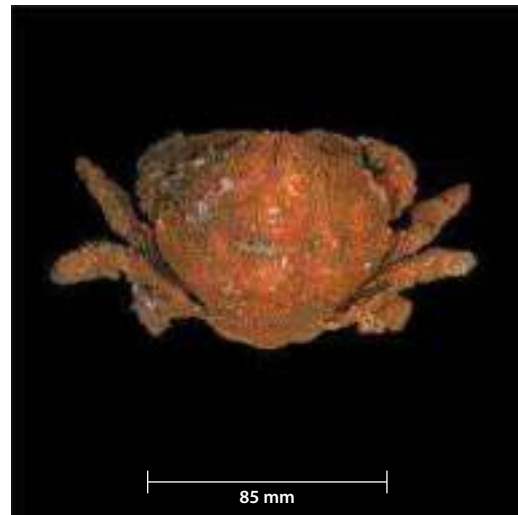
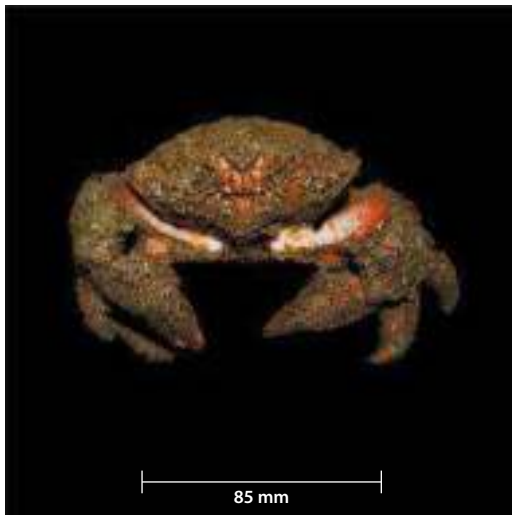
Infraorder: Brachyura

Family: Dromiidae

Genus: *Dromidia*

Species: *aegibotus*

Common name: Sponge crab



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

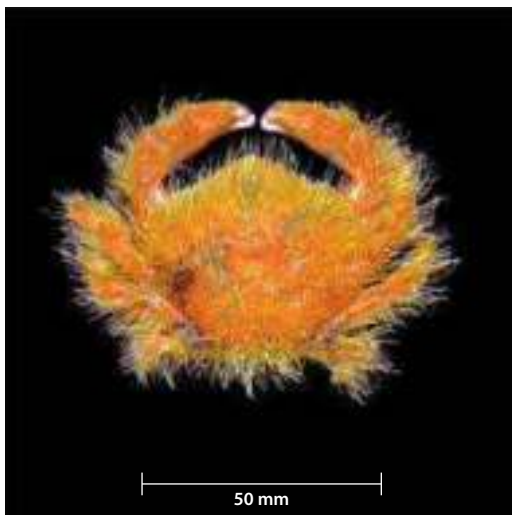
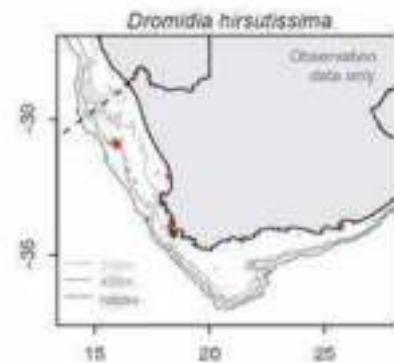
Dromidia hirsutissima, but *D. aegibotus* is larger, and has shorter, stiff hairs.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 322-323.

***Dromidia hirsutissima* (DroHir)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Dromiidae
Genus:	<i>Dromidia</i>
Species:	<i>hirsutissima</i>
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

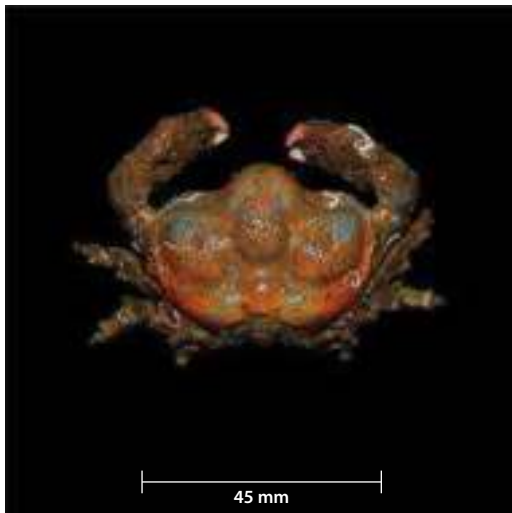
Exodromidia spp., but claws of *D. hirsutissima* folded close to mouth parts, more compact body shape and considerably longer, denser hairs.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 320-321.

***Speodromia platyarthrodes* (SpePla)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Dromiidae
Genus:	<i>Speodromia</i>
Species:	<i>platyarthrodes</i>
Common name:	Boxer/Muscle crab



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

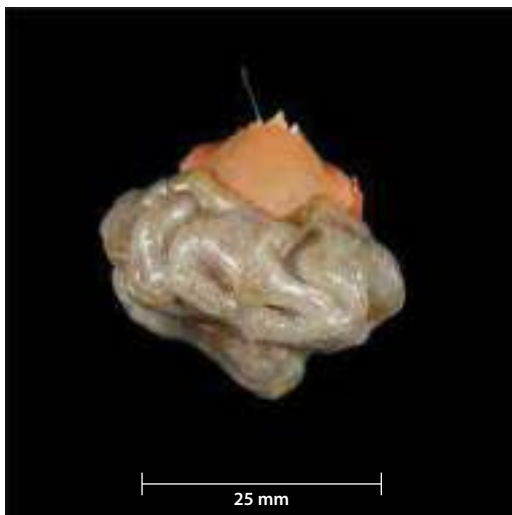
None.

Reference

Ng PK. 2016. The taxonomy of *Speodromia platyarthrodes* (Stebbing, 1905) (Crustacea: Brachyura), an unusual dromiid crab endemic to South Africa. *Zootaxa* 4111(3): 261-275.

***Pseudodromia rotunda* (PsuRot)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Dromiidae
Genus:	<i>Pseudodromia</i>
Species:	<i>rotunda</i>
Common name:	Rounded sponge crab

**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

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 222-224.

Stewart BA, Gouws G, Daniels SR and Matthee CA. 2004. Delimitation of morphologically similar sponge crab species of the genus *Pseudodromia* (Crustacea, Decapoda, Dromiidae) from South Africa. *Zoologica Scripta* 33: 45-55.

***Pseudodromia* spp. (Psddrm)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Dromiidae
Genus:	<i>Pseudodromia</i>
Species:	spp.
Common name:	Cloaked ascidian crab



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

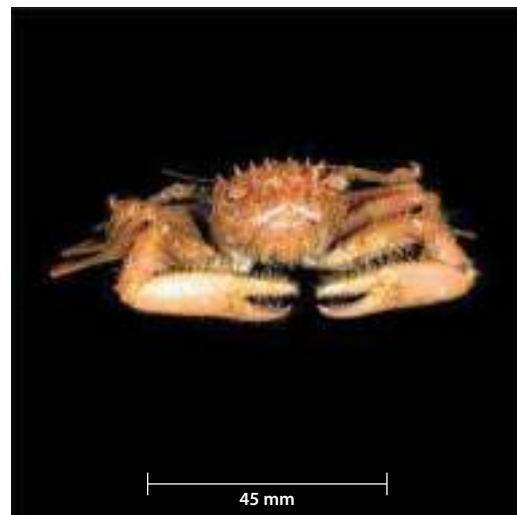
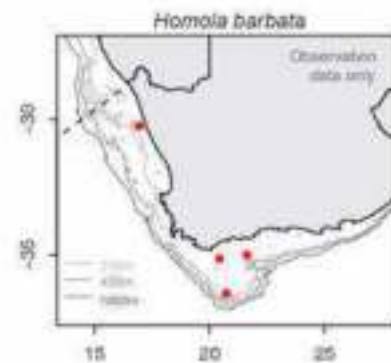
Pseudodromia rotunda, which is distinct in the form of frontal teeth and lower medial tooth.

Reference

Stewart BA, Gouws G, Daniels SR and Matthee CA. 2004. Delimitation of morphologically similar sponge crab species of the genus *Pseudodromia* (Crustacea, Decapoda, Dromiidae) from South Africa. *Zoologica Scripta* 33: 45-55.

***Homola barbata* (HomBar)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Homolidae
Genus:	<i>Homola</i>
Species:	<i>barbata</i>
Common name:	Periscope eye crab

**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

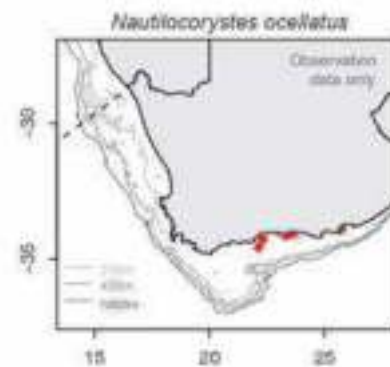
Miersiograpsus kingsleyi, but *H. barbata* is larger and has distinct spines on frontal portion of dorsal carapace.

Reference

Manning RB and Holthuis LB. 1981. West African Brachyuran crabs (Crustacea: Decapoda). *Smithsonian Contributions to Zoology* 306: 1-379.

Nautilocorystes ocellatus (NauOce)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Thiidae
Genus:	<i>Nautilocorystes</i>
Species:	<i>ocellatus</i>
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.

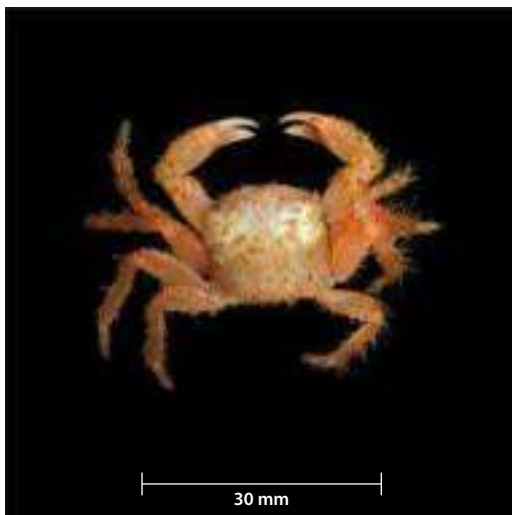
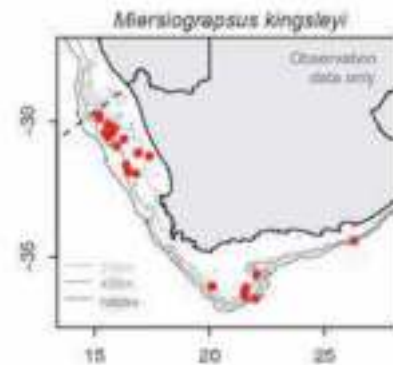
References

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 640-642.

Manning RB and Holthuis LB. 1981. West African Brachyuran crabs (Crustacea: Decapoda). *Smithsonian Contributions to Zoology* 306: 1-379 p. 72.

***Miersiograpsus kingsleyi* (LitKin)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Plagusiidae
Genus:	<i>Miersiograpsus</i>
Species:	<i>kingsleyi</i>
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.

Similar species

Homola barbata has a more elongated, rectangular carapace and spines on carapace.

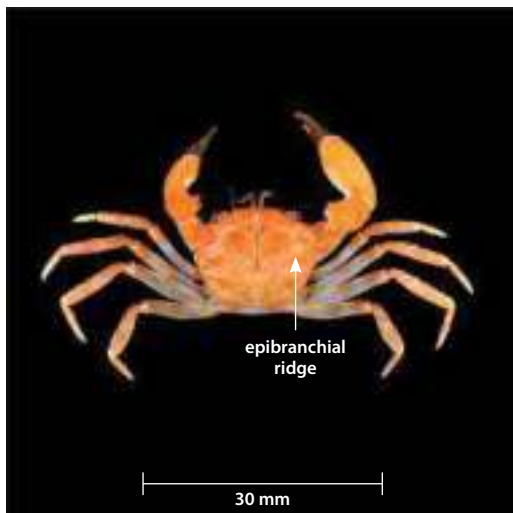
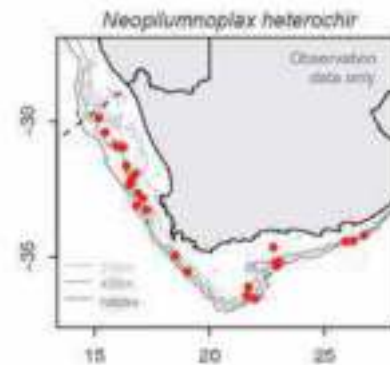
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 294-5 (as *Litocheira kingsleyi*).

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 3, pp. 224-226.

Neopilumnoplax heterochir (Dyspan)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Mathildellidae
Genus:	<i>Neopilumnoplax</i>
Species:	<i>heterochir</i>
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

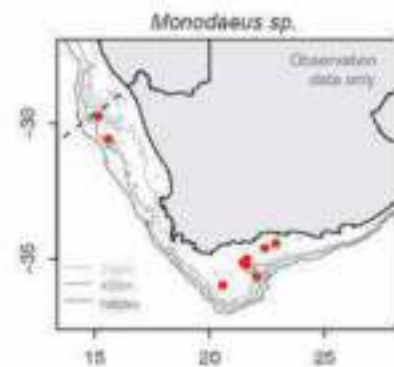
Monodaeus spp. are much more granular with knobs and ridges on carapace.

References

- Ahyong ST and Ng PKL. 2016. The species of *Mathildella* Guinot and Richer de Forges, 1981 and *Neopilumnoplax* Serène in Guinot, 1969 (Decapoda: Brachyura: Mathildellidae). *Journal of Crustacean Biology* 36(4): 538-552.
- 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:	<i>Monodaeus</i>
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

Guinot D and Macpherson E. 1988. Remarques sur le genre *Monodaeus* Guinot, 1967, avec la description de deux espèces nouvelles (Crustacea Decapoda Brachyura). *Bulletin du Muséum national d'Histoire naturelle*, Paris, 4, 10: 731-757.

Chaceon chuni (ChaChu)

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Decapoda

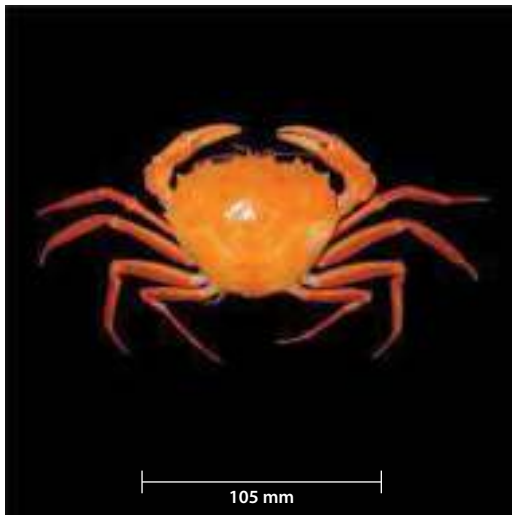
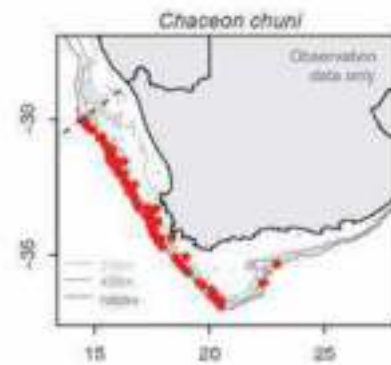
Infraorder: Brachyura

Family: Geryonidae

Genus: *Chaceon*

Species: *chuni*

Common name: Red crab



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 300-1 400 m depth.

Similar species

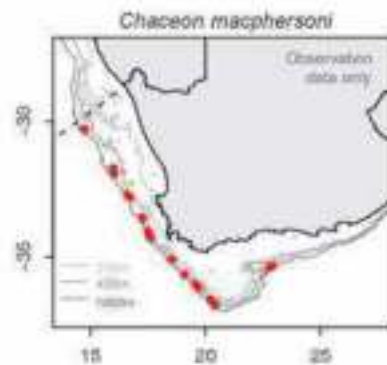
Chaceon macphersoni and *Chaceon maritae*, however these are paler than *C. chuni*, which is generally smaller in size, has a smoother carapace and flattened dactyl of fifth pereopod.

Reference

Manning KB and Holthius LB. 1988. South African species of the genus *Geryon* (Crustacea, Decapoda, Geryonidae). *Annals of the South African Museum* 98 (3): 77-92.

***Chaceon macphersoni* (ChaMac)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Geryonidae
Genus:	<i>Chaceon</i>
Species:	<i>macphersoni</i>
Common name:	White-leg crab

**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

- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 541-545.
- Groeneveld JC, Everett BI, Fennessy ST, Kirkman SP, Santos J, Robertson WD. 2013. Spatial distribution patterns, abundance and population structure of deep-sea crab *Chaceon macphersoni*, based on complementary analyses of trap and trawl data. *Marine and Freshwater Research* 64(6): 507-517.
- Manning KB and Holthius LB. 1988. South African species of the genus *Geryon* (Crustacea, Decapoda, Geryonidae). *Annals of the South African Museum* 98 (3): 77-92.

Chaceon maritae (Nrcrb)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Geryonidae
Genus:	<i>Chaceon</i>
Species:	<i>maritae</i>
Common name:	Northern/Deep-sea red crab



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.

Similar species

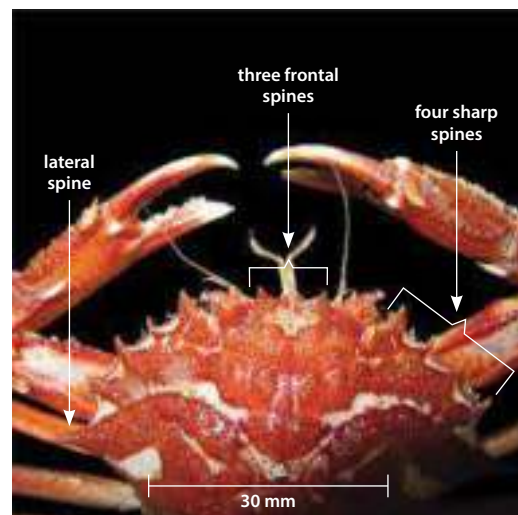
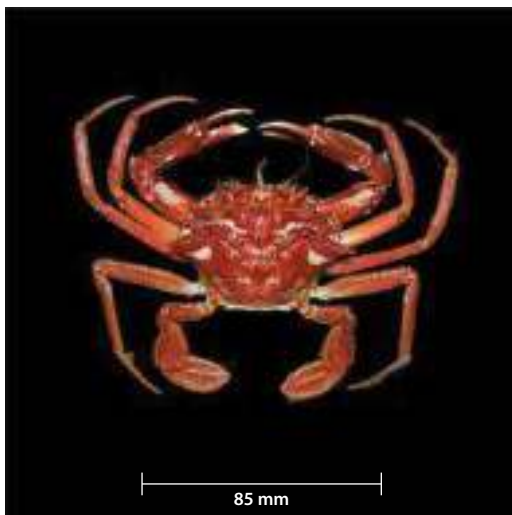
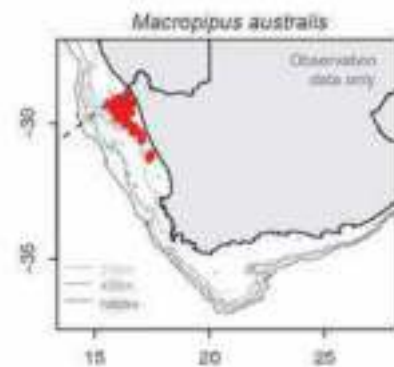
Chaceon chuni and *C. macphersoni*, but *C. maritae* has dorso-ventrally flattened dactyls of pereopods and different colouration to *C. macphersoni*.

References

- De B Beyers CJ. 1994. Population size and density of the deep-sea red crab *Chaceon maritae* (Manning and Holthuis) off Namibia determined from tag-recapture. *South African Journal of Marine Science* 14: 1-9.
- Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 545-551.
- Manning KB and Holthuis LB. 1988. South African species of the genus *Geryon* (Crustacea, Decapoda, Geryonidae). *Annals of the South African Museum* 98 (3): 77-92.

***Macropipus australis* (MacAus)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Polybiidae
Genus:	<i>Macropipus</i>
Species:	<i>australis</i>
Common name:	Painted swimming crab

**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

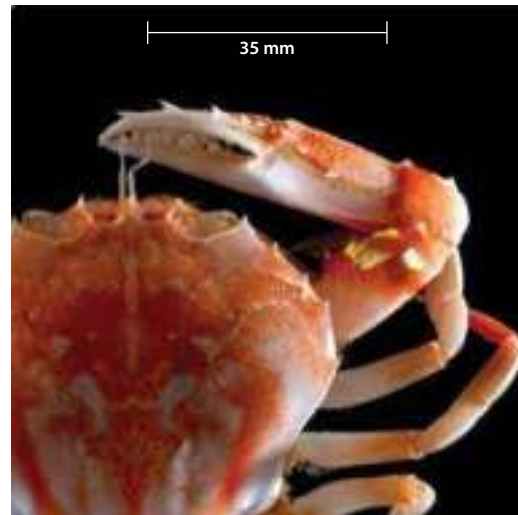
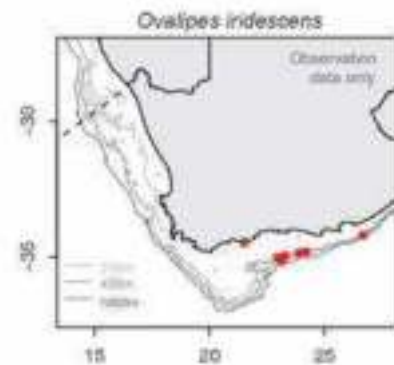
Bathynectes piperitus, which has a notably larger, longer lateral spine and colouration not as contrasting.

Reference

Manning RB and Holthuis LB. 1981. West African Brachyuran crabs (Crustacea: Decapoda). *Smithsonian Contributions to Zoology* 306: 1-379, p. 85.

***Ovalipes iridescens* (Ovalri)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Ovalipidae
Genus:	<i>Ovalipes</i>
Species:	<i>iridescens</i>
Common name:	Iridescent swimming crab



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

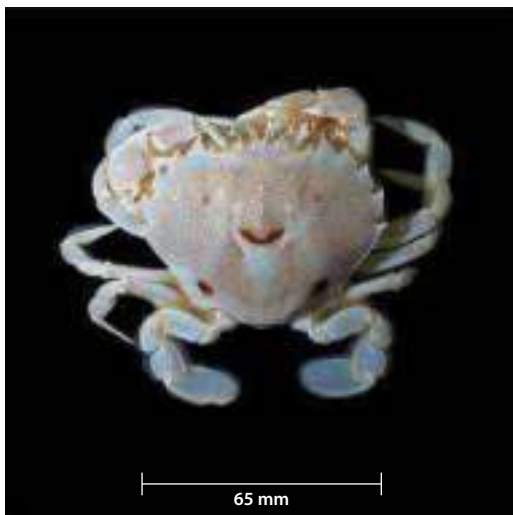
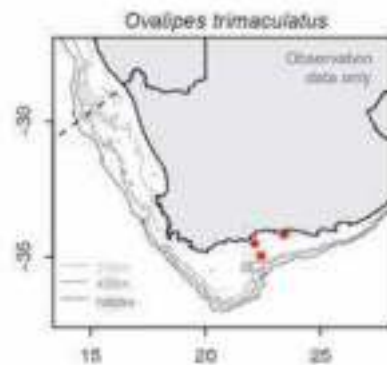
Ovalipes trimaculatus, but easily distinguished by colour.

Reference

Koch M, Duris Z, Huang JF and Chan TY. 2014. First report of the swimming crab *Ovalipes iridescens* (Meirs, 1886) (Brachyura, Portunidae) from Taiwan. *Crustaceana* 87(14): 1640-1647.

***Ovalipes trimaculatus* (Tssc)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Ovalipidae
Genus:	<i>Ovalipes</i>
Species:	<i>trimaculatus</i>
Common name:	Three-spot swimming crab

**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 crescentic 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.

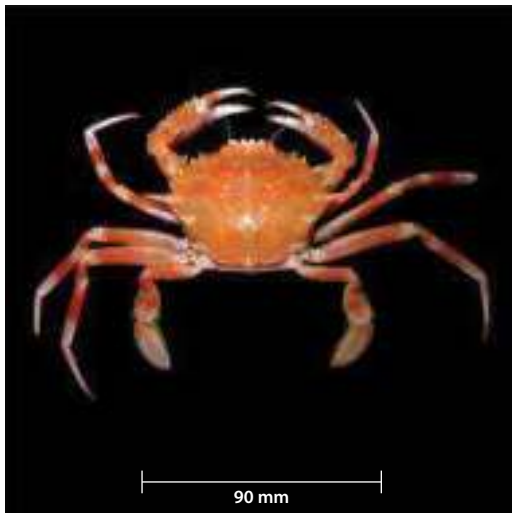
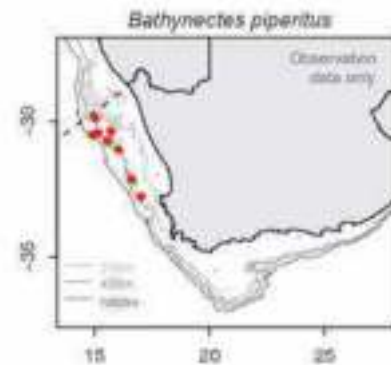
References

Du Preez HH and McLachlan A. 1984. Biology of the Three-spot swimming crab *Ovalipes punctatus* (de Haan), 1 Morphometrics and relative growth (Decapoda, Portunidae). *Crustaceana* 47: 72-82.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 555-559.

Bathynectes piperitus (BatPip)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Polybiidae
Genus:	<i>Bathynectes</i>
Species:	<i>piperitus</i>
Common name:	Red and white legged swimming crab



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

Abello P and Macpherson E. 1989. Distribution of *Bathynectes piperitus* (Brachyura: Portunidae) in the Benguela Upwelling Region and its relationship with some environmental parameters. *Journal of Crustacean Biology* 6 (3): 373-380.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 563-568.

***Charybdis smithii* (ChaSmi)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Portunidae
Genus:	<i>Charybdis</i>
Species:	<i>smithii</i>
Common name:	Smith's swimming crab

**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.

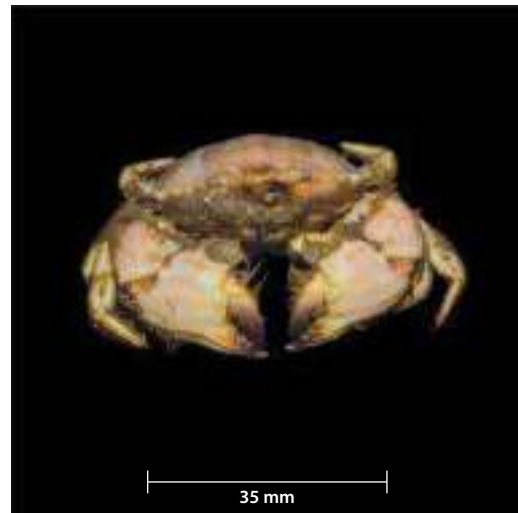
References

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 625-630.

Romanov E, Potier M, Zamorov V and Menard F. 2009. The swimming crab *Charybdis smithii*, distribution, biology and trophic role in the pelagic ecosystem of the Western Indian Ocean. *Marine Biology* 156:1089.

Atelecyclus rotundatus (AteRot)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Atelecyclidae
Genus:	<i>Atelecyclus</i>
Species:	<i>rotundatus</i>
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.

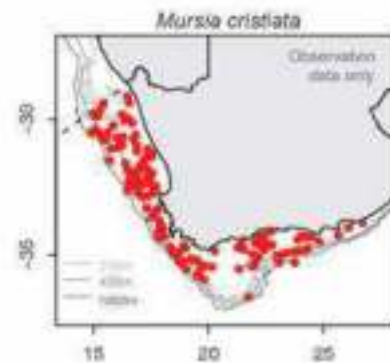
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837 (p. 197-198, Fig. 36 d, e, as *A. septemdentatus*).

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 304-307.

***Mursia cristata* (MurCri)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Calappidae
Genus:	<i>Mursia</i>
Species:	<i>cristata</i>
Common name:	Red spotted/Masked crab

**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

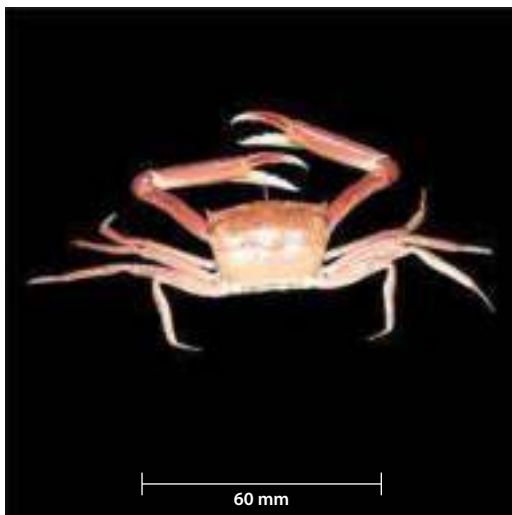
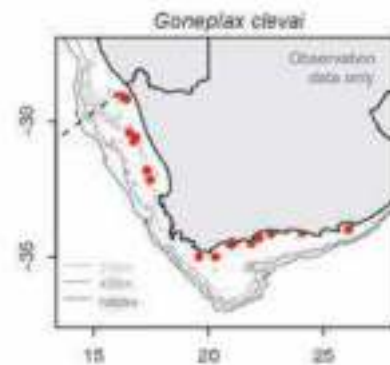
Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 354-356.

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2010. *Two Oceans: A Guide to the Marine Life of Southern Africa*. Struik Nature, Cape Town, p. 118.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 288-292.

Goneplax clevai (GonAng)

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Goneplacidae
Genus:	<i>Goneplax</i>
Species:	<i>clevai</i>
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

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 384-387.

Guinot D and Castro P. 2007. A new species of *Goneplax* Leach, 1814 (Crustacea, Decapoda, Brachyura, Goneplacidae) from the south Atlantic and the western limits of the Indo-West *G. rhomboides* (Linnaeus, 1758). *Zootaxa* 1577: 17-31.

***Carcinoplax longimanus* (CarLon)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Goneplacidae
Genus:	<i>Carcinoplax</i>
Species:	<i>longimanus</i>
Common name:	Long-arm pebble crab

**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

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 287-288.

Emmerson WD. 2016. *A Guide to, and Checklist for, the Decapoda of Namibia, South Africa and Mozambique*. Cambridge Scholars Publishing, Newcastle upon Tyne. Vol 2, pp. 379-383.

***Afrophila punctata* (AfrPun)**

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Decapoda

Infraorder: Brachyura

Family: Leucosiidae

Genus: *Afrophila*

Species: *punctata*

Common name: Pebble crab

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



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

Ebalia tuberculosa is smaller with a more diamond-shaped and granular carapace; *Carcinoplax longimanus* has more slender arms and is more pink.

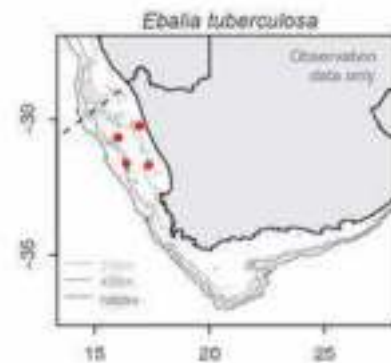
References

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 377-380 (as *Philyra punctata*).

Galil BS. 2009. An examination of the genus *Philyra* Leach, 1817 (Crustacea, Decapoda, Leucosiidae) with descriptions of seven new genera and six new species. *Zoosystema* 31(2): 279-320.

***Ebalia tuberculosa* (EbaTub)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Leucosiidae
Genus:	<i>Ebalia</i>
Species:	<i>tuberculosa</i>
Common name:	Speckled orange crab

**Distinguishing features**

Very small species. Carapace rounded-quadrate 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

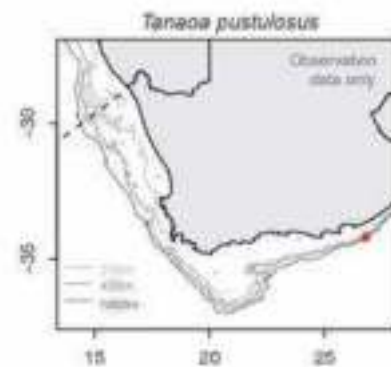
Afrophila punctata, which has a smoother, circular carapace.

Reference

Barnard KH. 1950. Descriptive catalogue of South African decapod Crustacea. *Annals of the South African Museum* 38: 1-837. pp. 367-368.

***Tanaoa pustulosus* (TanSpp)**

Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Infraorder:	Brachyura
Family:	Leucosiidae
Genus:	<i>Tanaoa</i>
Species:	<i>pustulosus</i>
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

Galil BS. 2003. Four new genera of leucosiid crabs (Crustacea: Brachyura: Leucosiidae) for three new species and nine species previously described in the genus *Randallia* Stimpson, 1857, with a redescription of the type-species, *R. ornata* (Randell, 1939). *Proceedings of the Biological Society of Washington* 116: 395-422.



PHYLUM: BRYOZOA

Authors

Wayne Florence¹ and Lara Atkinson²

Citation

Florence WK and Atkinson LJ. 2018. Phylum Bryozoa In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates of South Africa, Malachite Marketing and Media, Pretoria, pp. 227-243.

¹ Iziko Museums of South Africa, Cape Town

² South African Environmental Observation Network, Egagasini Node, Cape Town

Phylum: BRYOZOA

Lace/Moss animals

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 membranous or gelatinous.

Order Cheilostomatida

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

Bryozoa 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

- Bock PE and Gordon DP. 2013. Phylum Bryozoa Ehrenberg, 1831. In: Zhang Z-Q (Ed.) Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013). *Zootaxa*, 3703, 67-74. <http://dx.doi.org/10.11646/zootaxa.3703.1.14>
- Hayward PJ and Ryland JS. 1999. Cheilostomatous Bryozoa. Part 2. Hippothoidea – Celleporoidea. *Synopses of the British Fauna* (New Series) 14: 1-416 (Barnes RSK and Crothers JH, editors). Field Studies Council, Shrewsbury.

Hornera erugata (HorEru)

Phylum:	Bryozoa
Class:	Stenolaemata
Order:	Cyclostomatida
Family:	Horneridae
Genus:	<i>Hornera</i>
Species:	<i>erugata</i>
Common name:	Brittle tree bryozoan



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

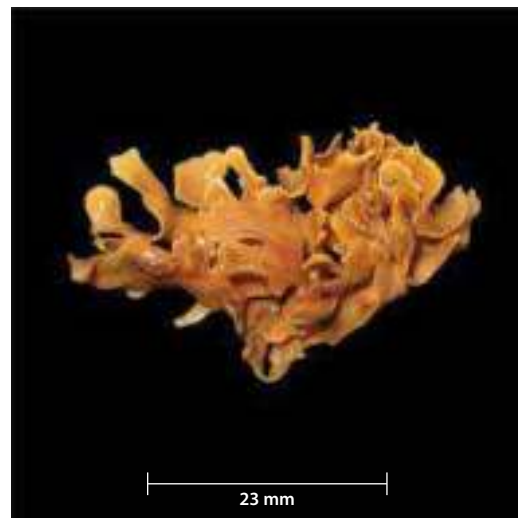
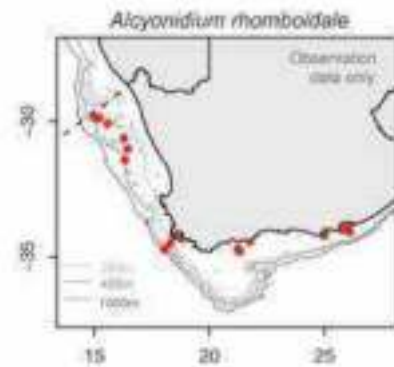
H. americana (West Coast) and *H. pluraramusii* (South Coast) appear similar, but can only be distinguished by examining fine details.

Reference

Hayward PJ and Cook PL. 1983. The South African Museum's Meiring Naudé Cruises. Part 13, Bryozoa II. *Annals of the South African Museum* 91: 1-161.

Alcyonidium rhomboidale (AlcSpp)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Ctenostomatida
Family:	Alcyoniidae
Genus:	<i>Alcyonidium</i>
Species:	<i>rhomboidale</i>
Common name:	Rubbery bryozoan



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

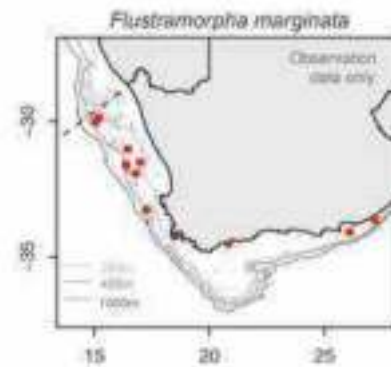
Alcyonidium chondroides is not as robust, with thinner, strappy, translucent fronds.

Reference

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

***Flustramorpha marginata* (Bryzo3)**

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Microporellidae
Genus:	<i>Flustramorpha</i>
Species:	<i>marginata</i>
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

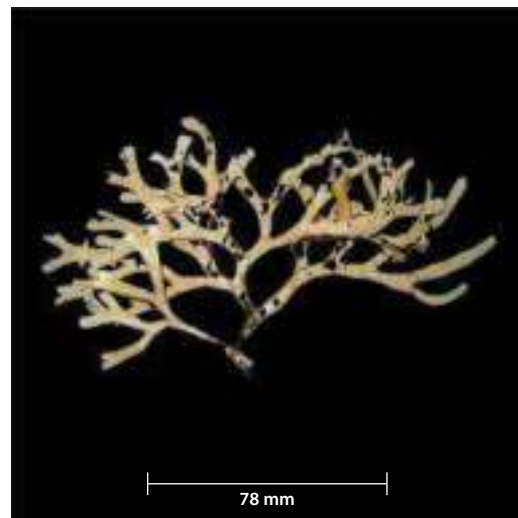
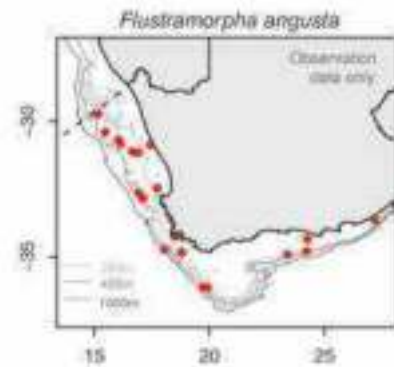
F. angusta and *Securiflustra securifrons* may appear similar, but *F. marginata* is distinguished by its blue-green colour.

References

Hayward PJ and Cook PL. 1983. The South African Museum's Meiring Naudé Cruises. Part 13, Bryozoa II. *Annals of the South African Museum* 91: 1-161.

Flustramorpha angusta (FluAng)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Microporellidae
Genus:	<i>Flustramorpha</i>
Species:	<i>angusta</i>
Common name:	Fragile strappy-tree bryozoan



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

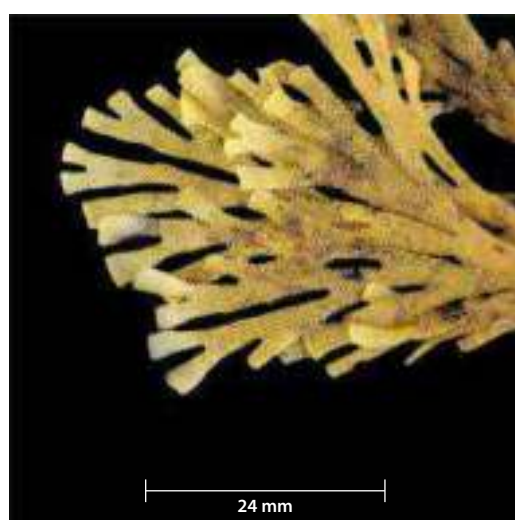
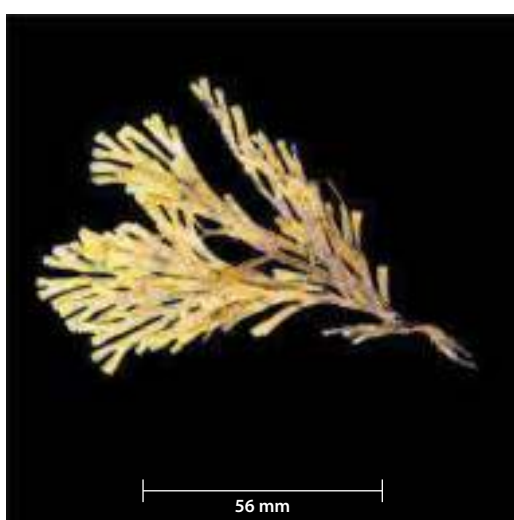
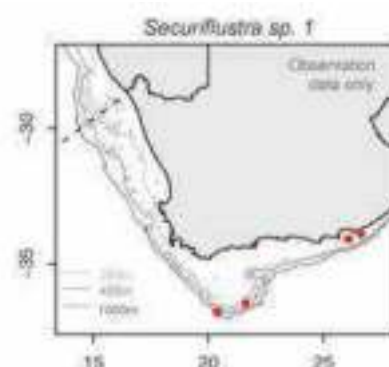
F. marginata and *Securiflustra securifrons* may appear similar, but *F. angusta* is distinguished by being more fragile, with thickened margins and its cream-brown colour.

References

Hayward PJ and Cook PL. 1983. The South African Museum's Meiring Naudé Cruises. Part 13, Bryozoa II. *Annals of the South African Museum* 91: 1-161.

***Securiflustra* sp. 1 (SecPap)**

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Flustridae
Genus:	<i>Securiflustra</i>
Species:	sp. 1
Common name:	Paper tree bryozoan

**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

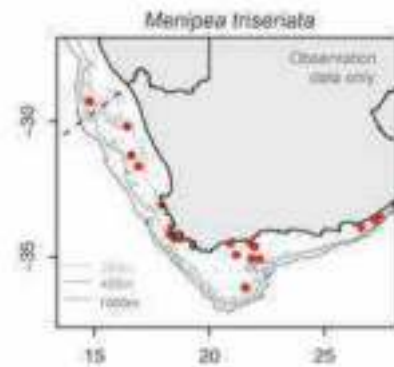
Similar in appearance to *Flustramorpha* species. *F. marginata* and *F. angusta* may appear similar, but *Securiflustra* is distinguished by paper-thin blades with no marginal thickening and its yellow colour. *F. marginata* is blue-green and *F. angusta* is cream to light brown.

References

Hayward PJ and Cook PL. 1983. The South African Museum's Meiring Naudé Cruises. Part 13, Bryozoa II. *Annals of the South African Museum* 91: 1–161.

Menipea triseriata (MenTri)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Candidae
Genus:	<i>Menipea</i>
Species:	<i>triseriata</i>
Common name:	Spiral bush bryozoan



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

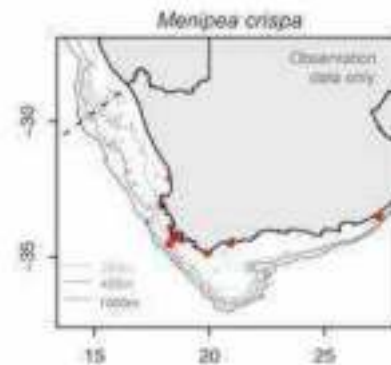
Menipea ornata is a similar species (not depicted in this guide) with broader branches and is more robust. Specimens should be retained.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

***Menipea crispa* (MenCri)**

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Candidae
Genus:	<i>Menipea</i>
Species:	<i>crispa</i>
Common name:	Claw-like bryozoan

**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

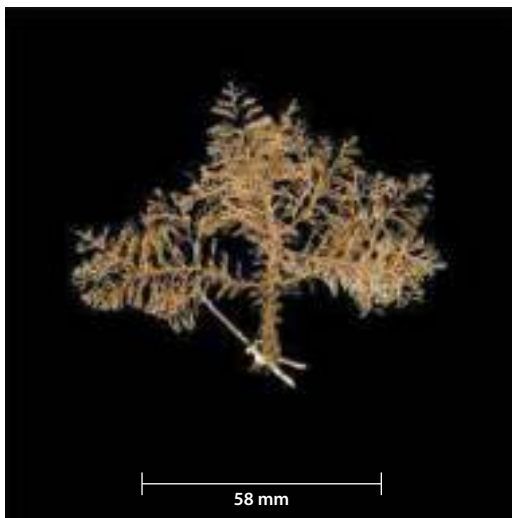
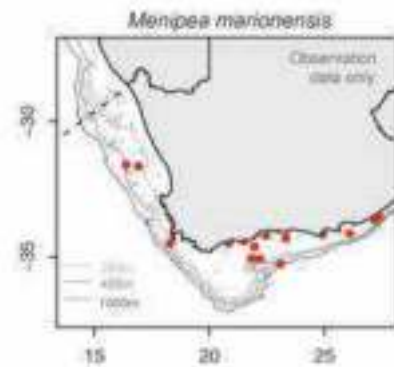
M. ornata, *M. triseriata* and *M. marionensis*, but *M. crispa* is distinguished by inward-curving branches.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

Menipea marionensis (MenSpp)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Candidae
Genus:	<i>Menipea</i>
Species:	<i>marionensis</i>
Common name:	Spiral tree bryozoan



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

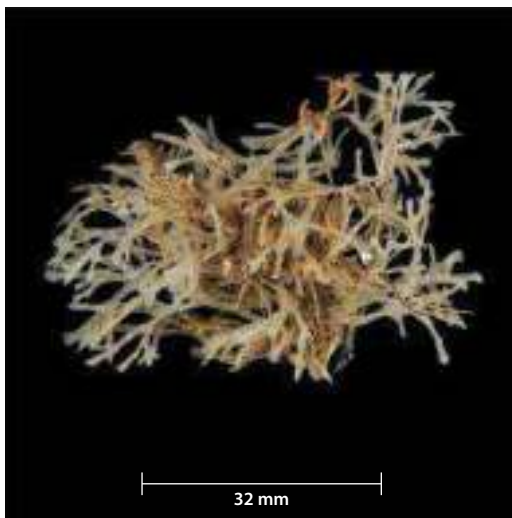
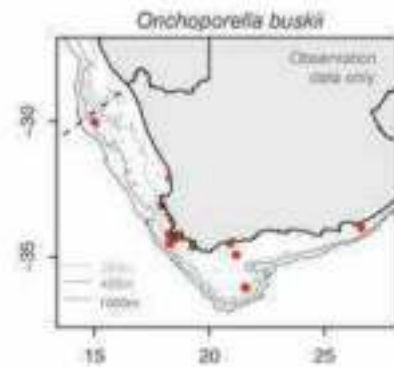
M. triseriata, *M. ornata* and *M. crispa* similar, but *M. marionensis* has finer branching and a distinctly tree-like shape.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

Onchoporella buskii (OncBus)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Calwellidae
Genus:	<i>Onchoporella</i>
Species:	<i>buskii</i>
Common name:	Elastic band bryozoan



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

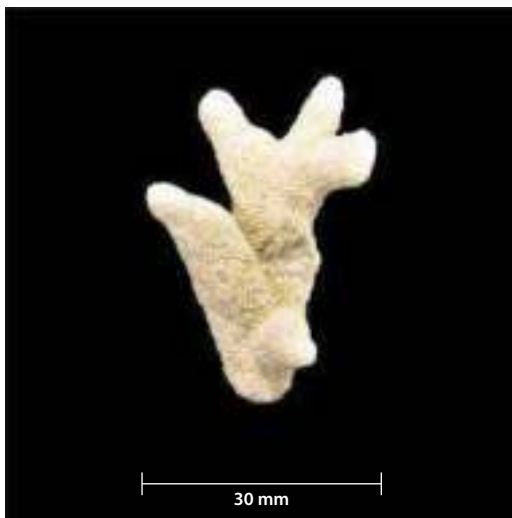
Alcyonidium chondroides, which is more gelatinous and rubbery in texture.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

Turbicellepora valligera (TurVal)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Celleporidae
Genus:	<i>Turbicellepora</i>
Species:	<i>valligera</i>
Common name:	False stag-horn bryozoan



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

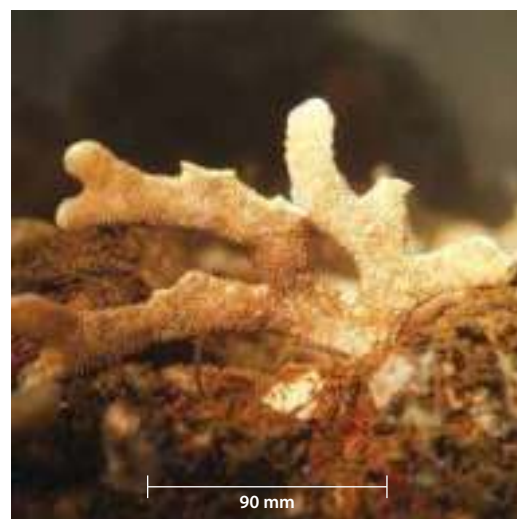
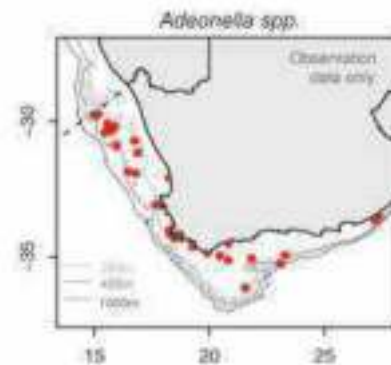
Can be distinguished from *Adeonella* spp. by its cylindrical branches. *Adeonella* have flattened strap-like branches.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

Potential VME

<i>Adeonella</i> spp. (Adeon)	
Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Adenellidae
Genus:	<i>Adeonella</i>
Species:	spp.
Common name:	Sabre bryozoan

**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

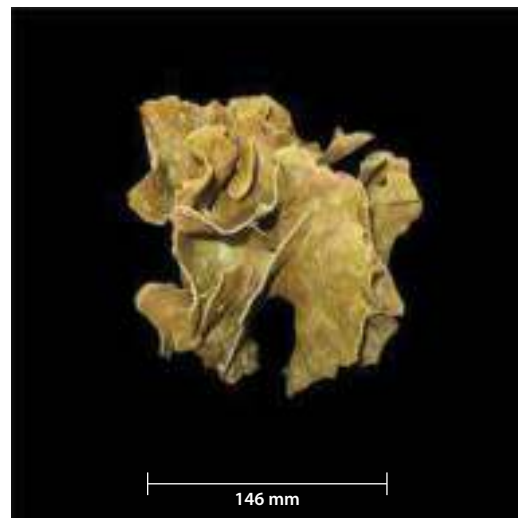
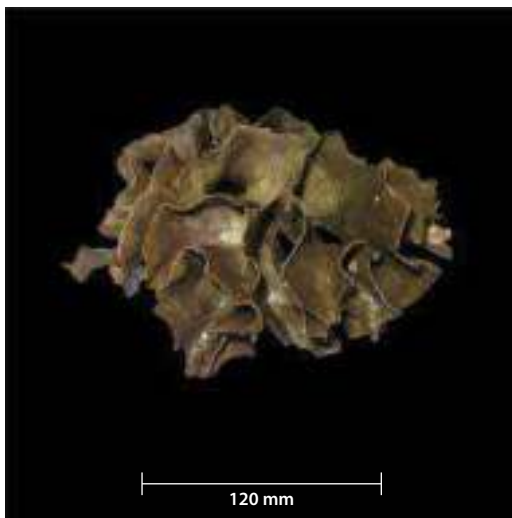
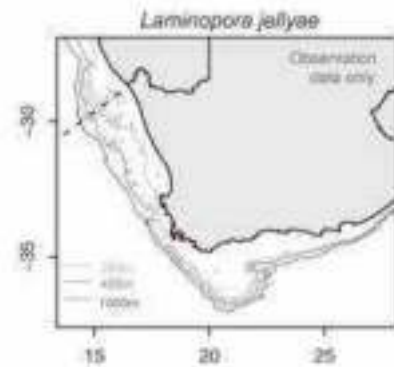
Species of this genus are weakly characterised and difficult to identify beyond the generic level; even when using zooidal characters.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

Laminopora jellyae (LamJel)

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Adeonellidae
Genus:	<i>Laminopora</i>
Species:	<i>jellyae</i>
Common name:	Bladed bryozoan



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

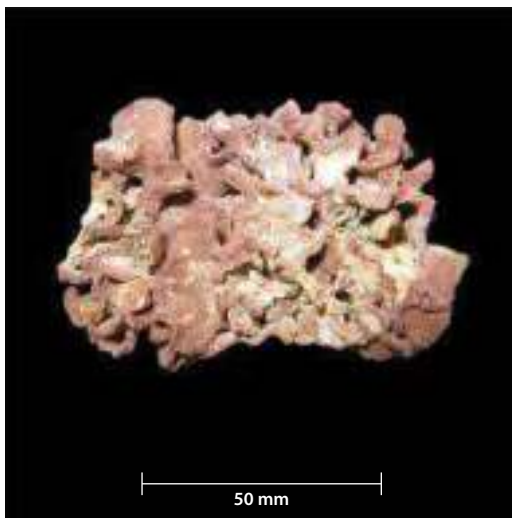
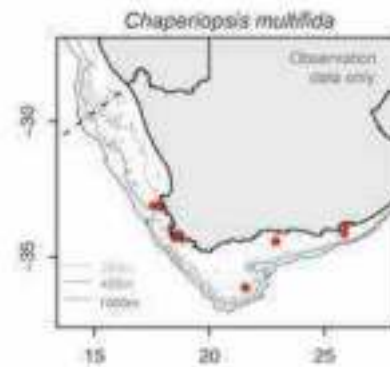
No obvious similar species known.

References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.

***Chaperiopsis multifida* (ChaMul)**

Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Chaperiidae
Genus:	<i>Chaperiopsis</i>
Species:	<i>multifida</i>
Common name:	Furry bryozoan

**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.

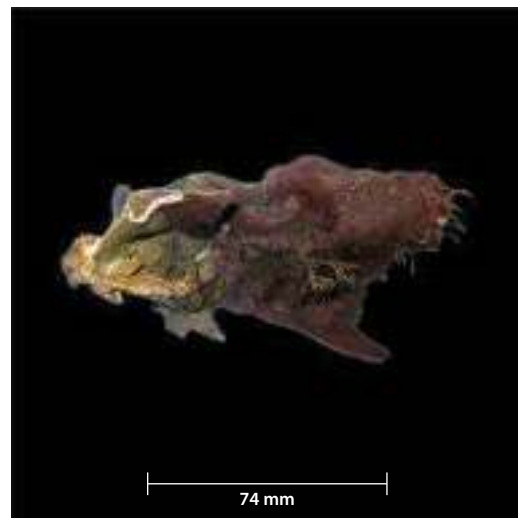
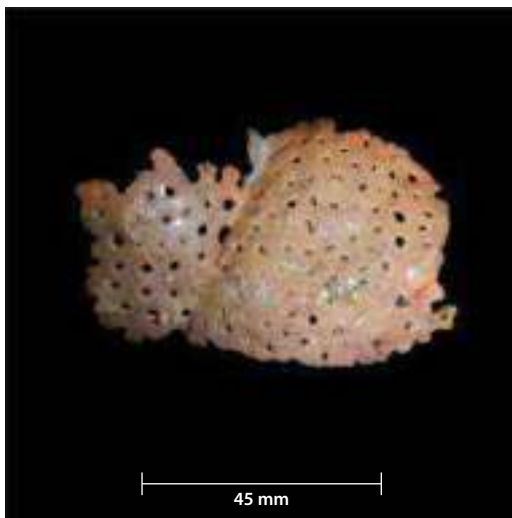
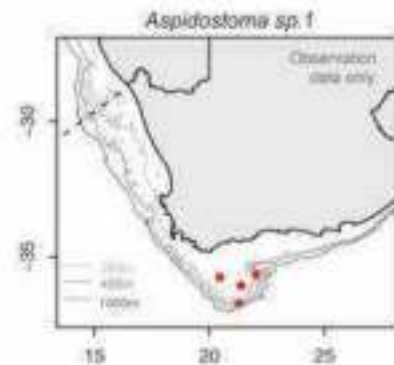
References

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58

Phylum: Bryozoa

Potential VME

<i>Aspidostoma</i> sp. 1 (Asp1)	
Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Aspidostomatidae
Genus:	<i>Aspidostoma</i>
Species:	sp. 1
Common name:	Pore-plated bryozoan



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

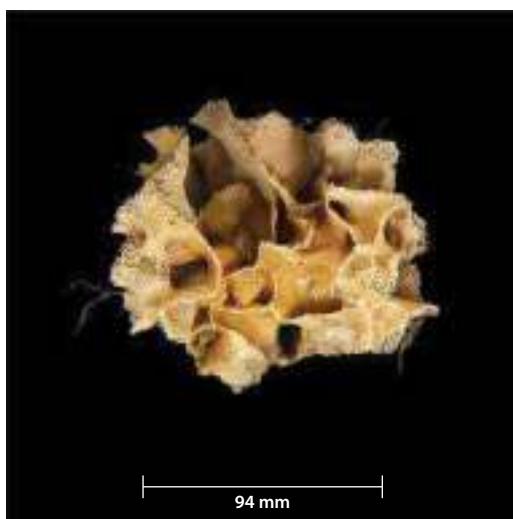
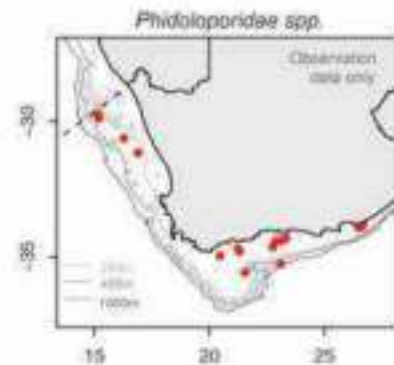
Aspidostoma livida is deep blue in colour and plates have large perforations irregular in shape.

References

Florence WK. 2016. Some deep-water cheilostome Bryozoa from the south coast of South Africa. *African Natural History* 12: 05-11.

Potential VME

Phidoloporidae spp. (Lace)	
Phylum:	Bryozoa
Class:	Gymnolaemata
Order:	Cheilostomatida
Family:	Phidoloporidae
Genus:	Phidoloporidae
Species:	spp.
Common name:	Honeycomb false lace coral

**Distinguishing features**

Erect, forming coral-like mass with folded plates that are often regularly perforated, giving the colony a honeycomb appearance.

Colour

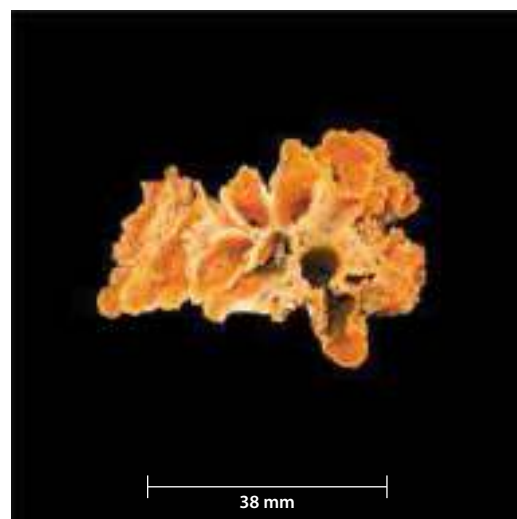
Off-white or cream to orange.

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

Florence WK, Hayward PJ and Gibbons MJ. 2007. Taxonomy of shallow-water Bryozoa from the west coast of South Africa. *African Natural History* 3: 1–58.



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

Atkinson LJ and Hiller N. 2018. Phylum Brachiopoda In:
Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates
of South Africa, Malachite Marketing and Media, Pretoria, pp. 245-248.

¹ South African Environmental Observation Network, Egagasini Node, Cape Town

² Canterbury Museum, Christchurch, New Zealand

Phylum: BRACHIOPODA

Lamp shells

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.

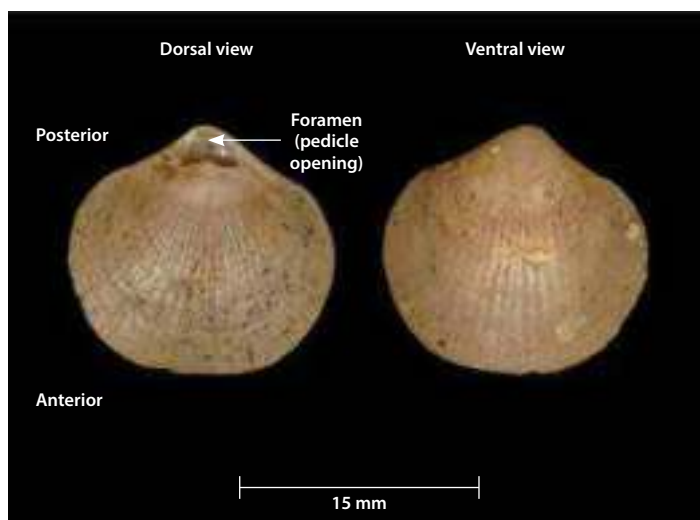
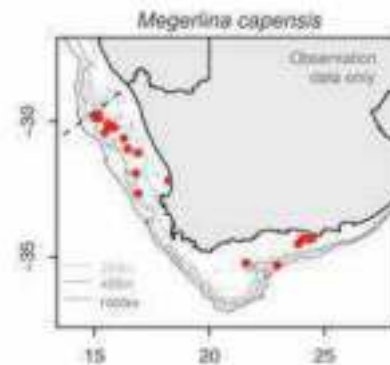
Although brachiopods were once thought to be unimportant prey items, there is a growing body of evidence to suggest they may be preyed upon by a range of predators, including crustaceans, echinoderms, gastropods and fish. Many specimens show holes drilled in the shell by predators and/or parasites. However, there is debate as to whether brachiopods were the preferred, or intended prey in observed instances.

References

- Bitner MA and Cohen BL 2013. Brachiopoda. In: *Encyclopedia of Life Sciences*. John Wiley & Sons, Ltd. DOI: 10.1002/9780470015902.a0001614.pub3
- Branch GM, Griffiths CL Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth Edition. Struik Nature, Cape Town. p.144.
- Emig CC, Bitner MA and Álvarez F. 2013. Phylum Brachiopoda. In: Zhang, Z.-Q. (Ed.) *Animal biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness* (Addenda 2013). *Zootaxa*, 3703, 75–78. <http://dx.doi.org/10.11646/zootaxa.3703.1.15>
- Harper, E.M., 2011. What do we really know about predation on modern rhynchonelliforms? *Memoirs of the Association of Australasian Palaeontologists* 41, pp. 45-57.

***Megerlina capensis* (MegCap)**

Phylum:	Brachiopoda
Class:	Rhynchonellata
Order:	Terebratulida
Family:	Kraussinidae
Genus:	<i>Megerlina</i>
Species:	<i>capensis</i>
Common name:	Ribbed Lamp shell

**Distinguishing features**

Small rounded sub-pentagonal to sub-quadrated 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

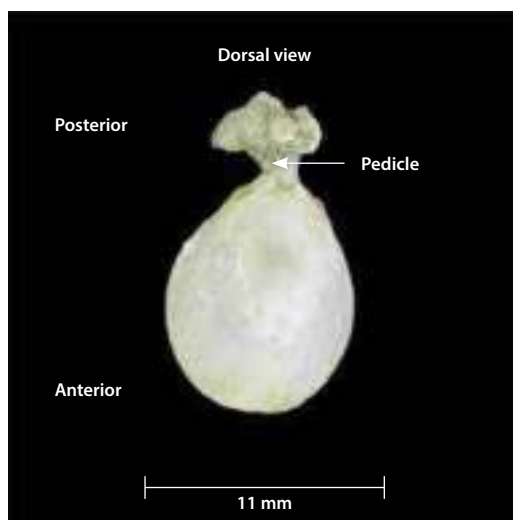
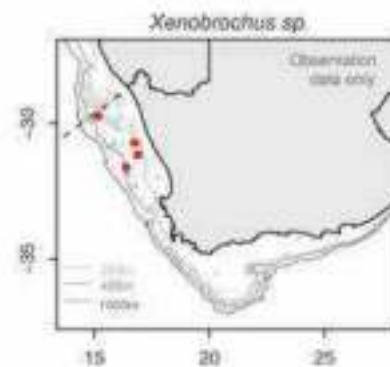
frequently have the posterior end abraded by close attachment to a rocky substrate resulting in enlargement of the pedicle opening.

References

- Hiller N. 1986. The South African Museum's *Meiring Naude* cruises. Part 16. Brachiopoda from the 1975–1979 cruises. *Annals of the South African Museum* 97:97-140.
- Hiller N. 1994. The environment, biogeography, and origin of the southern African Recent brachiopod fauna. *Journal of Paleontology* 68:776-86.
- Hiller N, MacKinnon DI and Nielsen SN. 2008. A review of the systematics, biogeography and evolutionary relationships of recent and fossil brachiopods of the Superfamily Kraussinoidea Dall, with descriptions of two new fossil species from New Zealand and Chile 379-390. In CUSACK, M. & HARPER, D.A.T. (eds) *Brachiopod Research into the Third Millennium. Earth and Environmental Science Transactions of the Royal Society of Edinburgh* 98.
- Jackson, J. W. 1952. A revision of some South African Brachiopoda; with descriptions of new species. *Annals of the South African Museum* 41:1-40.

Xenobrochus sp. (Xenobr)

Phylum:	Brachiopoda
Class:	Rhynchonellata
Order:	Terebratulida
Family:	Dyscoliidae
Genus:	<i>Xenobrochus</i>
Species:	sp.
Common name:	Smooth Lamp shell



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

- Hiller N. 1986. The South African Museum's *Meiring Naude* cruises. Part 16. Brachiopoda from the 1975–1979 cruises. *Annals of the South African Museum* 97:97–140.
- Hiller N. 1994. The environment, biogeography, and origin of the southern African Recent brachiopod fauna. *Journal of Paleontology* 68:776–86.
- Jackson, J. W. 1952. A revision of some South African Brachiopoda; with descriptions of new species. *Annals of the South African Museum* 41:1–40.



PHYLUM: MOLLUSCA

Authors

Dai Herbert¹, Georgina Jones² and Lara Atkinson³

Citation

Herbert DG, Jones GJ and Atkinson LJ. 2018. Phylum Mollusca In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates of South Africa, Malachite Marketing and Media, Pretoria, pp. 249-320.

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² Southern Underwater Research Group, Kommetjie, Cape Town

³ South African Environmental Observation Network, Egagasini Node, Cape Town

Phylum: **MOLLUSCA** (excluding Cephalopoda)

Sea snails, sea slugs, bivalves, tusk shells and chitons

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.

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

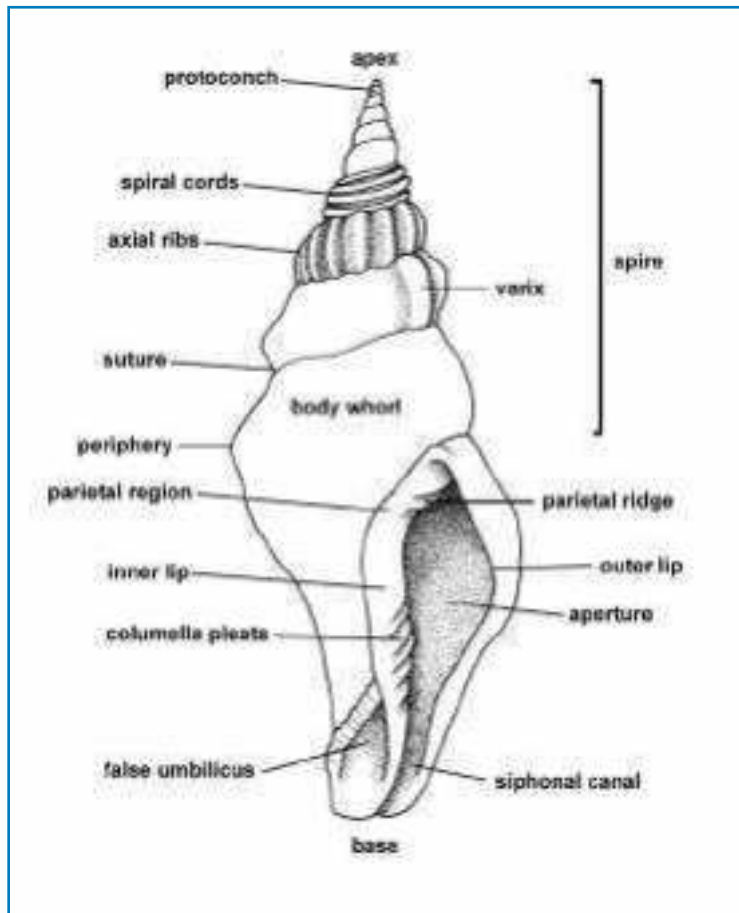
For morphological study most shelled gastropods, bivalves, tusk shells and chitons are best frozen as quickly as possible. After thorough freezing they can be allowed to thaw and quickly thereafter they should be preserved in 80% ethanol. If the animals are large, the ethanol will need to be replaced 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

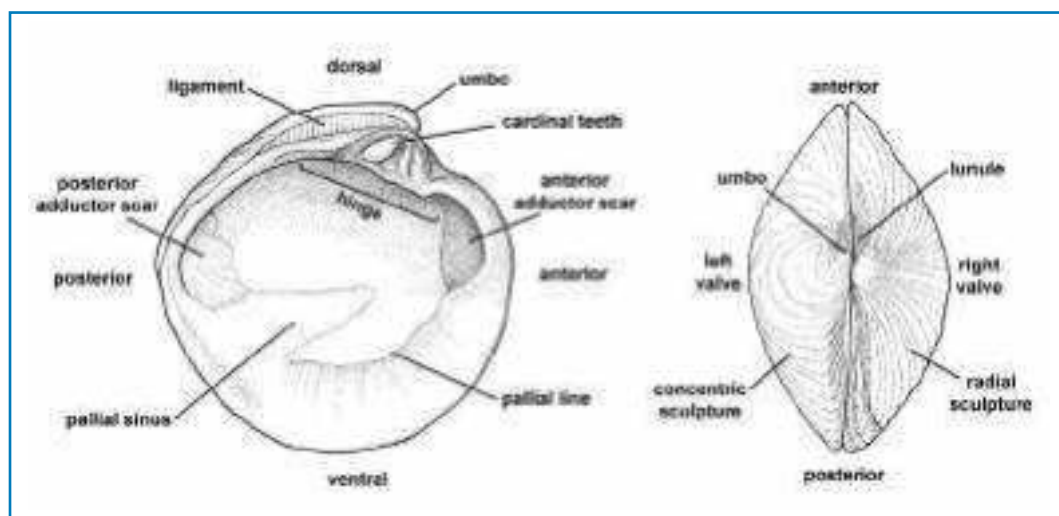
- Barnes RSK, Calow P, Olive PJW, Golding DW and Spicer JI. 2001. *The Invertebrates, A Synthesis* (3 ed.). UK: Blackwell Science.
- Beesley PL, Ross GJB and Wells A. (eds) 1998. *Mollusca: The Southern Synthesis. Fauna of Australia. Vol. 5*. CSIRO Publishing: Melbourne, Part A. xvi 563 pp. Part B viii 565–1234 pp.
- Jones G. 2008. *A field guide to the marine animals of the Cape peninsula*. Southern Underwater Research Group Press, Hout Bay.
- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 59, pl. 13.
- Ruppert EE, Fox RS and Barnes RD. 2004. *Invertebrate Zoology* (7 ed.). Brooks/Cole.
- Sturm, CF, Pearce, TA & Valdés, A. 2006. *The Molluscs: A Guide to their Study, Collection and Preservation*. American Malacological Society, Pittsburgh, PA, USA. pp. xii + 445.
- Trueman ER and Clarke MR. 1988. *The Mollusca* (Vol. 11) Form and function. Academic Press Inc., California.

Gastropod shell terminology



Adapted by LS Davis from Kilburn RN and Rippey E. 1982.
Sea shells of southern Africa. Johannesburg. Macmillan. p. 73

Bivalve shell terminology



Adapted by LS Davis from Kilburn RN and Rippey E. 1982.
Sea shells of southern Africa. Johannesburg. Macmillan. p. 73

Calliotropis granolirata (Topshl)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Vetigastropoda
Order:	Seguenziida
Family:	Eucyclidae
Genus:	<i>Calliotropis</i>
Species:	<i>granolirata</i>
Common name:	Cape cog shell



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

Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part IV. Gastropoda: Prosobranchiata: Rhipidoglossa, Docoglossa. Tectibranchiata. Polyplacophora. Solenogastres. Scaphopoda. *Annals of the South African Museum* 47(2): 201–360. p. 260.

Herbert DG. 2015. An annotated catalogue and bibliography of the taxonomy, synonymy and distribution of the Recent Vetigastropoda of South Africa (Mollusca). *Zootaxa* 4049(1): 1–98. p. 29. doi. org/10.11646/zootaxa.4049.1.1.

Calliostoma perfragile (CaScot)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Vetigastropoda
Order:	Trochida
Family:	Calliostomatidae
Genus:	<i>Calliostoma</i>
Species:	<i>perfragile</i>
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.

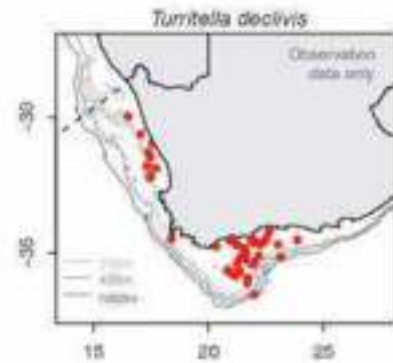
References

Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part IV. Gastropoda: Prosobranchiata: Rhipidoglossa, Docoglossa. Tectibranchiata. Polyplacophora. Solenogastres. Scaphopoda. *Annals of the South African Museum* 47(2): 201–360. p. 258.

Herbert DG. 2015. An annotated catalogue and bibliography of the taxonomy, synonymy and distribution of the Recent Vetigastropoda of South Africa (Mollusca). *Zootaxa* 4049(1): 1–98. p. 38. doi.org/10.11646/zootaxa.4049.1.1.

Turritella declivis (TurDec)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	unassigned Caenogastropoda
Family:	Turritellidae
Genus:	<i>Turritella</i>
Species:	<i>declivis</i>
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*.

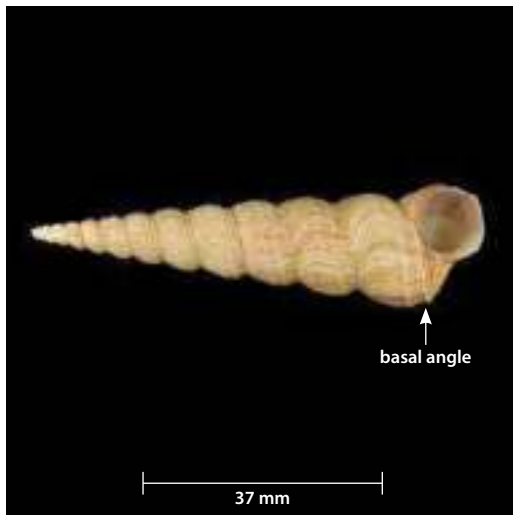
References

Herbert DG. 2013. *Turritella declivis* Adams & Reeve, in Reeve, 1849 (Mollusca: Gastropoda) – a South African not an Australian species, and a characteristic component of the Agulhas Bank benthos. *African Zoology* 48(2): 412–417. <http://dx.doi.org/10.3377/004.048.0206>.

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:	<i>Turritella</i>
Species:	<i>ferruginea</i>
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

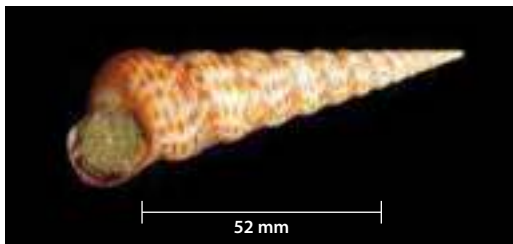
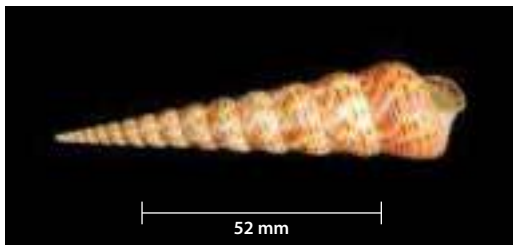
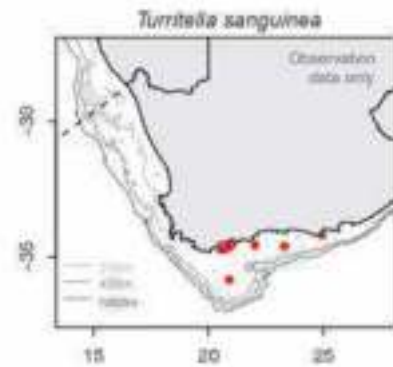
Might be confused with *Turritella sanguinea*, but in that species the whorls are more convex, the spiral sculpture more rounded, and the basal angle is not delineated by a slightly stronger spiral cord.

References

Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part III. Gastropoda: Prosobranchiata: Taenioglossa. *Annals of the South African Museum* 47(1): 1–199. p. 174.

Turritella sanguinea (TurSan)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	unassigned Caenogastropoda
Family:	Turritellidae
Genus:	<i>Turritella</i>
Species:	<i>sanguinea</i>
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.

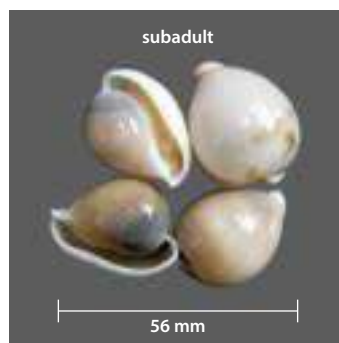
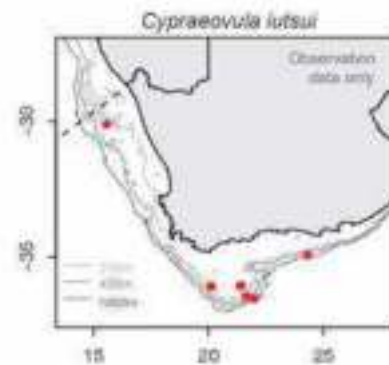
References

Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part III. Gastropoda: Prosobranchiata: Taenioglossa. *Annals of the South African Museum* 47(1): 1–199. p. 169.

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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Cypraeidae
Genus:	<i>Cypraeovula</i>
Species:	<i>iutsui</i>
Common name:	Globular Cape cowrie



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 ('bulla' 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

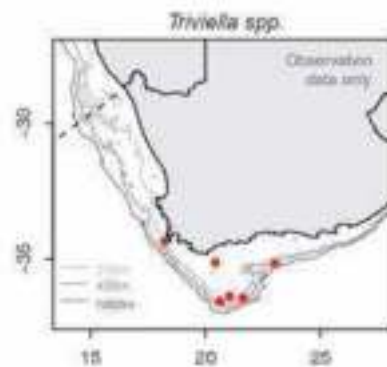
Several other *Cypraeovula* species occur off the coast of South Africa. Some differ only in subtle differences and they are very difficult to identify with certainty. *C. iutsui* seems to be one of the more commonly encountered ones in trawl nets. Specimens which do not match the above description and images should be recorded as *Cypraeovula* sp.

References

- Liltved WR. 2000. *Cowries and their relatives of southern Africa*. Second enlarged edition Seacomber Publications. Cape Town. p. 78.
- 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)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Triviidae
Genus:	<i>Triviella</i>
Species:	spp.
Common name:	Smooth pearl cowries

**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

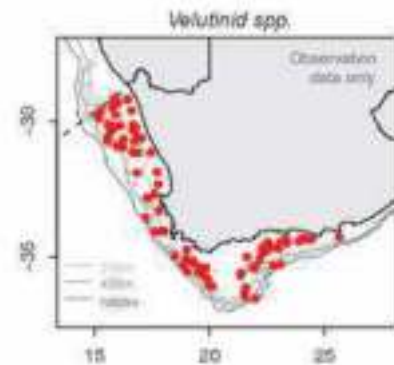
All smooth-shelled *Triviella* are captured under the code of **TriMil**, *Triviella* spp. and can include *T. calvariola*, *T. khanya*, *T. magnidentata*, *T. millardi*, *T. verhoefi*, *T. ovulate*, and *T. rubra*.

References

- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 59, pl. 13.
- Liltved WR. 2000. *Cowries and their relatives of southern Africa*. Second enlarged edition Seacomber Publications. Cape Town. pp. 152-164.

Velutinid (Opisbr)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Velutinidae
Genus:	<i>Lamellaria/Coriocella</i>
Species:	-
Common name:	Velutinid



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 circlet of gills.

Notes

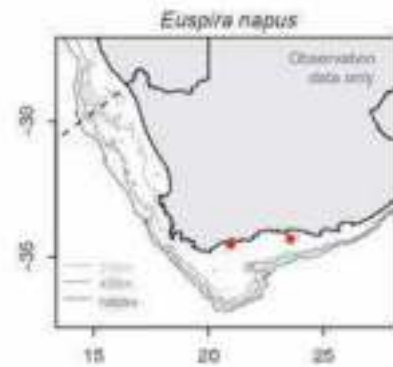
The taxonomy of the South African species is poorly resolved and needs further study.

References

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 58.

Euspira napus (EusNap)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Naticidae
Genus:	<i>Euspira</i>
Species:	<i>napus</i>
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

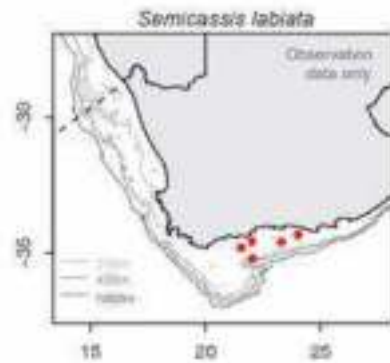
Euspira psila, which also occurs on the Agulhas Bank, is similar but much smaller (diameter \pm 10 mm). *Natica simplex* has a higher spire, is smaller and has a calcareous operculum. Another large moon snail, *Euspira lemairei*, occurs on the West Coast, but it has a higher spire and a broader umbilicus within which are two low spiral ridges.

References

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 24.

***Semicassis labiata* (Phalab)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Cassidae
Genus:	<i>Semicassis</i>
Species:	<i>labiata</i>
Common name:	Helmet/Lipped bonnet shell



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

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2010. *Two Oceans. A guide to the marine life of southern Africa*. Revised edition. David Philip. Cape Town. p. 188.

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)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Tonnidae
Genus:	<i>Eudolium</i>
Species:	<i>bairdii</i>
Common name:	Baird's bonnet

**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.

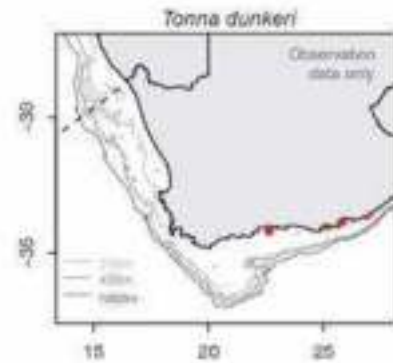
References

Beu AG, Bouchet P and Tröndlé J. 2012. Tonnoidean gastropods of French Polynesia. *Molluscan Research* 32: 61–120. p. 104.

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.

Tonna dunkeri (TonVar)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Littorinimorpha
Family:	Tonnidae
Genus:	<i>Tonna</i>
Species:	<i>dunkeri</i>
Common name:	Boxing-glove



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

- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg: Macmillan. p. 71 (as *T. variegata*).
- 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:	<i>Charonia</i>
Species:	<i>lampas</i>
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

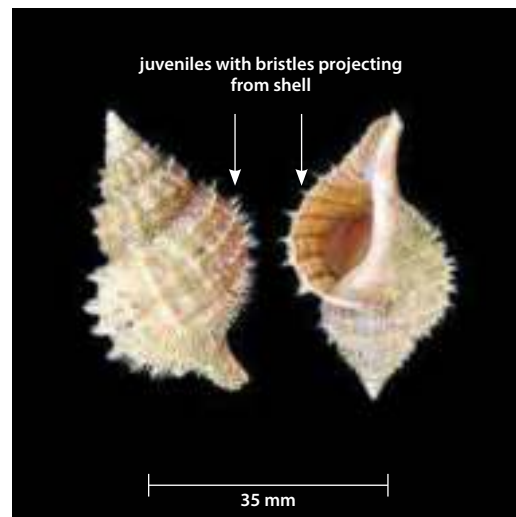
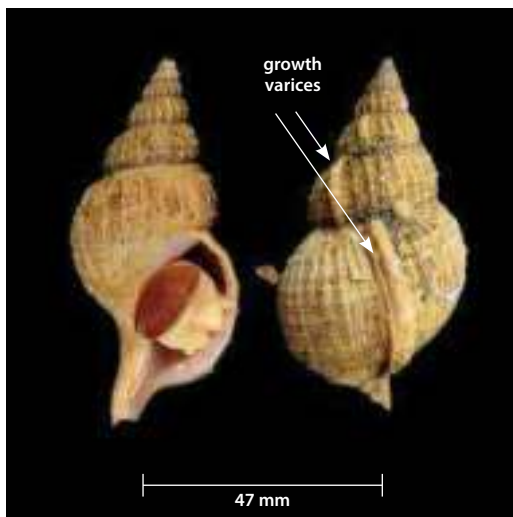
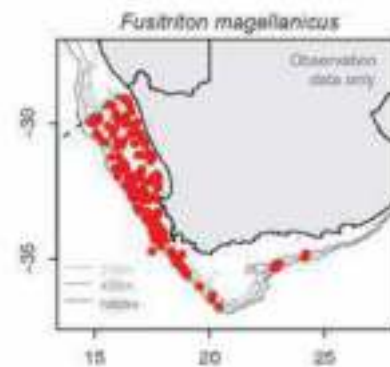
Branch GM, Griffiths CL, Branch ML and Beckley LE. 2010. *Two Oceans. A guide to the marine life of southern Africa*. Revised edition. David Philip. Cape Town. p. 190.

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 73.

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:	<i>Fusitriton</i>
Species:	<i>magellanicus</i>
Common name:	Waffle whelk



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.

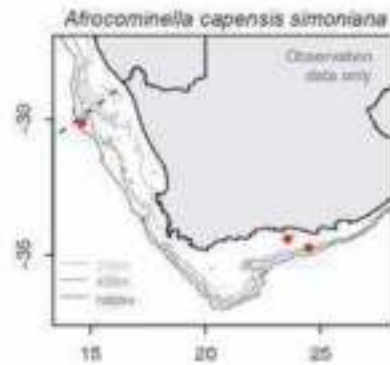
References

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan.

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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Buccinidae
Genus:	<i>Afrocominella</i>
Species:	<i>capensis simoniana</i>
Common name:	Variable Agulhas whelk



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

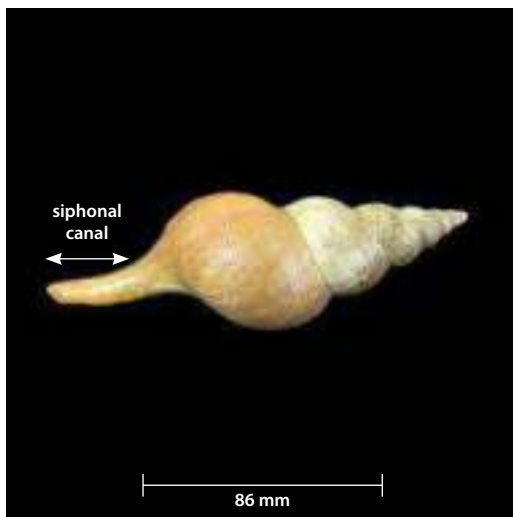
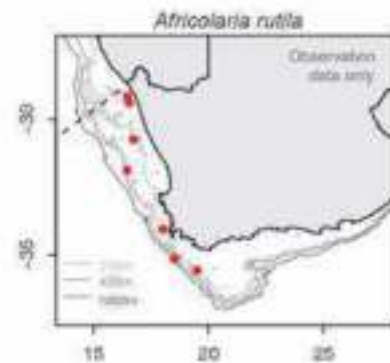
Agulhas Bank material traditionally regarded as a deep-water form of *Afrocominella elongata*, but that species is now considered part of a highly variable subspecies of *A. capensis*. Shallow-water specimens are considerably more elongate and have a more mottled colour pattern.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 192 (shallow-water form).
- Kilburn RN, Marais JP and Fraussen K. 2010. Buccinidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 21.
- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 93.

Africolaria rutila (FasRut)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Fascioliidae
Genus:	<i>Africolaria</i>
Species:	<i>rutila</i>
Common name:	Smooth horse conch



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

- Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seecombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 111 (as *Fasciolaria*).
- 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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Fascioliidae
Genus:	<i>Africolaria</i>
Species:	<i>thersites</i>
Common name:	Varicose horse conch



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.

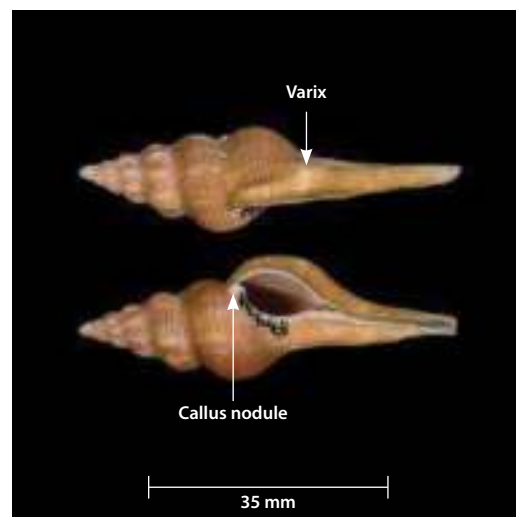
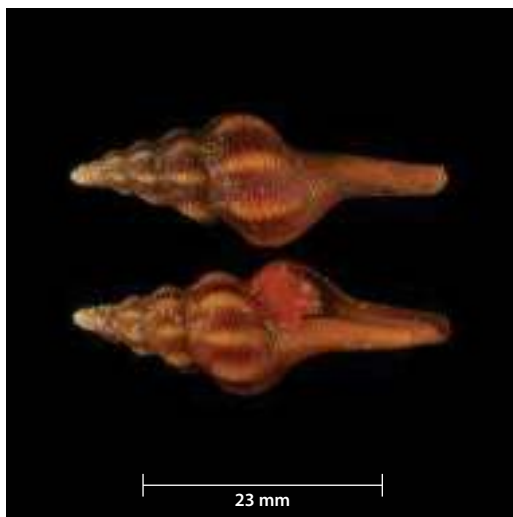
References

Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 112.

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.

Crassibougia clausicaudata (Fusin)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Fascioliidae
Genus:	<i>Crassibougia</i>
Species:	<i>clausicaudata</i>
Common name:	Tsitsikamma spindle shell



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.

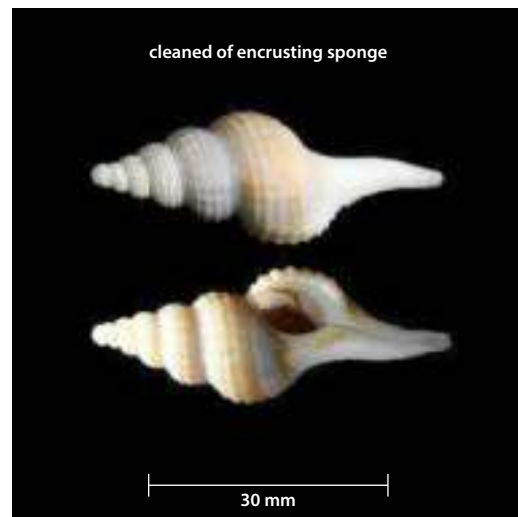
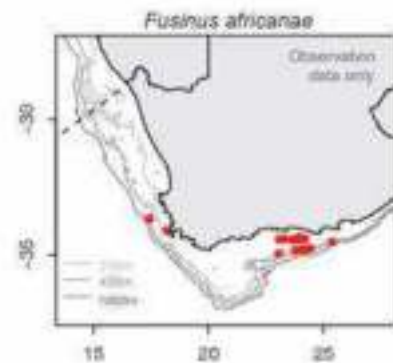
References

Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seecombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 136 (as *Pseudolatirus clausicaudatus*).

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)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Fascioliidae
Genus:	<i>Fusinus</i>
Species:	<i>africanae</i>
Common name:	Africana spindle shell

**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.

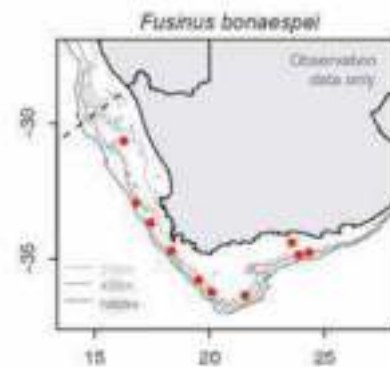
References

Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 114.

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:	Fascioliidae
Genus:	<i>Fusinus</i>
Species:	<i>bonaespei</i>
Common name:	Good Hope spindle shell



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 whorls, but these not evident on later whorls; 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.

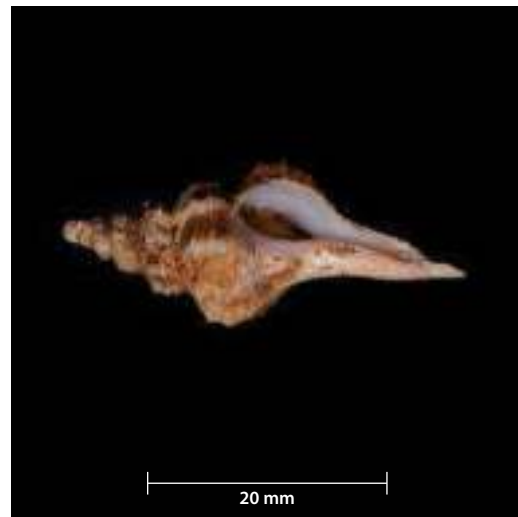
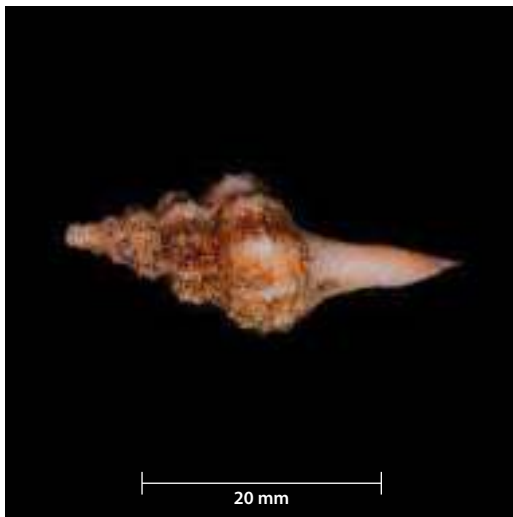
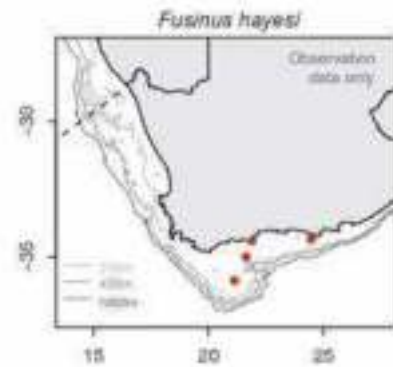
References

Marais J and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 225.

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:	Fascioliidae
Genus:	<i>Fusinus</i>
Species:	<i>hayesi</i>
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

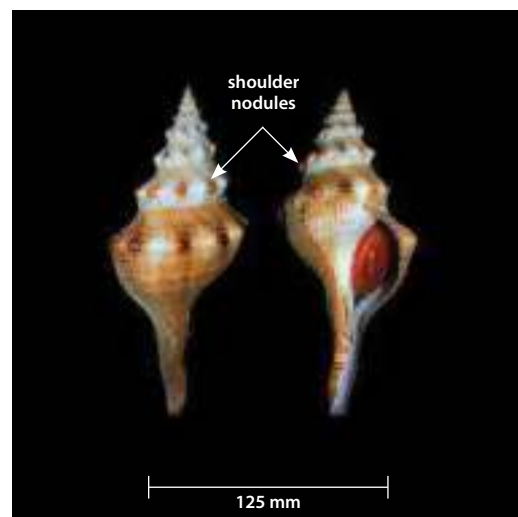
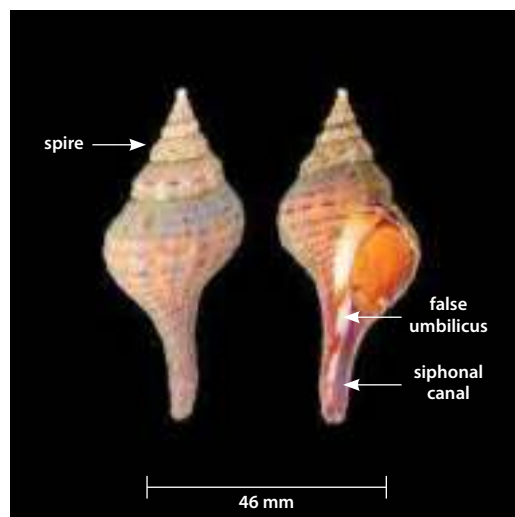
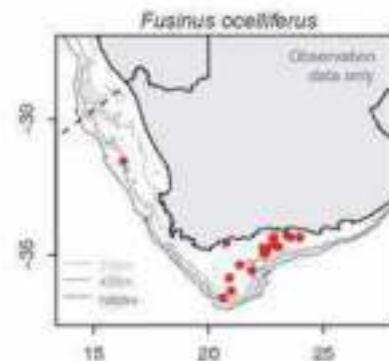
Fusinus africanae is another small species, but the sculpture of *F. hayesi* is coarser and more angular, particularly on the spire whorls.

References

- Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seecombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 116.
- 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:	Fascioliidae
Genus:	<i>Fusinus</i>
Species:	<i>ocelliferus</i>
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

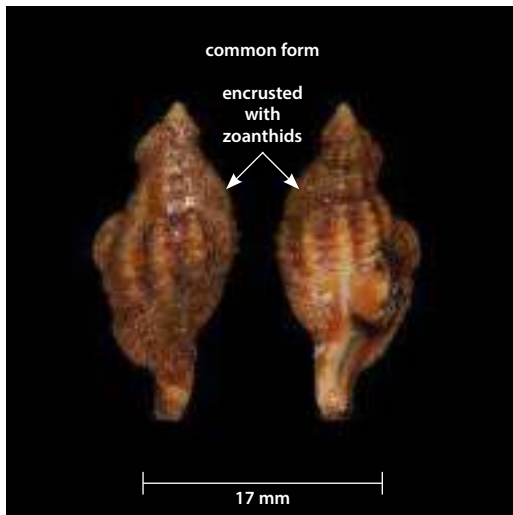
Lack of columella pleats on the inner lip and presence of a false umbilicus distinguish this species from similarly large species of *Africolaria* and *Kilburnia*. Attains a larger size than *Fusinus bonaespei* and has a shorter spire.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 194.
- Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 118 (as *F. ocellifer*).
- 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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Fascioliidae
Genus:	<i>Granulifusus</i>
Species:	<i>rubrolineatus</i>
Common name:	Red-striped spindle shell



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 ridges; 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

Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 126.

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:	Fascioliidae
Genus:	<i>Kilburnia</i>
Species:	<i>heynemanni</i>
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 scholvi 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

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 194.
- Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 111.
- 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:	Fascioliidae
Genus:	<i>Kilburnia</i>
Species:	<i>scholvieni</i>
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 heyneimanni 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*.

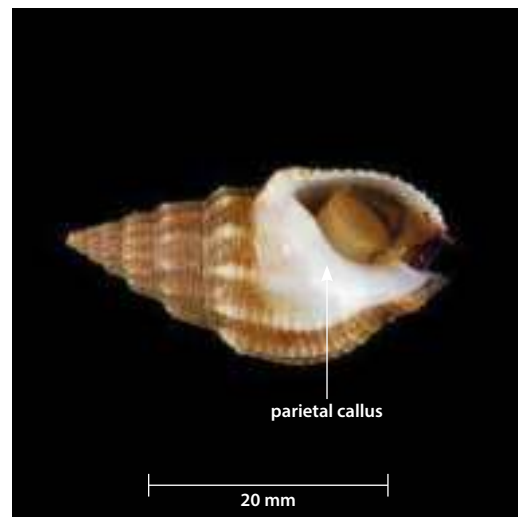
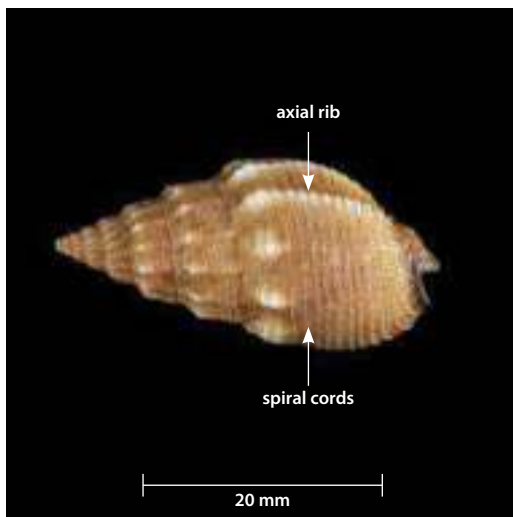
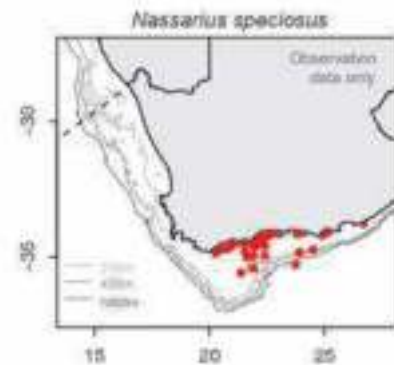
References

Marais JP and Kilburn RN. 2010. Fascioliidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 112.

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.

Nassarius speciosus (PerFor)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Nassariidae
Genus:	<i>Nassarius</i>
Species:	<i>speciosus</i>
Common name:	Shouldered/Purple-lipped dog-whelk



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

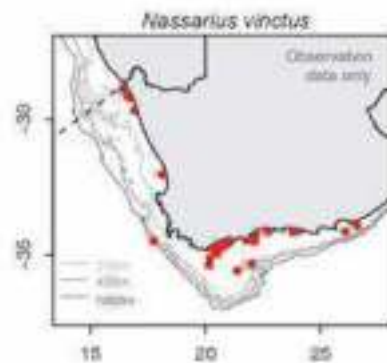
There are many species of *Nassarius* occurring off the South African coast, but the combination of characteristics exhibited by *N. speciosus* renders it quite easy to identify.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 196.
- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 101.
- Marais JP and Kilburn RN. 2010. Nassariidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 170.

***Nassarius vinctus* (BurNup)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Nassariidae
Genus:	<i>Nassarius</i>
Species:	<i>vinctus</i>
Common name:	Violet-mouthed dog-whelk

**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

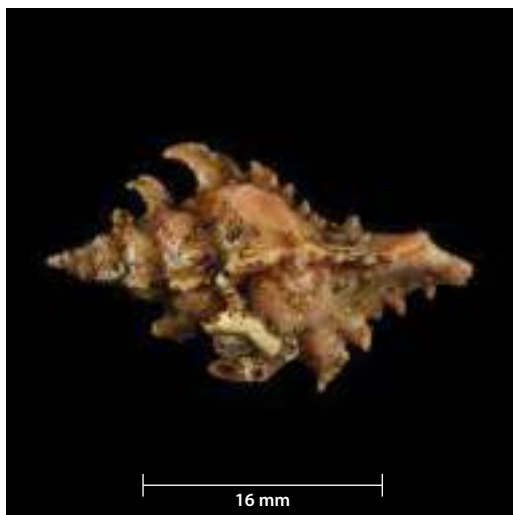
A common species that may occur at high population densities on sandy and muddy substrata.

References

- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 101.
- Marais JP and Kilburn RN. 2010. Nassariidae. In: Marais AP and Seecombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 172.
- 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.

Pteropurpura spp. (PteTra)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Muricidae
Genus:	<i>Pteropurpura</i>
Species:	spp.
Common name:	Stag shells



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.

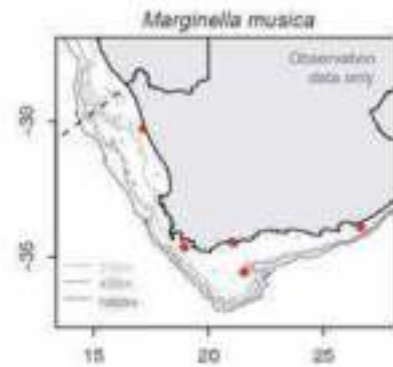
References

Marais JP and Kilburn RN. 2010. Muricidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. pp. 202–207.

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. pp. 100–101.

Marginella musica (MarMus)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Marginellidae
Genus:	<i>Marginella</i>
Species:	<i>musica</i>
Common name:	Musical margin shell



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.

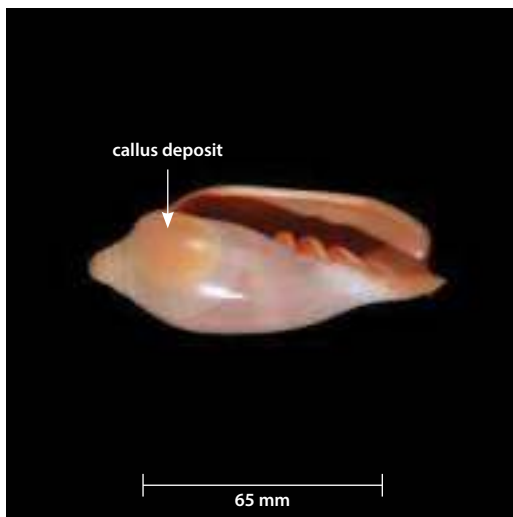
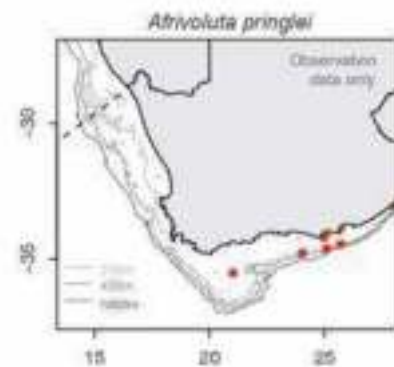
References

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 200.

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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Marginellidae
Genus:	<i>Afrivoluta</i>
Species:	<i>pringlei</i>
Common name:	Giant orange margin shell



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.

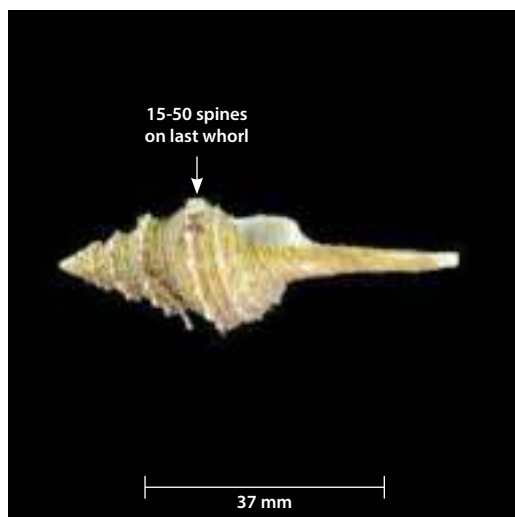
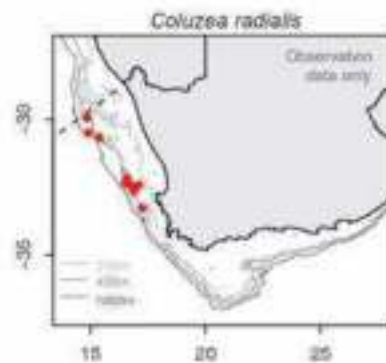
References

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 114.

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)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Turbinellidae
Genus:	<i>Coluzea</i>
Species:	<i>radialis</i>
Common name:	Benguela pagoda shell

**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 formosissimum* (Agulhas Bank) has much coarser axial sculpture and fewer peripheral spines (10–11 on last whorl).

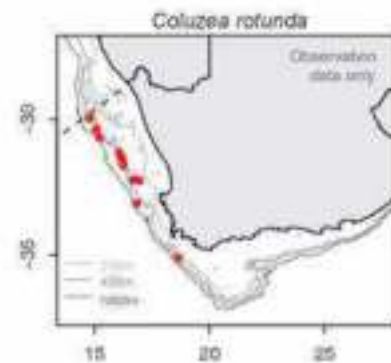
References

Marais JP and Kilburn RN. 2010. Turbinellidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 307.

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 116.

Coluzea rotunda (Fusinu)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Turbinellidae
Genus:	<i>Coluzea</i>
Species:	<i>rotunda</i>
Common name:	Rounded pagoda shell



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.

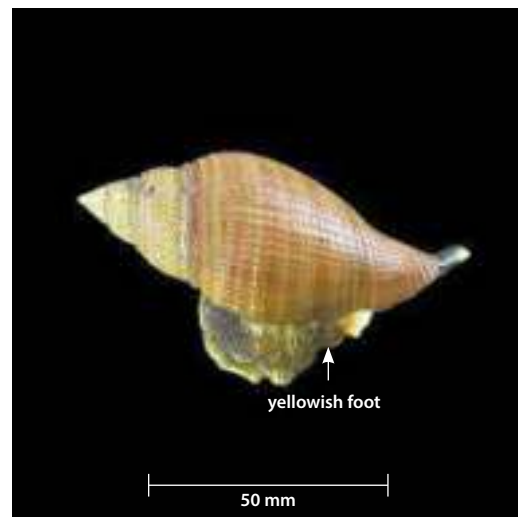
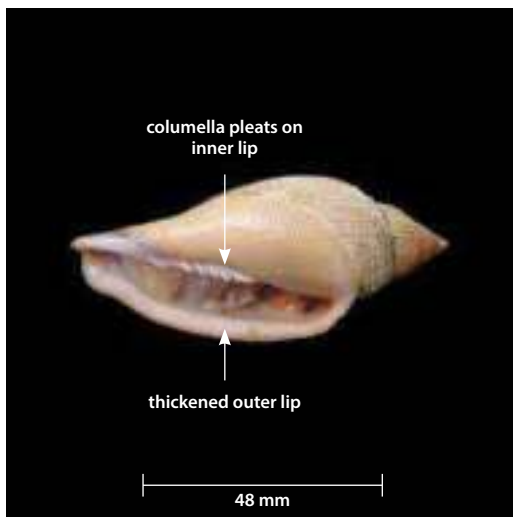
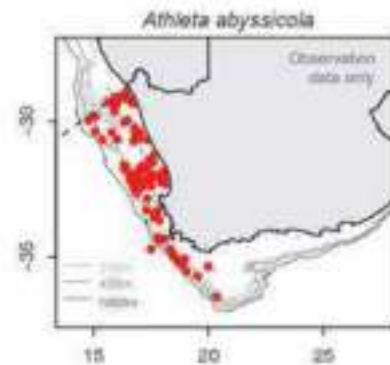
References

Marais JP and Kilburn RN. 2010. Turbinellidae. In: Marais AP and Seecombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 307.

Steyn DG and Lussi M. 2005. *Offshore shells of southern Africa: A pictorial guide to more than 750 gastropods*. Published by the authors. p. 116.

Athleta abyssicola (VolBos)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Volutidae
Genus:	<i>Athleta</i>
Species:	<i>abyssicola</i>
Common name:	Yellow-foot hatch shell



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. boswellae*, 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. boswellae*, but is even smaller (length up to 38 mm), has a lower spire, more blunt subsutural nodules and a uniformly pale colouration.

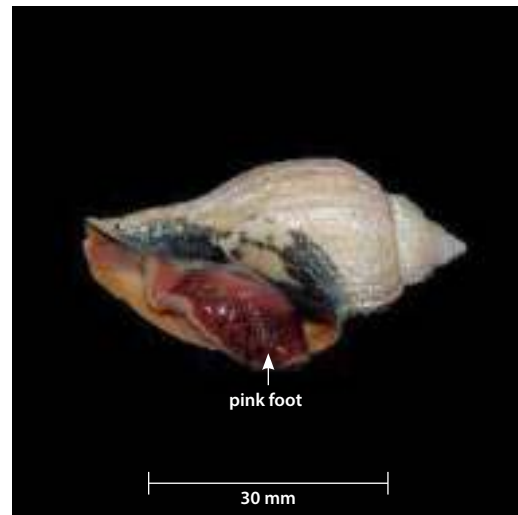
References

Aiken RP. 2010. Volutidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 316.

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:	<i>Athleta</i>
Species:	<i>lutosa</i>
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.

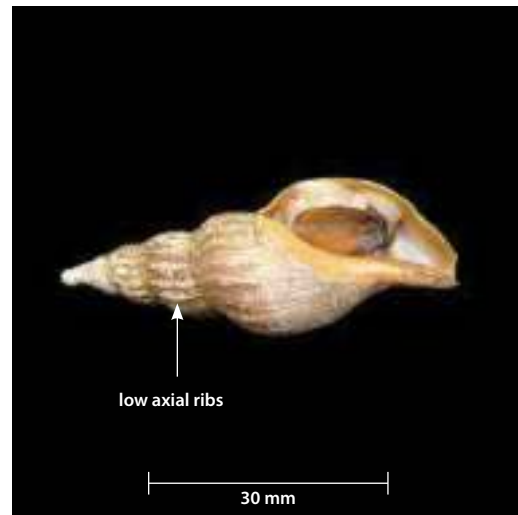
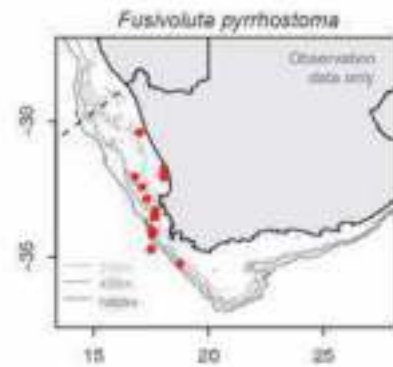
References

Aiken RP. 2010. Volutidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 319.

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.

Fusivoluta pyrrhostoma (FusPyr)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Volutidae
Genus:	<i>Fusivoluta</i>
Species:	<i>pyrrhostoma</i>
Common name:	Flame-mouthed volute



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 lemaîtrei, 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.

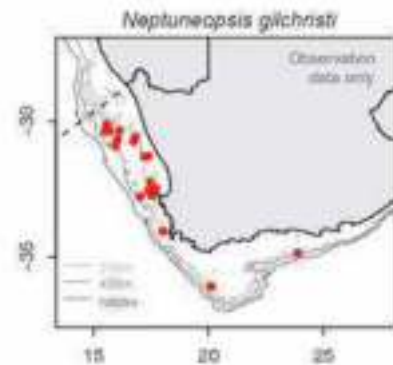
References

Aiken RP. 2010. Volutidae. In: Marais AP and Seccombe AD (eds) *Identification Guide to the Seashells of South Africa. Vol. 1. Groenkloof. Centre for Molluscan Studies.* p. 329.

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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Volutidae
Genus:	<i>Neptuneopsis</i>
Species:	<i>gilchristi</i>
Common name:	Gilchrist's volute



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

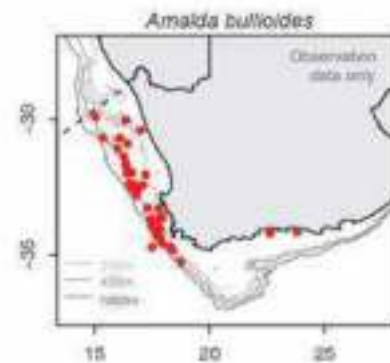
Aiken RP. 2010. Volutidae. In: Marais AP and Secombe AD (eds) *Identification Guide to the Seashells of South Africa*. Vol. 1. Groenkloof. Centre for Molluscan Studies. p. 333.

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 111.

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:	<i>Amalda</i>
Species:	<i>bullioides</i>
Common name:	Bullet amalda

**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

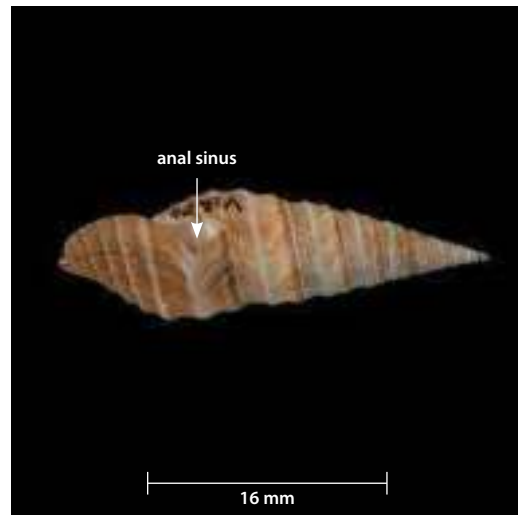
Several other species of *Amalda* occur on the Agulhas Bank, but most are considerably smaller than *A. bullioides*. *A. obtusa* is of similar size to *A. bullioides*, but it has a much broader, bluntly rounded spire and a brownish spire callus.

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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Borsoniidae
Genus:	<i>Pulsarella</i>
Species:	<i>fultoni</i>
Common name:	Humbug turrid



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

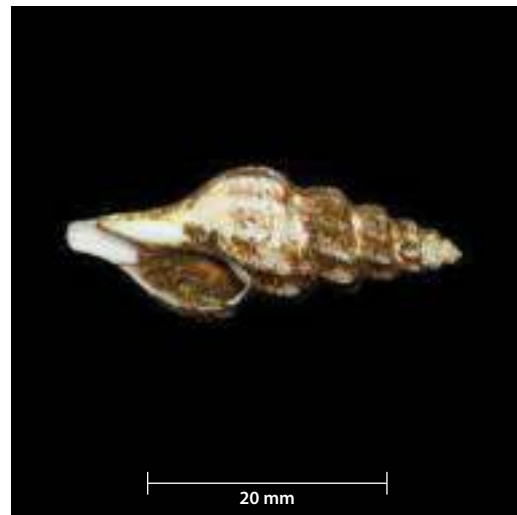
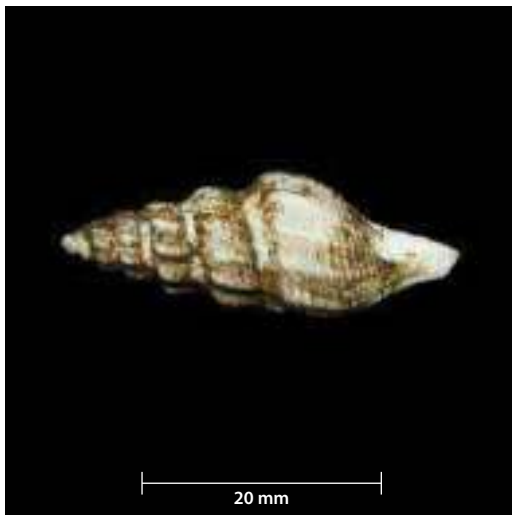
None.

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:	<i>Comitas</i>
Species:	<i>saldanhae</i>
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.

Comitas stolidus (ComSto)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Pseudomelatomidae
Genus:	<i>Comitas</i>
Species:	<i>stolidus</i>
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

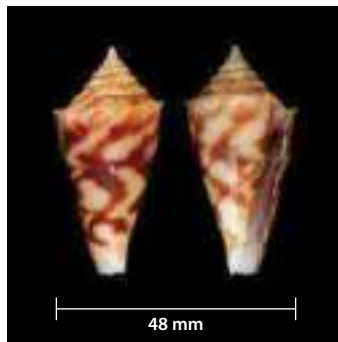
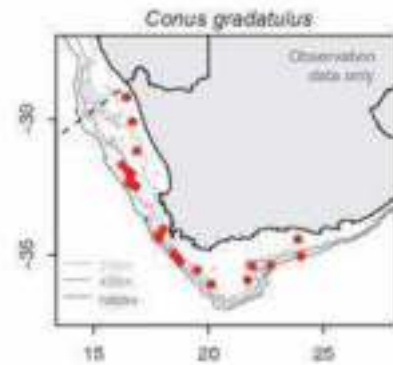
Makiyamaia gravis, from the eastern Agulhas Bank and Transkei, is somewhat similar, but is smaller (length up to 32 mm), has a broader shoulder slope and a swollen subsutural cord.

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)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Caenogastropoda
Order:	Neogastropoda
Family:	Conidae
Genus:	<i>Conus</i>
Species:	<i>gradatulus</i>
Common name:	Agulhas cone shell



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.

Colour

Ground colour white, variously marked with orange-brown or reddish-brown, often in a broad spiral band below shoulder, commonly broken up to form wavy axial stripes, sometimes almost covering whole body whorl; shoulder slope and spire white with occasional orange-brown axial flames. Living specimens with a thin, translucent, olive-yellow periostracum, partially obscuring underlying shell colour pattern; West Coast specimens generally uniformly whitish, lacking colour pattern and often chalky (form *patens*).

Size

Length up to 80 mm.

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

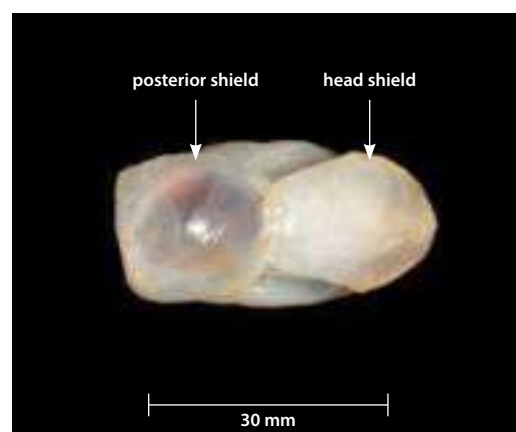
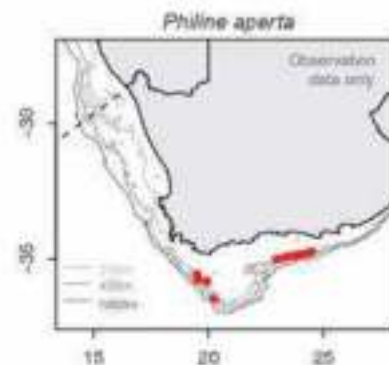
The West coast *Conus patens* is now considered to belong to the same species.

References

- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 121.
- 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*).

Philine aperta (PhiApe)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Cephalaspidea
Family:	Philinidae
Genus:	<i>Philine</i>
Species:	<i>aperta</i>
Common name:	Headshield/Shelled slug



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

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 204.
- Gosliner, T. 1987. *Nudibranchs of Southern Africa. A Guide to Opisthobranch Molluscs of Southern Africa*. Sea Challenger. Monterey. p. 41,
- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 131.
- Price RM, Gosliner TM and Valdes A. 2011. Systematics and phylogeny of *Philine* (Gastropoda: Opisthobranchia), with emphasis on the *Philine aperta* species complex. *Veliger* 51(2): 1–58.
- Zsilavecz G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Cape Town. Southern Underwater Research Group Press. p. 13.

Scaphander punctostriatus (Scapha)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Cephalaspidea
Family:	Scaphandridae
Genus:	<i>Scaphander</i>
Species:	<i>punctostriatus</i>
Common name:	Giant canoe bubble



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.

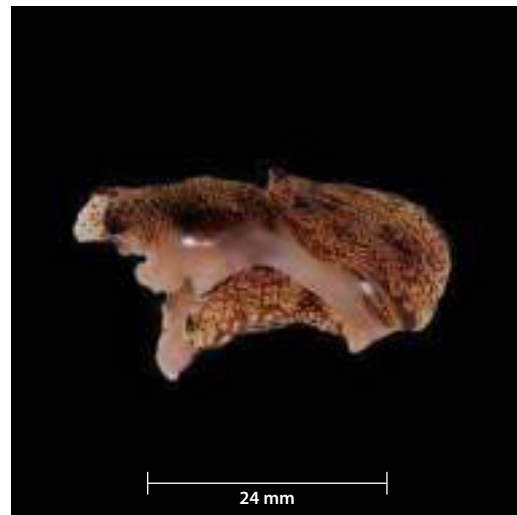
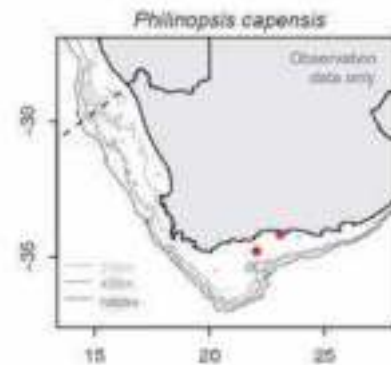
References

Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part IV. Gastropoda: Prosobranchiata: Rhipidoglossa, Docoglossa. Tectibranchiata. Polyplacophora. Solenogastres. Scaphopoda. *Annals of the South African Museum* 47(2): 201–360. p. 322.

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.

Philinopsis capensis (PhiCap)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Aglajidae
Genus:	<i>Philinopsis</i>
Species:	<i>capensis</i>
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.

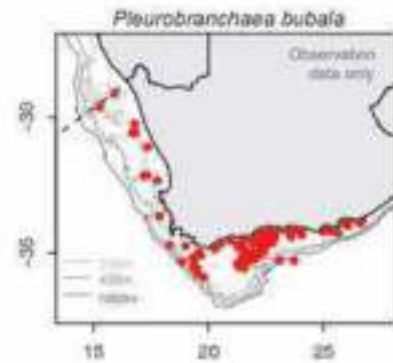
References

Identified from photograph by Georgina Jones and Terry Gosliner.

Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 14 (104 pp.)

Pleurobranchaea bubala (PleBub)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Pleurobranchomorpha
Family:	Pleurobranchaeidae
Genus:	<i>Pleurobranchaea</i>
Species:	<i>bubala</i>
Common name:	Warty pleurobranch



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

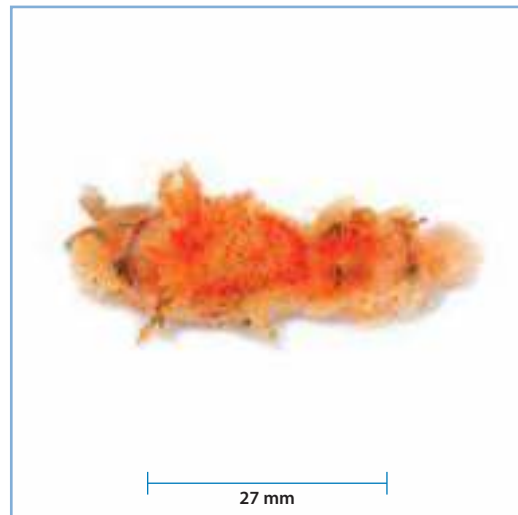
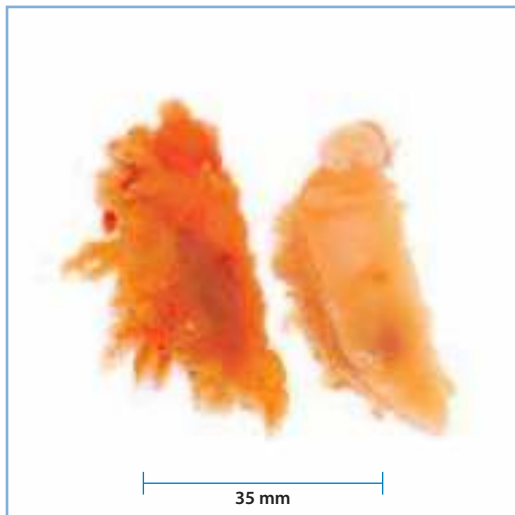
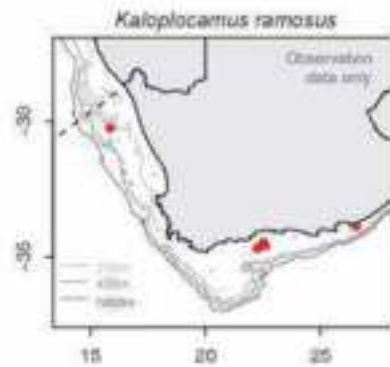
P. tarda is smaller and has a continuous smooth dorsal surface.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 206.
- Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 135 (271 pp.)
- Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 27 (104 pp.)

***Kaloplocamus ramosus* (NudFla)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Polyceridae
Genus:	<i>Kaloplocamus</i>
Species:	<i>ramosus</i>
Common name:	Tassled/Orange flame nudibranch



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

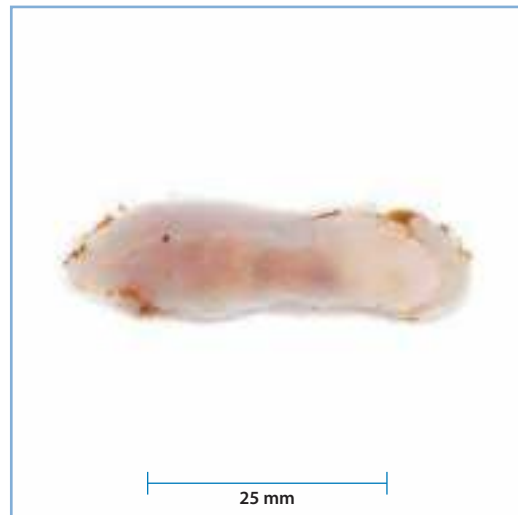
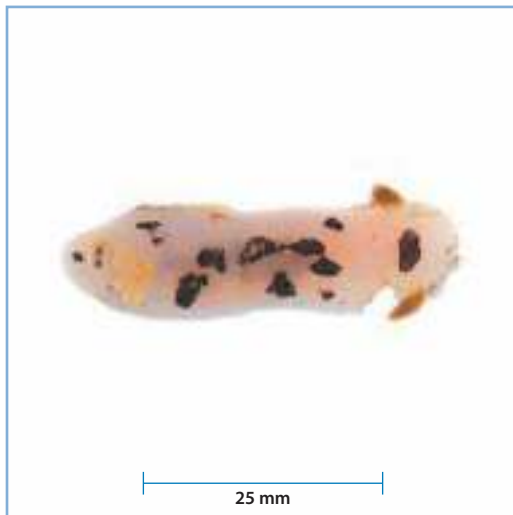
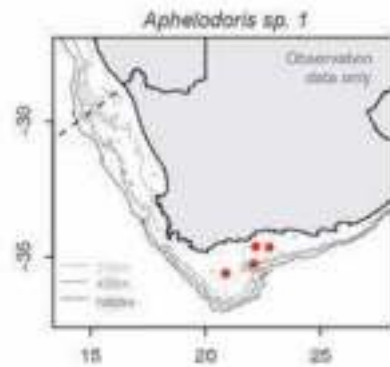
Identified from photograph by Georgina Jones and Terry Gosliner.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 143 (271 pp.)

Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 61 (104 pp.)

Aphelodoris sp. 1 (AphDot)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Dorididae
Genus:	<i>Aphelodoris</i>
Species:	sp. 1
Common name:	Chocolate-chip nudibranch



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

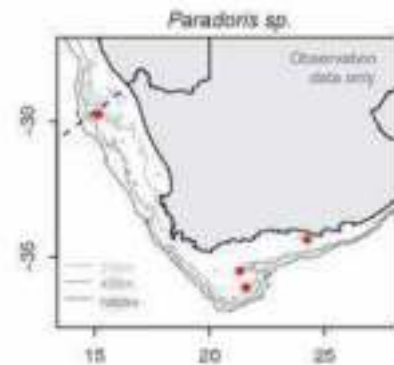
Identified from photograph by Georgina Jones.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 135 (271 pp.)

Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 35 (104 pp.)

***Paradoris* sp. 1 (Parador)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Discodorididae
Genus:	<i>Paradoris</i>
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 miocornata*) has a warty body, darker patches between spots and oblong rhinophores (chemosensory tentacles).

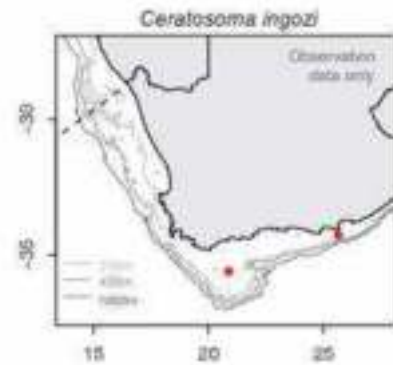
References

Identified from photograph by Georgina Jones.

Zsilavecz G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 32 (104 pp.)

Ceratosoma ingozi (CerIng)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Chromodorididae
Genus:	<i>Ceratosoma</i>
Species:	<i>ingozi</i>
Common name:	Inkspot nudibranch



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

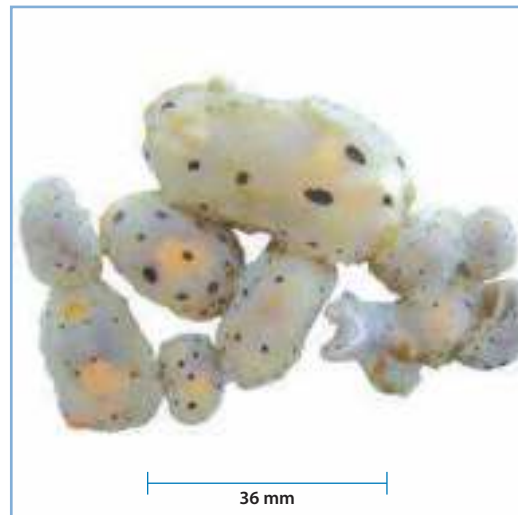
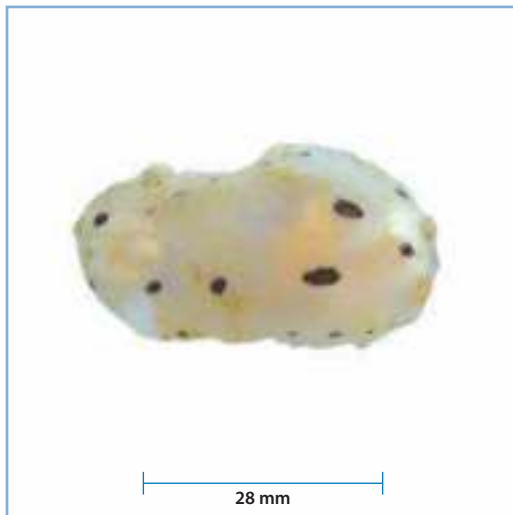
Identified from photograph by Georgina Jones and Terry Gosliner.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 137 (271 pp.)

Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 45 (104 pp.)

***Mandelia mirocornata* (ManMir)**

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Mandeliidae
Genus:	<i>Mandelia</i>
Species:	<i>mirocornata</i>
Common name:	Mandela's nudibranch



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

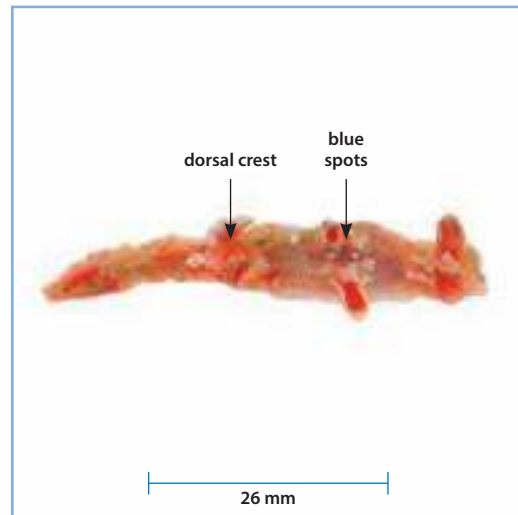
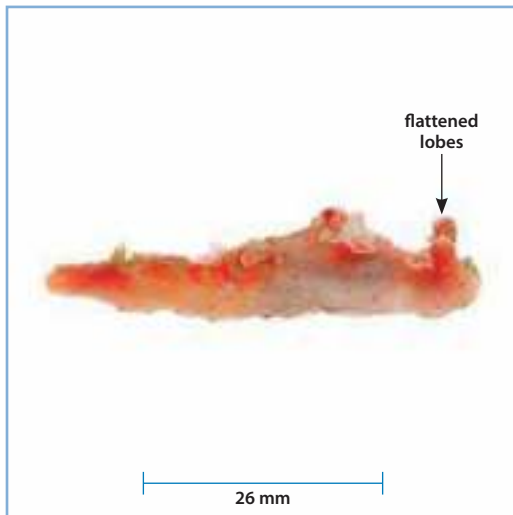
Identified from photograph by Georgina Jones.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 139 (271 pp.)

Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 51 (104 pp.)

Notobryon thompsoni (NotTho)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Scyllaeidae
Genus:	<i>Notobryon</i>
Species:	<i>thompsoni</i>
Common name:	Iridescent bluespot 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

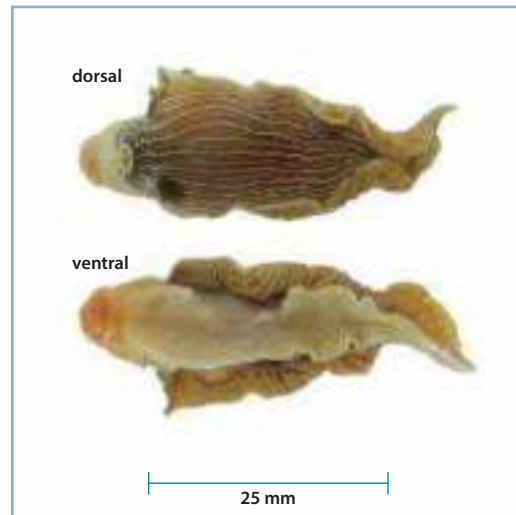
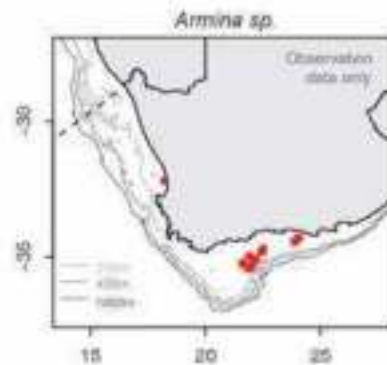
Identified from photograph by Georgina Jones and Terry Gosliner.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 145 (271 pp.)

Zsilavecz G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 67 (104 pp.)

Armina sp. (ArmSpp)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Arminidae
Genus:	<i>Armina</i>
Species:	sp.
Common name:	Striped sand slug/Pierre's Armina



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

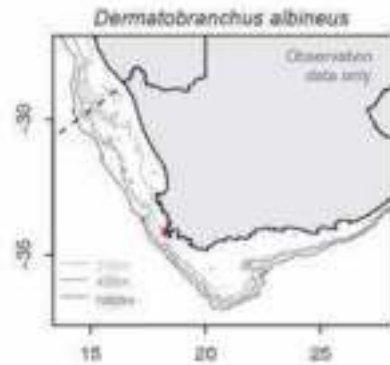
Identified from photograph by Georgina Jones.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 147 (271 pp.)

Zsilavec G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 76 (104 pp.)

Dermatobranchus albineus (DerAlb)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Arminidae
Genus:	<i>Dermatobranchus</i>
Species:	<i>albineus</i>
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.

Gosliner TM and Fahey SJ. 2011. Previously undocumented diversity and abundance of cryptic species: a phylogenetic analysis of Indo-Pacific Arminidae Rafinesque, 1814 (Mollusca: Nudibranchia) with descriptions of 20 new species of *Dermatobranchus*. *Zool J Linn Soc.* 161(2):245-356.

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 147 (271 pp.)

Zsilavecz G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 77 (104 pp.)

Dermatobranchus arminus (DerArm)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Arminidae
Genus:	<i>Dermatobranchus</i>
Species:	<i>arminus</i>
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.

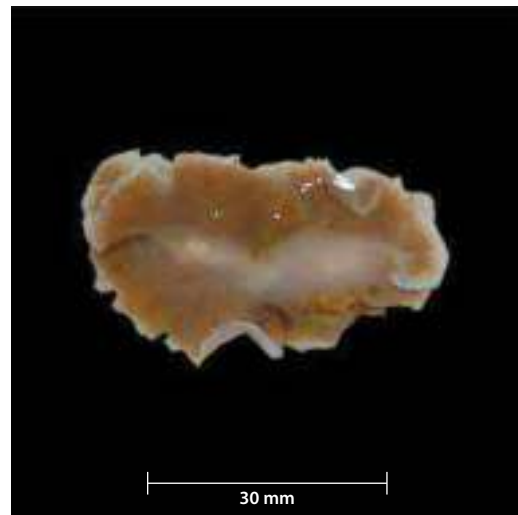
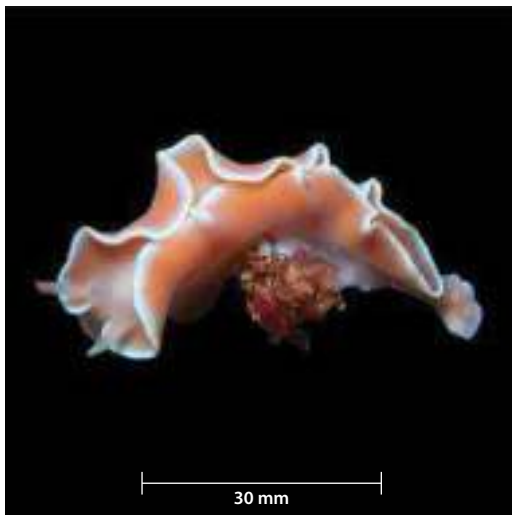
Gosliner TM and Fahey SJ. 2011. Previously undocumented diversity and abundance of cryptic species: a phylogenetic analysis of Indo-Pacific Arminidae Rafinesque, 1814 (Mollusca: Nudibranchia) with descriptions of 20 new species of *Dermatobranchus*. *Zool J Linn Soc.* 161(2):245-356.

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Zsilavecz G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 77 (104 pp.)

Leminda millecra (LemMil)

Phylum:	Mollusca
Class:	Gastropoda
Subclass:	Heterobranchia
Order:	Nudibranchia
Family:	Charcotiidae
Genus:	<i>Leminda</i>
Species:	<i>millecra</i>
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

Jones G. 2008. *A Field Guide to the Marine Animals of the Cape Peninsula*. Southern Underwater Research Group Press. p. 147 (271 pp.)

Zsilavecz G. 2007. *Nudibranchs of the Cape Peninsula and False Bay*. Southern Underwater Research Group Press. p. 79 (104 pp.)

Nucula nucleus (Tellin)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Protobranchia
Order:	Nuculida
Family:	Nuculidae
Genus:	<i>Nucula</i>
Species:	<i>nucleus</i>
Common name:	Common nut clam



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

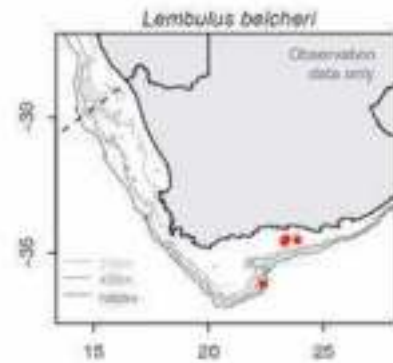
None; all other species of *Nucula* occurring on the Agulhas Bank are considerably smaller than *N. nucleus*.

References

- Barnard KH. 1964. Contributions to the knowledge of South African marine Mollusca. Part V. Lamellibranchiata. *Annals of the South African Museum* 47(3): 361–593. p. 361.
- Kilburn RN. 1999. The family Nuculidae (Bivalvia: Protobranchia) in South Africa and Mozambique. *Annals of the Natal Museum* 40: 245–268. p. 249.
- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 153.

Lembulus belcheri (VenSpp)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Protobranchia
Order:	Nuculanida
Family:	Nuculanidae
Genus:	<i>Lembulus</i>
Species:	<i>belcheri</i>
Common name:	Agulhas ridged nut clam



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

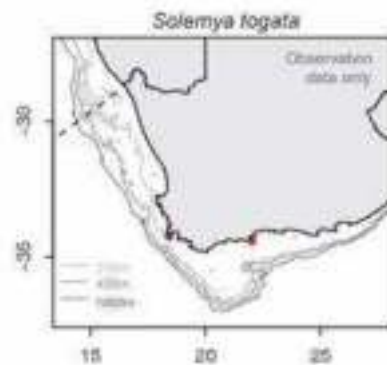
Lembulus lamellatus and *L. gemmulatus* are similar species occurring off the East coast, but both are considerably smaller than *L. belcheri* (length up to 21 mm).

References

Barnard KH. 1964. Contributions to the knowledge of South African marine Mollusca. Part V. Lamellibranchiata. *Annals of the South African Museum* 47(3): 361–593. p. 365.

Solemya togata (SolTog)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Protobranchia
Order:	Solemyida
Family:	Solemyidae
Genus:	<i>Solemya</i>
Species:	<i>togata</i>
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.

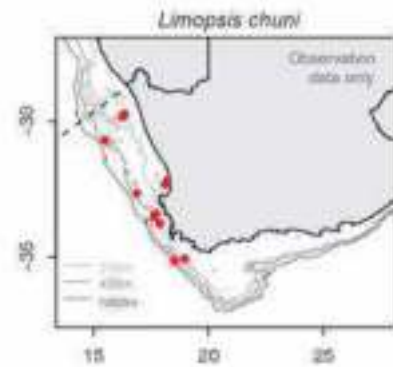
References

Kilburn RN. 1974. Taxonomic notes on South African marine Mollusca (4): Bivalvia, with descriptions of new species of Lucinidae. *Annals of the Natal Museum* 22(1): 335–348.

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 153.

Limopsis chuni (Dosini)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Pteriomorpha
Order:	Arcida
Family:	Limopsidae
Genus:	<i>Limopsis</i>
Species:	<i>chuni</i>
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

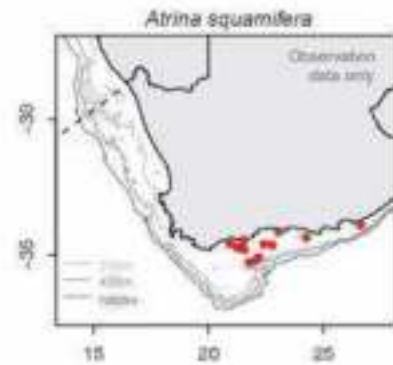
Oblimopa multistriata is another relatively large limopsid species, but it has much stronger radial sculpture. It is an Indian Ocean species ranging south to the Durban area.

References

Barnard KH. 1964. Contributions to the knowledge of South African marine Mollusca. Part V. Lamellibranchiata. *Annals of the South African Museum* 47(3): 361–593. p. 383.

Atrina squamifera (AtrSqu)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Pteriomorpha
Order:	Ostreida
Family:	Pinnidae
Genus:	<i>Atrina</i>
Species:	<i>squamifera</i>
Common name:	Scaly horse-mussel



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

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 148.

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 167.

***Ostrea atherstonei* (OstAth)**

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Pteriomorpha
Order:	Ostreida
Family:	Ostreidae
Genus:	<i>Ostrea</i>
Species:	<i>atherstonei</i>
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.

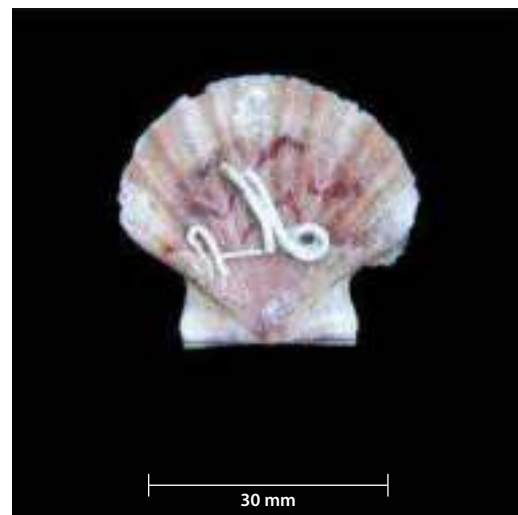
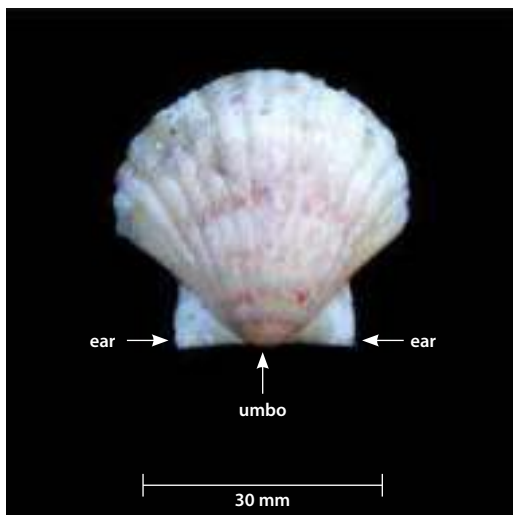
References

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 150.

Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 170, pl. 38.

Pecten sulcicostatus (PecMax)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Pteriomorpha
Order:	Pectinida
Family:	Pectinidae
Genus:	<i>Pecten</i>
Species:	<i>sulcicostatus</i>
Common name:	Agulhas ridged scallop



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

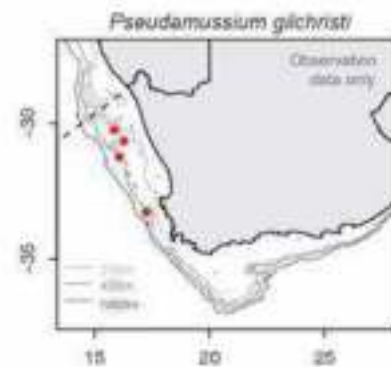
Pecten afribenedictus from the East Coast (south to East London) has a concave left valve and a more convex right valve in which the radial ribs lack fine radial threads. In addition, it has a wide purple-brown band around the ventral margin of the interior and it does not reach such a large size (maximum diameter 76 mm).

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 150.
- Dijkstra HH and Kilburn RN. 2001. The family Pectinidae in South Africa and Mozambique (Mollusca: Bivalvia: Pectinoidea). *African Invertebrates* 42: 263–321. p. 286.
- Kilburn RN and Rippey E. 1982. *Sea shells of southern Africa*. Johannesburg. Macmillan. p. 171, pl. 38.

***Pseudamussium gilchristi* (Pecten)**

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Pteriomorpha
Order:	Pectinida
Family:	Pectinidae
Genus:	<i>Pseudamussium</i>
Species:	<i>gilchristi</i>
Common name:	Gilchrist's scallop

**Distinguishing features**

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.

Similar species

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

Dijkstra HH and Kilburn RN. 2001. The family Pectinidae in South Africa and Mozambique (Mollusca: Bivalvia: Pectinoidea). *African Invertebrates* 42: 263–321.

Lucinoma capensis (LucCap)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Heterodonta
Order:	Lucinida
Family:	Lucinidae
Genus:	<i>Lucinoma</i>
Species:	<i>capensis</i>
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

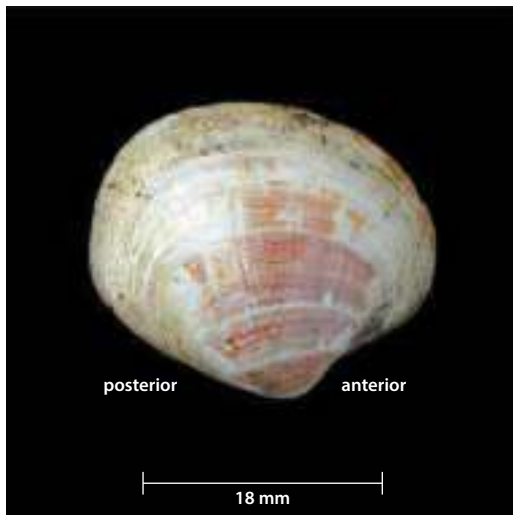
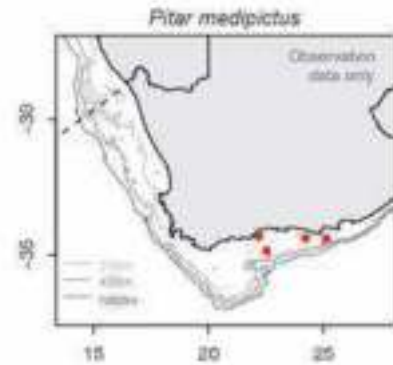
Limopsis chuni is somewhat similar, but it has a taxodont hinge and a hairy periostracum. *Dosinia lupinus orbigny*, a common venerid bivalve on the South and West coasts, has a similar shape, but has a thicker shell with more prominent umbones, finer concentric sculpture and a well-developed pallial sinus internally.

References

Barnard KH. 1964. Contributions to the knowledge of South African marine Mollusca. Part V. Lamellibranchiata. *Annals of the South African Museum* 47(3): 361–593. p. 473 (as *Phacoides*).

Pitar medipictus (PitAbb)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Heterodonta
Order:	Venerida
Family:	Veneridae
Genus:	<i>Pitar</i>
Species:	<i>medipictus</i>
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

Lamprell, KL & Kilburn, RN. 1999. The genera *Lioconcha* and *Pitar* in South Africa and Mozambique, with descriptions of three new species (Mollusca: Bivalvia: Veneridae). *Vita Marina* 46 (1–2): 19–41.

Cuspidaria capensis (CusSpp)

Phylum:	Mollusca
Class:	Bivalvia
Subclass:	Heterodonta
Order:	Anomalodesmata
Family:	Cuspidariidae
Genus:	<i>Cuspidaria</i>
Species:	<i>capensis</i>
Common name:	Cape cuspidaria



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

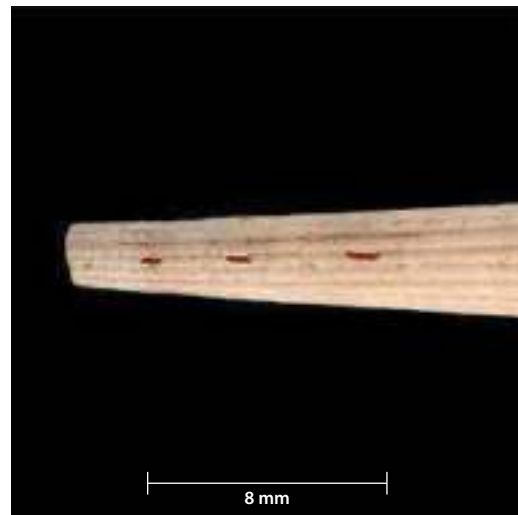
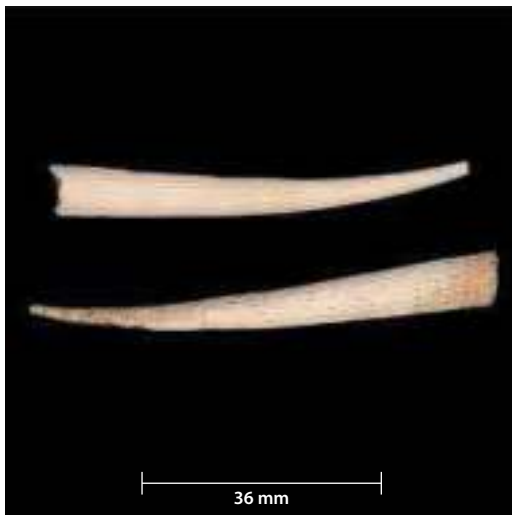
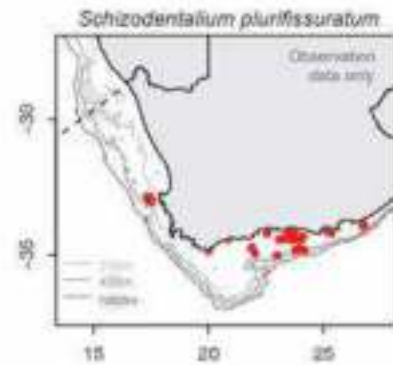
Cuspidaria species are predatory. The siphon is shot out of the rostrum and expands rapidly, sucking in small prey items such as copepods.

References

Barnard KH. 1964. Contributions to the knowledge of South African marine Mollusca. Part V. Lamellibranchiata. *Annals of the South African Museum* 47(3): 361–593. p. 579–582.

Schizodentalium plurifissuratum (SchPlu)

Phylum:	Mollusca
Class:	Scaphopoda
Subclass:	-
Order:	Dentalida
Family:	Dentaliidae
Genus:	<i>Schizodentalium</i>
Species:	<i>plurifissuratum</i>
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

Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part IV. Gastropoda: Prosobranchiata: Rhipidoglossa, Docoglossa. Tectibranchiata. Polyplacophora. Solenogastres. Scaphopoda. *Annals of the South African Museum* 47(2): 201–360. p. 346.

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature. Cape Town. p. 144.

Leptochiton sykesi (LepSyk)

Phylum:	Mollusca
Class:	Polyplacophora
Subclass:	-
Order:	Lepidopleurida
Family:	Leptochitonidae
Genus:	<i>Leptochiton</i>
Species:	<i>sykesi</i>
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 mid-line 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

- Barnard KH. 1963. Contributions to the knowledge of South African marine Mollusca. Part IV. Gastropoda: Prosobranchiata: Rhipidoglossa, Docoglossa. Tectibranchiata. Polyplacophora. Solenogastres. Scaphopoda. *Annals of the South African Museum* 47(2): 201–360. p. 331.
- Kaas, P & van Belle, RA. 1985. *Monograph of living chitons*. Vol. 1. Backhuys. Leiden. p. 75.



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
of South Africa, Malachite Marketing and Media, Pretoria, pp. 321-391.

¹ South African Department of Agriculture, Forestry and Fisheries, Cape Town

² Ichthyology Department, Rhodes University, Grahamstown, South Africa

Phylum: **MOLLUSCA** Class: Cephalopoda

Argonauts, octopods, cuttlefish and squids

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 nautilus (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. $III \geq II > IV > I$ 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.

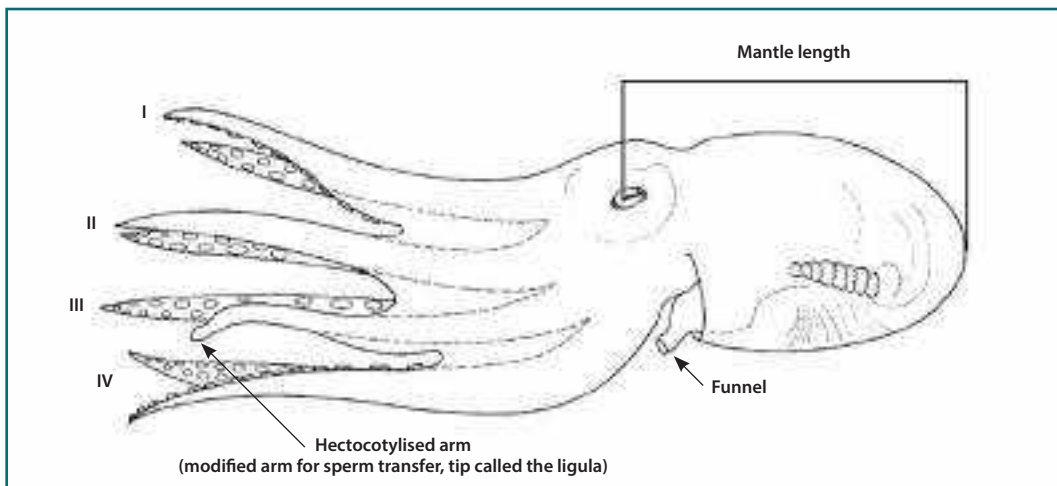


Figure 1: Schematic of a generalised incirrate octopus

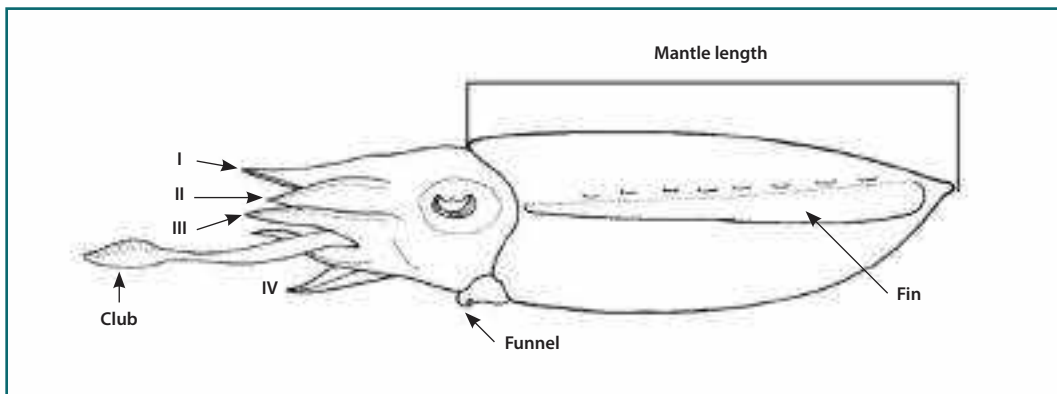


Figure 2: Schematic of a generalised cuttlefish

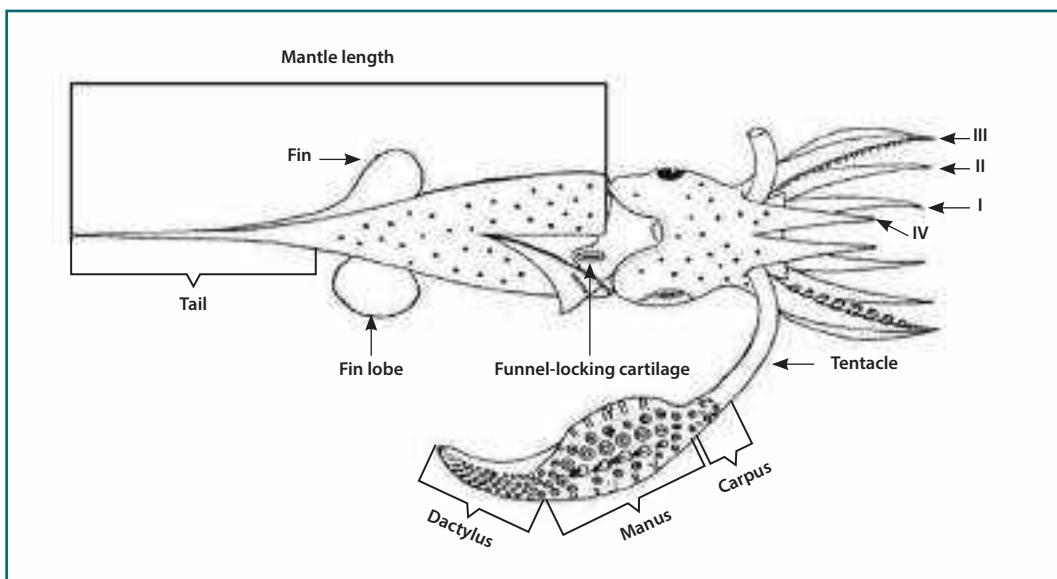


Figure 3: Schematic of a generalised squid

Orders Myopsida and Oegopsida (Squids)

Two closely related orders (sometimes treated as suborders). Ten circumoral 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.

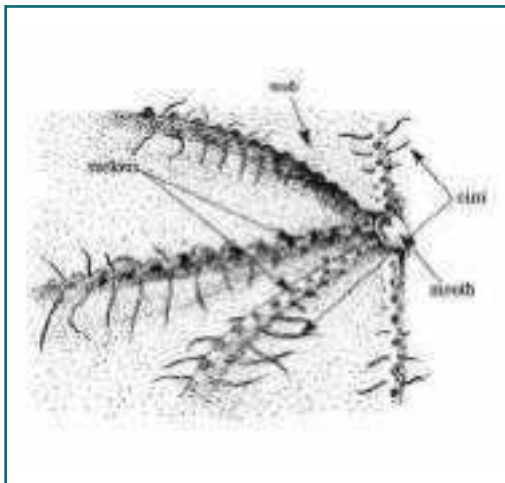


Figure 4: Oral view of typical Cirrate octopod showing suckers flanked by cirri

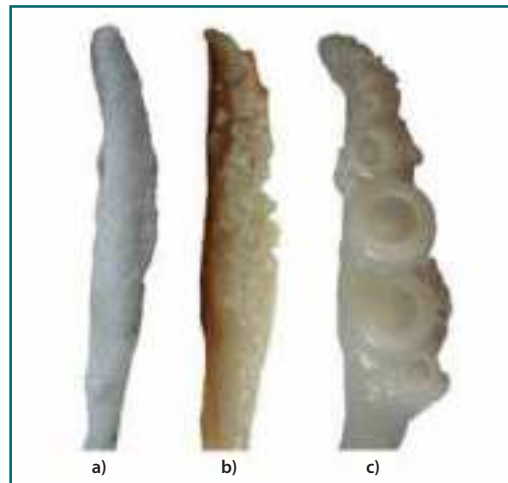


Figure 5: Example cuttlefish clubs with a) small subequal suckers, b) moderately enlarged and c) greatly enlarged medial suckers



Figure 6: Ventral mantle of cuttlefish showing entire (left) and deeply emarginated (right) ventral margin

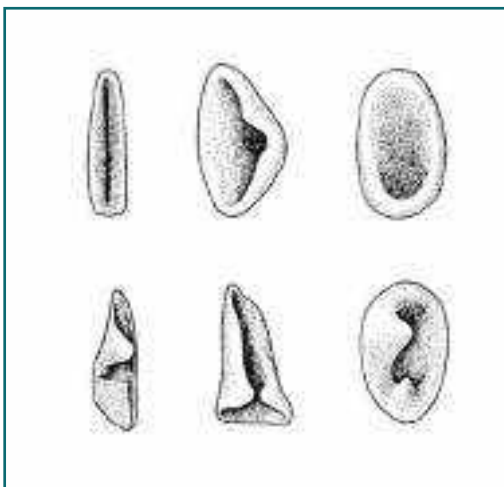


Figure 7: Examples of shapes of funnel-locking cartilage

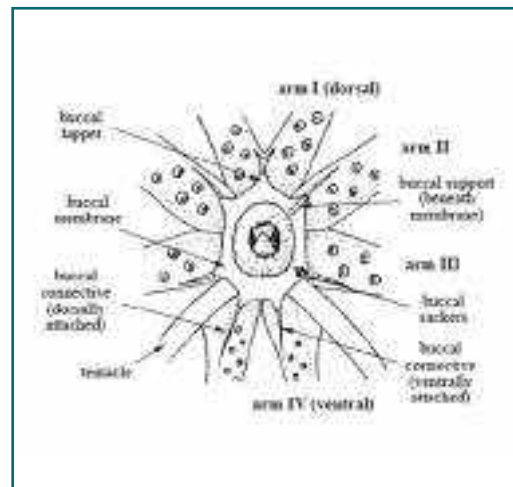
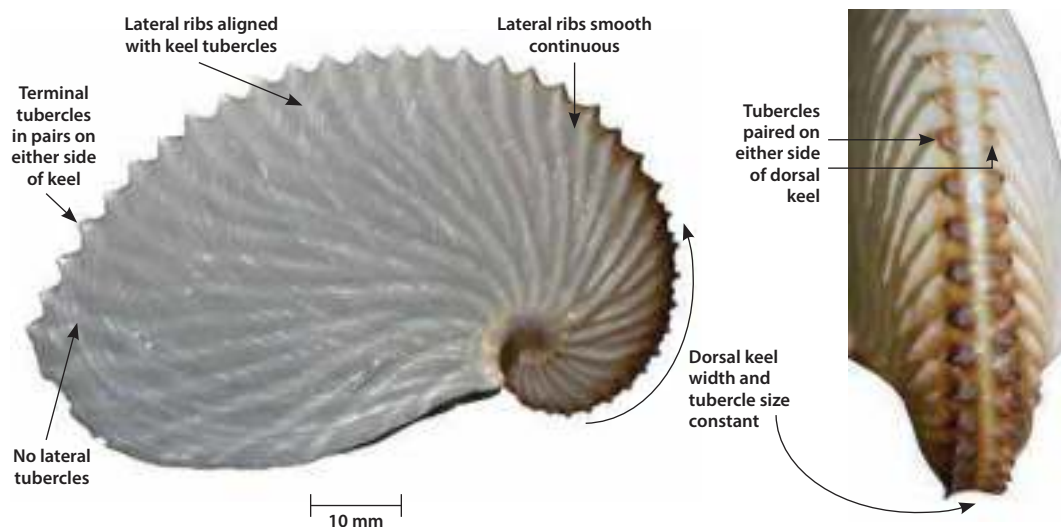
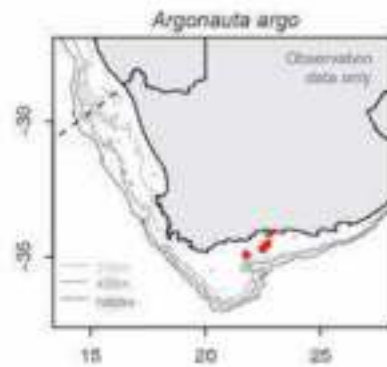


Figure 8: Buccal anatomy of squids

Argonauta argo (ArgArg)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Argonautidae
Common:	Greater argonaut (Paper nautilus)
Alternate:	-



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

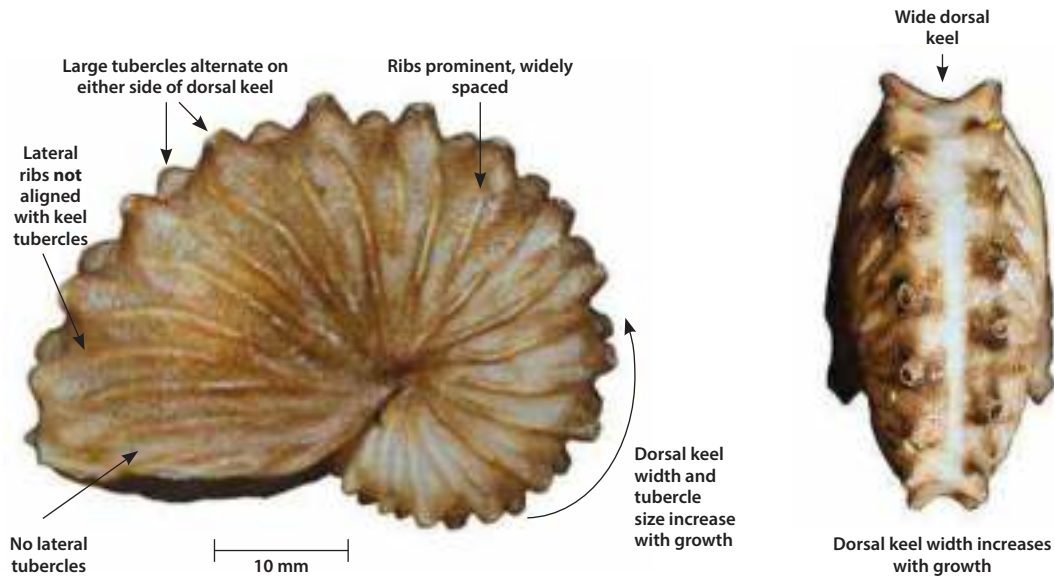
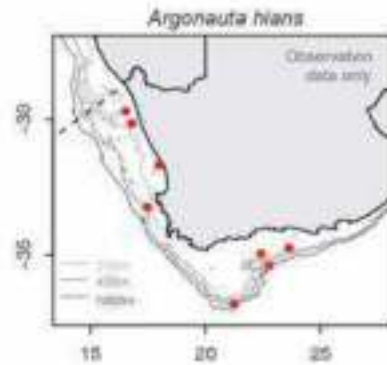
A. hians and *A. nodosus*: **Shell** dorsal keel width and tubercle size **increasing with growth**, i.e. from apex towards mouth. Keel tubercles **not paired**, alternating on either side of the keel. ♀♀: Arms IV shorter than Arms II; ♂♂ with 10-11 (*A. hians*) or 17-20 (*A. nodosus*) suckers on normal arms.

References

Jereb *et al.*, 2014; Nesis, 1987; Sanchez, 1988.

Argonauta hians (ArgHia)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Argonautidae
Common:	Lesser argonaut (Paper nautilus)
Alternate:	-



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.

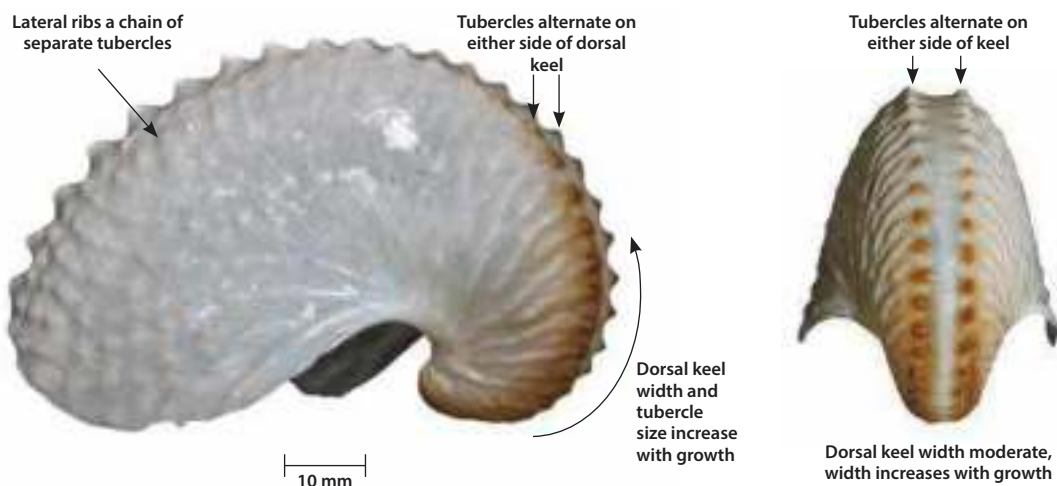
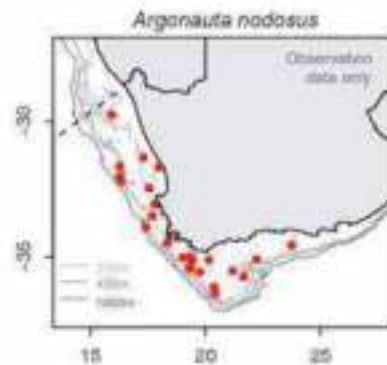
A. nodosus: Lateral ribs inconspicuous, ending in a chain of separate tubercles; shell white. ♀♀: Arms II longer than Arms III, 2.0 to 2.8 times ML; ♂♂: 17-20 suckers on normal arms.

References

Jereb *et al.*, 2014; Nesis, 1987.

Argonauta nodosus (ArgNod)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Argonautidae
Common:	Knobbed argonaut (Paper nautilus)
Alternate:	-



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.

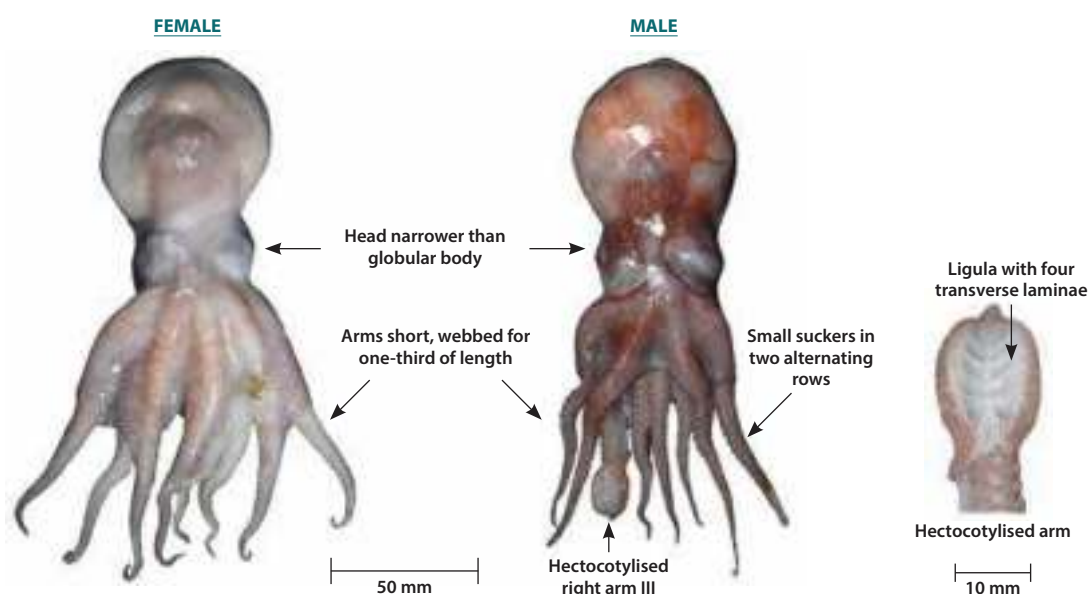
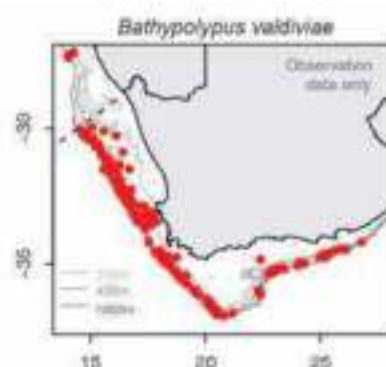
A. hians: Lateral ribs prominent, smooth, not terminating in keel tubercle; dorsal keel 20-30% of shell length. Shell off-white to brown. ♀♀: Arms II & III subequal, 1.4 to 2.0 times ML; ♂♂: 10-11 suckers on normal arms.

References

Jereb *et al.*, 2014; Nesis, 1987.

***Bathypolypus valdiviae* (BatVal)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Bathypolypodidae
Common:	-
Alternate:	-

**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 \approx II \approx III \approx IV.

Hectocotylus

Right Arm III. Ligula a broad, rounded disc with a deep trough bearing four big transverse laminae.

Size

80 mm mantle length.

Distribution

Both coasts, but more common on West Coast. Generally 450 to 1000 m depth, but has been recorded at 200 m.

Similar species

Enteroctopus and *Octopus*: Arms moderate length (3.5-5.0 times mantle length); ink sac present.

Benthoctopus: Arms three to six times mantle length; large prominent suckers; ink sac absent.

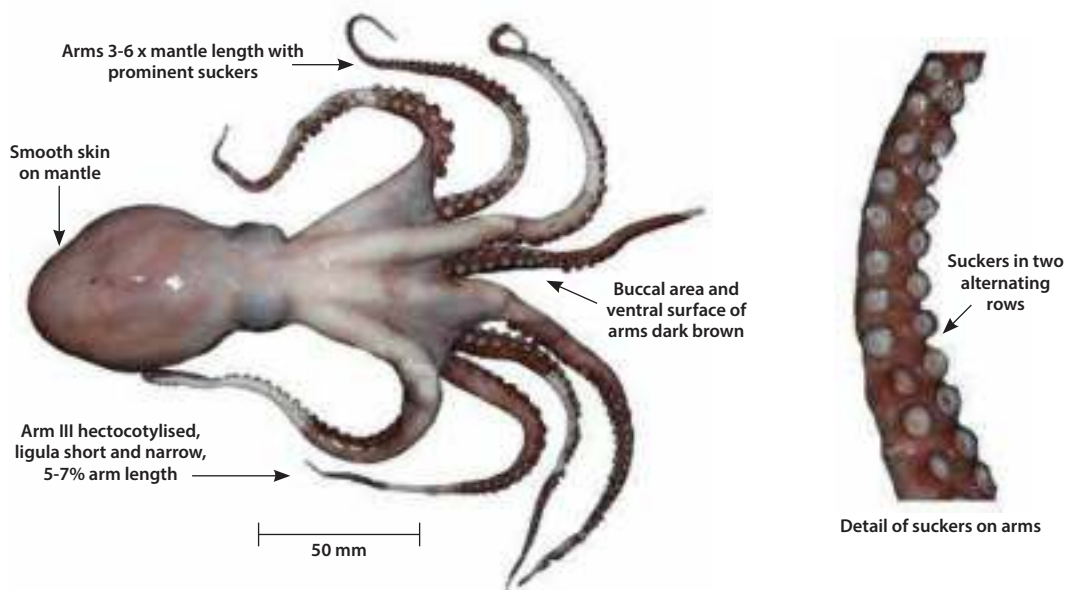
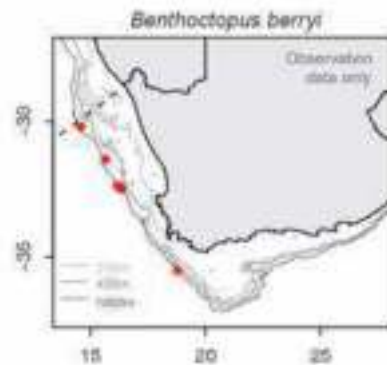
Eledone schultzei (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

References

Jereb *et al.*, 2014; Roper *et al.*, 1984; Nesis, 1987; Sanchez, 1988.

Benthoctopus berryi (BenBer)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Octopodidae
Common:	Deepwater octopus
Alternate:	-



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:** $I \approx II \approx III > IV$.

Hectocotylus

Right Arm III. Ligula short, narrow 5-7% of hectocotylosed 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.

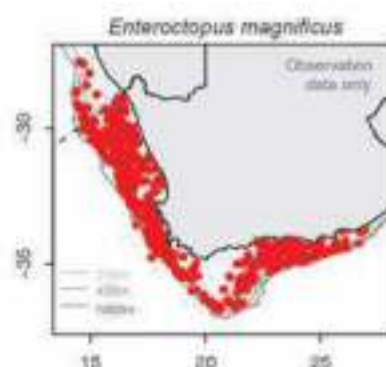
Eledone schultzei (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

References

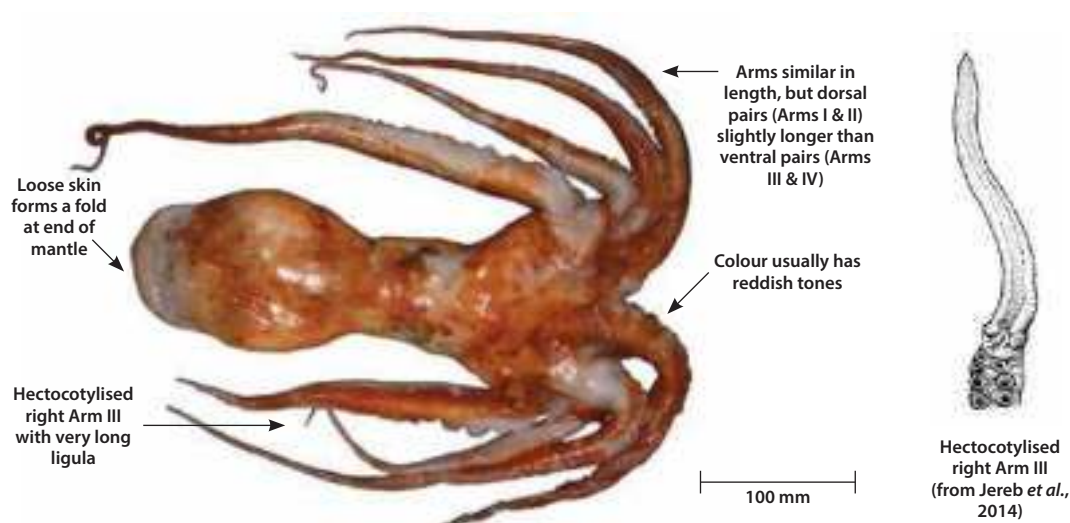
Jereb *et al.*, 2014; Nesis, 1987.

***Enteroctopus magnificus* (OctMag)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Octopodidae
Common:	Southern giant octopus
Alternate:	<i>Octopus dofleini</i> (in error); <i>Octopus magnificus</i>



Records from shallow waters may be the result of misidentifications

**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 ($III \geq II > IV > I$); 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.

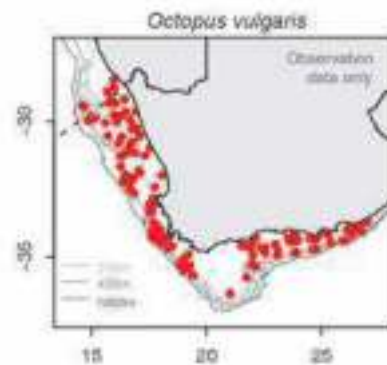
Eledone schultzei (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

References

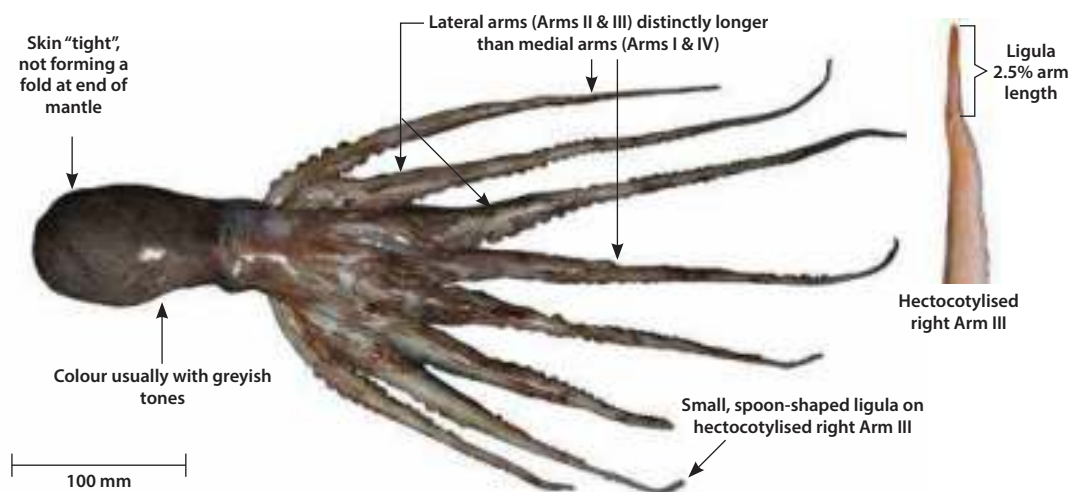
Jereb *et al.*, 2014; Nesis, 1987; Roper *et al.*, 1984.

Octopus vulgaris (OctVul)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Octopoda
Suborder:	Incirrata
Family:	Octopodidae
Common:	Common octopus
Alternate:	<i>Octopus "vulgaris" type III</i>



Note: *Octopus vulgaris* is currently regarded as a single widely distributed species with a number of regional forms. These regional forms may be distinct species.



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.

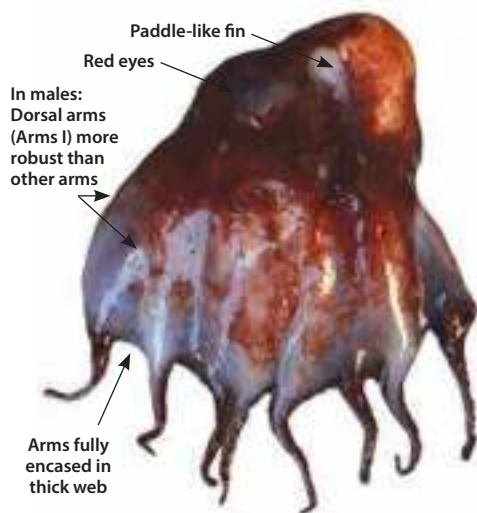
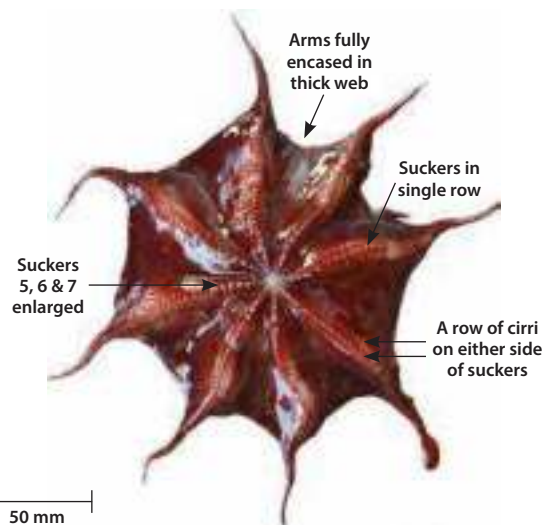
Eledone schultzei (inshore, under 20 m depth) and *Velodona togata* (KZN): Distinguished by single row of suckers on arms (to date neither have been recorded on demersal surveys).

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:	<i>Opisthoteuthis vossi</i>

**LATERAL VIEW****ORAL VIEW****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:	-

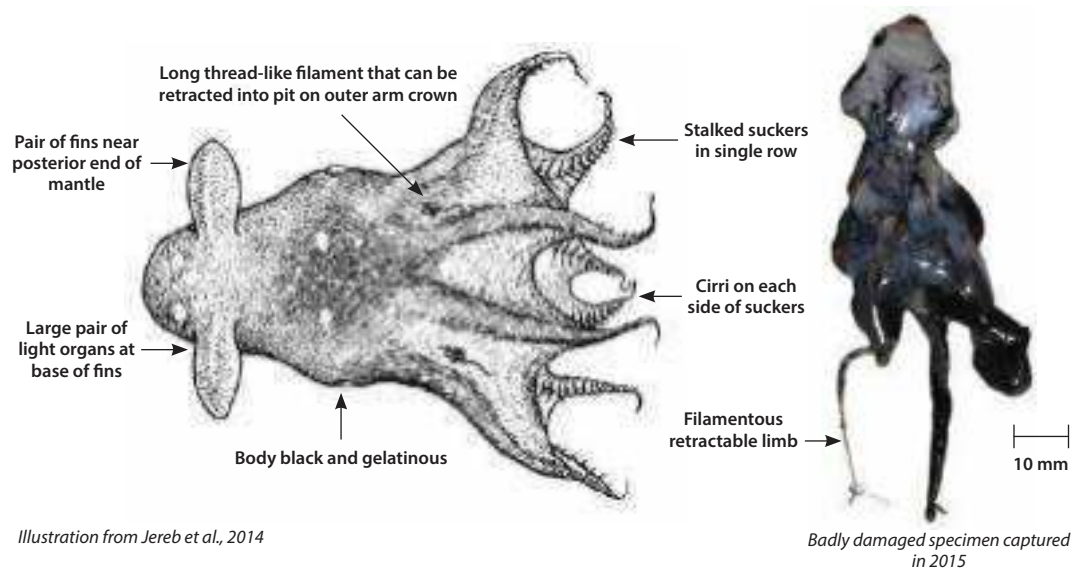
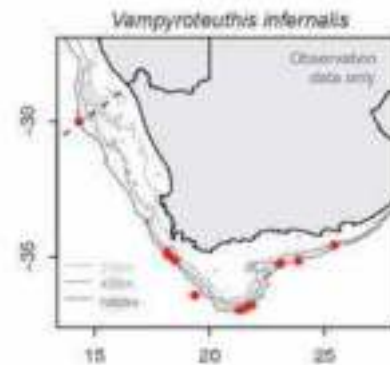


Illustration from Jereb *et al.*, 2014

Badly damaged specimen captured in 2015

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.

Hectocotylus

None.

Size

Maximum 130 mm mantle length.

Distribution

Mesopelagic (600-1 200 m) on West and South Coasts.

Similar species

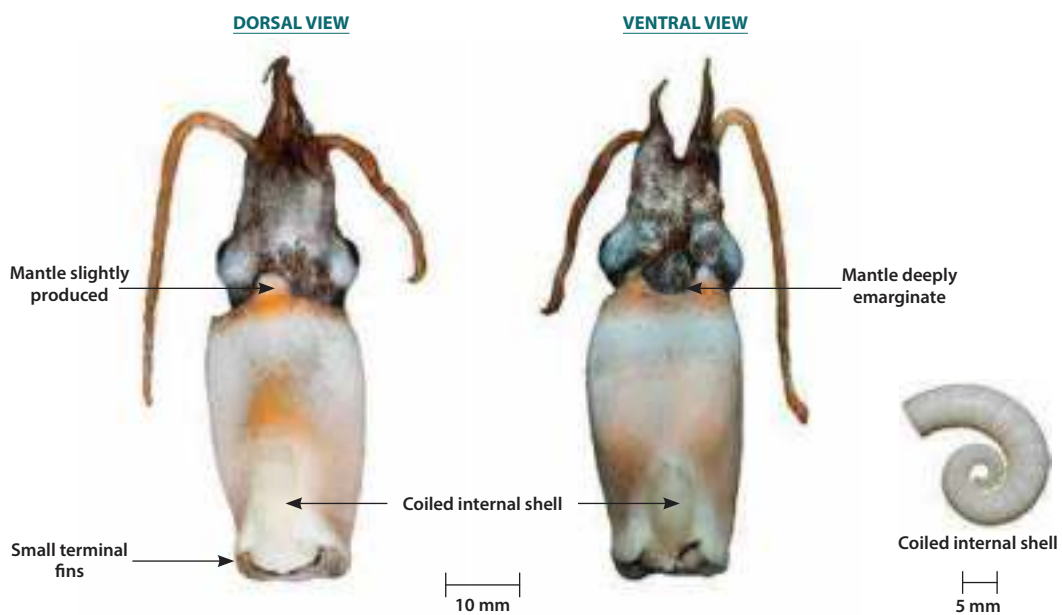
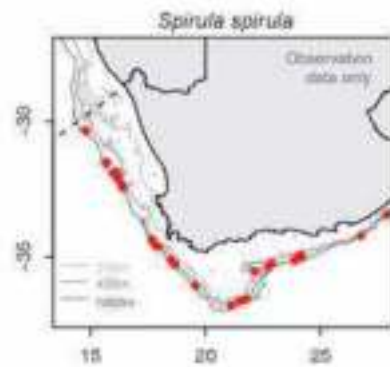
None, only known black octopod in the area.

References

Jereb *et al.*, 2014; Young, 2009.

***Spirula spirula* (Spirul)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Spirulida
Suborder:	-
Family:	Spirulidae
Common:	Ram's horn squid
Alternate:	-

**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

Jereb & Roper, 2010; Nesis, 1987.

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

Character	<i>Sepia papillata</i>	<i>Sepia simoniana</i>	<i>Sepia tuberculata</i>	<i>Sepia vermiculata</i>
Dorsal margin	broadly produced	slightly produced	broadly produced	produced dorsally
Ventral margin	entire	entire	entire	entire (♂) or emarginated (♀)
Dorsal mantle	rough, densely covered with small tubercles	smooth, covered with fine papillae	densely covered with obvious tubercles	smooth; no tubercles or papillae
Wrinkled patches	present	usually absent; rarely present on mantle	present	absent
Diameter of largest club suckers	equal to or greater than width of club	no enlarged suckers	much less than width of club	much less than width of club

Table 2: Medium-sized *Sepia* (but beware of small individuals of above and of large *Sepia faurei*)

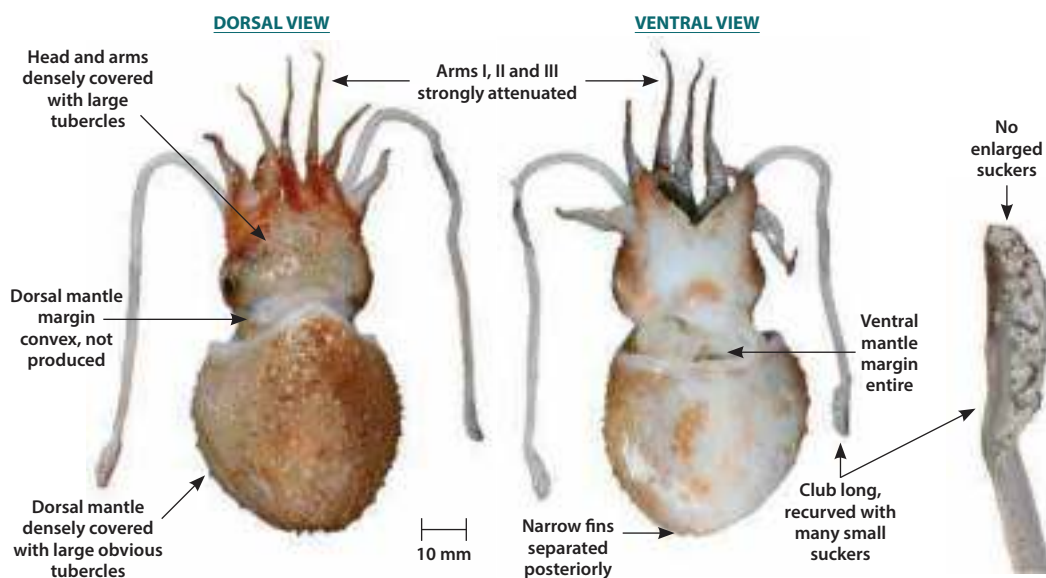
Character	<i>Sepia angulata</i>	<i>Sepia australis</i>	<i>Sepia hieronis</i> ♂	<i>Sepia hieronis</i> ♀
Dorsal margin	slightly produced	produced dorsally	strongly produced	produced
Ventral margin	entire	entire	entire	emarginated
Dorsal mantle	densely covered with obvious tubercles	smooth	smooth	smooth
Posterior spine	absent	large, obvious	absent	absent
Enlarged club suckers	absent	present	absent	absent
Arms I, II & III	long, strongly attenuated	not attenuated	not attenuated	not attenuated

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 chitinated

Character	<i>Sepia dubia</i>	<i>Sepia faurei</i>	<i>Sepia robsoni</i>	<i>Sepia</i> sp. A	<i>Sepia</i> cf. <i>typica</i>
Dorsal margin	straight	straight or slightly convex	straight	slightly convex	slightly convex
Ventral margin	deeply emarginated	emarginated	emarginated	entire or emarginated	entire or emarginated
Dorsal mantle	sparsely papillose, 2 large wart-like growths	densely covered with papillae or tubercles	smooth	smooth or sparsely papillose	smooth
Ventral pores	absent	absent	absent	absent	present
Shell	hard calcified	hard centre, edges soft	completely soft	hard centre, edges soft	hard centre, edges soft
Dorsal arms	suckers to tips	tips devoid of suckers	distal ½ devoid of suckers	suckers to tips	suckers to tips

***Sepia angulata* (SepAng)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	-

**Distinguishing features**

- Mantle short and broad. Dorsal margin convex, not produced. Ventrally entire.
- 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).

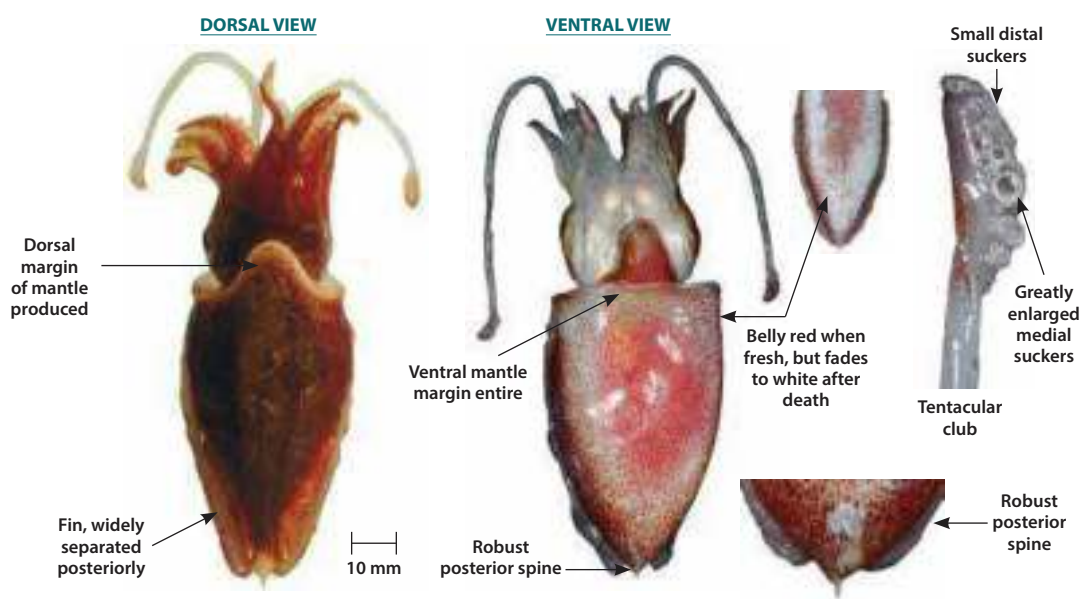
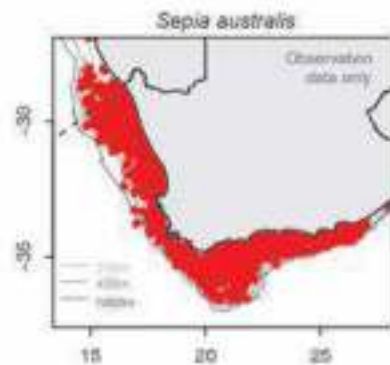
The combination of strongly attenuated arms and dorsal surface densely covered with large papillae distinguishes this species from all except *Sepia tuberculata*. Differs from *S. tuberculata* in longer, thinner arms, absence of wrinkled patches on the belly, and absence of enlarged suckers on the clubs.

References

None.

Sepia australis (SepAus)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	Southern cuttlefish
Alternate:	-



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.

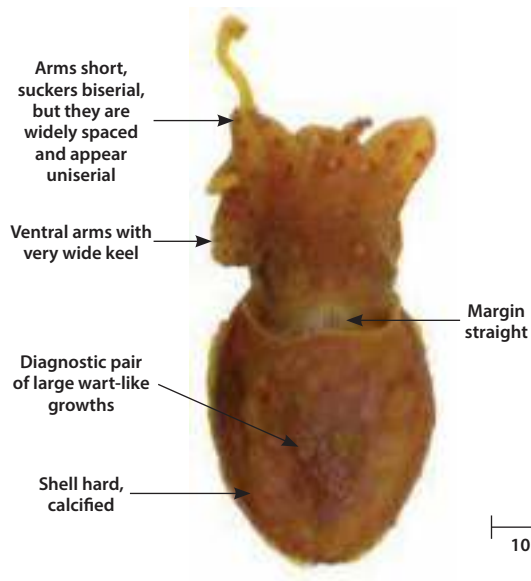
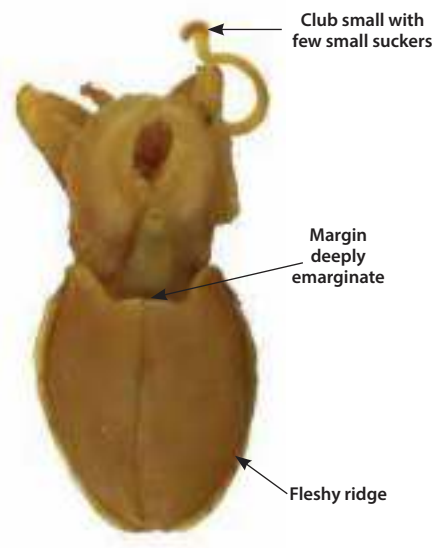
S. elegans: Recorded off Namibia is similar, has smaller spine and part of each arm (extent varies between sexes) with suckers arranged in two rows.

References

Augustyn *et al.*, 1995; Jereb & Roper, 2005; Roeleveld, 1972; Sanchez, 1988.

***Sepia dubia* (SepDub)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Hemisepius dubia</i>

**DORSAL VIEW****VENTRAL VIEW****Distinguishing features**

- A fleshy ridge without pores on sides of ventral mantle typical of the subgenus *Hemisepius*.
- Shell hard, well-calcified, unlike any others in the subgenus *Hemisepius*.
- 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 *Hemisepius* 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.

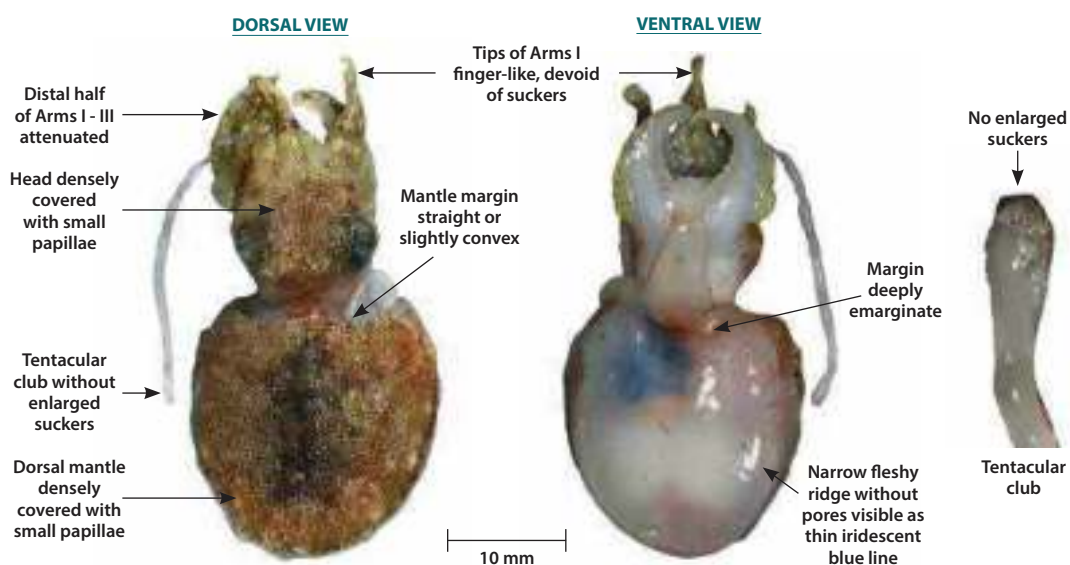
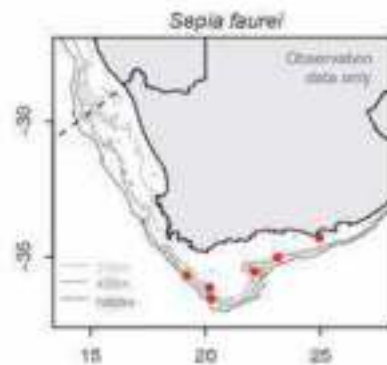
S. cf. typica: 10-12 diagnostic obvious black pores ventrally.

References

Adam and Rees, 1966; Roeleveld, 1972.

Sepia faurei (SepFau)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Hemisepius faurei</i>



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 thin, not calcified, but middle hard to the touch as in most *Hemisepius*.
- 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.

Club

Broad and slightly recurved with 33 small suckers in transverse rows. Median suckers slightly larger than lateral suckers.

Hectocotylus

Not described.

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).

Differs from others in the subgenus *Hemisepius* 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.

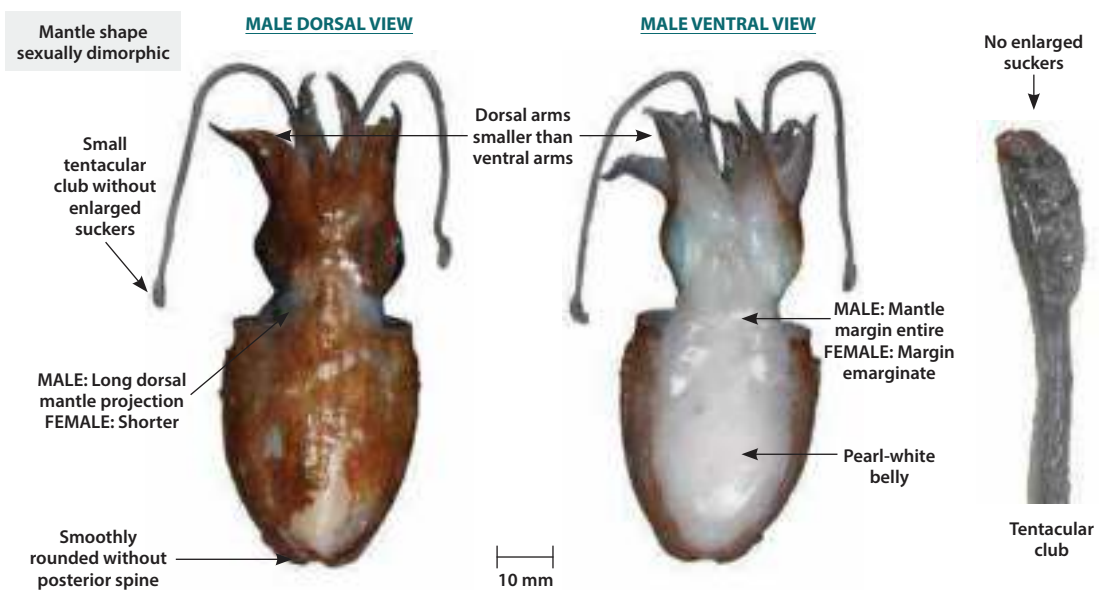
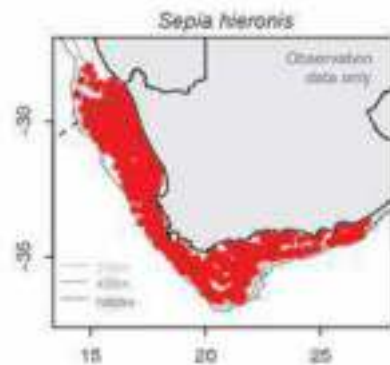
S. robsoni: Dorsal mantle and head smooth, or with few papillae around edges of shell. Shell thin, completely chitinous without hard central area.

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*.

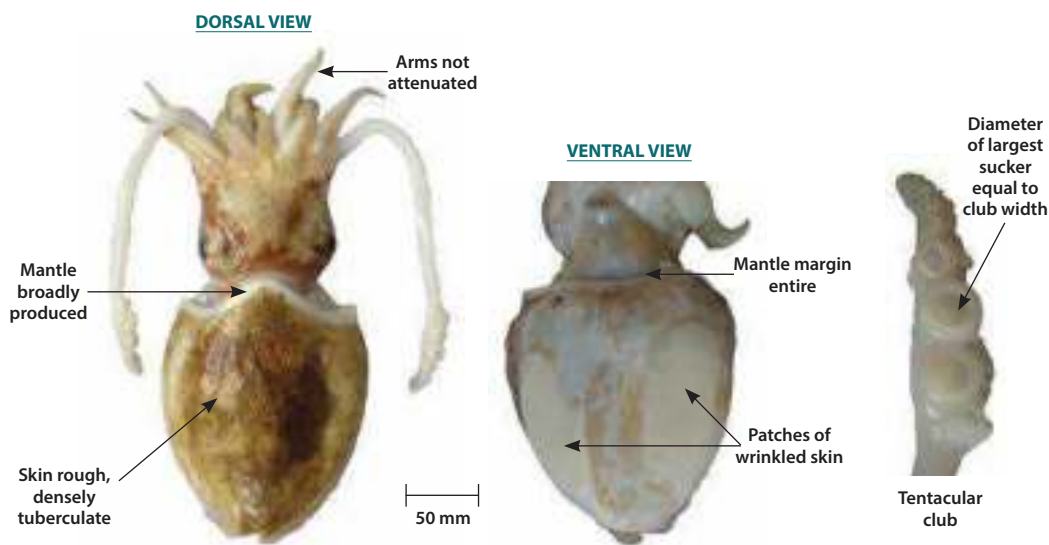
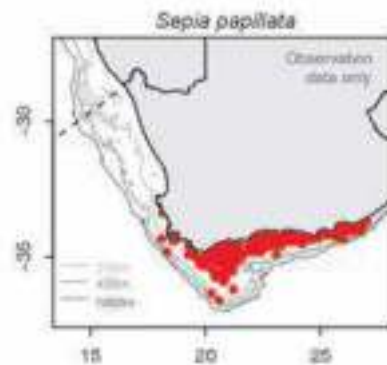
Sepia australis: Large, robust posterior spine. Fin wider. Belly red. Tentacular club larger with enlarged medial suckers. Suckers quadriserial for entire length of all arms.

References

Augustyn *et al.*, 1995; Jereb & Roper, 2005; Roeleveld, 1972; Sanchez, 1988.

Sepia papillata (SepPap)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	-



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 ¼.
- Arms I to III not attenuated, webbed for about half of length.
- Colour: Dorsal dark reddish-brown to purple; ventral pale with scattered chromatophores.

Club

Long. Small suckers distally. Four enlarged medial suckers. Middle two extremely large, diameter approximately equal to width of the sucker-bearing surface of the club.

Hectocotylus

Left ventral arm. In modified region sucker rows two and three separated by naked area with transverse ridges.

Size

140 mm mantle length.

Distribution

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. simoniana*.

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.

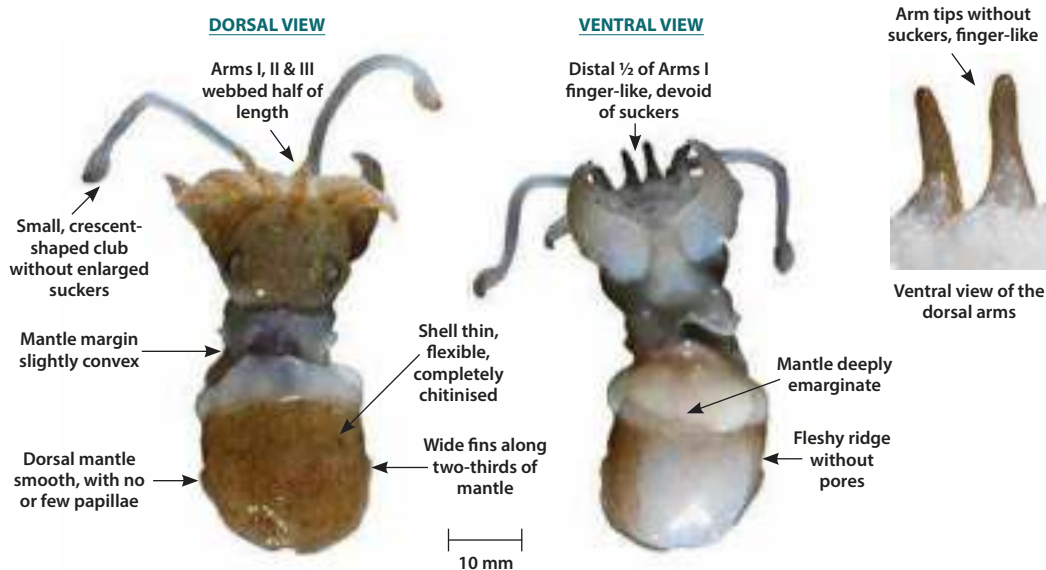
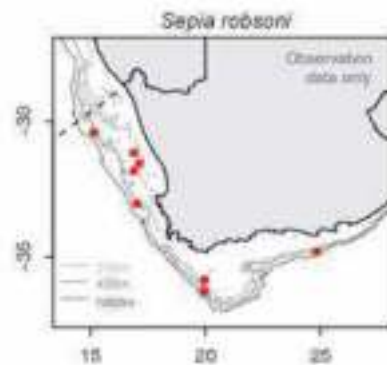
S. simoniana: Club very long, with numerous minute suckers. Normally lacks wrinkled patches on belly.

References

Augustyn *et al.*, 1995; Jereb & Roper, 2005; Roeleveld, 1972.

***Sepia robsoni* (SepRob)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Hemisepius robsoni</i>

**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 chitinous, 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 $\frac{3}{4}$.

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.

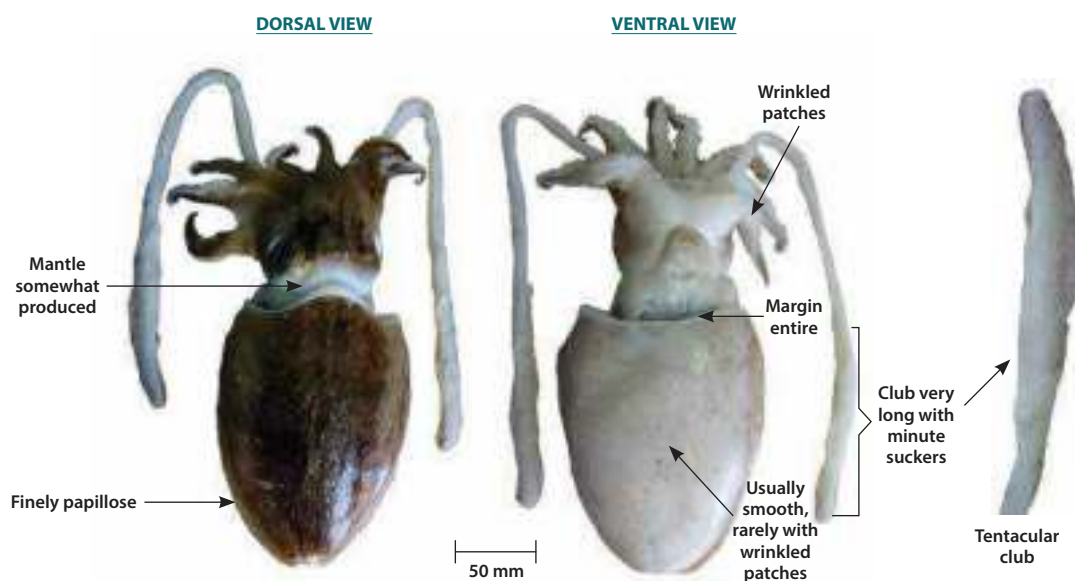
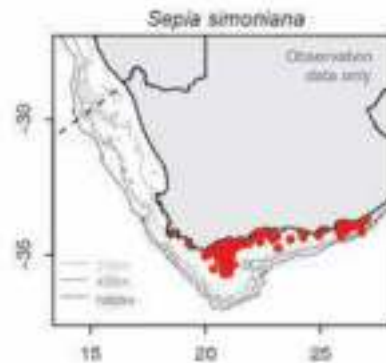
S. faurei: Centre of shell hard; dorsal surface of mantle densely covered with papillae or tubercles; distal half of Arms I-III attenuated and webbed for less than half of length; tips of Arms I devoid of suckers.

References

Augustyn *et al.*, 1995; Jereb & Roper, 2005; Roeleveld, 1972; Sanchez, 1988.

Sepia simoniana (SepSim)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	-



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.

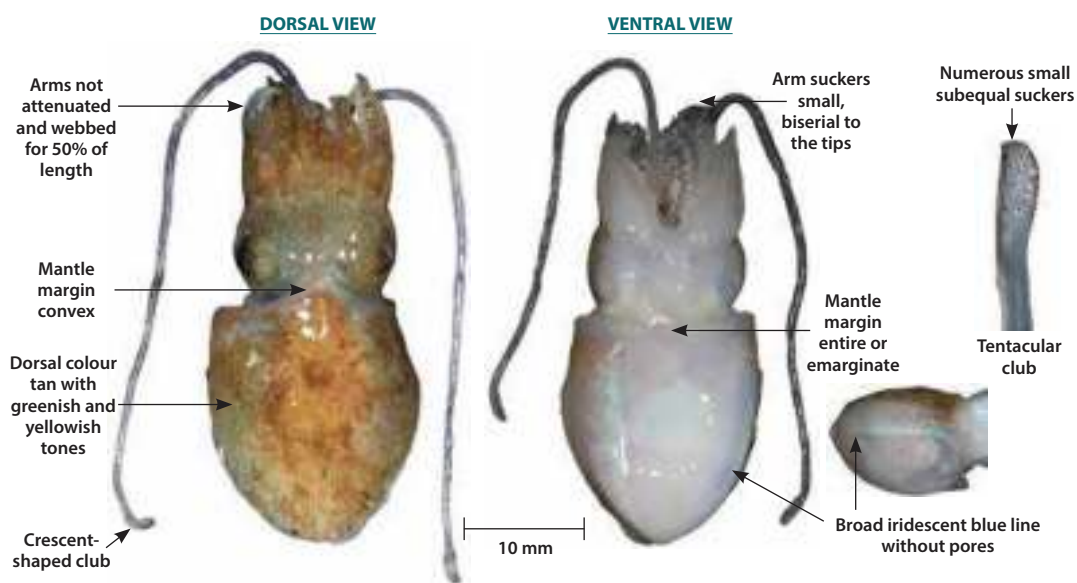
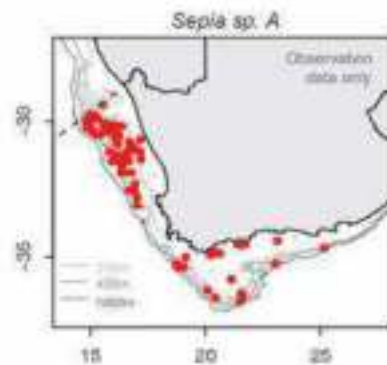
S. papillata and *S. tuberculata* have large wrinkled patches on the belly, and enlarged suckers on the clubs.

References

Augustyn *et al.*, 1995; Jereb & Roper, 2005; Roeleveld, 1972.

***Sepia* sp. A (Sep001)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Hemisepius</i> sp. A

**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.

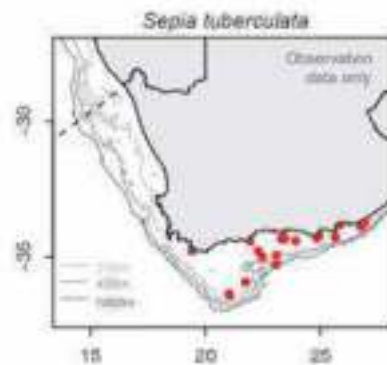
S. cf. typica: 10-12 diagnostic obvious black pores ventrally.

References

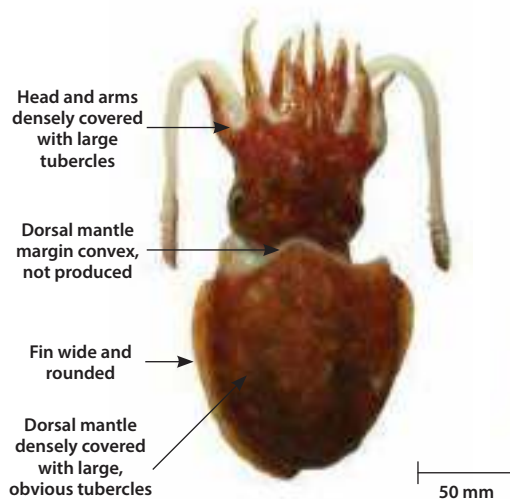
None.

Sepia tuberculata (SepTub)

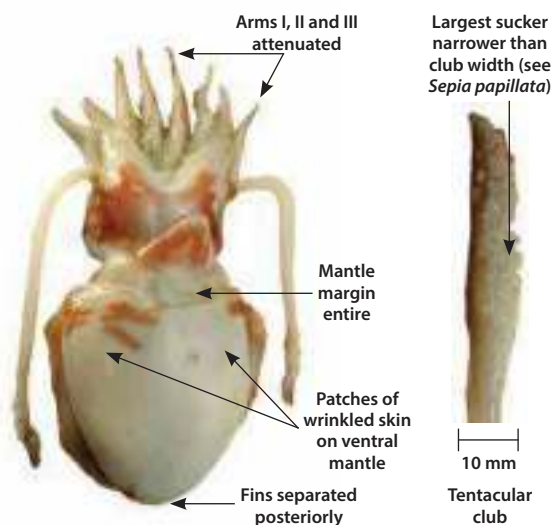
Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	-



DORSAL VIEW



VENTRAL VIEW



Distinguishing features

- Mantle short and broad. Dorsal margin convex, not produced. Ventrally entire.
- 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.

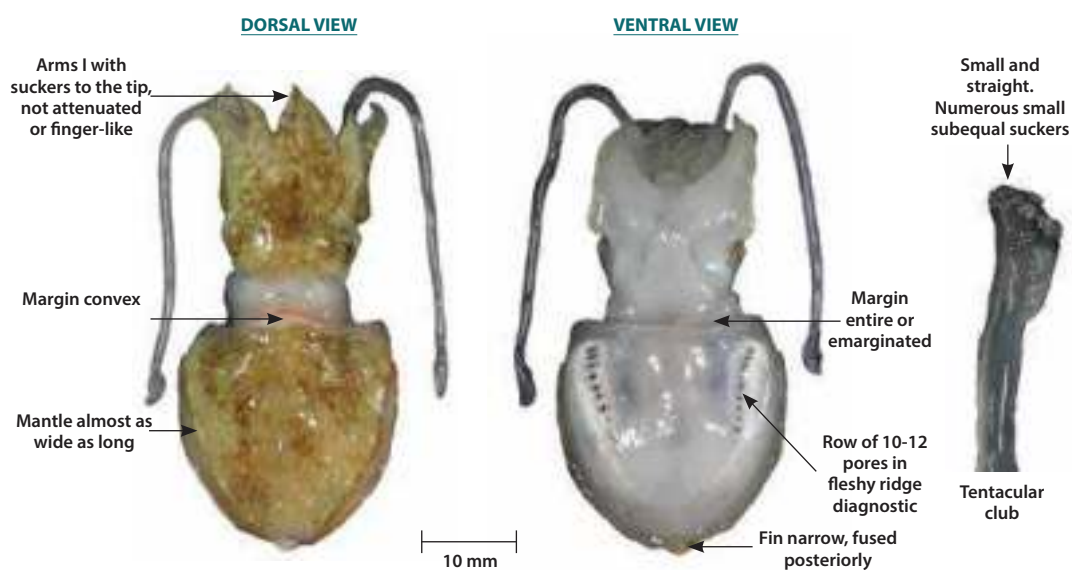
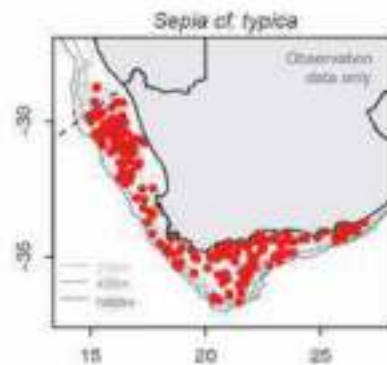
S. angulata: Also has large, obvious tubercles on dorsal, but lacks wrinkled patches on belly.

References

Augustyn *et al.*, 1995; Jereb & Roper, 2005; Roeleveld, 1972.

***Sepia cf. typica* (SepTyp)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Hemisepius cf. typica</i>

**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.

Club

Small and straight, with numerous small subequal suckers in transverse rows of six.

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).

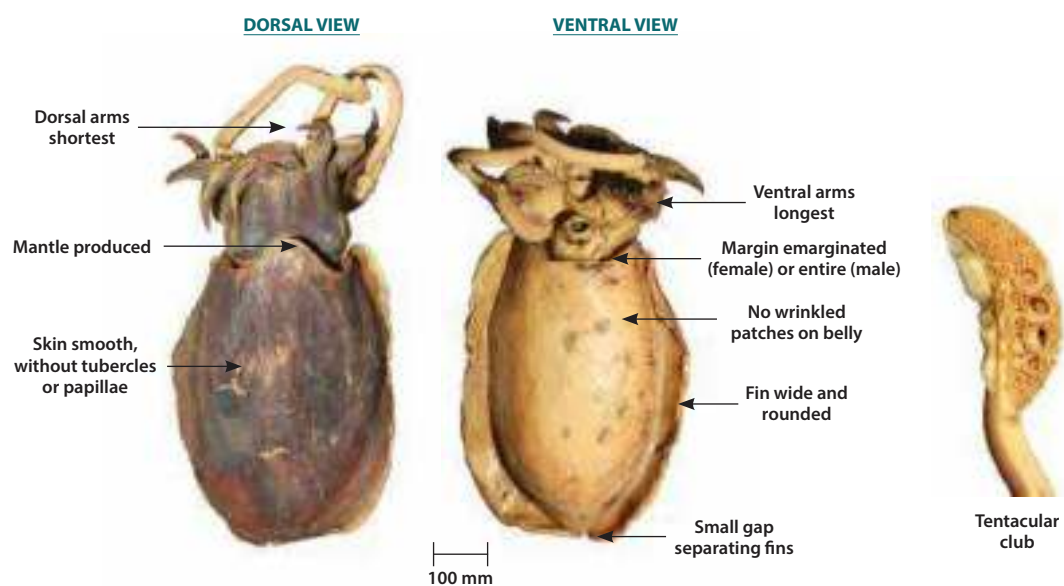
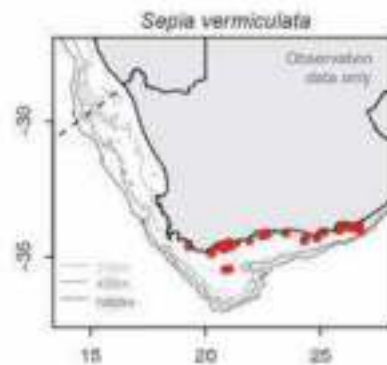
Distinguished from all others in the Subgenus *Hemisepius* (*Sepia dubia*, *S. faurei*, *S. robsoni*, and *S. sp. A*) by the presence of pores in the fleshy ventral ridge.

References

Roeleveld, 1972.

Sepia vermiculata (SepVer)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Sepia officinalis vermiculata</i>



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).

Adults can be confused only with the other three large species, *S. papillata*, *S. simoniana* and *S. tuberculata*.

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.

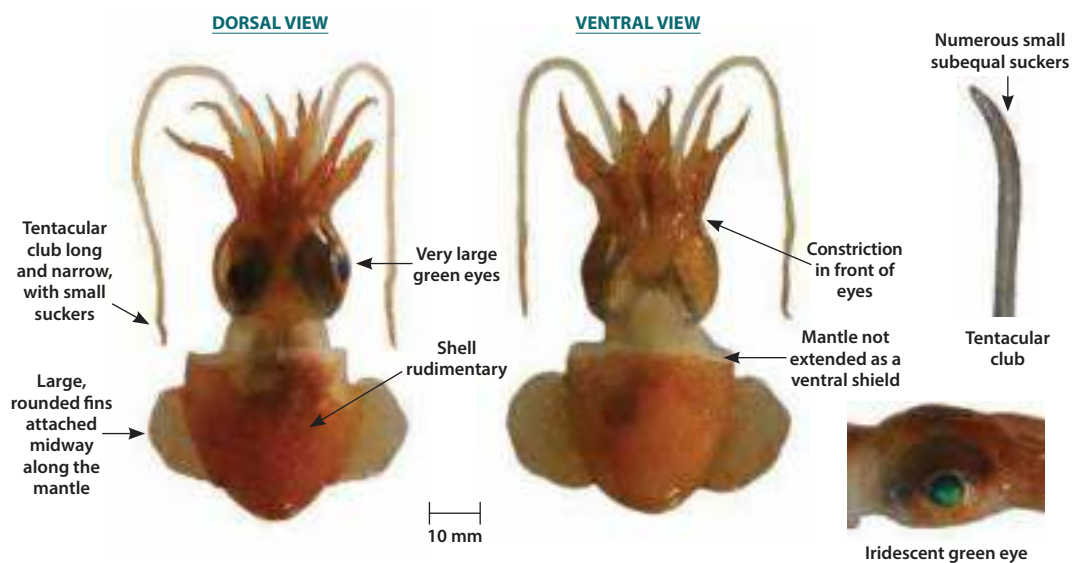
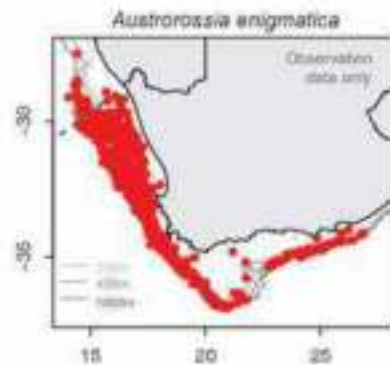
S. papillata and *S. tuberculata* have large wrinkled patches on the belly.

References

Jereb & Roper, 2005; Roeleveld, 1972; Sanchez, 1988.

Austrorossia enigmatica (RosEni)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiolidae
Common:	Bobtail squid
Alternate:	<i>Rossia enigmatica</i> ; <i>Austrorossia mastigophora</i>



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

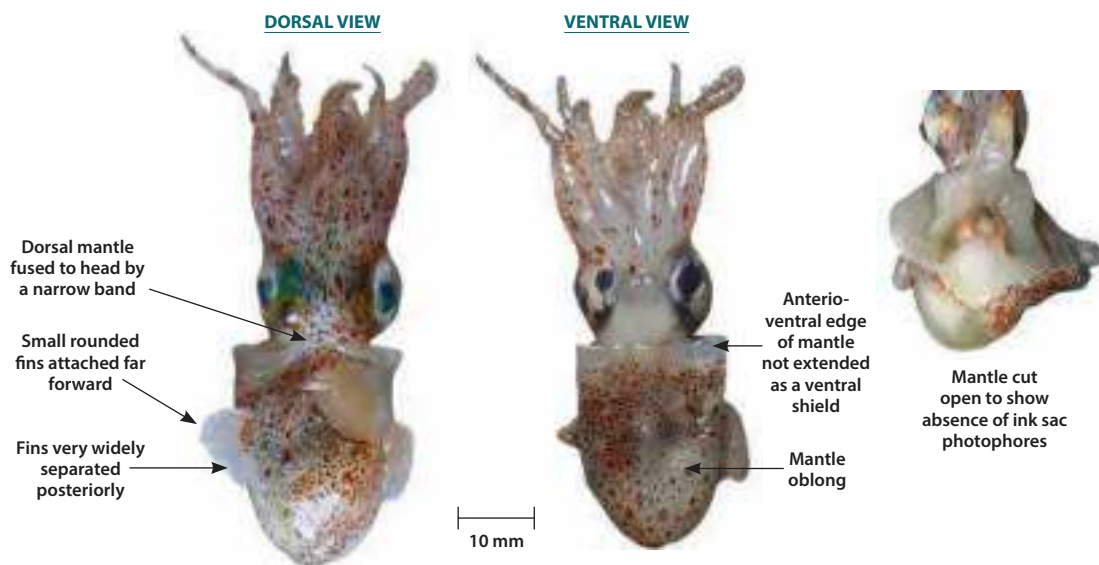
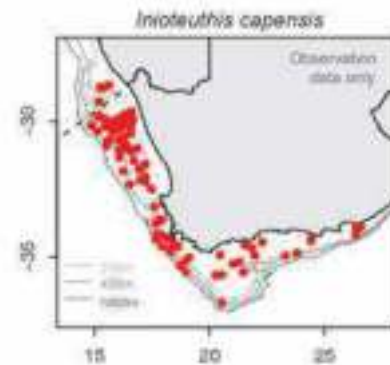
None.

References

Nesis, 1987; Sanchez, 1988.

Inioteuthis capensis (Inio)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
Common:	-
Alternate:	<i>Rondeletiola capensis</i>



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

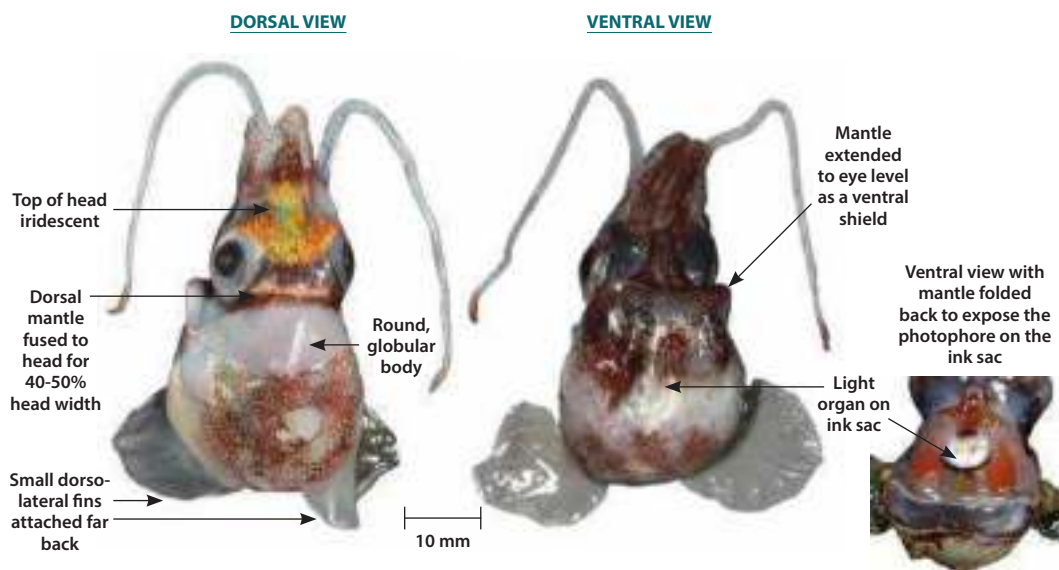
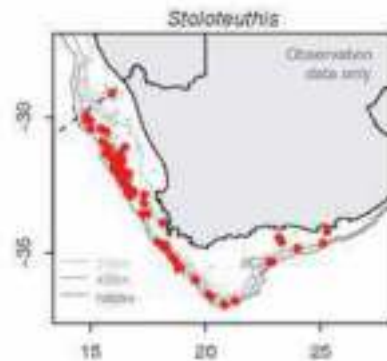
Stoloteuthis: Larger, more globular; dorsal mantle broadly fused with head (occipital band 40-50% head width); ventral mantle extended to form a ventral shield; luminous organ present on ink sac.

References

Nesis, 1987.

***Stoloteuthis* sp. (Stolot)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Sepiida
Suborder:	-
Family:	Sepiidae
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

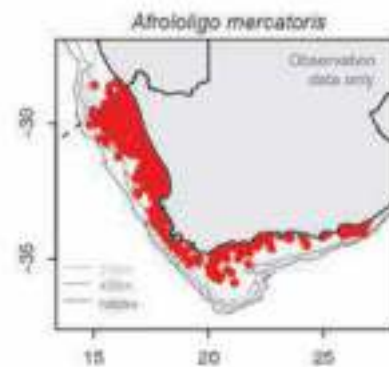
Inioteuthis capensis: Smaller, body longer, less globular. Anterior edge of mantle not extended into a ventral shield. Mantle narrowly fused to head dorsally. No luminous organ on the ink sac.

References

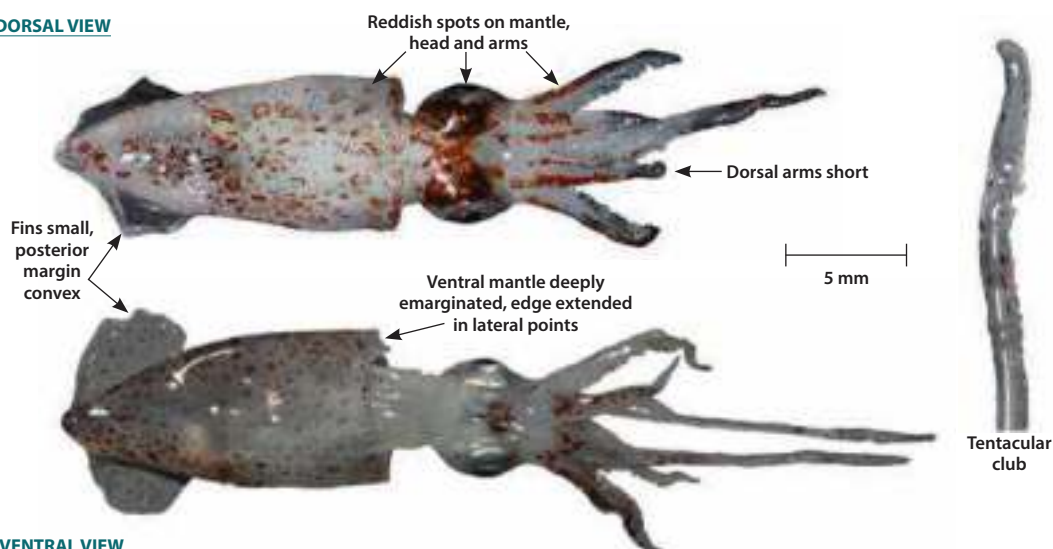
Nesis, 1987.

Afrololigo mercatoris (Lollig)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Myopsida
Suborder:	-
Family:	Loliginidae
Common:	African thumbstall squid
Alternate:	<i>Lolliguncula mercatoris</i>



DORSAL VIEW



VENTRAL VIEW

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

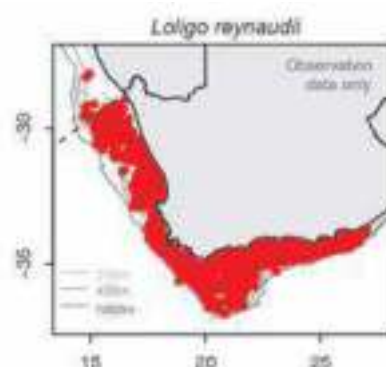
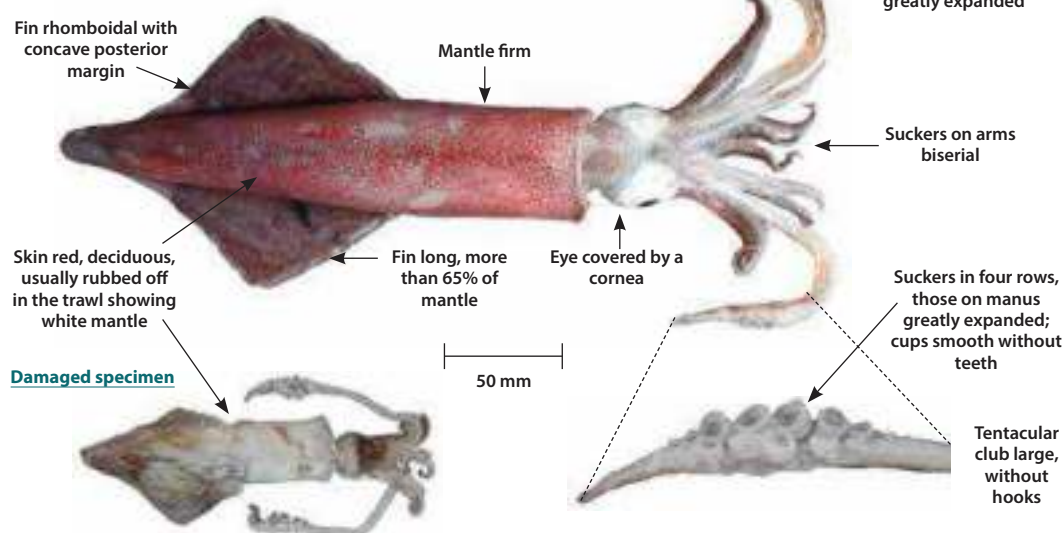
Juvenile *Loligo reynaudii* have longer, narrower fins with concave posterior margins; ventral mantle shallowly emarginated; and lack the irregular reddish spots. Clubs wider, with some enlarged suckers.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Loligo reynaudii* (CHOK)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Myopsida
Suborder:	-
Family:	Loliginidae
Common:	Chokka
Alternate:	<i>Loligo vulgaris reynaudii</i>

**VENTRAL VIEW****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.
- 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 chitinous 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.

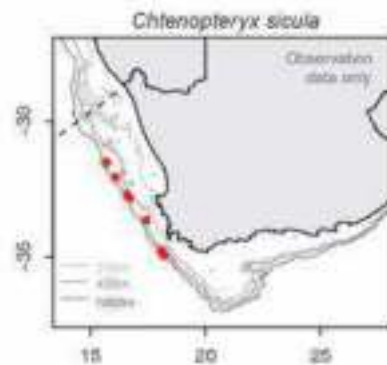
Uroteuthis duvaucelii from KwaZulu-Natal which has a wider club with four rows of enlarged suckers.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Ctenopteryx sicula (CteSic)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	[Unassigned]
Suborder:	-
Family:	Ctenopterygidae
Common:	Comb-finned squid
Alternate:	<i>Ctenopteryx sicula</i> (common misspelling)



DORSAL VIEW

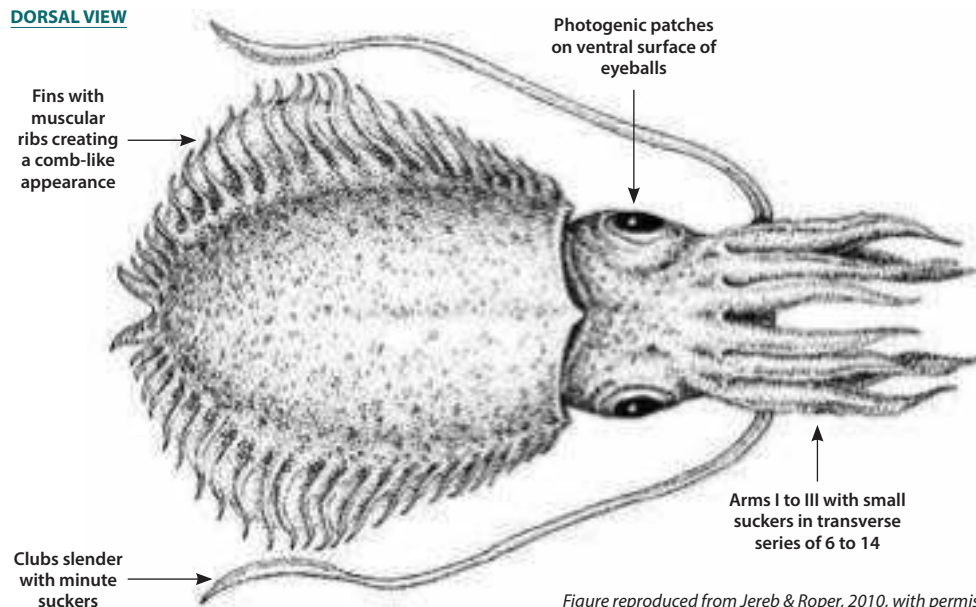


Figure reproduced from Jereb & Roper, 2010, with permission.

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

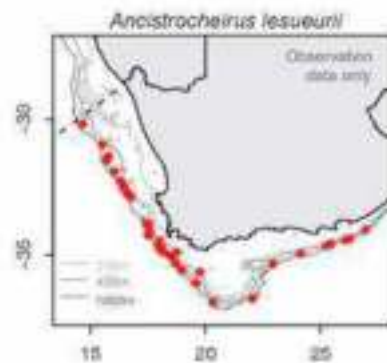
Comb-like fins are diagnostic.

References

Jereb & Roper, 2010.

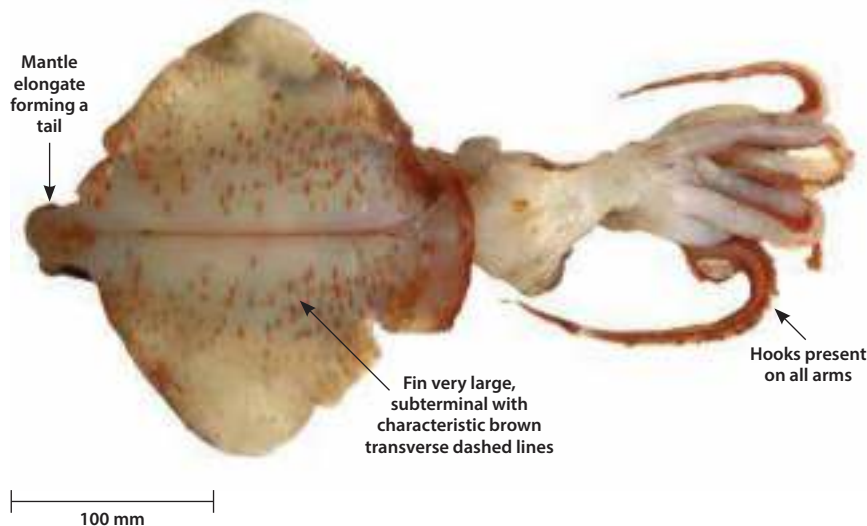
Ancistrocheirus lesueurii (AncLes)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Ancistrocheiridae
Common:	Sharpear enope squid
Alternate:	<i>Thelidioteuthis alessandrinii</i>



DORSAL VIEW

Note: Usually badly damaged in trawl, completely skinned and the head usually separated from the body.



VENTRAL VIEW



Illustration from Jereb & Roper (2010) showing 20-24 large scattered photophores

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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Brachoteuthis picta (BraPic)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Brachoteuthidae
Common:	Ornate arm squid
Alternate:	-



DORSAL VIEW

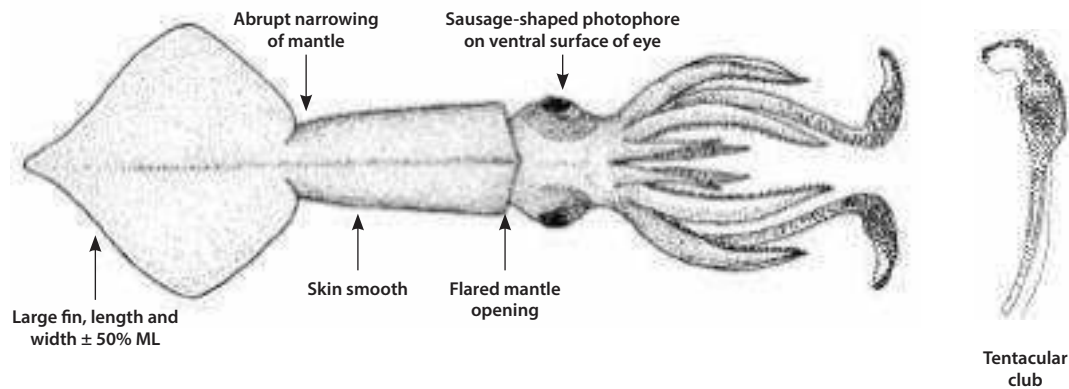


Figure reproduced from Jereb & Roper, 2010, with permission.

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

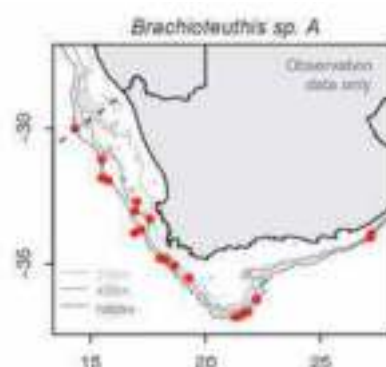
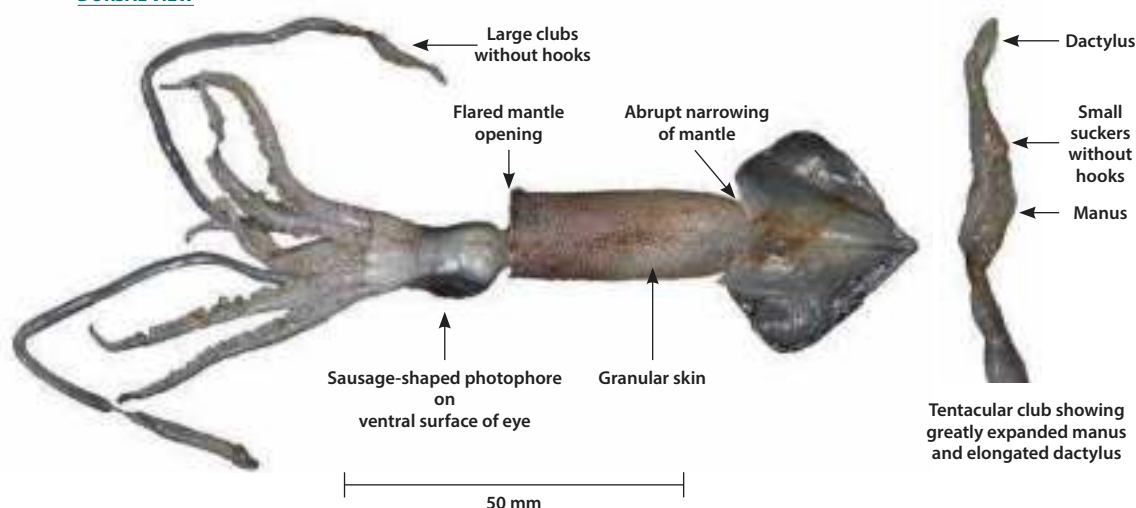
Brachoteuthis sp. A. has rough "warty" skin. Fin length less than 50% ML, width greater than length.

References

Jereb & Roper, 2010; Lipinski, 2001; Nesis, 1987; Sanchez, 1988.

***Brachoteuthis* sp. A (Brachi)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Brachoteuthidae
Common:	-
Alternate:	-

**DORSAL VIEW****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

Brachoteuthis picta: Smooth skin; fin length equals width, about 50% of ML.

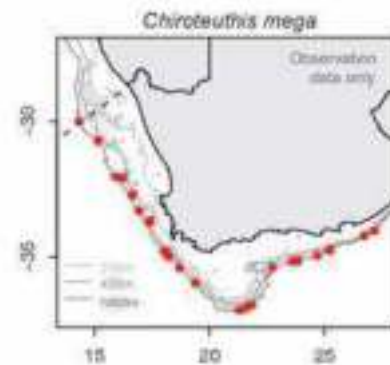
Onykia species also have rough, warty skin but differ in the presence of hooks on the clubs.

References

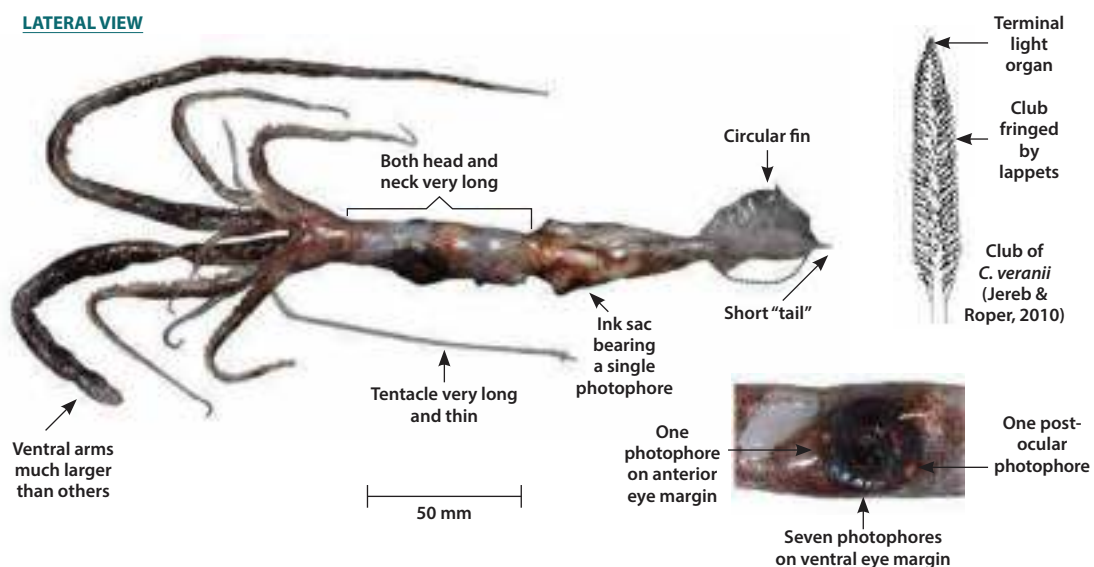
Jereb & Roper, 2010; Lipinski, 2001; Nesis, 1987.

Chiroteuthis mega (ChrCap)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Teuthoidea
Suborder:	Oegopsida
Family:	Chiroteuthidae
Common:	Atlantic long-arm squid
Alternate:	<i>Chiroteuthis capensis</i>



LATERAL VIEW



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.

Club

Tentacles long and very thin; club fringed with lappets; suckers in four rows arranged in pairs at the base of each lappet; a long oval light organ at the tip of the club.

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.

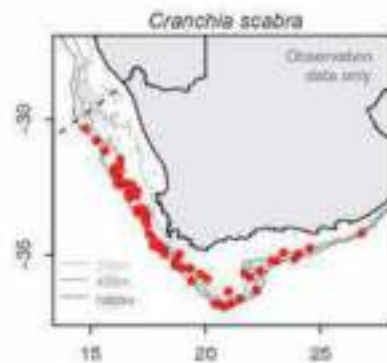
Joubiniteuthis portieri: Long slender tail (greater than ML) posterior to short round fin. Arms I - III very long, 2x mantle length and 3x length of Arms IV. Lacks photophores on eyeballs.

References

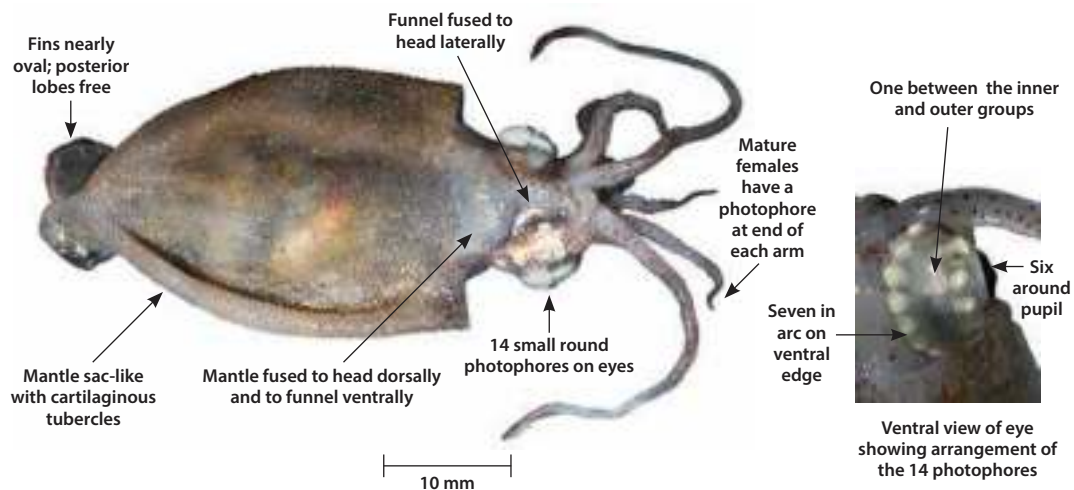
Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988; Voss, 1967.

***Cranchia scabra* (CrnScb)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Rough cranch squid
Alternate:	-

**VENTRAL VIEW**

Ventral mantle with two cartilaginous strips extending from apex of each mantle-funnel fusion

**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 hectocotyliised 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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Club

Not expanded, with small sub-equal suckers. Alternating series of carpal suckers and pads for most of tentacle length.

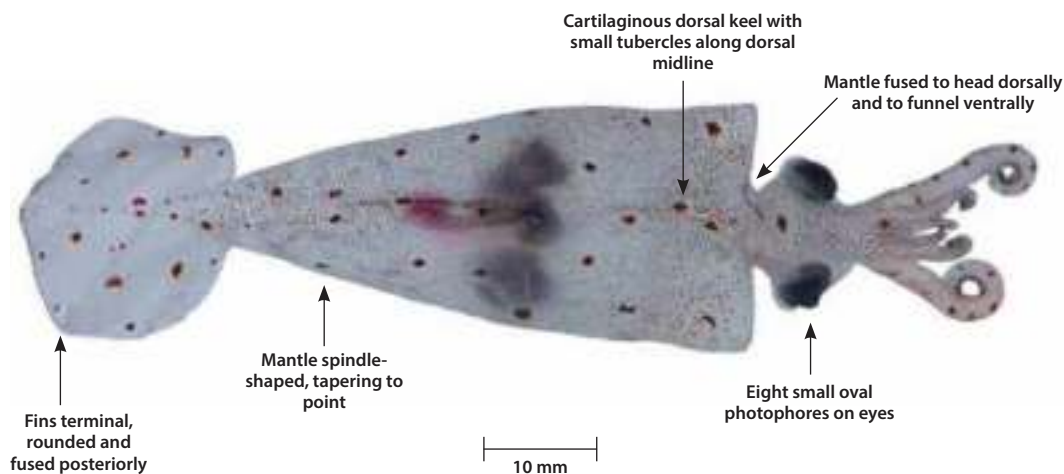
Leachia cyclura (LeaCyc)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Leach's cranch squid
Alternate:	-



DORSAL VIEW

One cartilaginous strip extends ventrally for 20-30% of ML from apex of each funnel-mantle fusion



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.

Club

Median suckers on manus greatly enlarged.

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

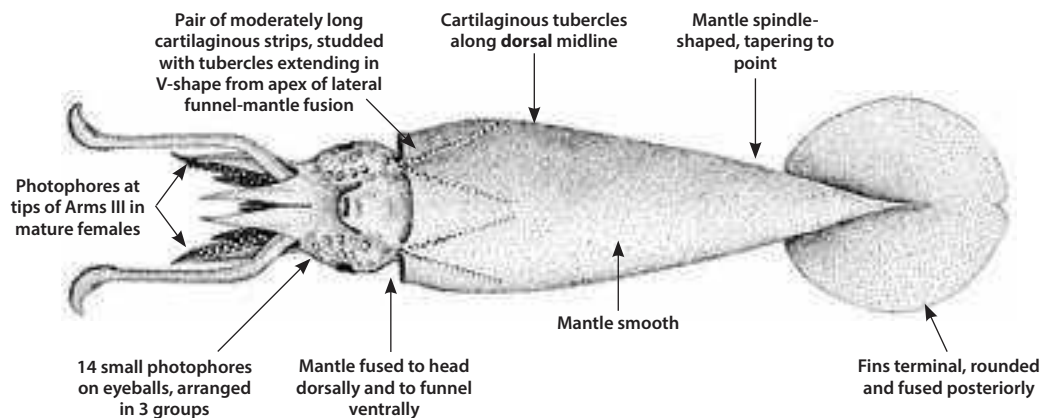
Jereb & Roper, 2010; Nesis, 1987.

***Liocranchia reinhardti* (LioRei)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Reinhart's cranch squid
Alternate:	-



VENTRAL VIEW If unsure of the species, use the code *Liocra* for *Liocranchia* sp.



Ventral view (Vos, 1980) reproduced with the permission of the Bulletin of Marine Science

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.

Hectocotylus

Right or left ventral arm. Suckers in two series on midpoint of hectocotylysed arms.

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

Jereb & Roper, 2010; Nesis, 1987; Vos, 1980.

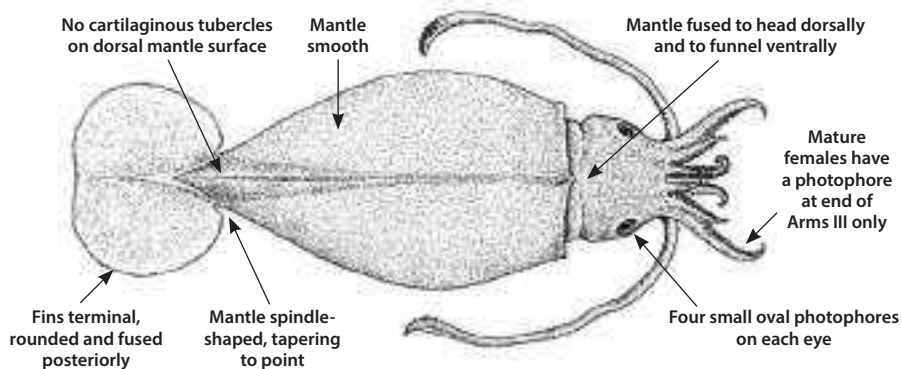
Liocranchia valdiviae (LioVal)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Valdivia cranch squid
Alternate:	-



DORSAL VIEW

Ventral mantle with two pairs of moderately long cartilaginous strips studded with tubercles, one pair extending in V-shape from apex of each lateral funnel-mantle fusion. If unsure of the species, use the code *Liocra* for *Liocranchia* sp.



No illustration available, figure of *L. reinhardti* used to indicate features. 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. 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.

Club

Slightly expanded with small, sub-equal suckers. An alternating series of carpal suckers and pads for most of tentacle length.

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

Liocranchia reinhardti: Cartilaginous tubercles along dorsal midline. Fourteen oval photophores on eye.

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

Jereb & Roper, 2010; Nesis, 1987.

***Megalocranchia maxima* (Megalo)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Large cranch squid
Alternate:	-

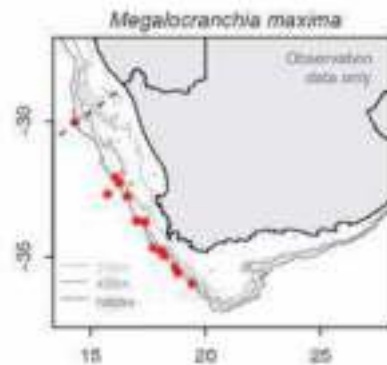
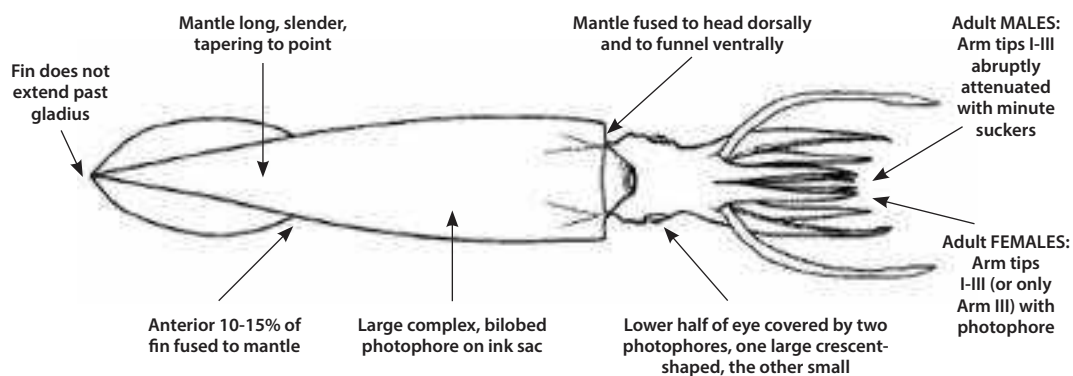
**VENTRAL VIEW**

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; 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*).

Club

Carpal suckers in two series on tentacular stalk; clubs moderate, slightly expanded with suckers in four series.

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

Jereb & Roper, 2010; Nesis, 1987.

Sandalops melancholicus (SanMel)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Melancholy cranch squid
Alternate:	-



DORSAL VIEW

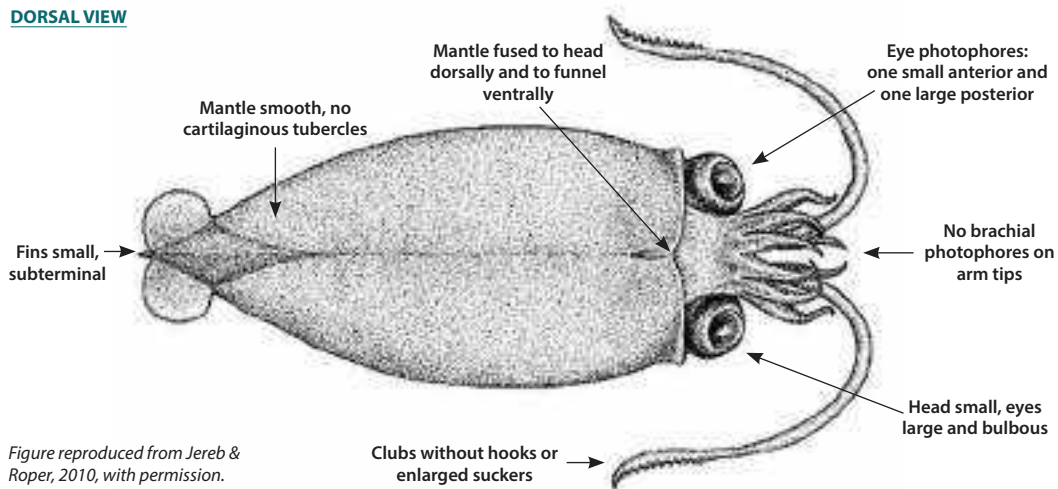


Figure reproduced from Jereb & Roper, 2010, with permission.

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; 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

Jereb & Roper, 2010; Nesis, 1987.

Club

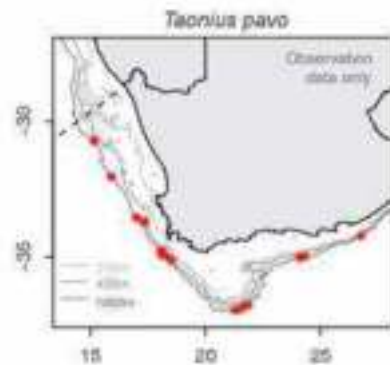
Club moderate, without enlarged suckers or hooks. Suckers in four series.

Hectocotylus

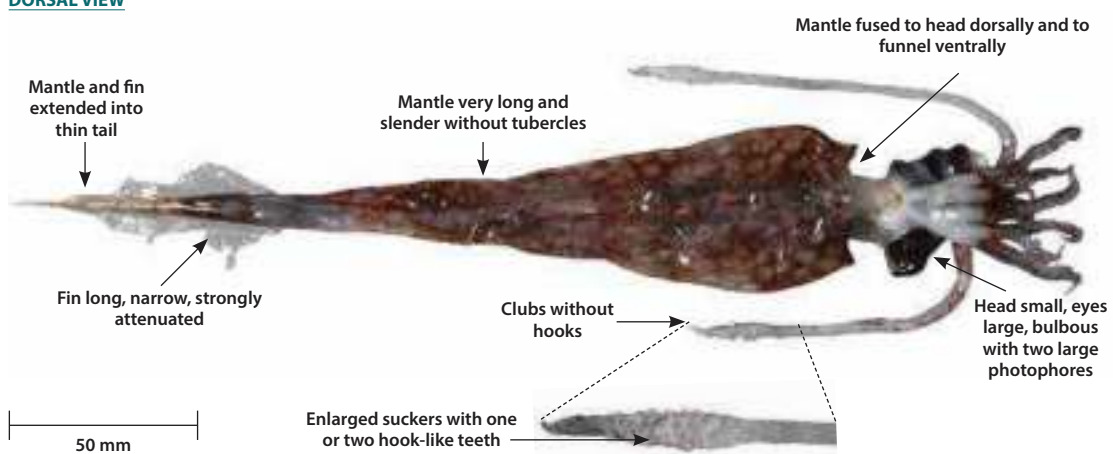
Absent.

Taonius pavo (Taonis)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	Peacock cranch squid
Alternate:	-



DORSAL VIEW



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.

Club

Moderate without hooks; enlarged suckers with one or two large hook-like teeth.

Hectocotylus

Absent.

Size

650 mm mantle length.

Distribution

West and South Coasts. Juveniles below 600 m, adults to 2000 m.

Similar species

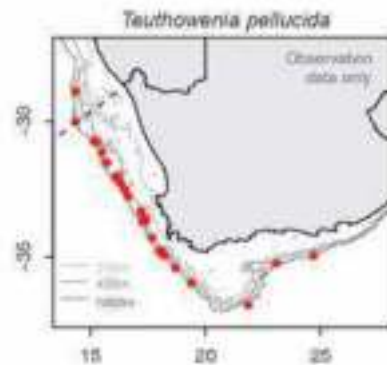
None.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Teuthowenia pellucida (Teuthw)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Cranchiidae
Common:	-
Alternate:	-



DORSAL VIEW

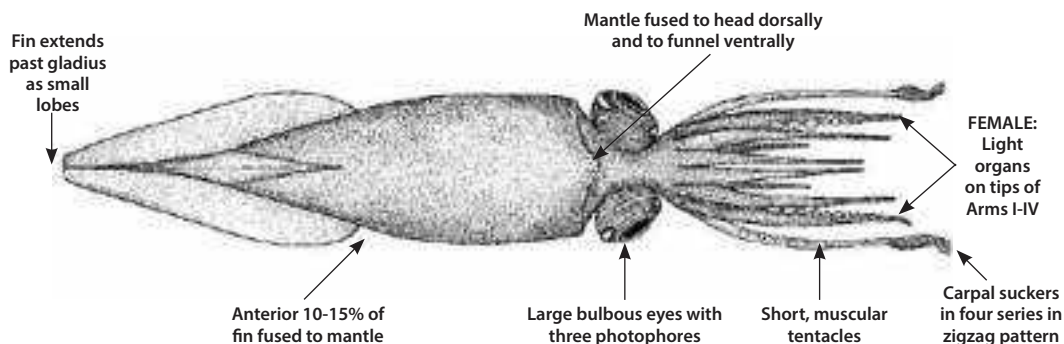


Figure reproduced from Jereb & Roper, 2010, with permission.

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

Jereb & Roper, 2010; Nesis, 1987.

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
Suborder:	-
Family:	Cycloteuthidae
Common:	Discus squid
Alternate:	-

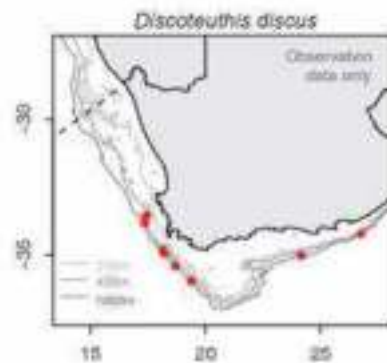
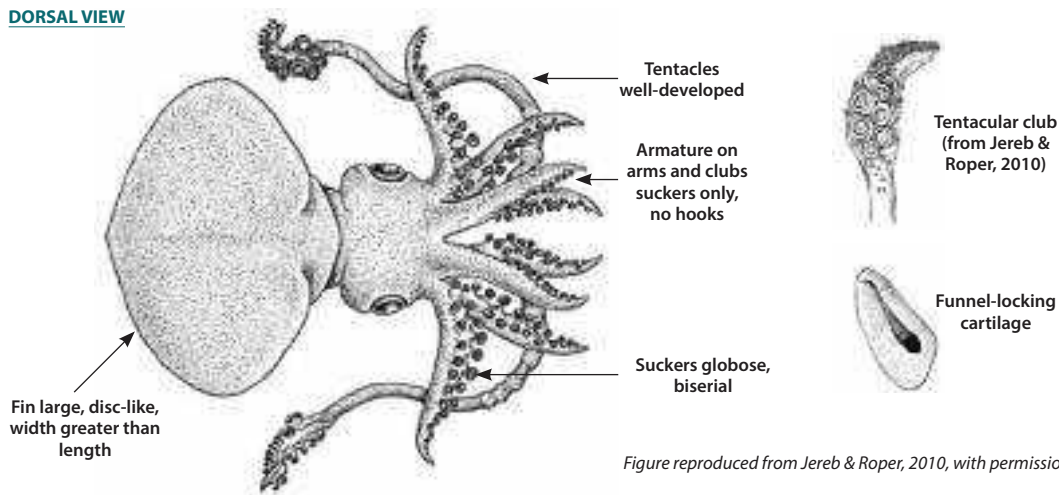
**DORSAL VIEW**

Figure reproduced from Jereb & Roper, 2010, with permission.

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.

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.

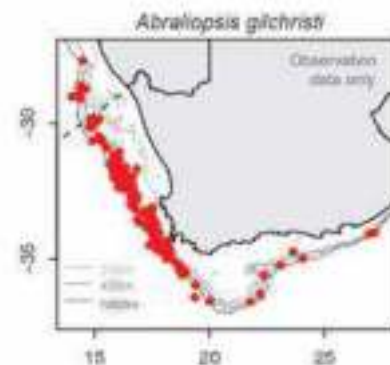
Ancistrocheirus leseuerii: Armature of hooks, diagnostic dashed brown line on fins.

References

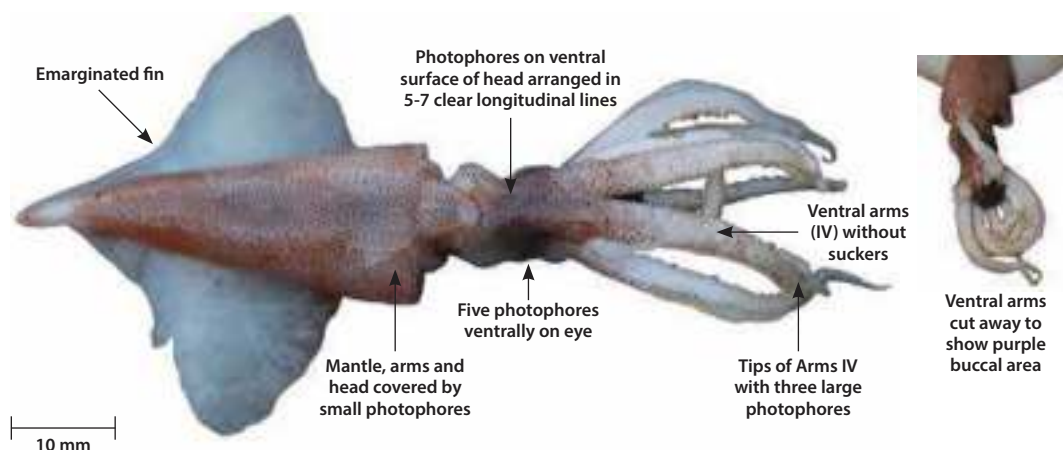
Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Abraliopsis gilchristi (AbrGil)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Enoploteuthidae
Common:	Gilchrist's enope squid
Alternate:	-



VENTRAL VIEW



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.

Club

Two series of hooks and one series of suckers on manus.

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.

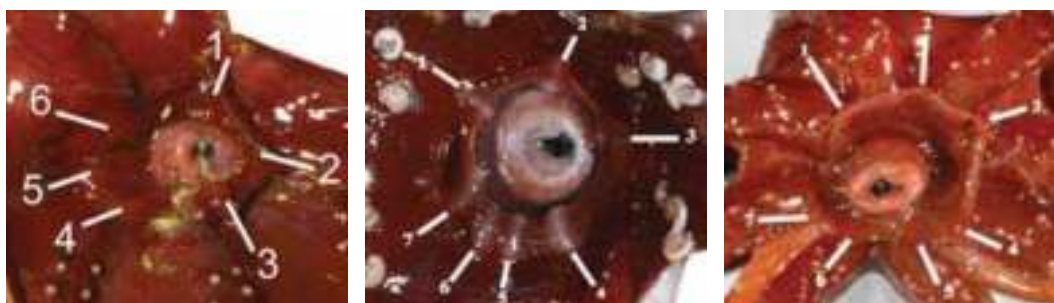
Abralia siedleckyi: Has one very large and four small photophores on eyes; Arms IV with suckers distally and without photophores; club with one row of hooks. Other *Abralia* sp. have 5-12 photophores on eyes.

References

Jereb & Roper, 2010; Lipinski, 1983; Nesis, 1987; Sanchez, 1988.

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”.**

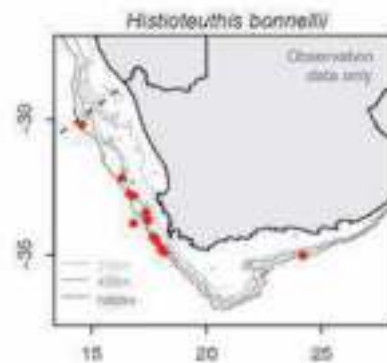
	<i>H. bonnellii</i>	<i>H. macrohista</i>	<i>H. meleagroteuthis</i>	<i>H. miranda</i>	<i>H. reversa</i>
Mantle length relative to head length	Much shorter than head	Much shorter than head	Shorter than head	Longer than head	Longer than head
Cartilaginous tubercles on mantle	None	None	Large obvious tubercles on dorsal midline of mantle and on Arms I-II	Small inconspicuous tubercles on dorsal midline of mantle and on Arms I-II	None
Large, elongate photophore on tips of Arms I-III	Present	Present	Absent	Absent	Absent
Inner webbing between Arms I-III	50% of arm length	50% of arm length	Less than 15% of arm length	Up to 15% of arm length	Vestigial
Number of photophores around left eye	17	16	19-21	16	18
Number of buccal lappets	6	7	7	7	7



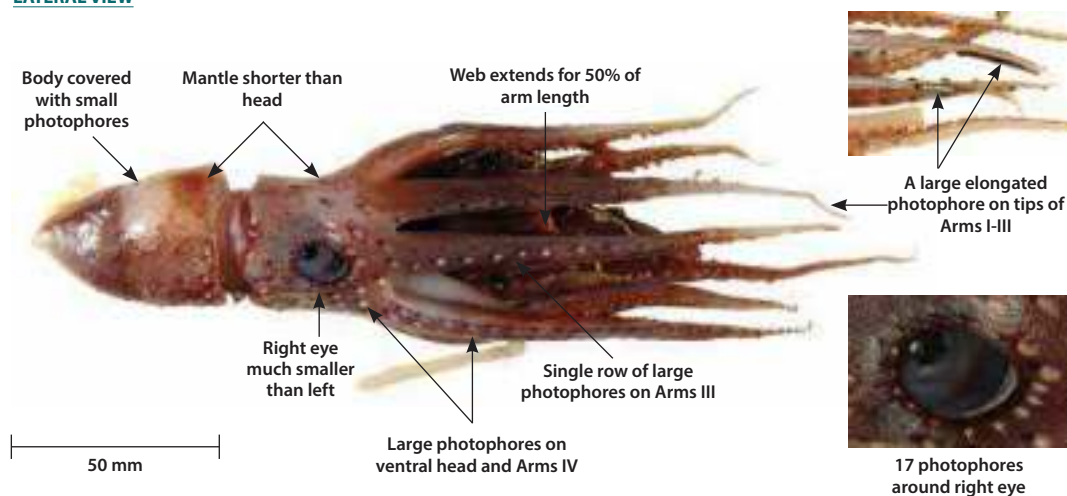
Examples of the buccal crown in *Histioteuthis* to illustrate the number of buccal lappets; either six (*H. bonnellii*, left) or seven lappets (*H. macrohista* and *H. miranda*, centre and right panels respectively)

Histioteuthis bonnellii (HisBon)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Histioteuthidae
Common:	Ornate/Bonnelli's jewel squid
Alternate:	-



LATERAL VIEW



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 *Histioteuthis*).

Distribution

Mainly on West Coast, from 500 to 1500 m.

Similar species

See Table 4 (page 369).

The only *Histioteuthis* 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.

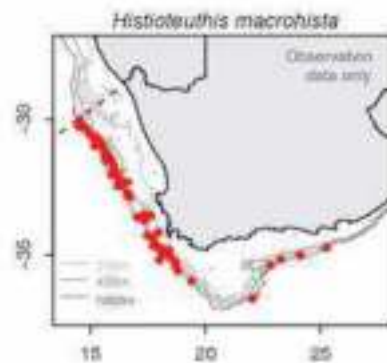
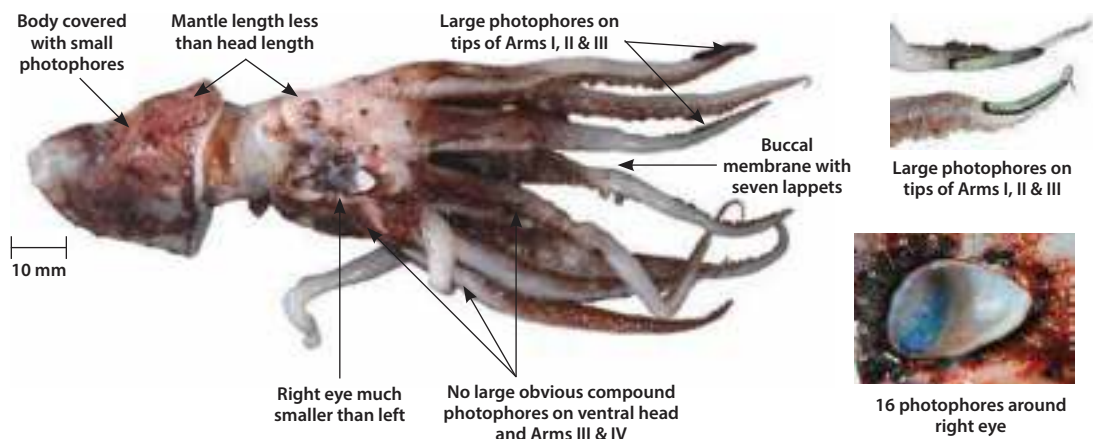
H. miranda and *H. reversa*: **Mantle long**; buccal lappets seven.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Histioteuthis macrohista* (HisMac)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Histioteuthidae
Common:	Plain jewel squid
Alternate:	-

**LATERAL VIEW****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 1 000 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.

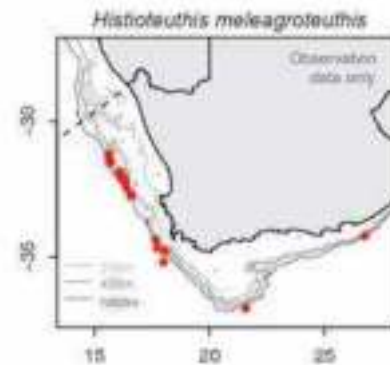
H. miranda and *H. reversa*: **Mantle long**; seven buccal lappets.

References

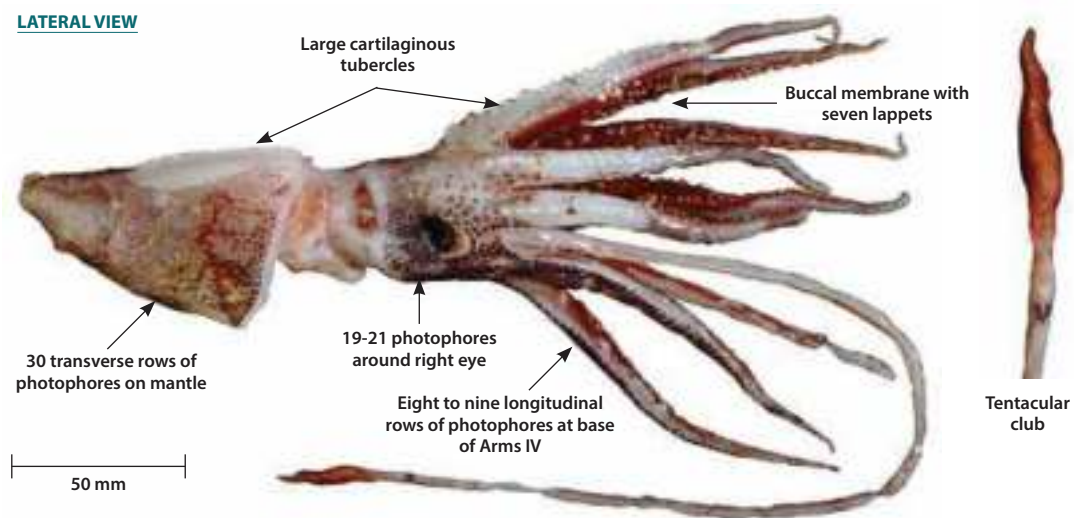
Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Histioteuthis meleagroteuthis (HisMel)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Histioteuthidae
Common:	Crested jewel squid
Alternate:	-



LATERAL VIEW



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).

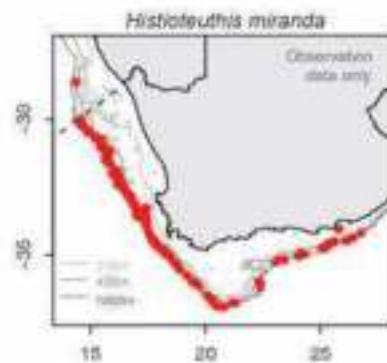
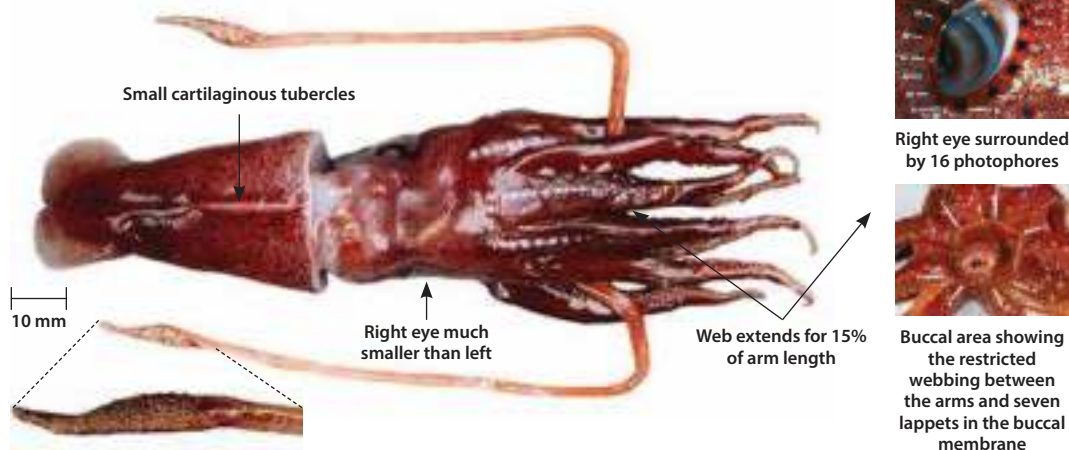
Distinguished from other *Histioteuthis* by large cartilaginous tubercles on dorsal midline of mantle and dorsal base of Arms I-III; 19-20 photophores around right eye.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Histioteuthis miranda* (HisMir)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Histioteuthidae
Common:	Common jewel squid
Alternate:	-

**DORSAL VIEW****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 *Histioteuthis* 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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Histioteuthis reversa (HisRev)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Histioteuthidae
Common:	Reverse jewel squid
Alternate:	-



DORSAL VIEW

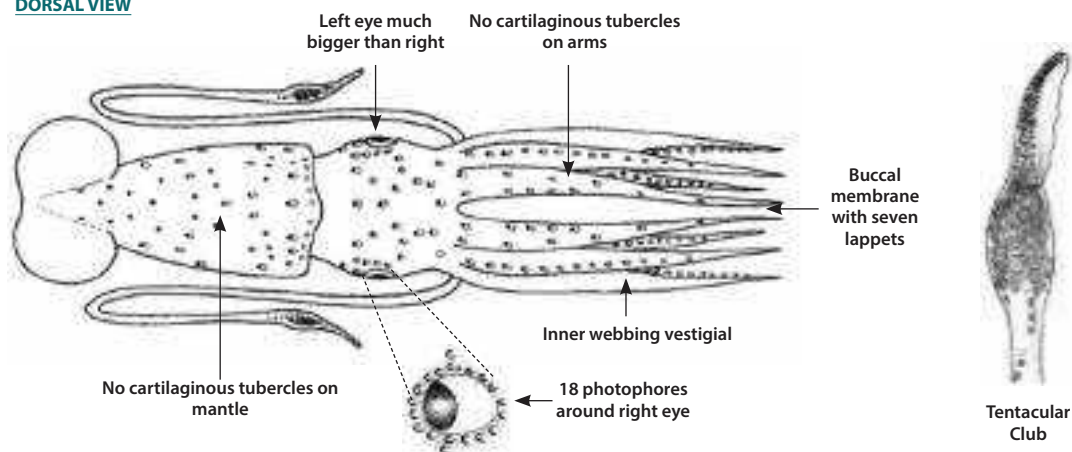


Figure reproduced from Jereb & Roper, 2010, with permission.

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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Joubiniteuthis portieri* (JouPor)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Joubiniteuthidae
Common:	Joubin's squid
Alternate:	-

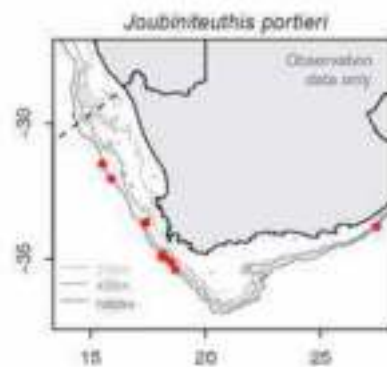
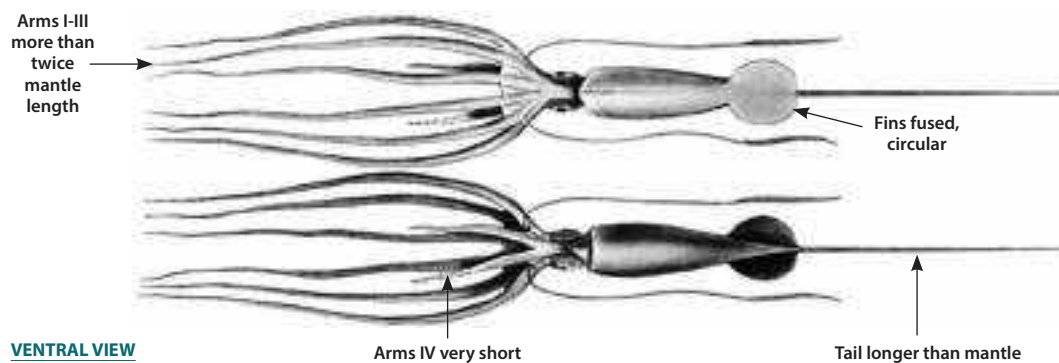
**DORSAL VIEW****VENTRAL VIEW**

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

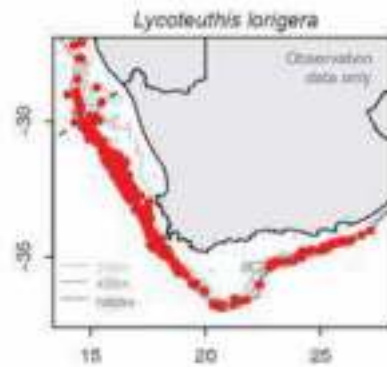
None. Combination of long Arms I-III and long tail diagnostic.

References

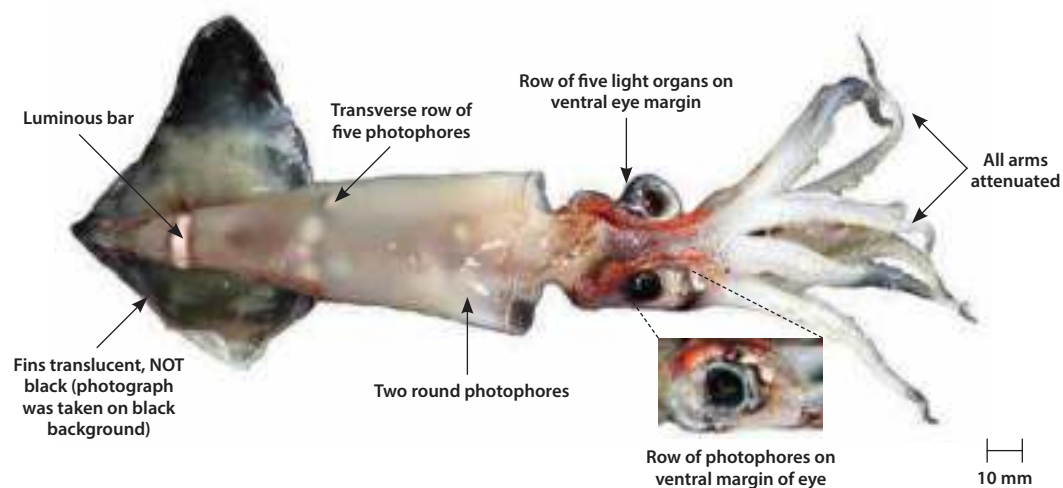
Jereb & Roper, 2010; Nesis, 1987; Young & Roper, 1969; Sanchez, 1988.

Lycoteuthis lorigera (Lycote)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Lycoteuthidae
Common:	Crowned firefly squid
Alternate:	<i>Lycoteuthis diadema</i>



VENTRAL VIEW



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

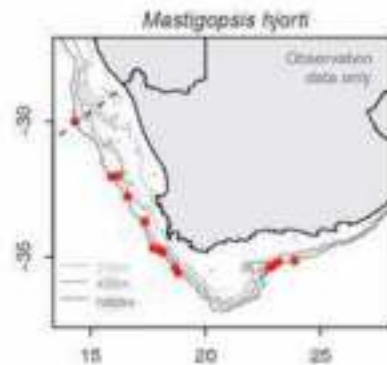
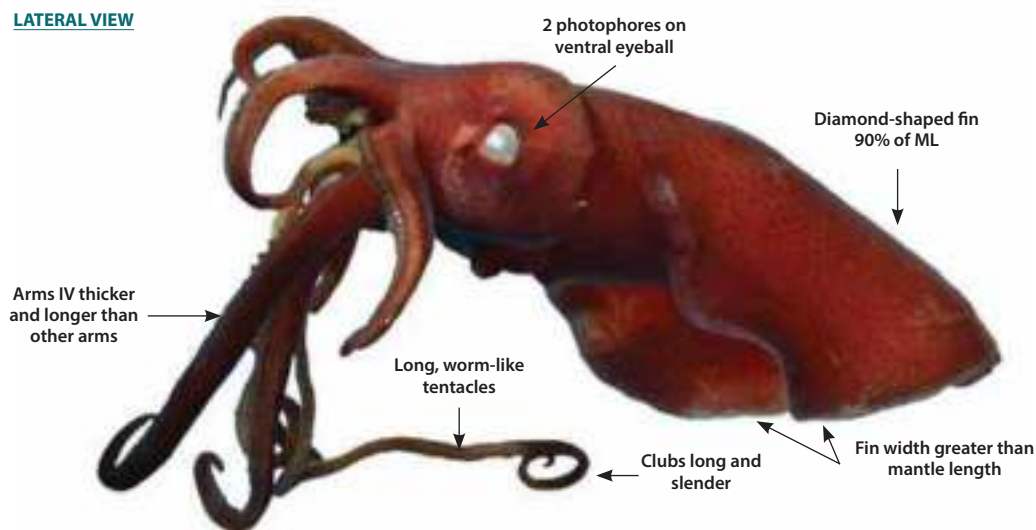
None. The three series of visceral photophores (visible through the mantle) diagnostic in the area.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Mastigopsis hjorti* (MasHjo)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Mastigoteuthidae
Common:	Hjort's whiplash squid
Alternate:	<i>Mastigoteuthis hjorti</i>

**LATERAL VIEW**

From Vecchione & Young (2014), reproduced with permission from RE Young

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.

Hectocotylus

Absent.

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.

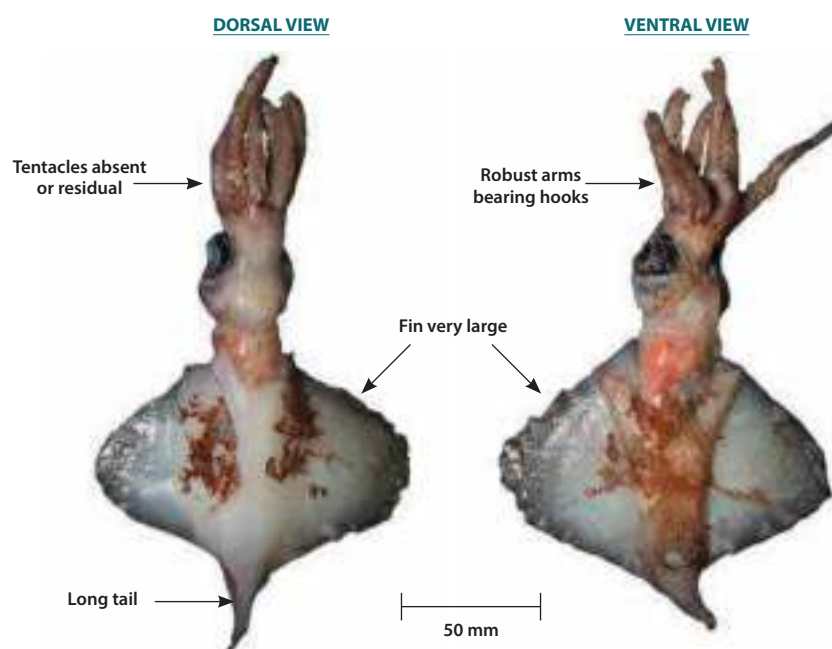
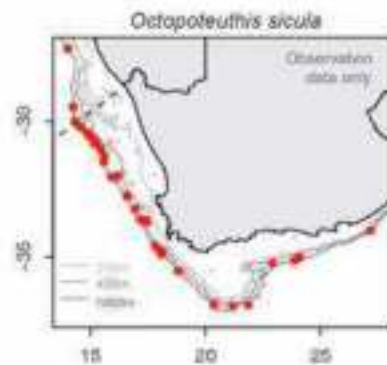
Taningia danae: Tentacles residual; no photophores on eyeball; arms with hooks; large, swollen terminal photophore at tips of Arms II.

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 II; no terminal photophores on other arms.

Ancistrocheirus lesueurii: Armature of hooks, diagnostic brown dashed lines on fin.

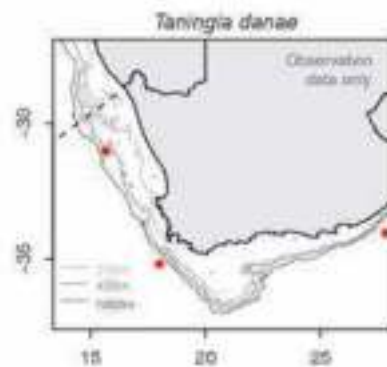
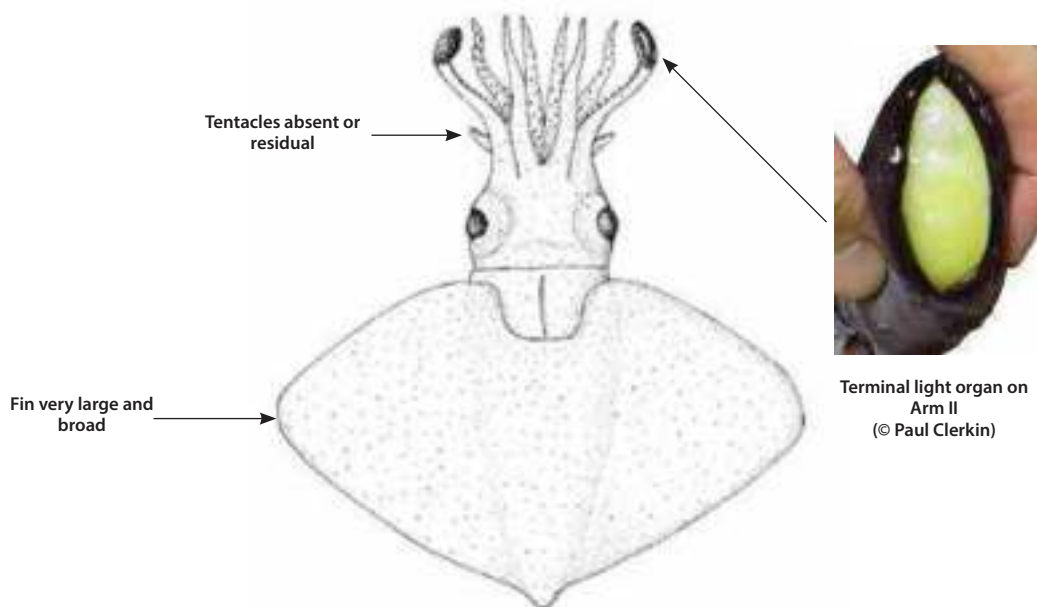
Mastigopsis hjorti: Tentacles present; armature of suckers without hooks; two photophores on eyeballs.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Taningia danae* (TanDan)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Octopoteuthidae
Common:	Taning's octopus squid
Alternate:	-

**DORSAL VIEW****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.

Club

Tentacles present in paralarval stage (up to 45 mm ML) only, absent in adults.

Hectocotylus

Absent.

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.

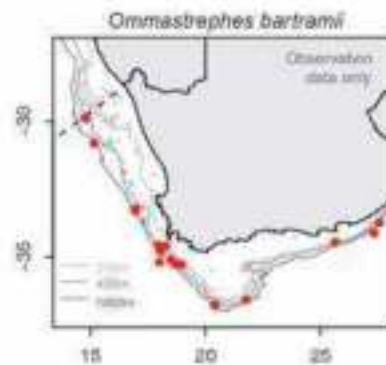
Mastigopsis hjorti: Tentacles present; armature suckers without hooks; two photophores on eyeballs.

References

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

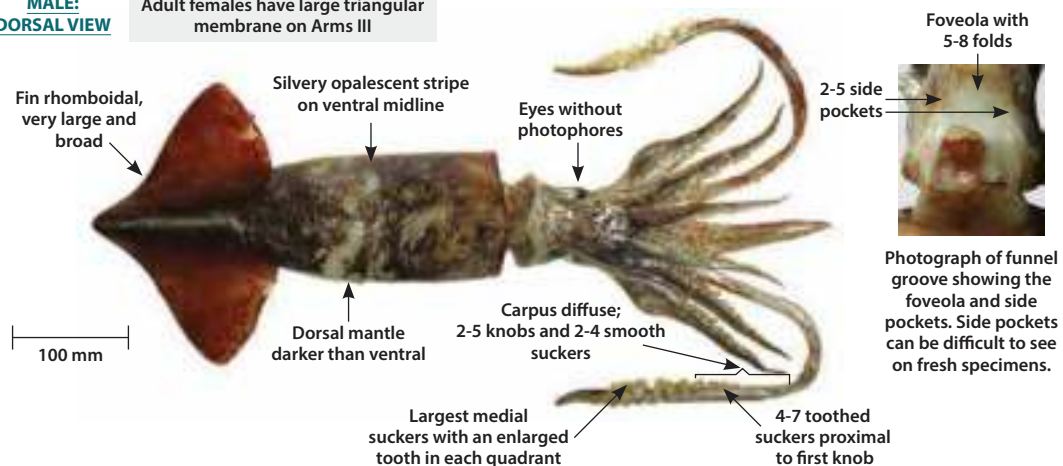
Ommastrephes bartramii (OmmBar)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Ommastrephidae
Common:	Neon flying squid
Alternate:	-



MALE: DORSAL VIEW

Adult females have large triangular membrane on Arms III



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***.

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.

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

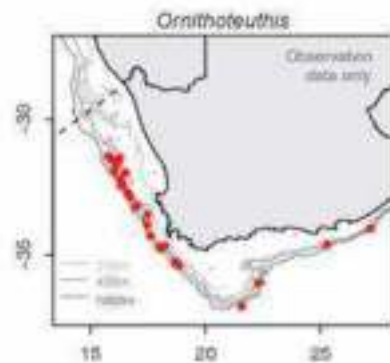
Sthenoteuthis oualaniensis and *Sthenoteuthis pteropus* very similar, distinguished by large obvious photophore anteriorly on dorsal mantle. Mantle fused to funnel in *S. oualaniensis*, not fused in *S. pteropus* or other *Ommastrephids*. See also *Ornithoteuthis* and *Todarodes*.

References

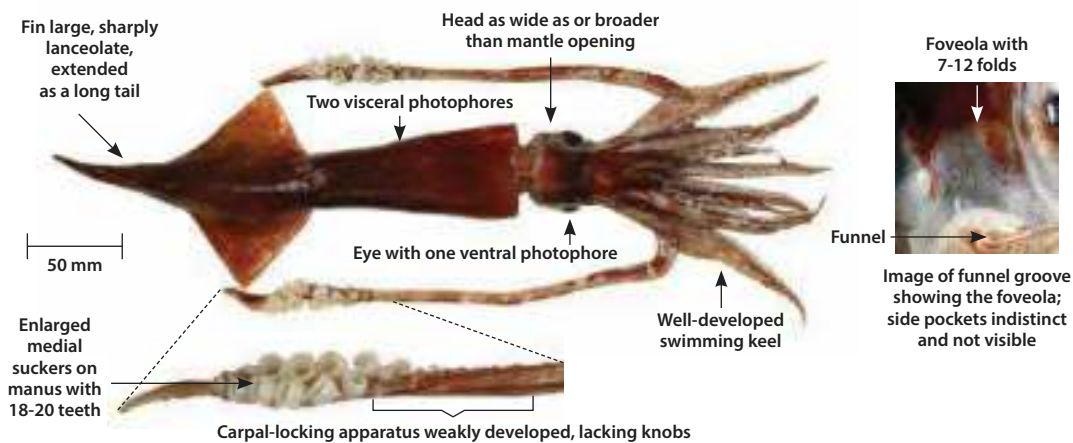
Jereb & Roper, 2010; Nesis, 1987; Roeleveld, 1988; Sanchez, 1988.

***Ornithoteuthis* sp. (Ornith)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
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.

**Distinguishing features**

- 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.

Club

Suckers in four series. Medial manus suckers very large, with **18-20 equal-sized teeth**: carpal-locking apparatus weakly developed, lacking knobs.

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

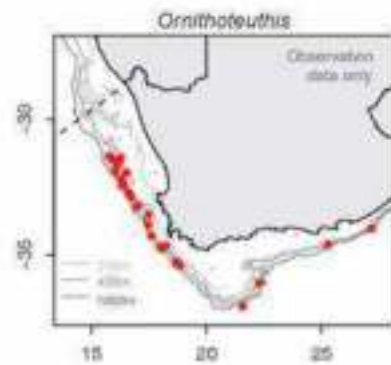
The Ommastrephid genera are distinguished by the structure of the funnel groove (see *Ommastrephes*, *Todarodes* and *Todaropsis*). See next page for differences between the two species in this genus.

References

Jereb & Roper, 2010; Nesis, 1987; Roeleveld, 1988; Sanchez, 1988.

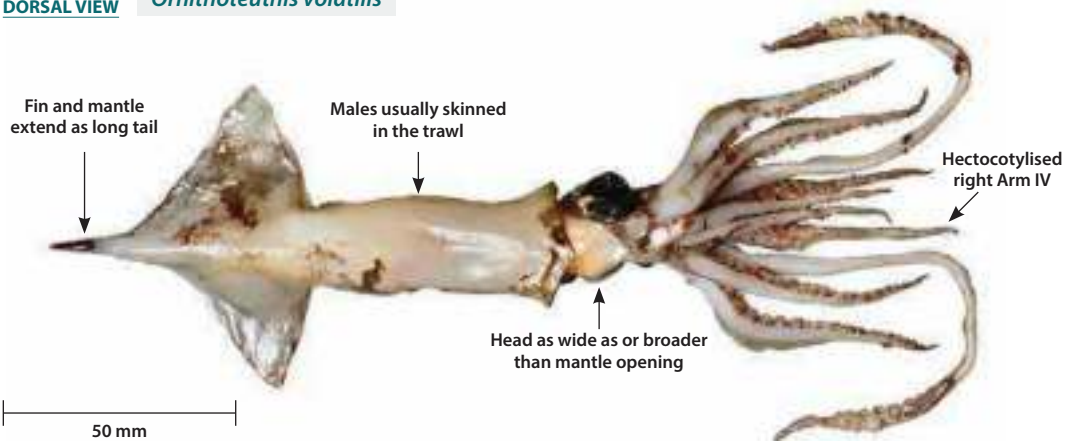
Ornithoteuthis Males

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Ommastrephidae
Common:	Atlantic and Shiny bird squids
Alternate:	-



MALE:
DORSAL VIEW

Ornithoteuthis volatilis



Ornithoteuthis antillarum Atlantic bird squid (OrnAnt)

Hectocotylus



Ventro-lateral view of right Arm IV (figure reproduced from Jereb & Roper, 2010, with permission) showing:

Distal half with sucker stalks modified into papillae; honeycomb sculpturing along midventral surface consisting of **four or five** longitudinal columns of depressions and swollen ridges. There are **20 to 25 depressions** (pits or pores) in each column.

Distribution

Known global distribution North Atlantic south to at least 28° S off Namibia.

Possible off the northern West Coast.

Ornithoteuthis volatilis Shiny bird squid (OrnVol)

Hectocotylus



Oral and ventro-lateral views of right Arm IV (figure reproduced from Jereb & Roper, 2010, with permission) showing:

Distal half with sucker stalks modified into papillae; honeycomb sculpturing along midventral surface consisting of **two or three** longitudinal columns of depressions and swollen ridges. There are **10 to 15 depressions** (pits or pores) in each column.

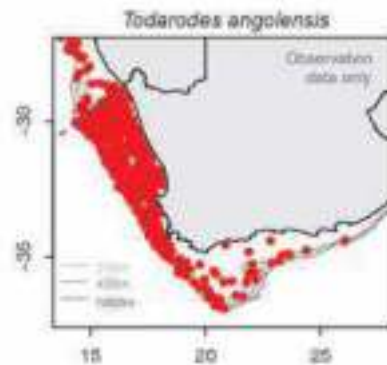
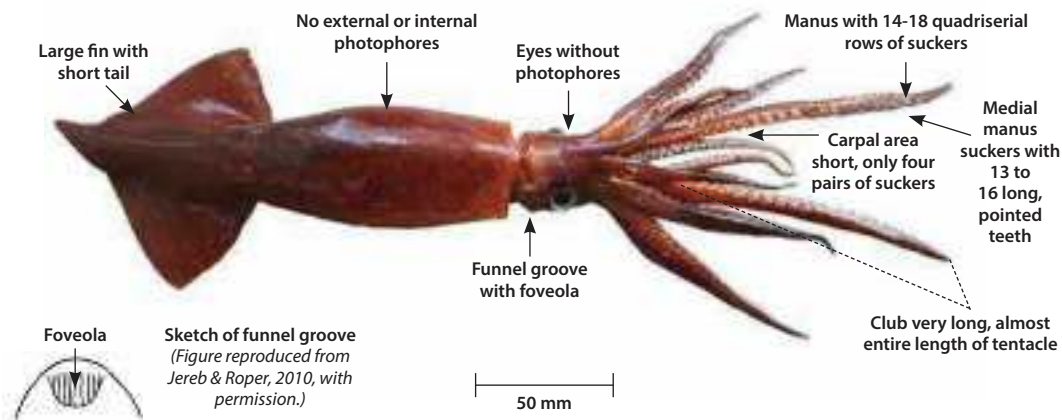
Distribution

Known global distribution Indo-West Pacific to east coast of Africa. Reported from the Benguela off South Africa and Namibia.

Possible off both West and South Coasts.

***Todarodes angolensis* (Toddes)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Ommastrephidae
Common:	Angola flying squid
Alternate:	-

**FEMALE:
DORSAL VIEW****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** quadriserial 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.

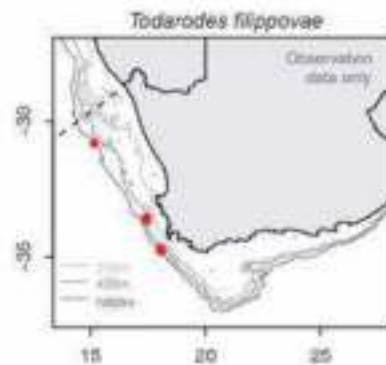
Todarodes filippovae: Club much shorter; with 12-14 quadriserial sucker rows; sucker rings with 7-13 teeth; carpus very short, only two pairs of carpal suckers; longer fin.

References

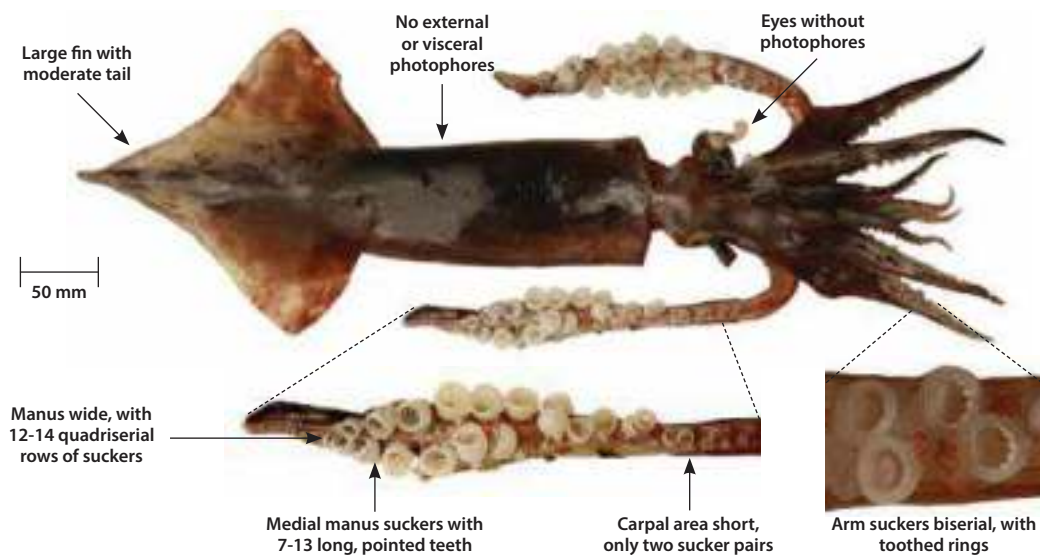
Jereb & Roper, 2010; Nesis, 1987; Roeleveld, 1988; Sanchez, 1988.

Todarodes filippovae (TodFil)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Ommastrephidae
Common:	Antarctic flying squid
Alternate:	-



FEMALE: DORSAL VIEW



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*).

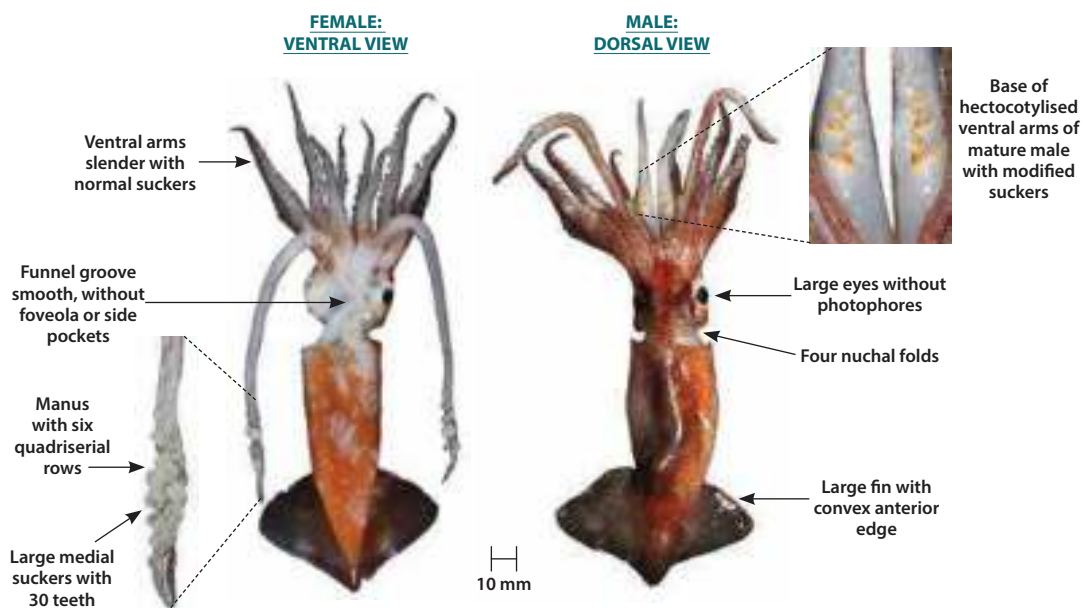
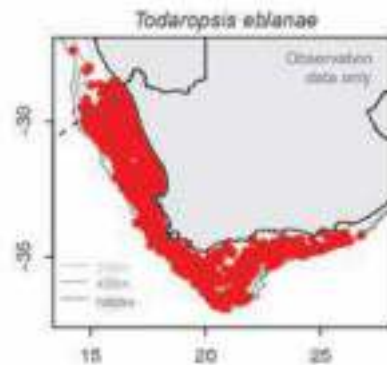
Todarodes angolensis: Club much longer, with 14-18 quadriserial sucker rows; sucker rings with 13-16 teeth; four pairs of carpal suckers; shorter fin.

References

Jereb & Roper, 2010; Nesis, 1987; Roeleveld, 1988; Sanchez, 1988.

***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.

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.

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

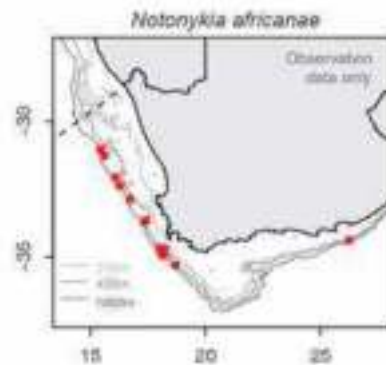
Distinguished from other Ommastrephids in the area by smooth funnel groove lacking both foveola and side pockets; absence of body, eye and visceral photophores; presence of nuchal folds and having both ventral arms hectocotylied.

References

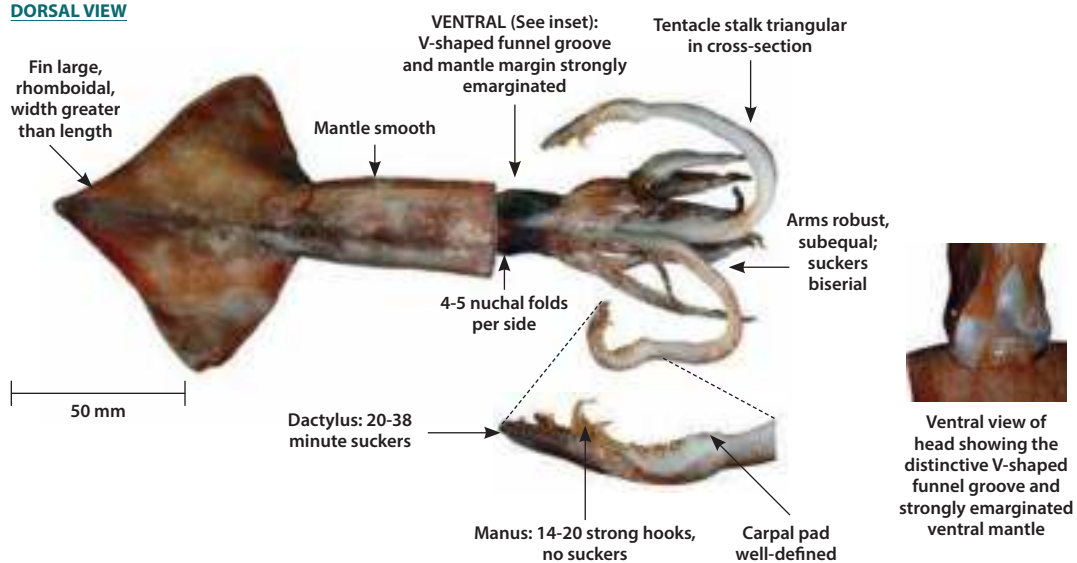
Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Notonykia africanae (NotAfr)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Onychoteuthidae
Common:	Benguela clubhook squid
Alternate:	-



DORSAL VIEW



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.

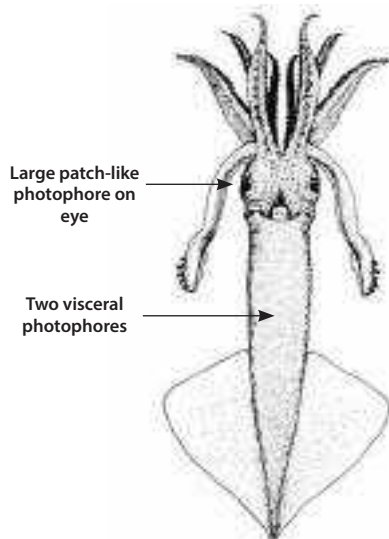
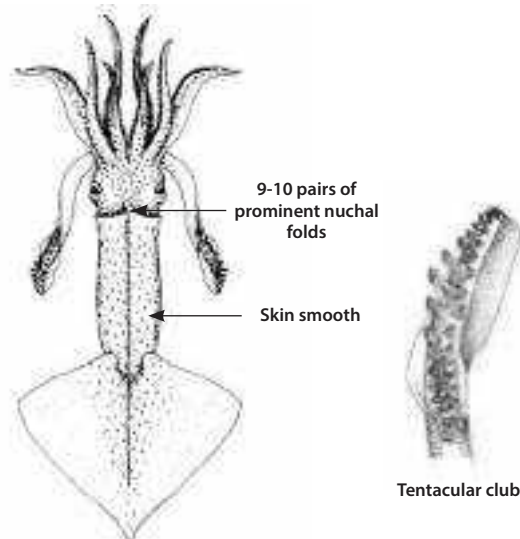
Onychoteuthis banksii: Skin smooth; two visceral photophores on ventral midline; large light organ on eyes; 9-10 pairs of prominent nuchal folds; 20-22 large medial hooks on club.

References

Jereb & Roper, 2010; Nesis *et al.*, 1998.

***Onychoteuthis banksii* (OnyBan)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Onychoteuthidae
Common:	Common clubhook squid
Alternate:	-

**VENTRAL VIEW****DORSAL VIEW****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.

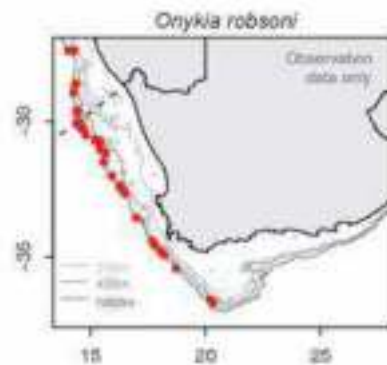
Onykia species: Skin very rough, "warty", no photophores; no nuchal folds.

References

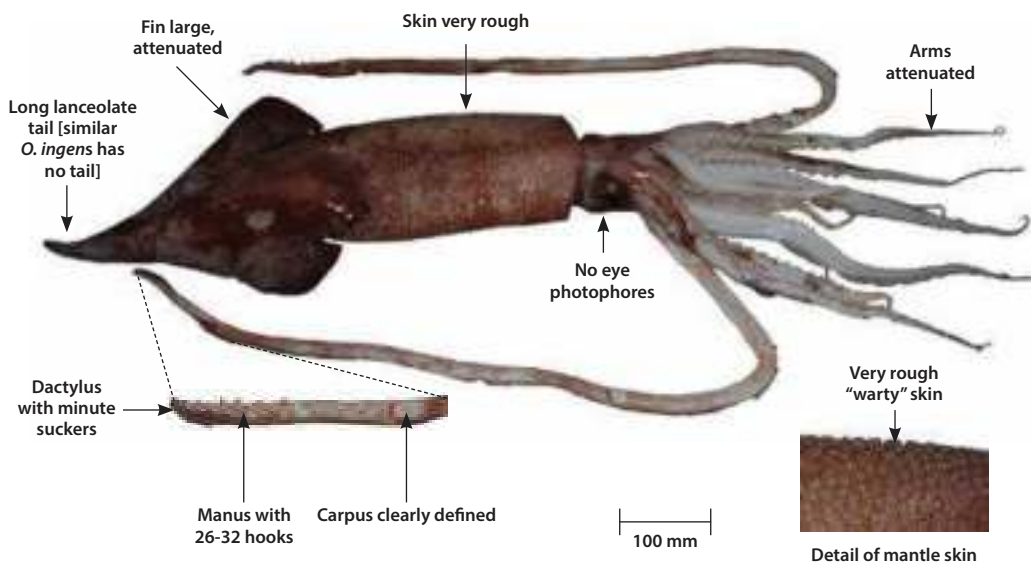
Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Onykia robsoni (MorRob)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Onychoteuthidae
Common:	Warty squid
Alternate:	<i>Moroteuthis robsoni</i>



DORSO-LATERAL VIEW



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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

***Pyroteuthis margaritifera* (Pyrote)**

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Pyroteuthidae
Common:	Jewel enope squid
Alternate:	-

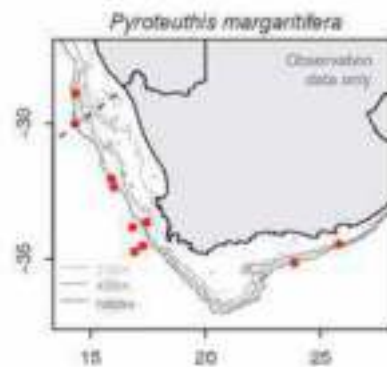
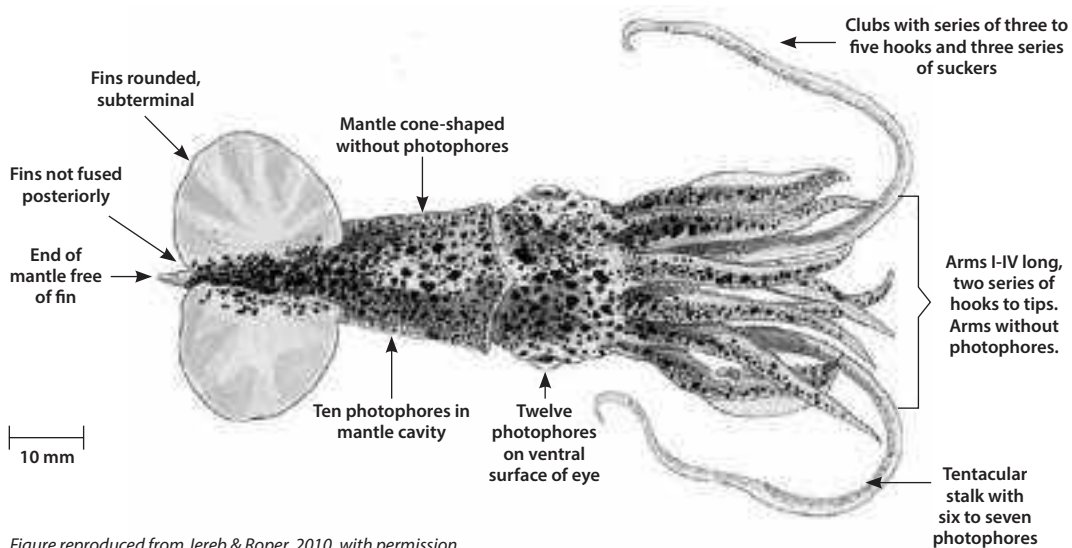
**DORSAL VIEW**

Figure reproduced from Jereb & Roper, 2010, with permission.

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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

Thysanoteuthis rhombus (ThyRho)

Phylum:	Mollusca
Class:	Cephalopoda
Order:	Oegopsida
Suborder:	-
Family:	Thysanoteuthidae
Common:	Rhombic squid
Alternate:	-



DORSAL VIEW

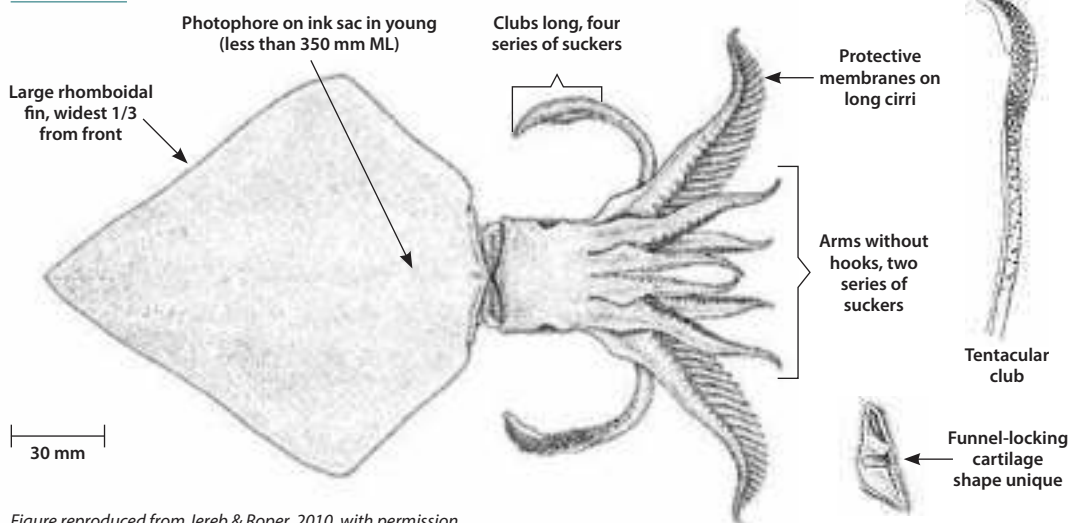


Figure reproduced from Jereb & Roper, 2010, with permission.

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.

Club

Tentacles relatively short, strong. Clubs long, widened with four series of suckers. Carpal-locking apparatus a series of alternating knobs and suckers on stalk proximal to clubs.

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

Jereb & Roper, 2010; Nesis, 1987; Sanchez, 1988.

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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

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Jennifer Olbers⁴ and Ahmed Thandar⁵

Citation

Atkinson LJ, Mah C, Filander Z, Olbers J and Thandar A. 2018. Phylum Echinodermata In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates of South Africa, Malachite Marketing and Media, Pretoria, pp. 393-476.

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Phylum: ECHINODERMATA

Starfish, basket stars, brittle stars, sea urchins, feather stars and sea cucumbers

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 anthozoa 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

sediments. 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 larvae 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.

Class Ophiuroidea (Basket and brittle stars)

Brittle and basket stars are closely related to starfish and can be identified by their five or more long, simple or branching arms which are sharply marked off from the central body disc. They are highly mobile and crawl across the seabed by means of their supple arms, unlike starfish that use tube feet. Brittle and basket stars have various modes of feeding, with most being scavengers, detritus feeders or filter feeders. The mouth is located on the underside of the disc, which has a complex toothed-jaw formed from skeletal plates. Ophiuroids play an important role within the marine ecosystem, often forming symbiotic relationships with other marine species such as corals, gorgonians and algae.

Collection and preservation

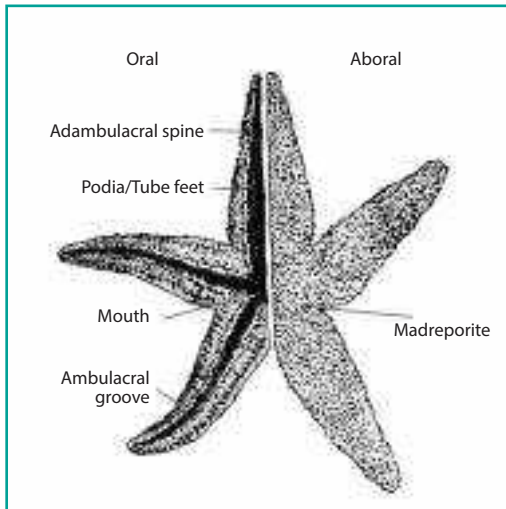
Specimens should be preserved in 80-90% ethanol and 96% ethanol for molecular studies. If the climate is not excessively humid, specimens can be preserved in 96% ethanol and later dried for storage.

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.

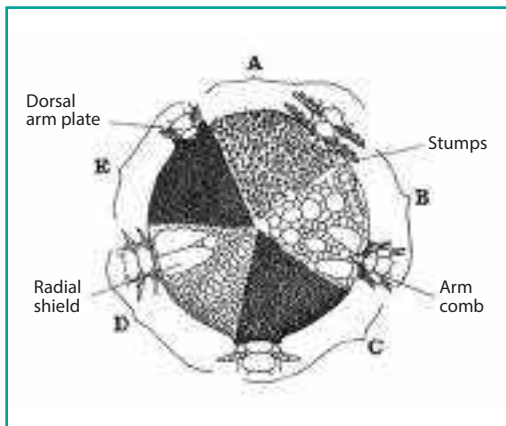
References

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- Jones G. 2008. *A field guide to the marine animals of the Cape peninsula*. Southern Underwater Research Group Press, Hout Bay, Cape Town. (271 pp.)
- Lawrence JM. 1975. On the relationships between marine plants and sea urchins. *Oceanographic Marine Biological Annual Review* 13: 213-286.
- Moore J. 2006. *An Introduction to the Invertebrates*. Cambridge University Press, 2nd edition, doi: 10.1017/CBO9780511754760.
- Nichols D. 1961. A comparative histological study of the tube-feet of two regular echinoids. *Journal of Cell Science*, 3(58): 157-180.
- Pawson DL. 2007. Phylum Echinodermata. *Zootaxa* 1668(1):749-764.
- Smith AB. 1984. Classification of the Echinodermata. *Paleontology* 27(3):431-459.

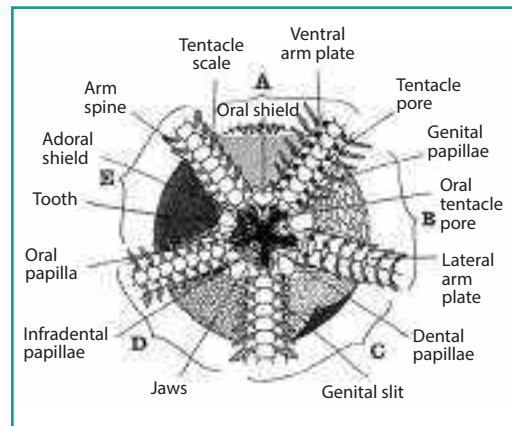
Asteriodea body plan (General FB code STARFS):



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) Amphiuroidae and E) Ophiodermatidae. Adapted from Clark and Rowe (1971).

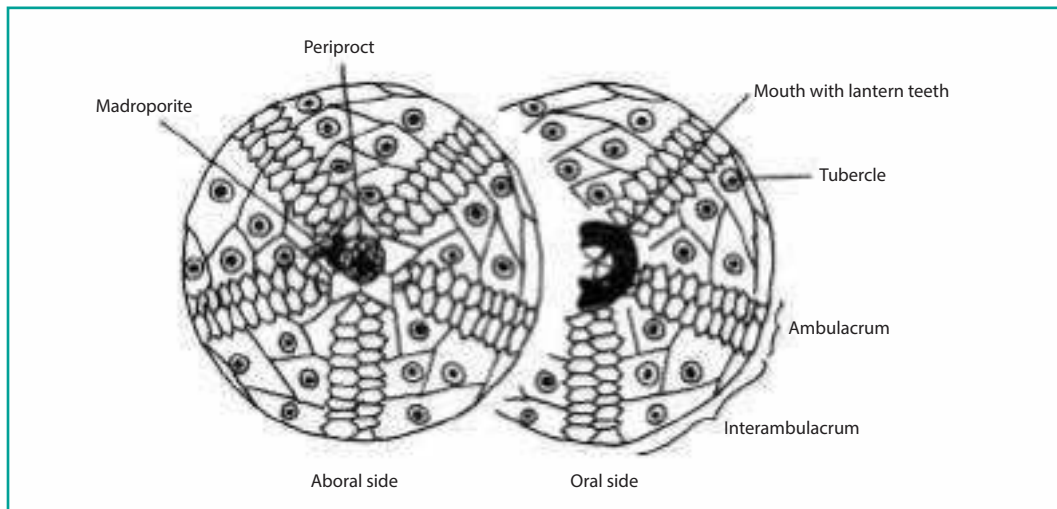


Composite diagram showing characters of the **ventral** surface of the disc in the following families: A) Ophiotrichidae, B) Ophiuridae, C) Ophiocomidae, D) Amphiuroidae and E) Ophiodermatidae. Adapted from Clark and Rowe (1971).

Reference:

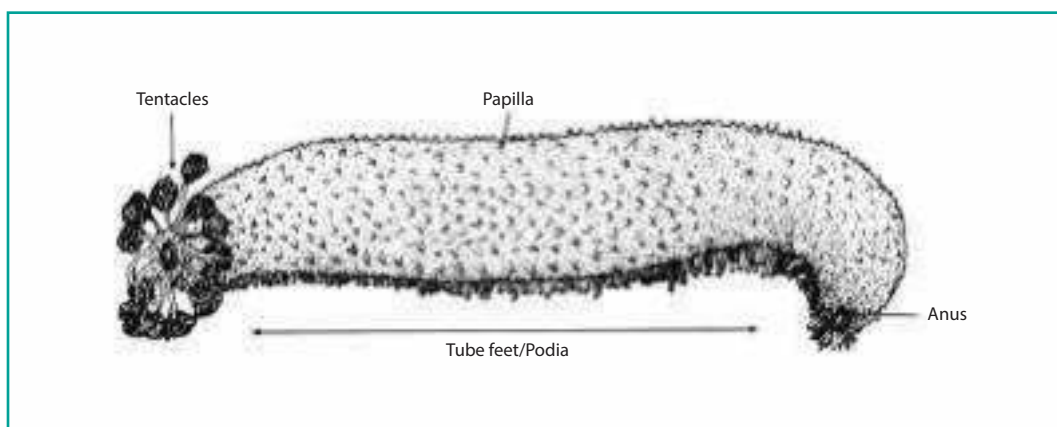
Clark AM and Rowe FWE. 1971. *Shallow-water Indo-West Pacific Echinoderms*. Pitman Press, Bath. 238 pp. Reproduced with permission.

Echinoidea body plan (General FB code URCHIN):



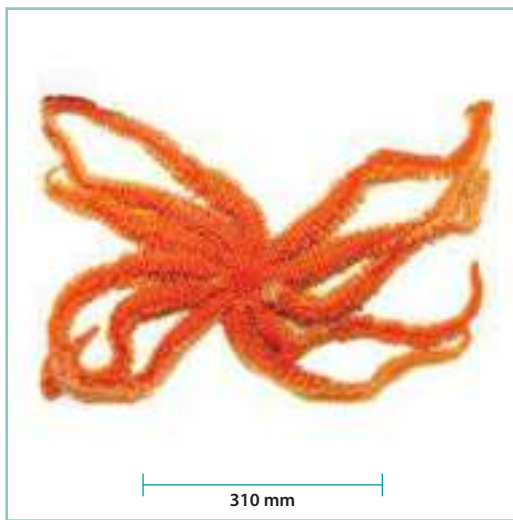
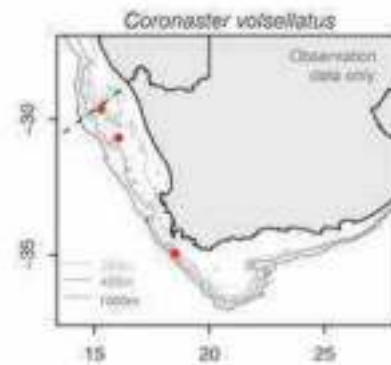
Composite diagram showing features of the dorsal and ventral surfaces of a general Echinoidea body plan.

Holothuroidea body plan (General FB code CUMBER):



Coronaster volsellatus (CorVol)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Forcipulatida
Family:	Asteriidae
Genus:	<i>Coronaster</i>
Species:	<i>volsellatus</i>
Common name:	False brisingid/Spiny pom-pom starfish



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.

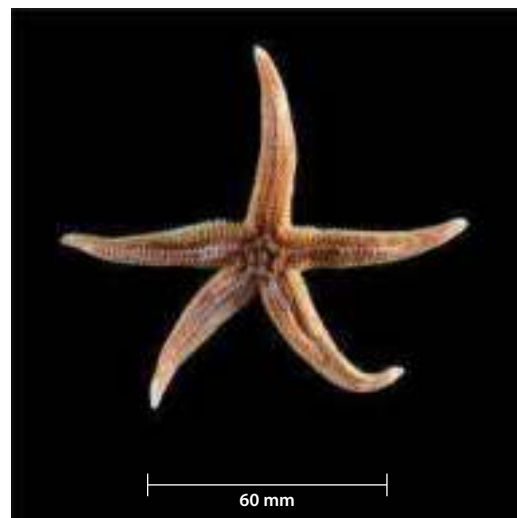
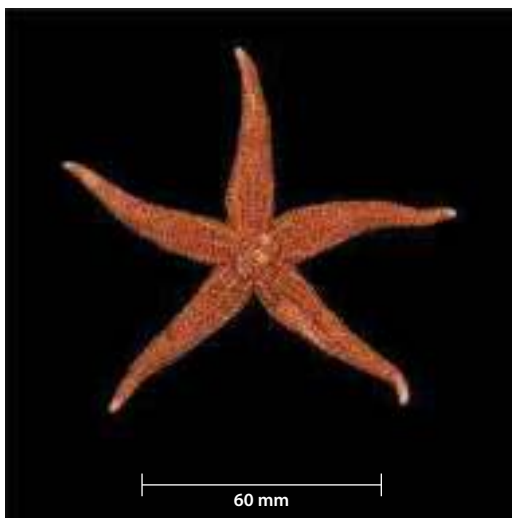
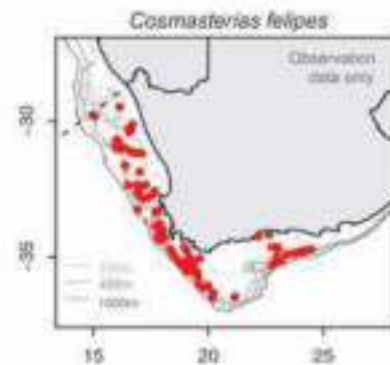
References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 459-461 (794pp.).

Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Cosmasterias felipes* (Sticha)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Forcipulatida
Family:	Stichasteridae
Genus:	<i>Cosmasterias</i>
Species:	<i>felipes</i>
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 Asteroiidae 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

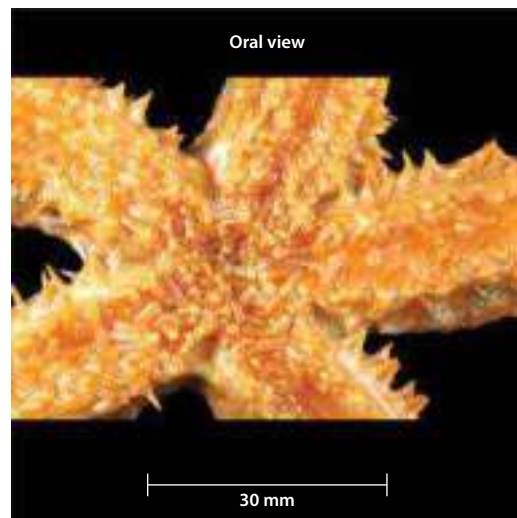
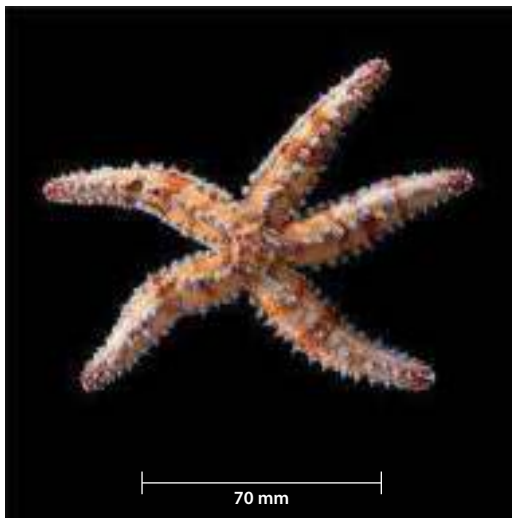
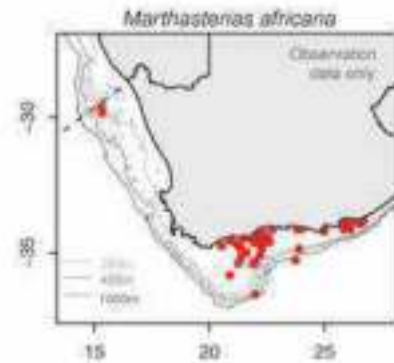
Perissasterias polyacantha, but *Cosmasterias felipes* is smaller, firmer, rigid in texture and less 'spiny'.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 428-429 (794pp.).

Marthasterias africana (Mart)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Forcipulatida
Family:	Asteriidae
Genus:	<i>Marthasterias</i>
Species:	<i>africana</i>
Common name:	African spiny starfish



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

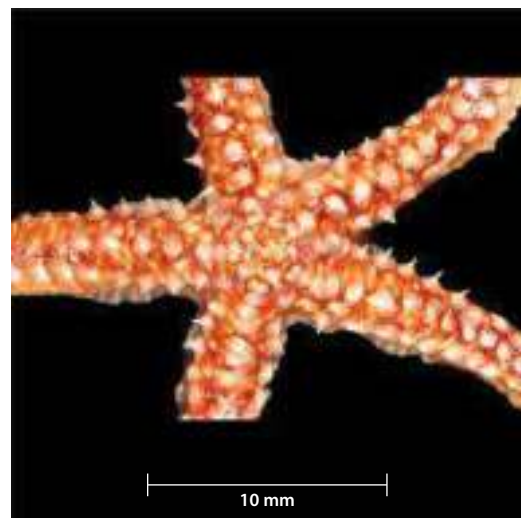
Sclerasterias spp. appear similarly spiny and similar in shape, but *M. africana* has larger, distinct midradial spines along each arm.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth Edition. Struik Nature, Cape Town. p. 226.
- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 94 (as *Marthasterias glacialis*). (277pp.).
- Wright AG, Pérez-Portela R and Griffiths CL. 2016. Determining the correct identity of South African *Marthasterias* (Echinodermata: Asteroidea). *African journal of marine science*, 38(3), pp.443-455.

***Sclerasterias* spp. (SciEus)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Forcipulatida
Family:	Asteriidae
Genus:	<i>Sclerasterias</i>
Species:	spp.
Common name:	Small spiny starfish

**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

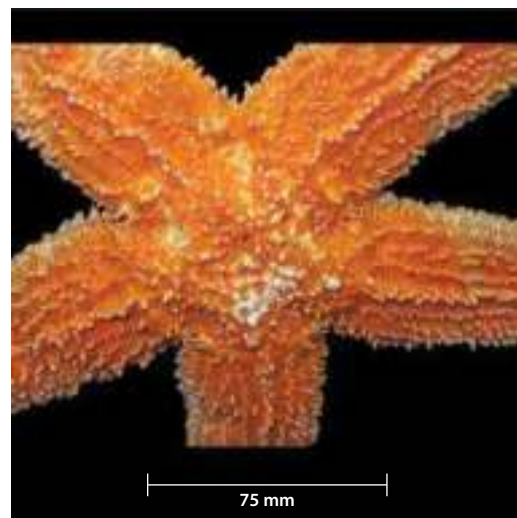
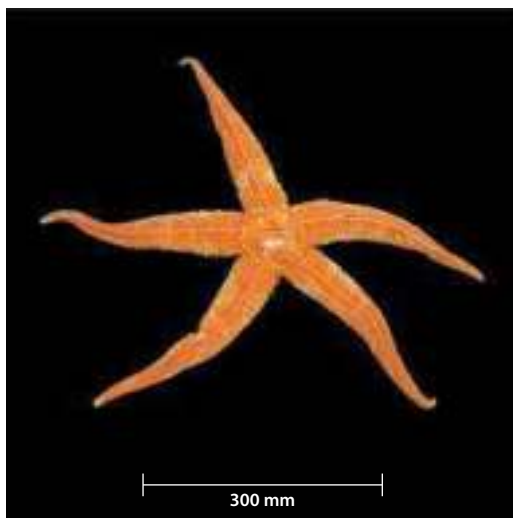
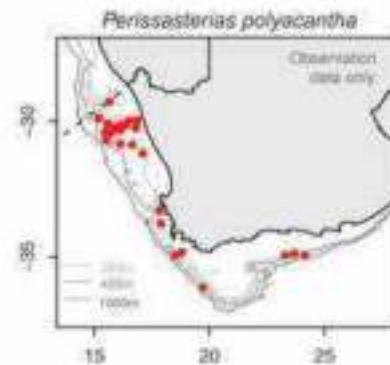
Marthasterias africana, but *Sclerasterias* spp. spines are more equal in size than the distinctly larger central arm spine of *M. africana*.

References

Mortensen T. 1933. *Echinoderms of South Africa (Asteroidea and Ophiuroidea): Papers from Dr Th. Mortensens's Pacific Expedition 1914–1916*, Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening. 93: 215-400.

Perissasterias polyacantha (Cosmas)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Forcipulatida
Family:	Stichasteridae
Genus:	<i>Perissasterias</i>
Species:	<i>polyacantha</i>
Common name:	Very large orange star



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.

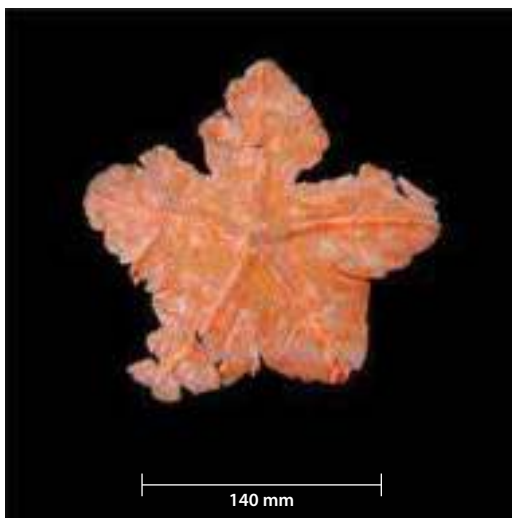
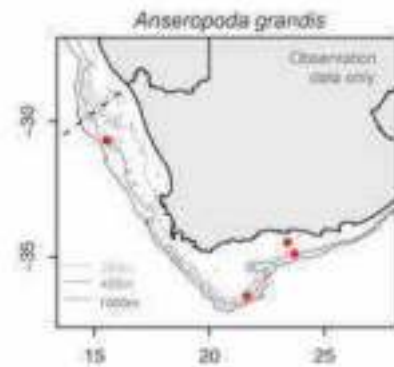
References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 445-446 (794pp.).

Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Anseropoda grandis* (AnsGra)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Asterinidae
Genus:	<i>Anseropoda</i>
Species:	<i>grandis</i>
Common name:	Pancake/Goosefoot star

**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 \pm 275 to 315 m.

Similar species

None.

References

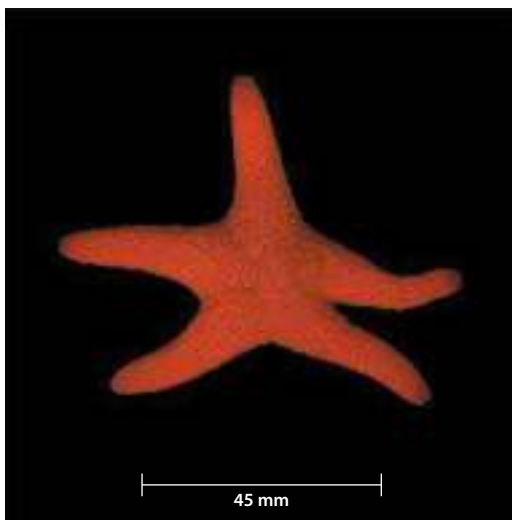
Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 75-76. (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 174-17 (794pp.).

Mortensen T. 1933. *Echinoderms of South Africa (Asteroidea and Ophiuroidea): papers from Dr Th. Mortensens's Pacific Expedition 1914-1916*, Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening. 93: 215-400.

Callopatiria granifera (CalGra)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Asterinidae
Genus:	<i>Callopatiria</i>
Species:	<i>granifera</i>
Common name:	Red starfish



Distinguishing features

Thick finger-like, blunt-tipped arms, almost semi-circular in cross-section. Granular texture on aboral surface said to resemble overlapping tiles.

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.

Similar species

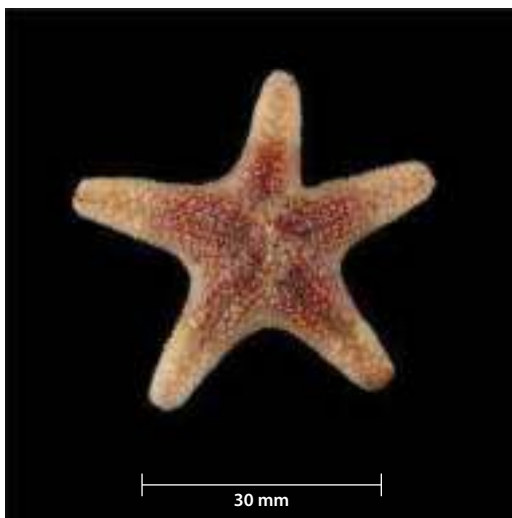
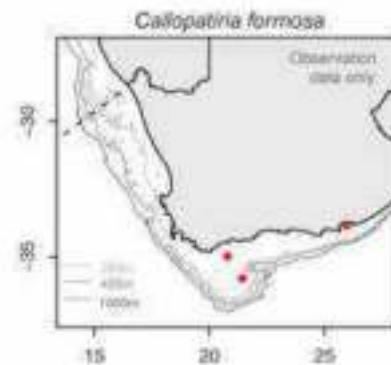
Cushion star *Pteraster capensis*, but *C. granifera* has more distinct, longer arms. *Patiria stellifera* cushion star with more webbing between the arms.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 190-192 (794pp.).

***Callopatiria formosa* (CalFor)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Asterinidae
Genus:	<i>Callopatiria</i>
Species:	<i>formosa</i>
Common name:	Purple starfish

**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.

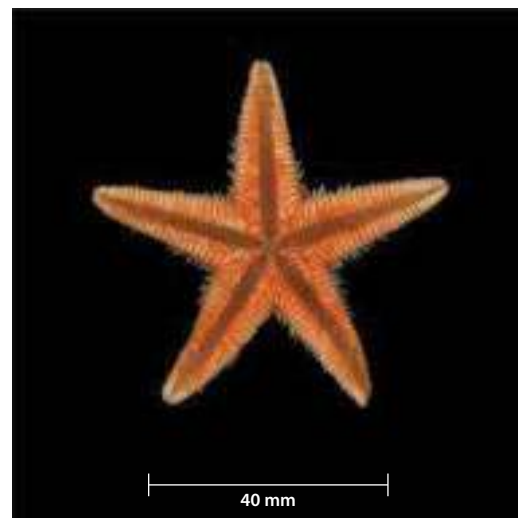
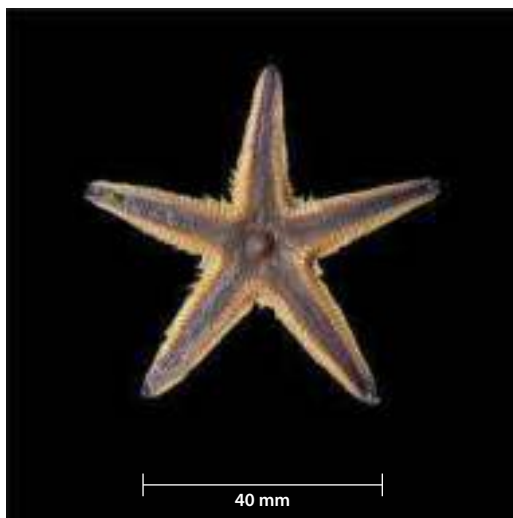
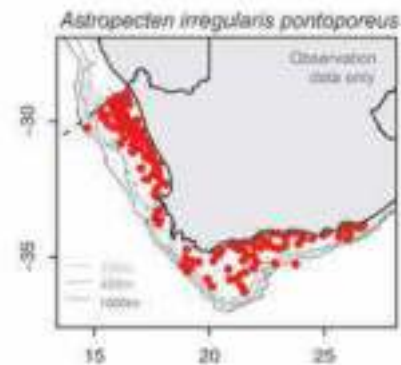
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 78-79. (277pp.).

Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Astropecten irregularis pontoporeus* (AstPan)**

Phylum:	Echinodermata
Class:	Asteriidea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Astropecten</i>
Species:	<i>irregularis pontoporeus</i>
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.

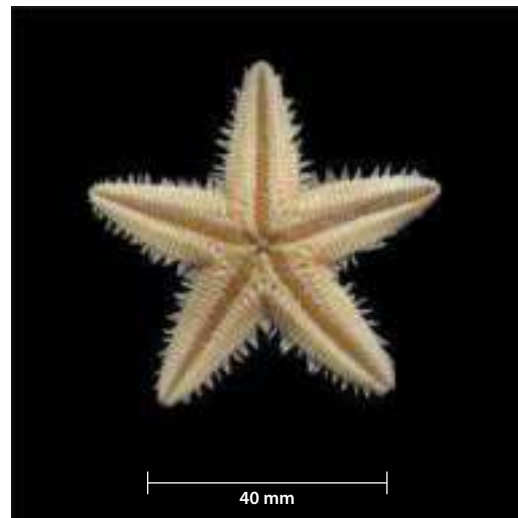
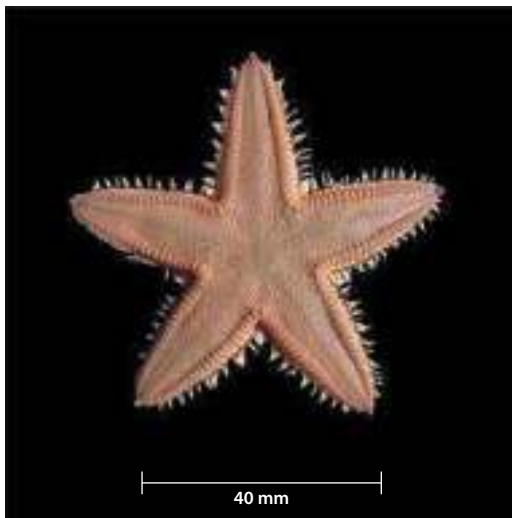
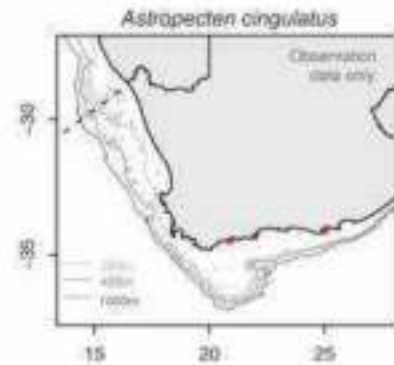
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 50-51. (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 25-44 (794pp.).

Astropecten cingulatus (AstAnt)

Phylum:	Echinodermata
Class:	Asteriodea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Astropecten</i>
Species:	<i>cingulatus</i>
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).

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.

Distribution

This is a shallow-water species found more commonly on the South Coast of South Africa, from 0-65 m depth.

Similar species

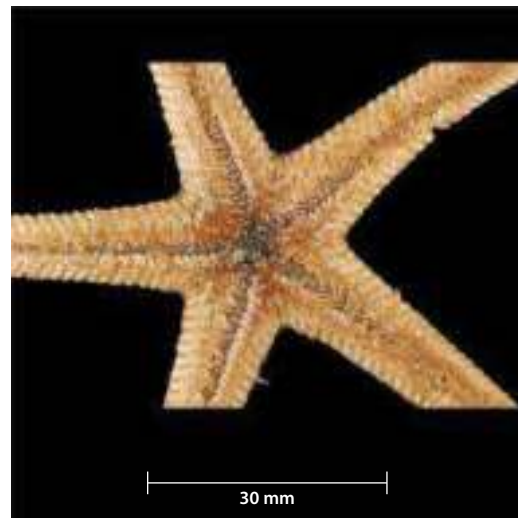
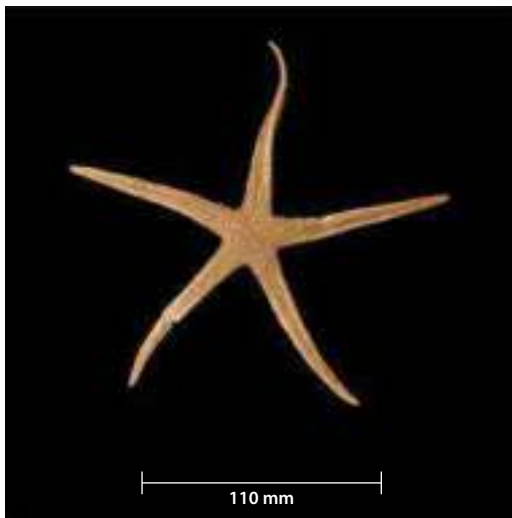
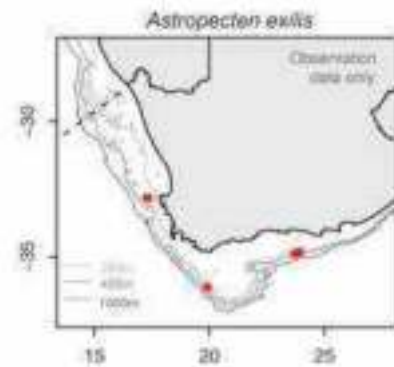
Similar to *Astropecten irregularis pontoporeus*, but the marginal plates in *A. irregularis pontoporeus* are pale in comparison to *A. cingulatus*, which has petaloid arms and elongated oral marginal plates.

References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 33. (277pp.).

Astropecten exilis (AstrLa)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Astropecten</i>
Species:	<i>exilis</i>
Common name:	Long-arm Astropecten



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.

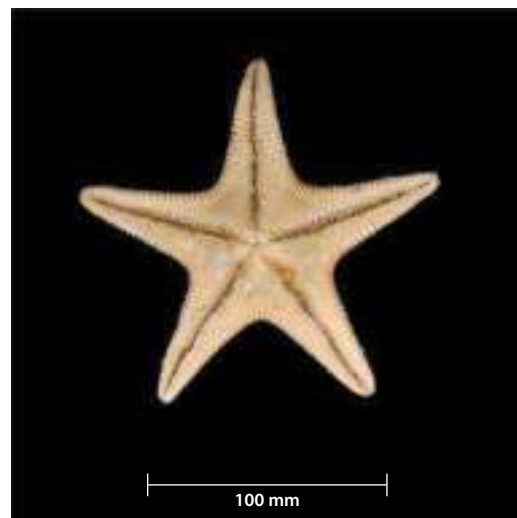
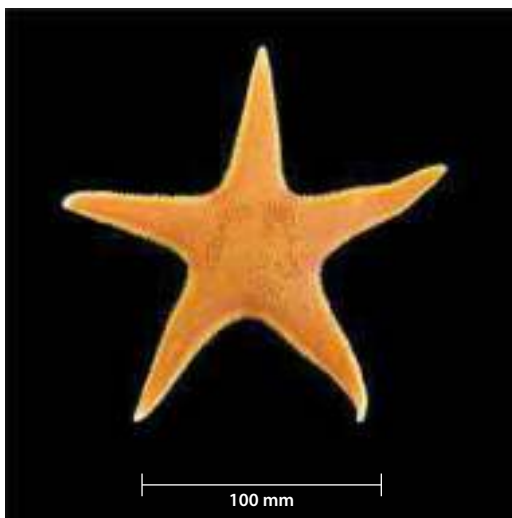
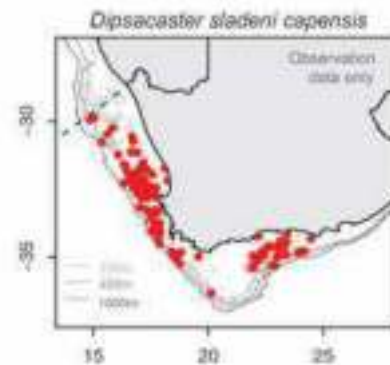
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 49. (277pp.).

Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Dipsacaster sladeni capensis* (PerAga)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Dipsacaster</i>
Species:	<i>sladeni capensis</i>
Common name:	Coarse-grained orange star

**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 \pm 110 m to 630 m depth.

Similar species

Dipsacaster sladeni, which is a subspecies.

References

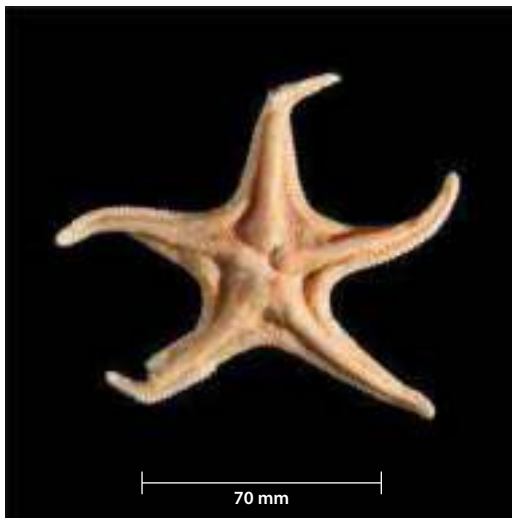
Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 52-53. (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 50-51. (794pp.).

Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Persephonaster* sp. (PerCou)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Persephonaster</i>
Species:	sp.
Common name:	Coarse-grained pale star



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

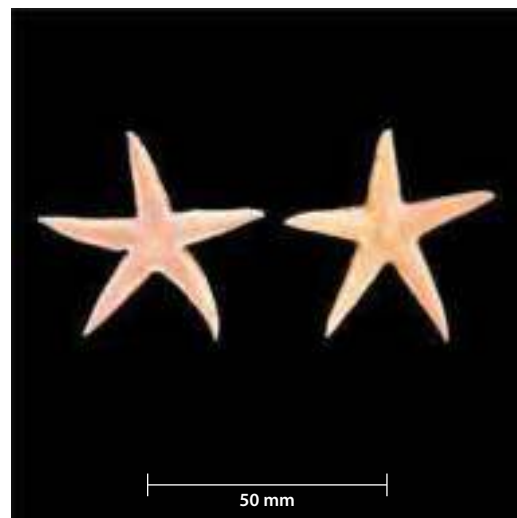
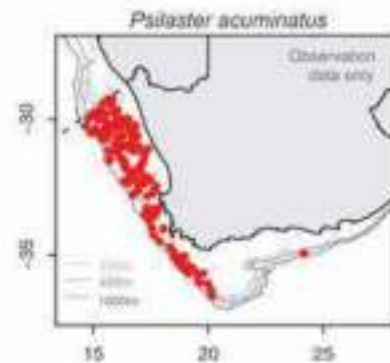
Dipsacaster sladeni capensis, however *Persephonaster* sp. appear more sunken/collapsed on aboral, with midradial ribs projecting. Specimens to be retained for further taxonomic study.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 59-66. (794pp.).

***Psilaster acuminatus* (PleAga)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Psilaster</i>
Species:	<i>acuminatus</i>
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

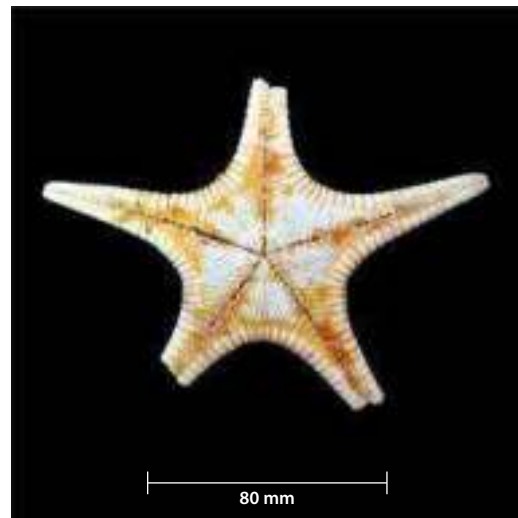
None.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 73-81 (794pp.).

***Plutonaster cf. intermedius* (PluAga)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Paxillosida
Family:	Astropectinidae
Genus:	<i>Plutonaster</i>
Species:	<i>cf. intermedius</i>
Common name:	Intermediate starfish



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. Madrepore 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 \pm 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

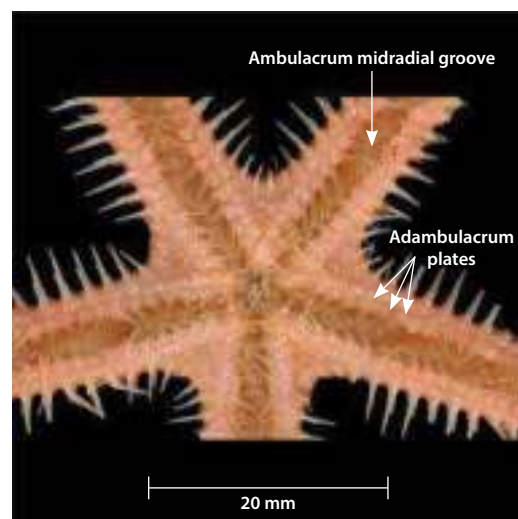
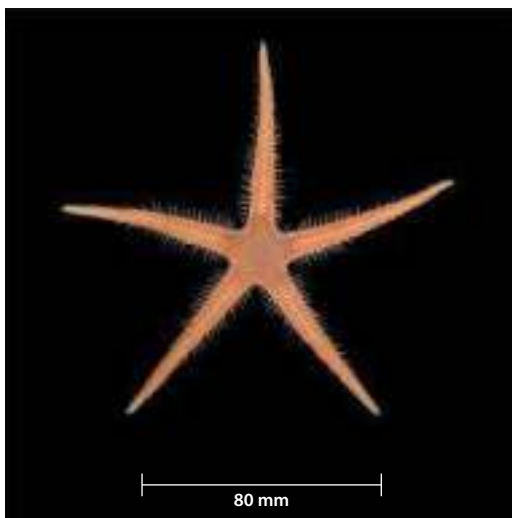
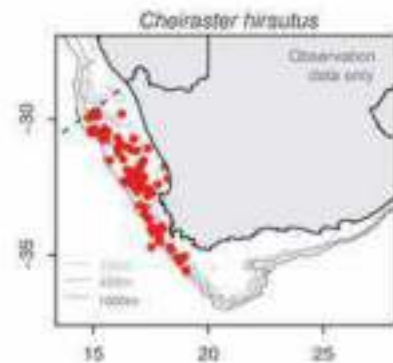
Persephonaster sp. and *Dipsacaster sladeni capensis*. Other species of *Plutonaster* spp. may occur in the region and may have distinct spines on the inferomarginal plates.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 66-73 (794pp.).

***Cheiraster hirsutus* (Astrop)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Notomyotida
Family:	Benthopectinidae
Genus:	<i>Cheiraster</i>
Species:	<i>hirsutus</i>
Common name:	Spiky orange centre star

**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

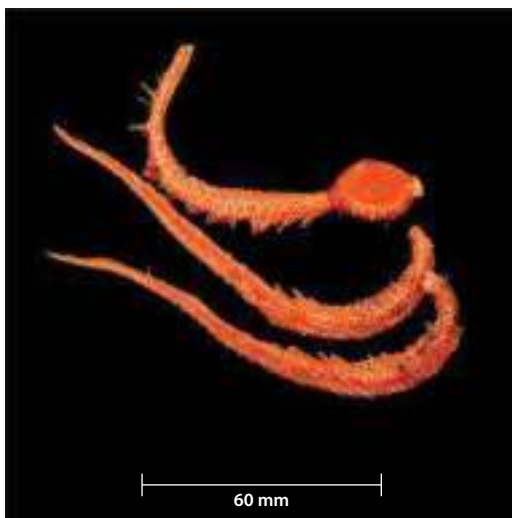
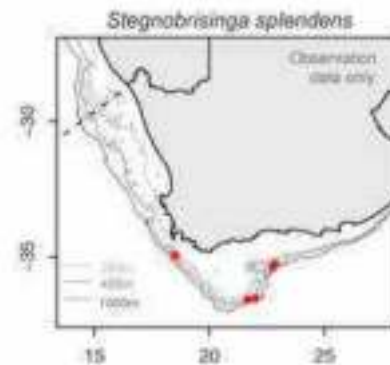
Can appear similar to some *Astropecten* species, however *Cheiraster hirsutus* is distinct in having particularly long spines, suckered tube feet and tips of arms curl up on capture.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 126-136 (794pp.).

Stegnobrisinga splendens (SteSpl)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Brisingida
Family:	Brisingidae
Genus:	<i>Stegnobrisinga</i>
Species:	<i>splendens</i>
Common name:	Brisingid rigid



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 volsellatus, 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.

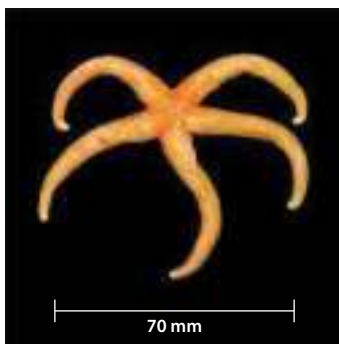
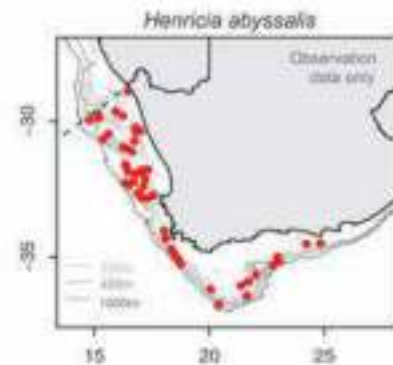
References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp.476-477. (794pp.).

Species confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Henricia abyssalis* (HerAbs)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Spinulosida
Family:	Echinasteridae
Genus:	<i>Henricia</i>
Species:	<i>abyssalis</i>
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

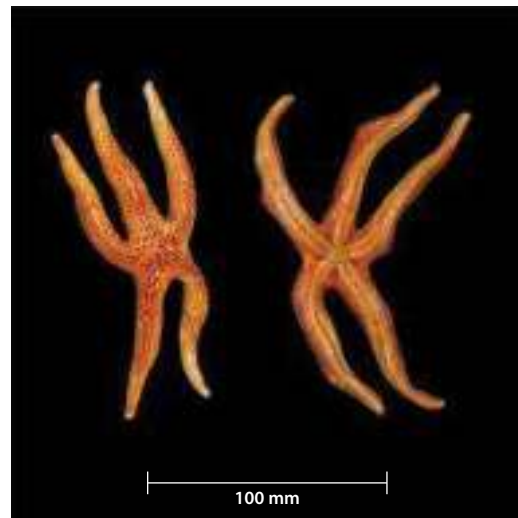
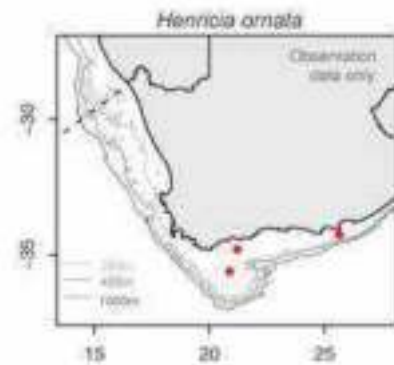
Henricia ornata, but *H. abyssalis* more common and distinguished by the white tips.

References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 88. (277pp.).

Henricia ornata (HenOrn)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Spinulosida
Family:	Echinasteridae
Genus:	<i>Henricia</i>
Species:	<i>ornata</i>
Common name:	Reticulated star



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

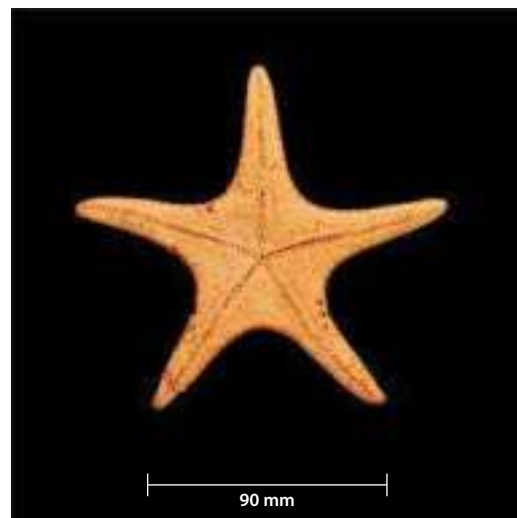
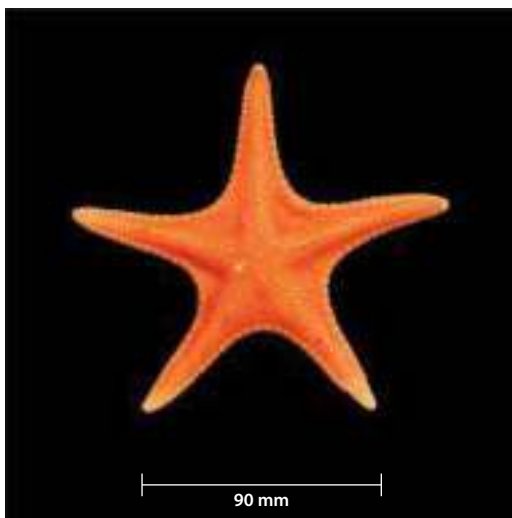
Henricia abyssalis, but *H. ornata* has spotted appearance (irregular-honeycombed) on aboral surface and usually deeper/darker colour.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth Edition. Struik Nature, Cape Town. p. 190.
- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 89. (277pp.).
- Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 394-395. (794pp.).

***Gilbertaster anacanthus* (GilAna)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Goniasteridae
Genus:	<i>Gilbertaster</i>
Species:	<i>anacanthus</i>
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

Fisher, WK. 1906. The starfishes of the Hawaiian Islands. *Bulletin of the United States Fish Commission* 23: 987-1130. p. 1045.

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Calliaster acanthodes* (CaAca)**

Phylum: Echinodermata

Class: Asteroidea

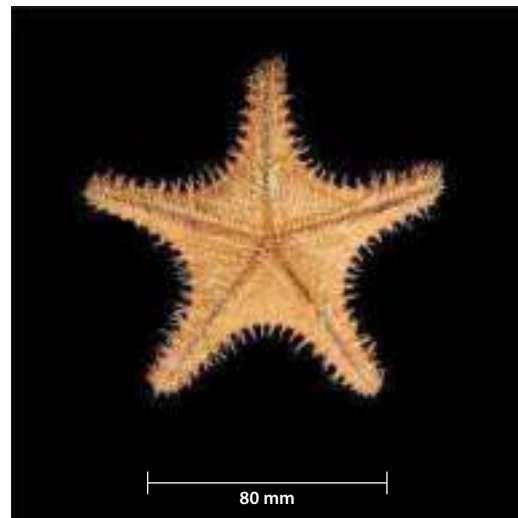
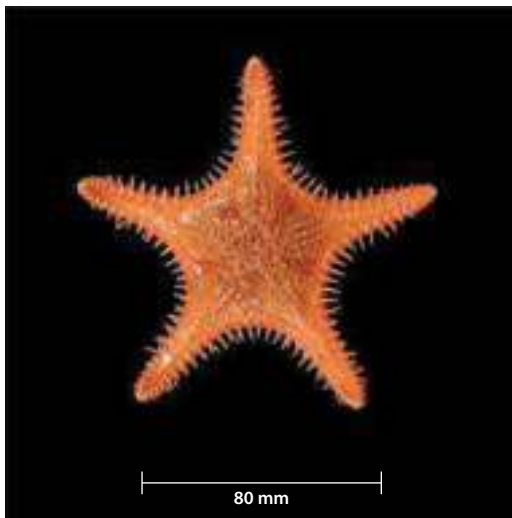
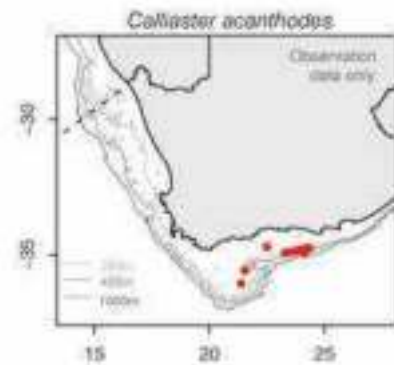
Order: Valvatida

Family: Goniasteridae

Genus: *Calliaster*

Species: *acanthodes*

Common name: Spiky sheriff star



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 phyrangiana*, which has blunt, stout marginal spines and bivalve pedicellariae.

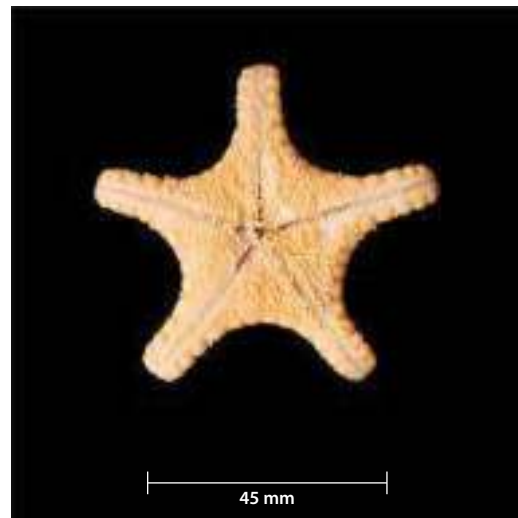
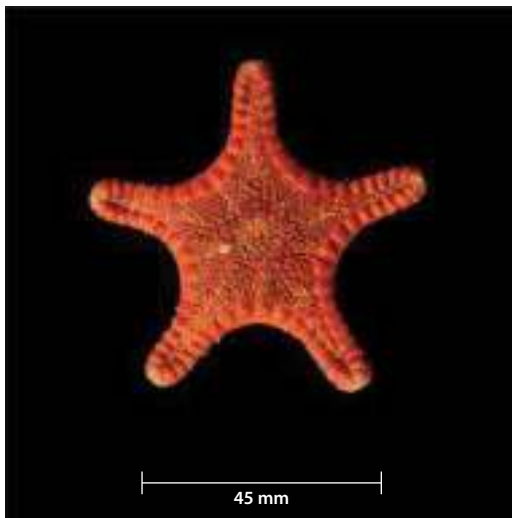
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 60-61. (277pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Calliaster baccatus (CalBac)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Goniasteridae
Genus:	<i>Calliaster</i>
Species:	<i>baccatus</i>
Common name:	Blunt sheriff star



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).

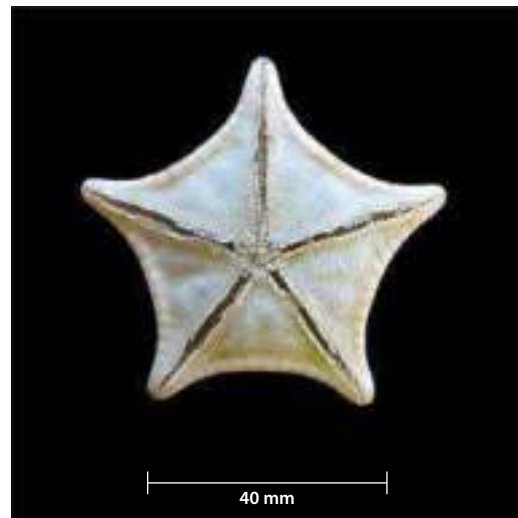
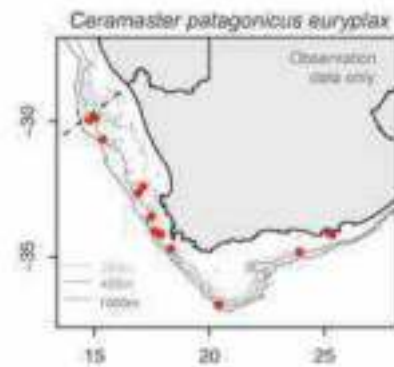
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 61. (277pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Ceramaster patagonicus euryplax* (CerGra)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Goniasteridae
Genus:	<i>Ceramaster</i>
Species:	<i>patagonicus euryplax</i>
Common name:	Shiny red sheriff star



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

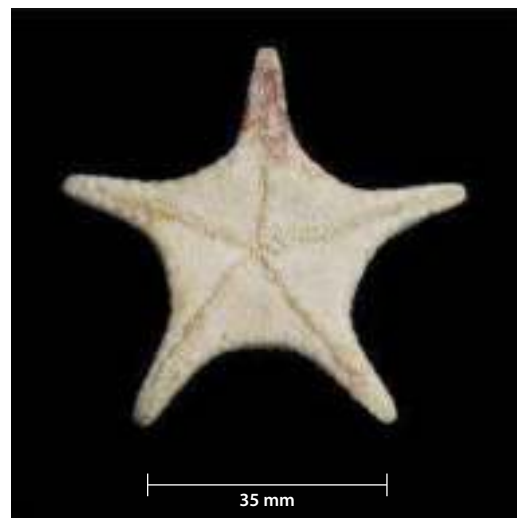
Toraster tuberculatus and *Odontaster australis*, but *C. granularis* is usually a bright, shiny red with a smoother aboral texture.

References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 61-62 (277pp.).

***Cladaster macrobrachius* (ClaMac)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Goniasteridae
Genus:	<i>Cladaster</i>
Species:	<i>macrobrachius</i>
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

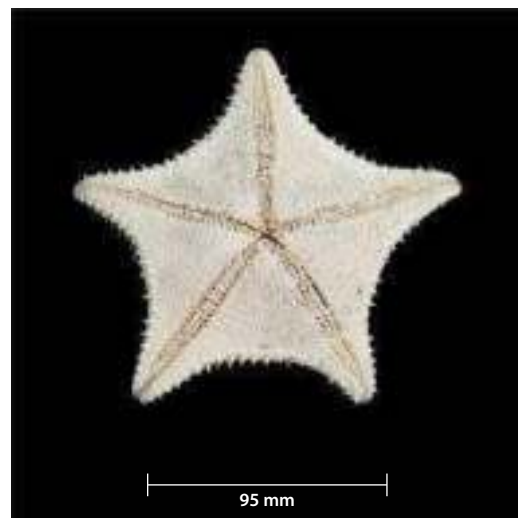
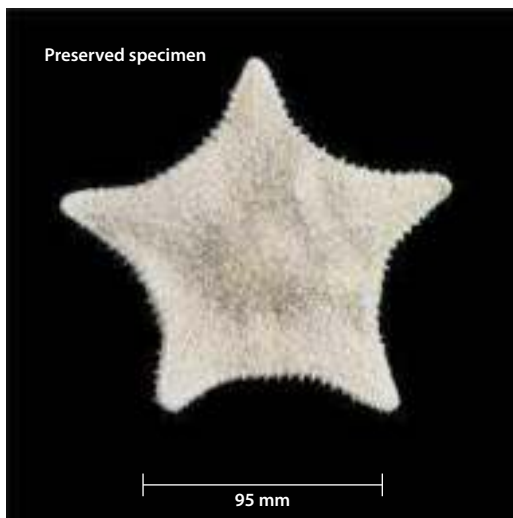
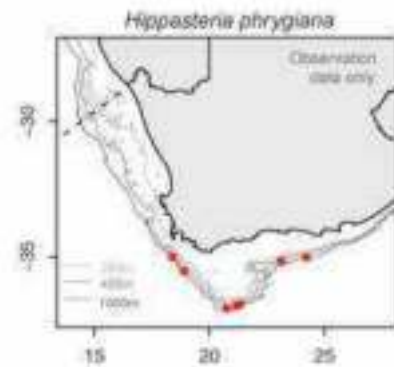
Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 62. (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 239-240. (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Hippasteria phrygiana (HipPhr)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Goniasteridae
Genus:	<i>Hippasteria</i>
Species:	<i>phrygiana</i>
Common name:	Thorny starfish



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.

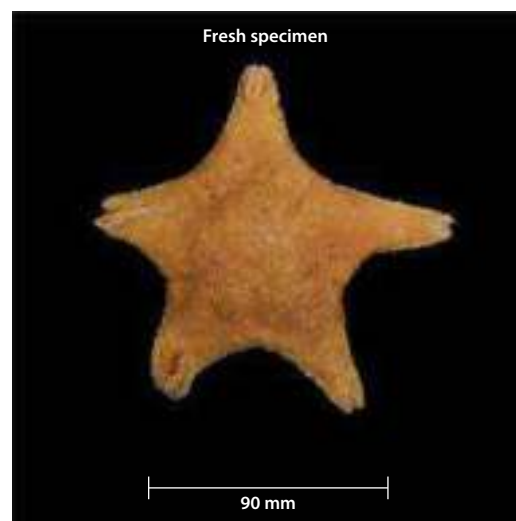
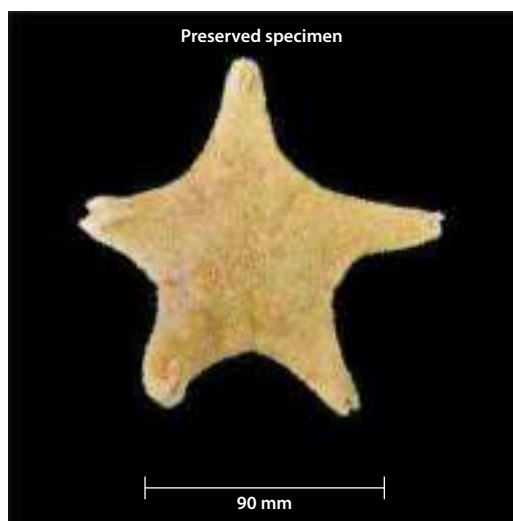
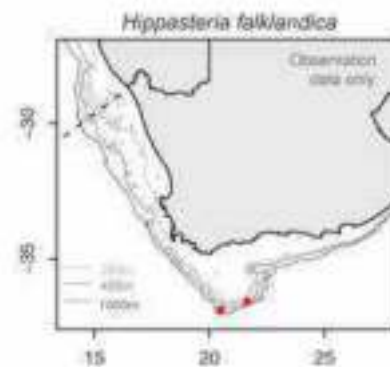
Similar species

Toraster tuberculatus.

References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 63 (277pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Hippasteria falklandica* (HipFal)*Phylum:** Echinodermata**Class:** Asteroidea**Order:** Valvatida**Family:** Goniasteridae**Genus:** *Hippasteria***Species:** *falklandica***Common name:** Falkland starfish**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

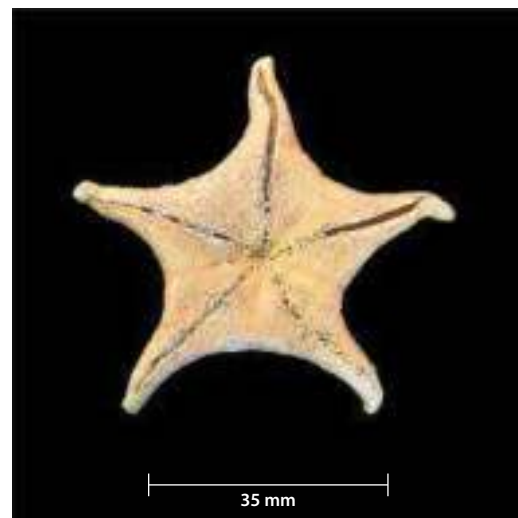
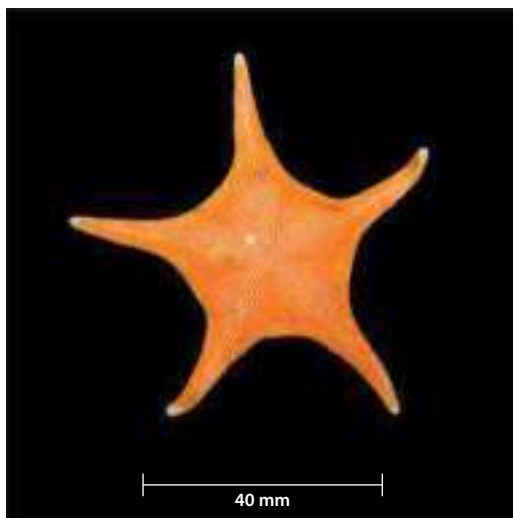
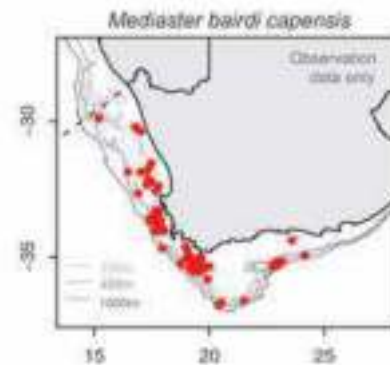
Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. p. 247 (794pp.).

Mah C, Neill K, Eléaume M and Foltz D. 2014. New species and global revision of *Hippasteria* (Hippasterinae: Goniasteridae; Asteroidea; Echinodermata). The Linnean Society of London, *Zoological Journal of the Linnean Society*, 171: 422-456

Species photographs confirmed by Dr C. Mah, Smithsonian, Washington, November 2016.

Mediaster bairdi capensis (MedCap)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Goniasteridae
Genus:	<i>Mediaster</i>
Species:	<i>bairdi capensis</i>
Common name:	Orange sheriff star



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.

Colour

Orange to red.

Size

Average up to 70 mm diameter.

Distribution

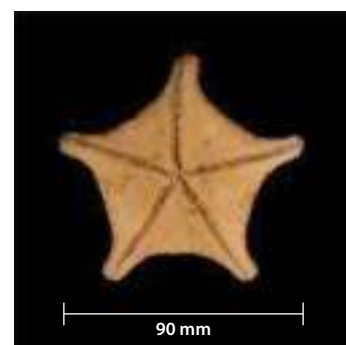
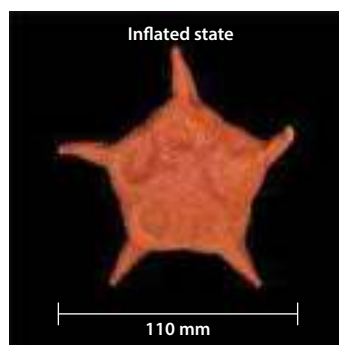
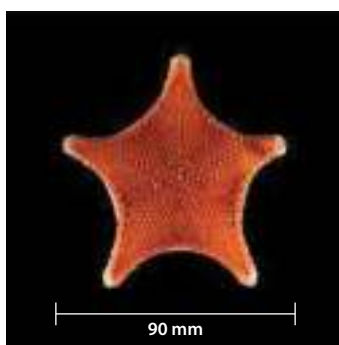
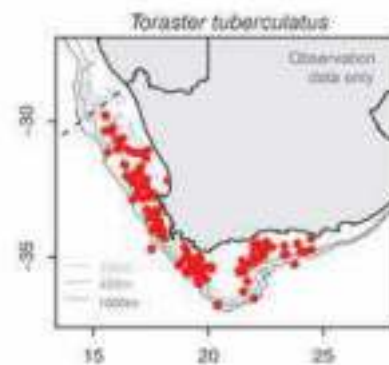
West and South Coasts of South Africa.

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.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 64. (277pp.).
- Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 251-253 (794pp.).

Toraster tuberculatus* (TorTub)*Phylum:** Echinodermata**Class:** Asteroidea**Order:** Valvatida**Family:** Goniasteridae**Genus:** *Toraster***Species:** *tuberculatus***Common name:** Red sheriff star**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.

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

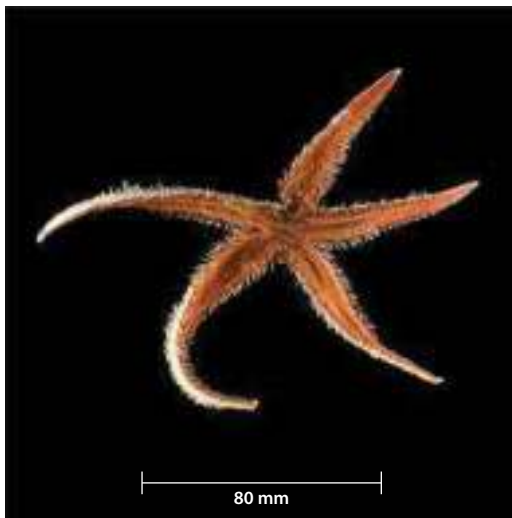
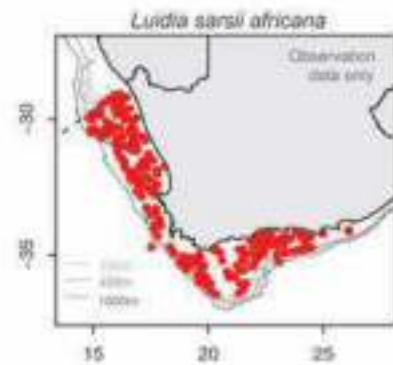
Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. p. 267 (794pp.).

Mortensen T. 1933. *Echinoderms of South Africa (Asteroidea and Ophiuroidea): Papers from Dr Th. Mortensen's Pacific Expedition 1914–1916*, Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening. 93: 215–400.

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Luidia sarsii africana* (LucAfr)**

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Paxillosida
Family:	Luidiidae
Genus:	<i>Luidia</i>
Species:	<i>sarsii africana</i>
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

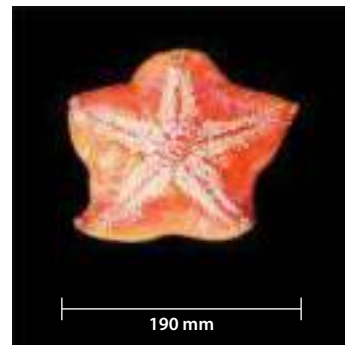
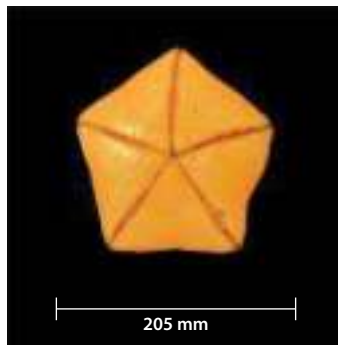
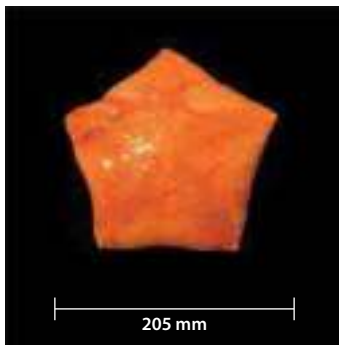
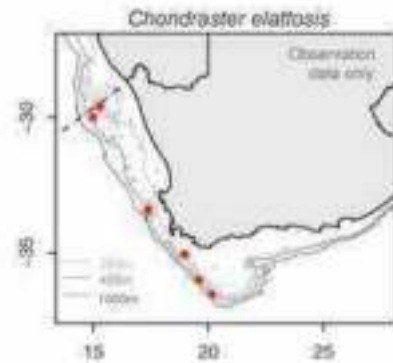
Astropecten polyacanthus and *Astropecten exilis*, however arms of *Luidia africana* are more flattened and broader, i.e. less tapered, and break off central disc easily.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. p. 20. (794pp.).

Chondraster elattosis (ChoEla)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Poraniidae
Genus:	<i>Chondraster</i>
Species:	<i>elattosis</i>
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

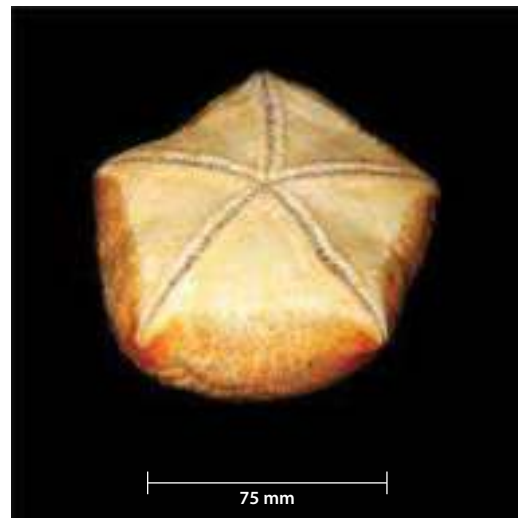
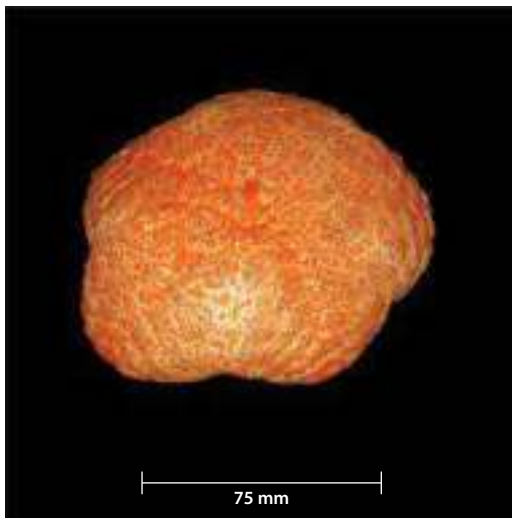
Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 73-74 (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 202-204 (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Spoladaster veneris (SpoBra)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Poraniidae
Genus:	<i>Spoladaster</i>
Species:	<i>veneris</i>
Common name:	Inflated star



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

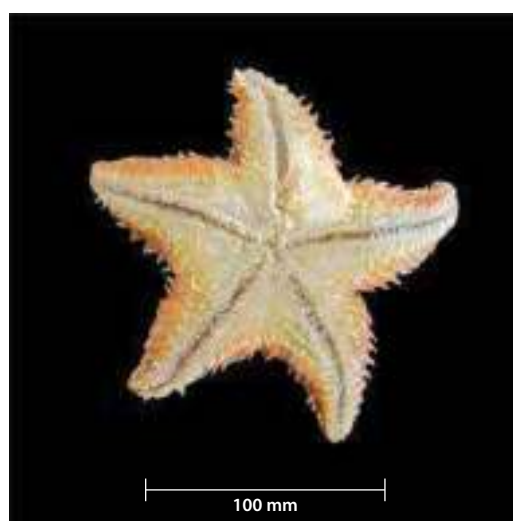
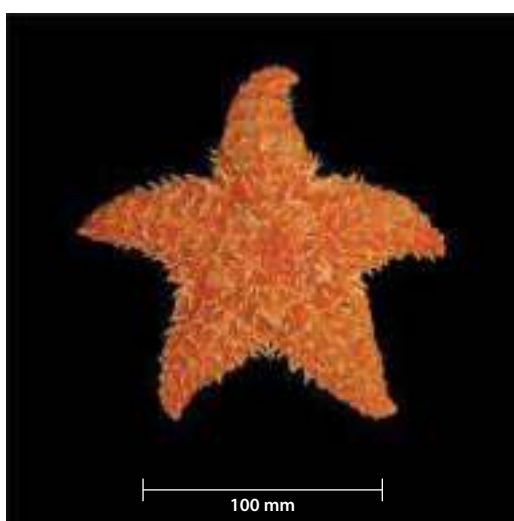
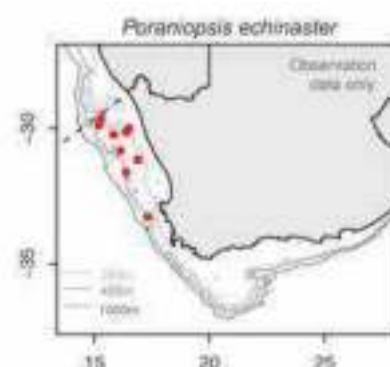
Chondraster elattosis, but *S. brachyactis* inflates and is not as leathery.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 222-224 (794pp.).

***Poraniopsis echinaster* (PorEch)**

Phylum:	Echinodermata
Class:	Asteriidea
Order:	Valvatida
Family:	Poraniidae
Genus:	<i>Poraniopsis</i>
Species:	<i>echinaster</i>
Common name:	Spiky cushion star

**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

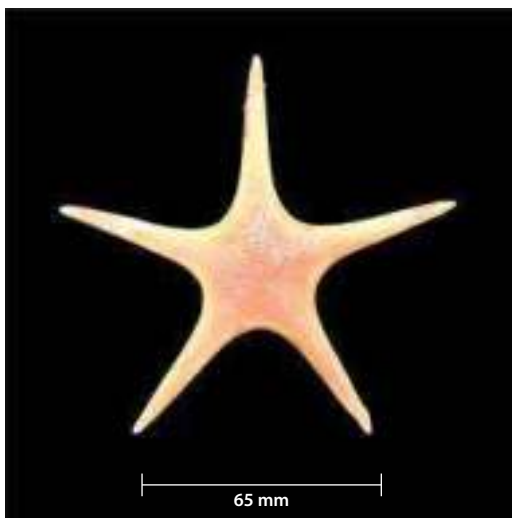
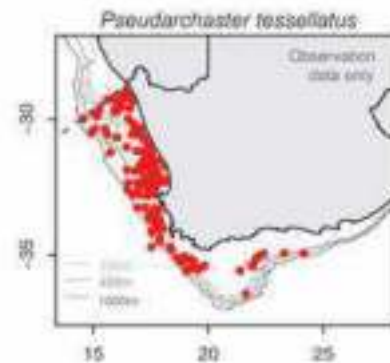
Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 90 (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 220-222 (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Pseudarchaster tessellatus* (PseTes)**

Phylum:	Echinodermata
Class:	Asteriidea
Order:	Paxillosida
Family:	Pseudarchasteridae
Genus:	<i>Pseudarchaster</i>
Species:	<i>tessellatus</i>
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.

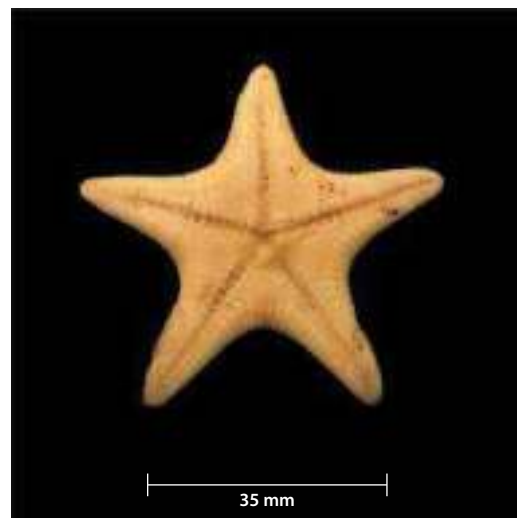
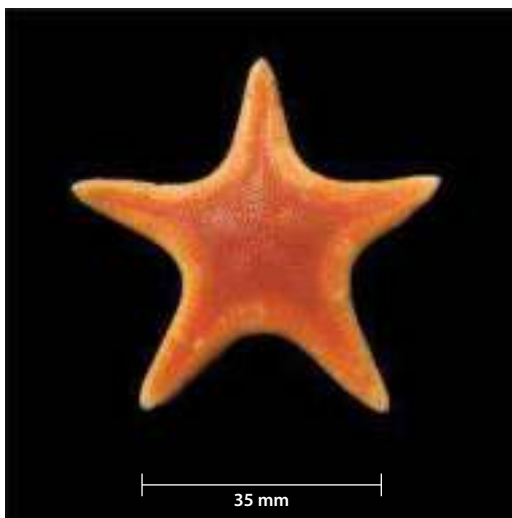
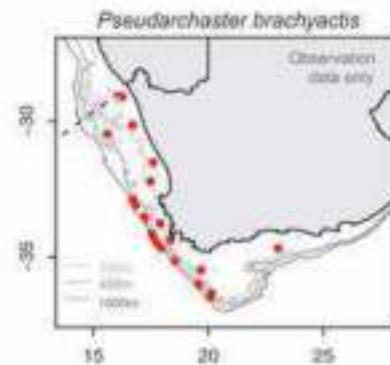
References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 260-264 (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

***Pseudarchaster brachyactis* (PseBra)**

Phylum:	Echinodermata
Class:	Asteriidea
Order:	Paxillosida
Family:	Pseudarchasteridae
Genus:	<i>Pseudarchaster</i>
Species:	<i>brachyactis</i>
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.

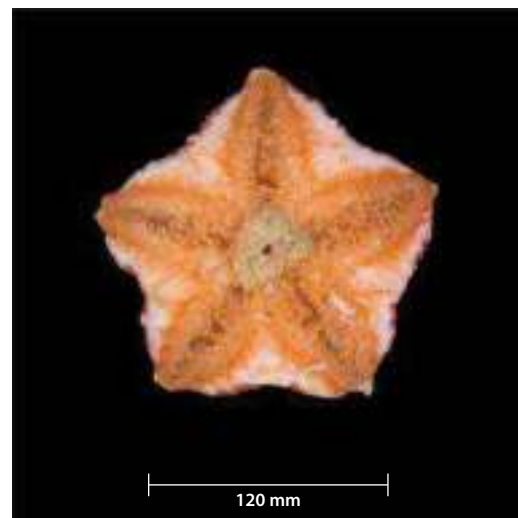
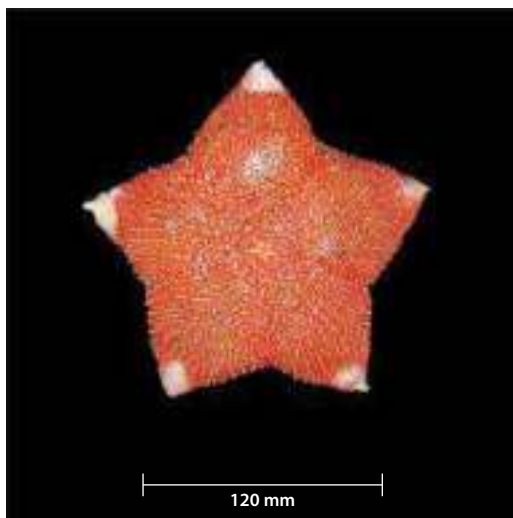
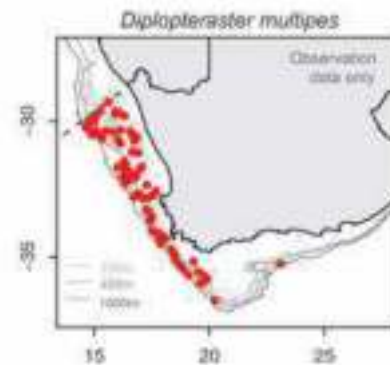
References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 260-264 (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Diplopteraster multipes (DipMul)

Phylum:	Echinodermata
Class:	Asteriidea
Order:	Velatida
Family:	Pterasteridae
Genus:	<i>Diplopteraster</i>
Species:	<i>multipes</i>
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

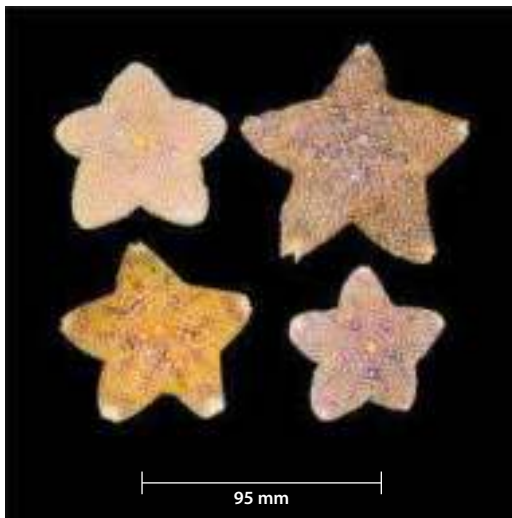
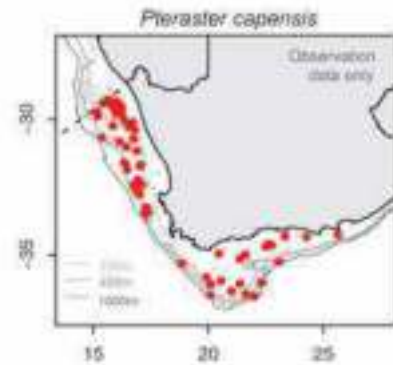
Pteraster capensis can appear similar, however *Diplopteraster multipes* rapidly disintegrates when out of water on deck and becomes mushy very quickly, while *P. capensis* is firm in texture and remains so on deck.

References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 310-313 (794pp.).

Pteraster capensis (PteCap)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Velatida
Family:	Pterasteridae
Genus:	<i>Pteraster</i>
Species:	<i>capensis</i>
Common name:	Common/Brooding cushion star



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 affinus, which has more tapering arms, otherwise similar (keep a look out).

References

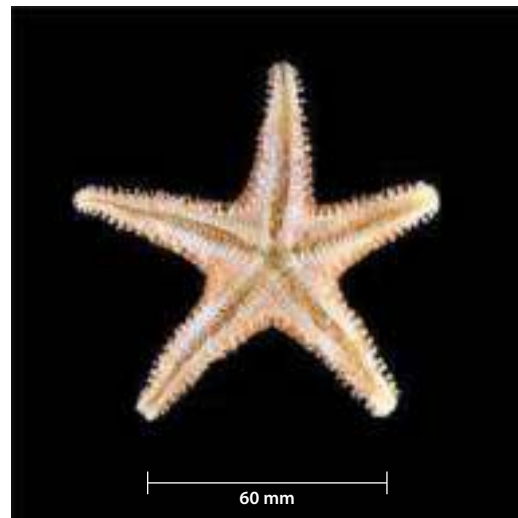
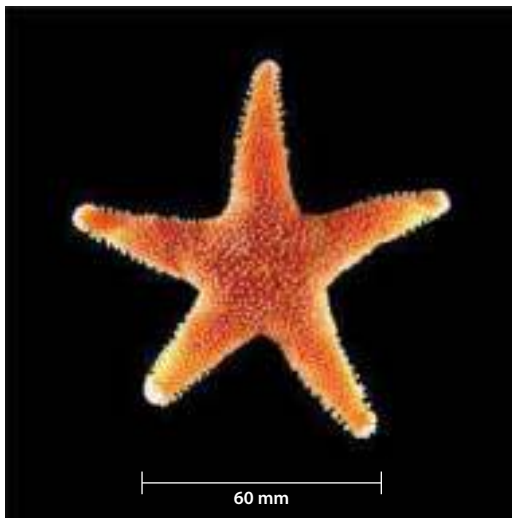
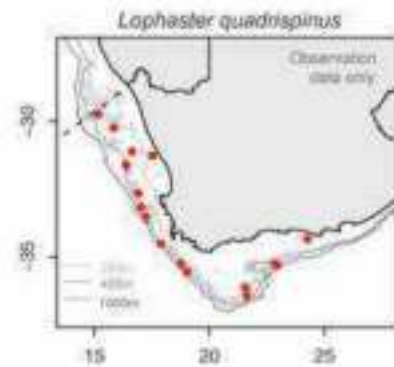
Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth Edition. Struik Nature, Cape Town. p. 188.

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 327-328. (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Lophaster quadrispinus (LopQua)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Echinasteridae
Genus:	<i>Lophaster</i>
Species:	<i>quadrispinus</i>
Common name:	Four-spined starfish



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.

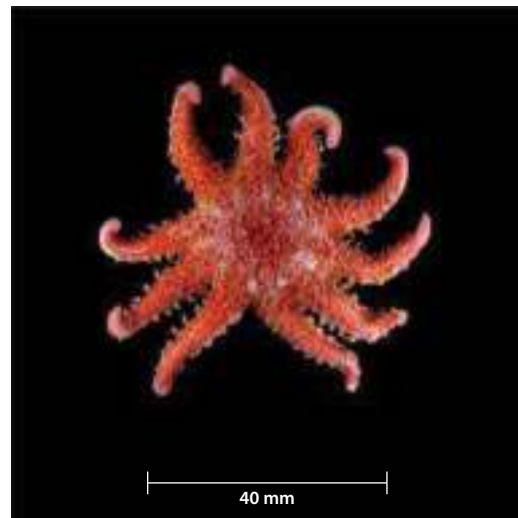
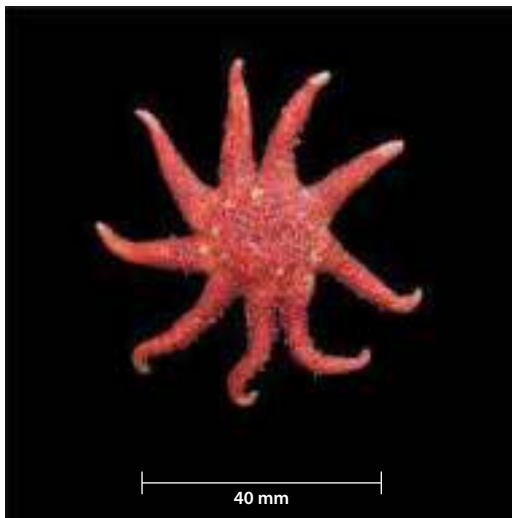
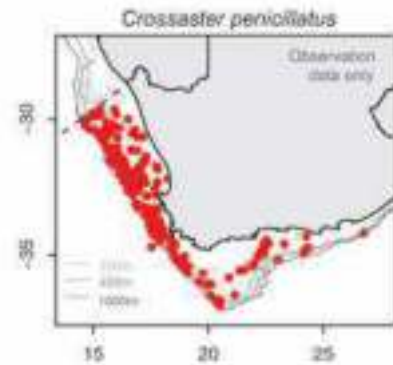
References

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 299-301. (794pp.).

Species identification confirmed by Dr C. Mah, Smithsonian, Washington, June 2015.

Crossaster penicillatus (Blomme)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Solasteridae
Genus:	<i>Crossaster</i>
Species:	<i>penicillatus</i>
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 puffier appearance.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. p. 86 (277pp.).
- Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 296-298 (794pp.).

Solaster spp. (Solast)

Phylum:	Echinodermata
Class:	Asteroidea
Order:	Valvatida
Family:	Solasteridae
Genus:	<i>Solaster</i>
Species:	spp.
Common name:	Sun-shaped orange star



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

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 301-306. (794pp.).

Odontaster australis (OdoAus)

Phylum: Echinodermata

Class: Asteroidea

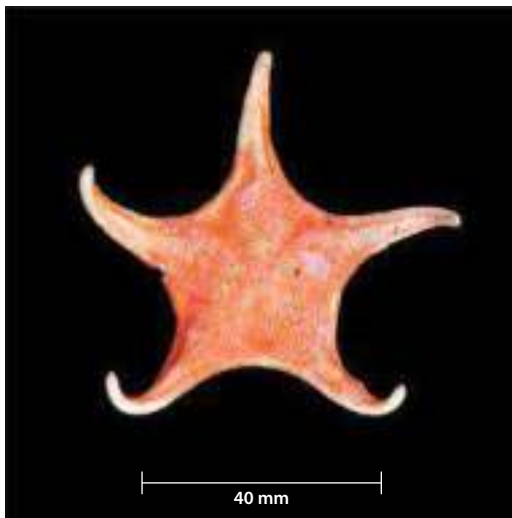
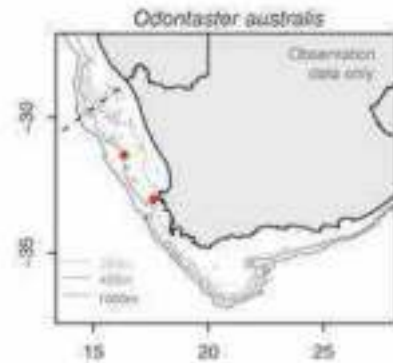
Order: Valvatida

Family: Odontasteridae

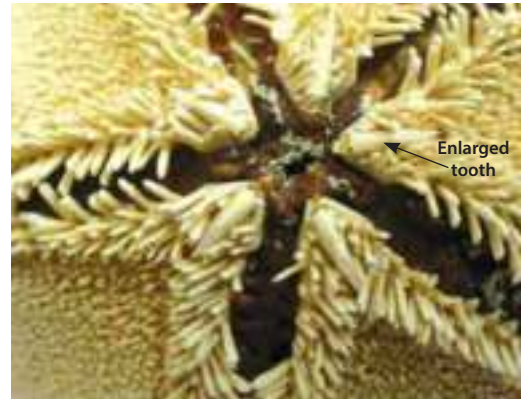
Genus: *Odontaster*

Species: *australis*

Common name: False sheriff star



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.

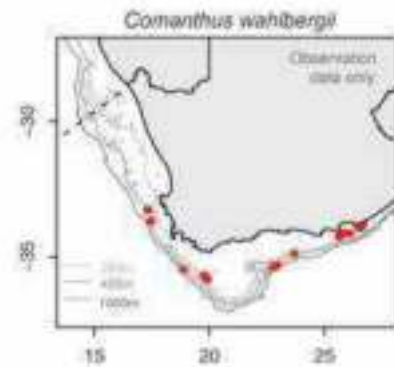
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 58-59. (277pp.).

Clark AM and Downey ME. 1992. *Starfishes of the Atlantic (Volume 3)*. Chapman and Hall: London. pp. 154-155. (794pp.).

Comanthus wahlbergii (ComWah)

Phylum:	Echinodermata
Class:	Crinoidea
Order:	Comatulida
Family:	Comasteridae
Genus:	<i>Comanthus</i>
Species:	<i>wahlbergii</i>
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

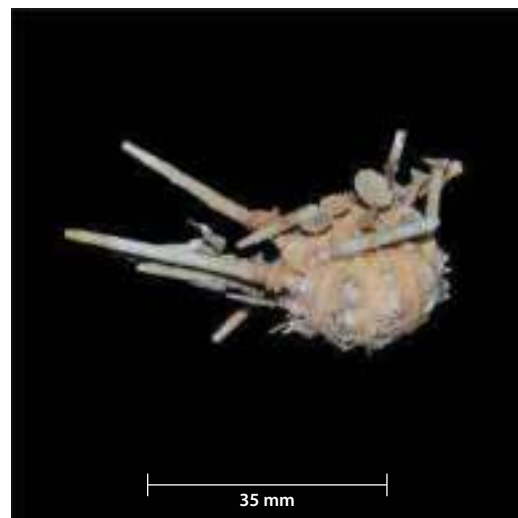
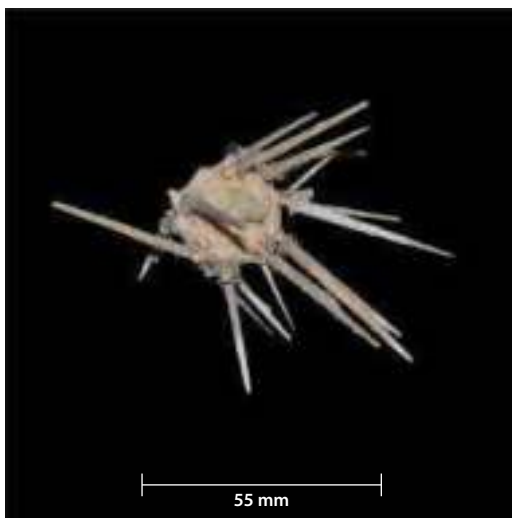
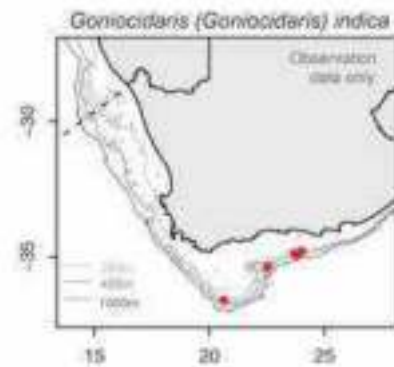
Sea lilies, which are distinguished from feather stars (*Comanthus wahlbergii*) by the absence of a stalk in feather stars. *Tropiometra carinata* is a similar species, but usually smaller and have finer, more numerous pinnules and only 10 long arms.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth Edition. Struik Nature, Cape Town. p. 192.
- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. British Museum (Natural History): London. pp. 11-12 (794pp.).
- Jones G. 2008. *A Field guide to the marine animals of the Cape Peninsula*. Southern Underwater Research Group. p. 172.

Goniocidaris indica (GonInd)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Cidaroida
Family:	Cidaridae
Genus:	<i>Goniocidaris</i> (<i>Goniocidaris</i>)
Species:	<i>indica</i>
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

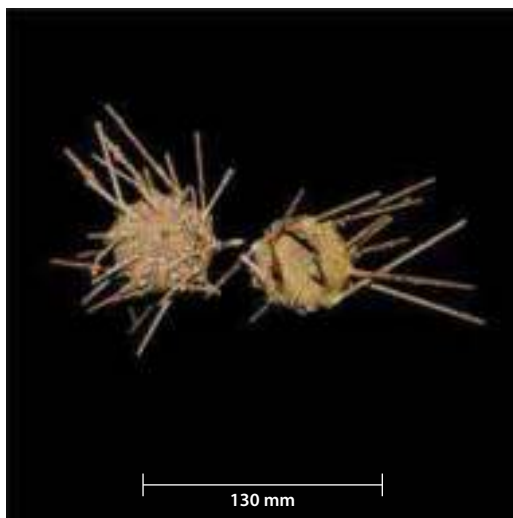
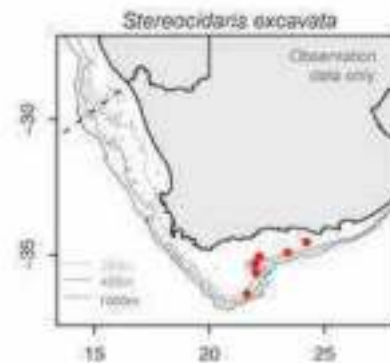
None. Umbrella-like structures distinguish *Goniocidaris indica*.

References

- Filander Z and Griffiths CL. 2014. Additions to and revision of the South African echinoid fauna (Echinodermata: Echinoidea). *African Natural History* 10: 47-56.
- Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. p.15.
- Mortensen T. 1951. *A Monograph of the Echinoidea. V.2: Spatangoida II. Amphisternata II. Spatangiaae, Loveniidae, Pericosmidae, Schizasteridae, Brissidae*. C. A. Reitzel, Copenhagen. pp. 555.

Stereocidaris excavata (SteSpp)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Cidaroida
Family:	Cidaridae
Genus:	<i>Stereocidaris</i>
Species:	<i>excavata</i>
Common name:	Pencil urchin



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.

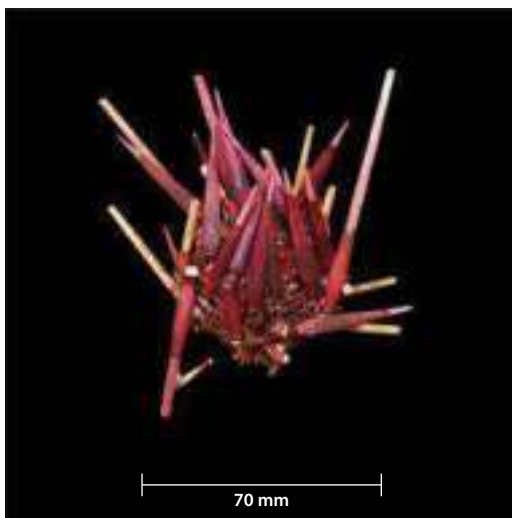
References

Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. p.17.

Mortensen T. 1932. New Contributions to the Knowledge of the Cidarids I: Notes on Some Recent Cidarids. *Det Kkongelige Danske Videnskabernes Selskabs Skrifter, Naturvidenskabelig og Afdeling* 9, 145-174.

***Histocidaris purpurata* (HisPur)**

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Cidaroida
Family:	Histocidaridae
Genus:	<i>Histocidaris</i>
Species:	<i>purpurata</i>
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.

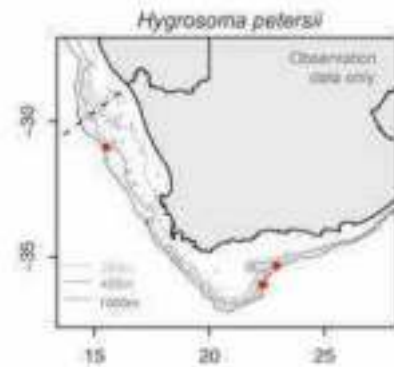
References

Mortensen T. 1928. *A Monograph of the Echinoidea. I. Cidaroida*. C. A. Reitzel & Oxford University Press, Copenhagen & London. pp. 104-107.

Sladen WP. 1889. Report on a collection of echinodermata from the south-west coast of Ireland, dredged in 1888 by a committee appointed by the Royal Irish Academy. *Proceedings of the Royal Irish Academy* (1889-1901), 1, pp. 687-704. p. 699; pl. 29: figs 1-5.

Hygrosoma petersii (TamSha)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Echinothurioida
Family:	Echinothuriidae
Genus:	<i>Hygrosoma</i>
Species:	<i>petersii</i>
Common name:	Grey Tam O'Shanter



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*.

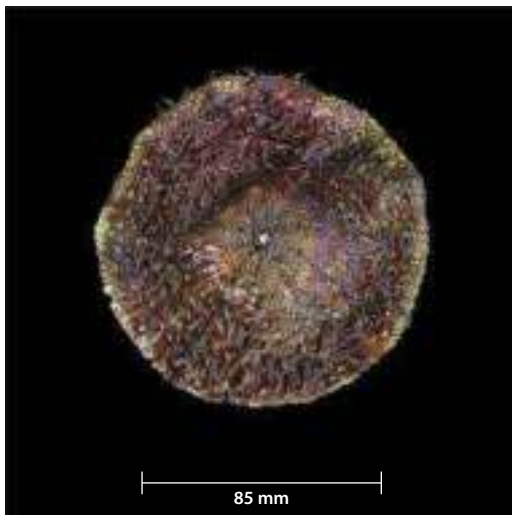
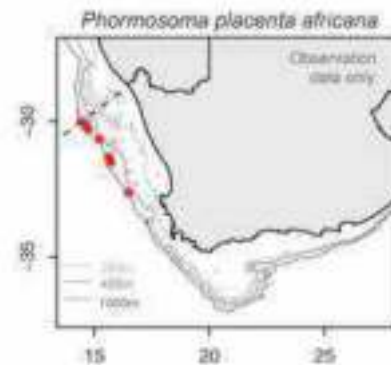
References

Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. pp. 220. (277pp.).

Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 22-23.

***Phormosoma placenta africana* (TamOsh)**

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Echinothurioida
Family:	Echinothuriidae
Genus:	<i>Phormosoma</i>
Species:	<i>placenta africana</i>
Common name:	Beret urchin/Tam O'Shanter

**Distinguishing features**

Soft, flexible, disc-shaped test, texture leather-like, usually collapsed in trawl. Deepened areoles (circular areas around spine-bearing structure). Short, uniform spines, easily brushed off. Spines bearing poisonous glands (handle with caution).

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

Hygrosoma petersii, but *P. placenta africana* differs in that both large tubercles (structure bearing spines) and areoles disappear towards mouth (peristome).

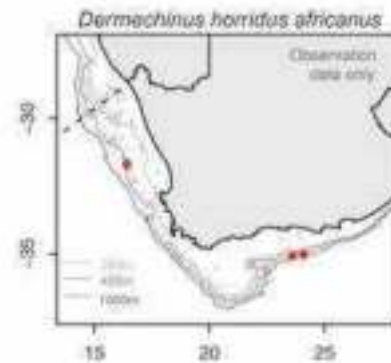
References

Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. pp. 221. (277pp.).

Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 25-26.

***Dermechinus horridus africanus* (DemHor)**

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Camarodonta
Family:	Echinidae
Genus:	<i>Dermechinus</i>
Species:	<i>horridus africanus</i>
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.

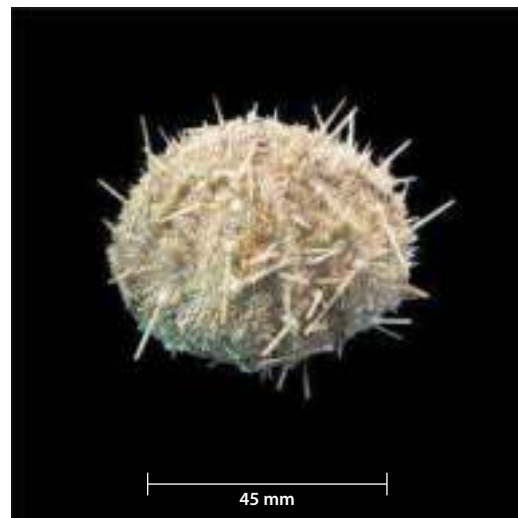
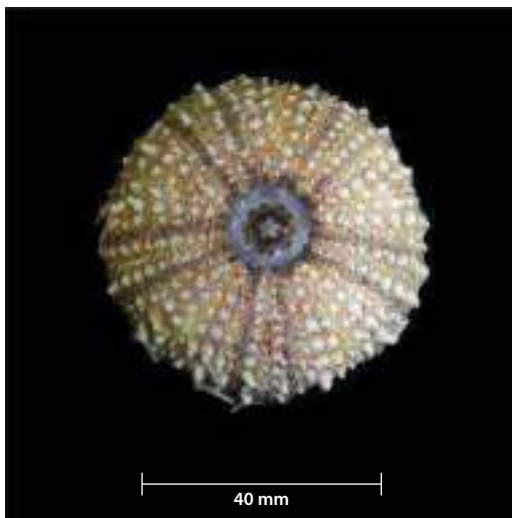
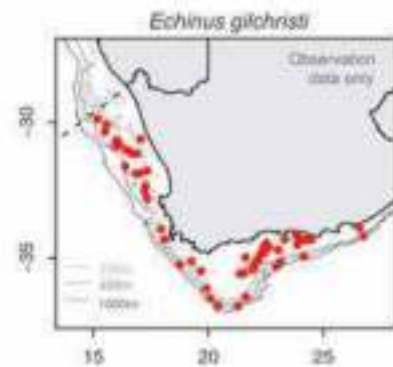
References

Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. p. 235. (277pp.).

Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 39-40.

Echinus gilchristi (EchGil)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Camarodonta
Family:	Echinidae
Genus:	<i>Echinus</i>
Species:	<i>gilchristi</i>
Common name:	Spiky/Common sea urchin



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.

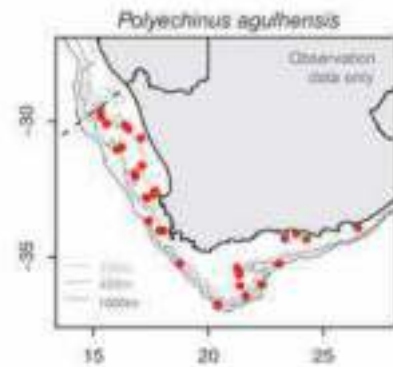
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Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. pp. 277. (277pp.).

Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 40-41.

***Polyechinus agulhensis* (ParGra)**

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Camarodonta
Family:	Echinidae
Genus:	<i>Polyechinus</i>
Species:	<i>agulhensis</i>
Common name:	Large spiky urchin



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

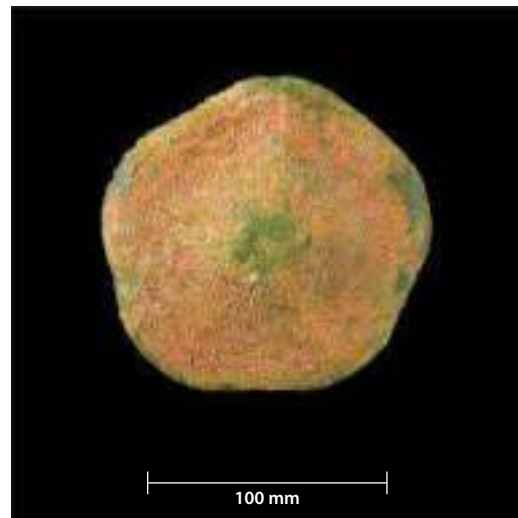
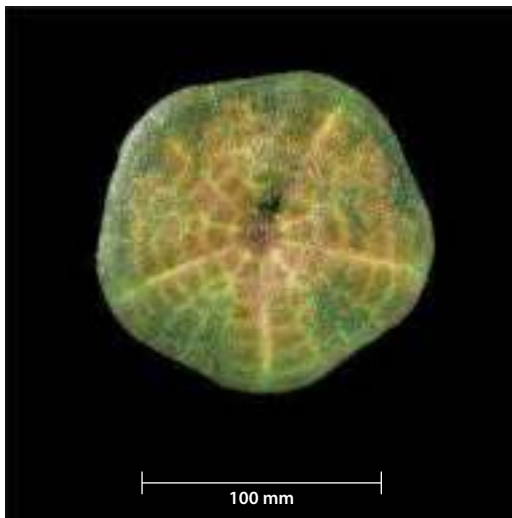
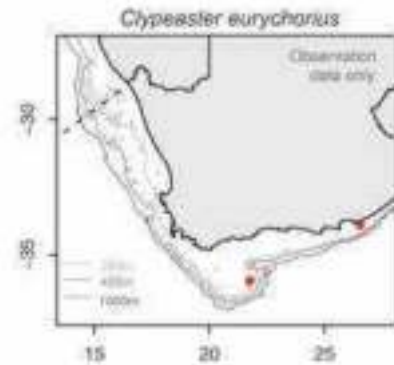
Echinus gilchristi, but *P. agulhensis* has a more tapered, sloping test in volcano shape and lacks fleshy ring around mouth.

References

- Clark HL. 1923. The Echinoderm fauna of South Africa. *Trustees of the South African Museum* 13:7. p. 221, 23 plates.
- Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. p. 238. (277pp.).
- Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 41-42.

Clypeaster eurychorius (ClyEur)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Clypeasteroidea
Family:	Clypeasteridae
Genus:	<i>Clypeaster</i>
Species:	<i>eurychorius</i>
Common name:	Green sunhat urchin



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

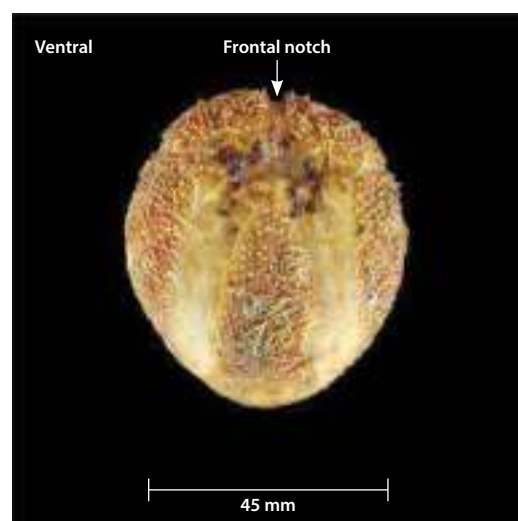
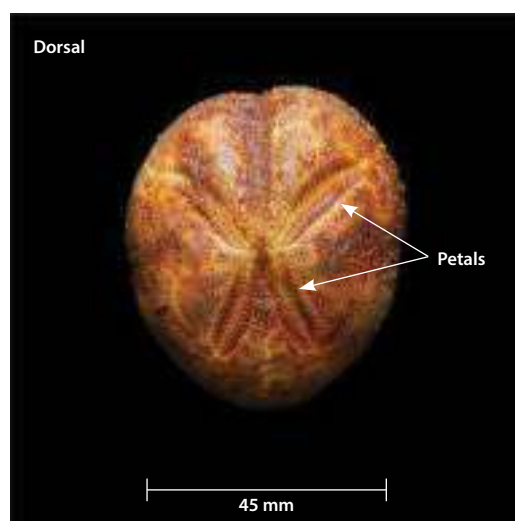
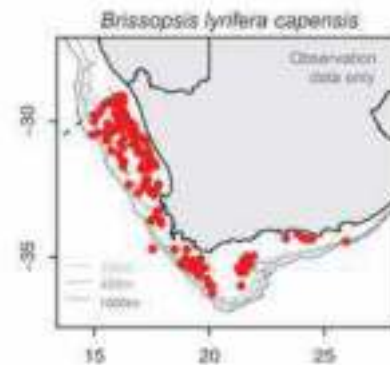
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Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 50-51.

Brissopsis lyrifera capensis (Smouse)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Spatangoida
Family:	Brissidae
Genus:	<i>Brissopsis</i>
Species:	<i>lyrifera capensis</i>
Common name:	Brissopsis/Heart urchins



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

Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. p. 249. (277pp.).

Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. p. 57.

***Echinocardium cordatum* (EchCor)**

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Spatangoida
Family:	Loveniidae
Genus:	<i>Echinocardium</i>
Species:	<i>cordatum</i>
Common name:	Small heart urchin/Sea potato

**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

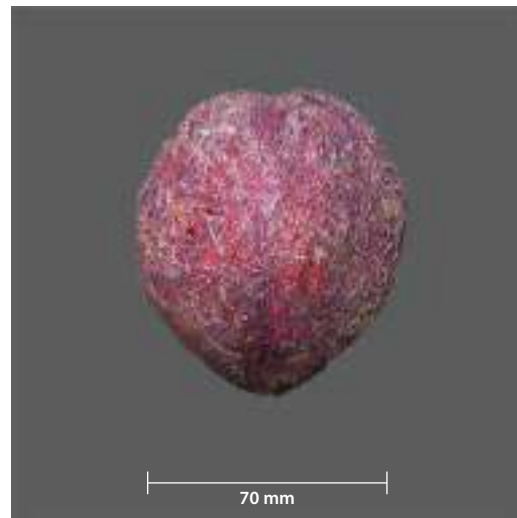
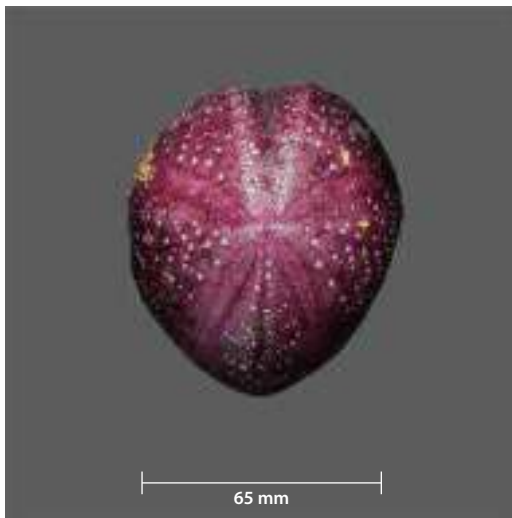
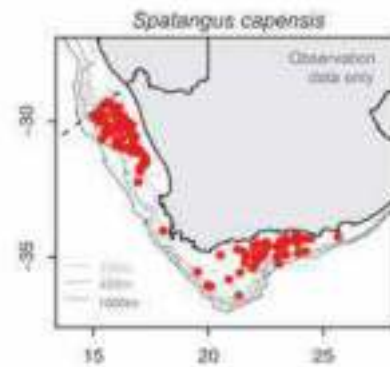
Schizaster lacunosus, which has an extremely pointed end and test very high at posterior end.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth Edition. Struik Nature, Cape Town. p. 236.
- Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. p. 251. (277pp.).
- Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 60-61.

Spatangus capensis (Pheart)

Phylum:	Echinodermata
Class:	Echinoidea
Order:	Spatangoida
Family:	Spatangidae
Genus:	<i>Spatangus</i>
Species:	<i>capensis</i>
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

- Clark AM and Courtman-Stock J. 1976. *The echinoderms of southern Africa*. Publ. No. 766. British Museum (Nat. Hist), London. p. 253. (277pp.).
- Filander Z and Griffiths C. 2017. Illustrated guide to the echinoid (Echinodermata: Echinoidea) fauna of South Africa. *Zootaxa*, 4296 (1): 1-72. pp. 63-64.
- Mortensen T. 1951. *A Monograph of the Echinoidea*. V.2: *Spatangoida* II. *Amphisternata* II. *Spatangidae*, *Loveniidae*, *Pericosmidae*, *Schizasteridae*, *Brissidae*. C. A. Reitzel, Copenhagen. p. 16.

***Ophiocreas* spp. (Ophiu 6)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Euryalida
Family:	Asteroschematidae
Genus:	<i>Ophiocreas</i>
Species:	spp.
Common name:	Brown-skinned snake star

**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

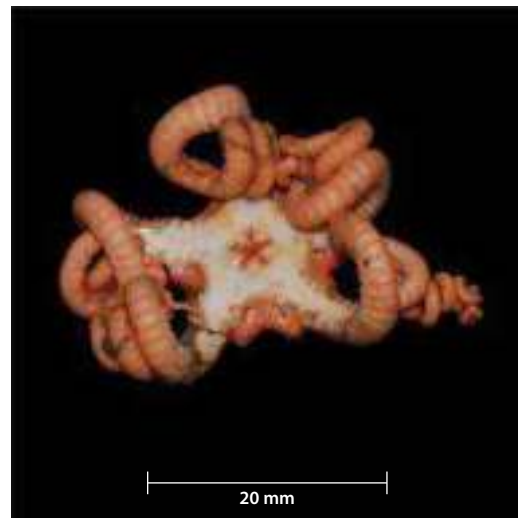
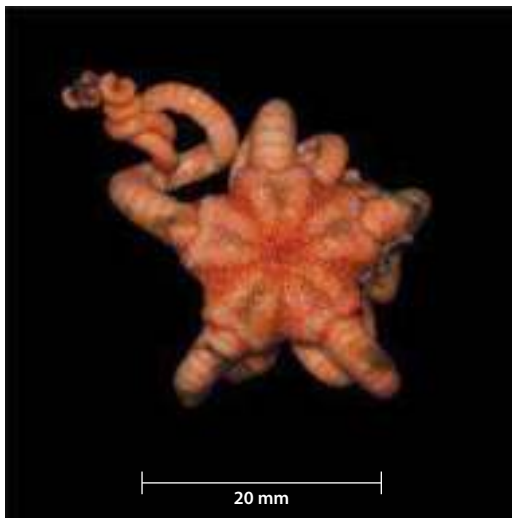
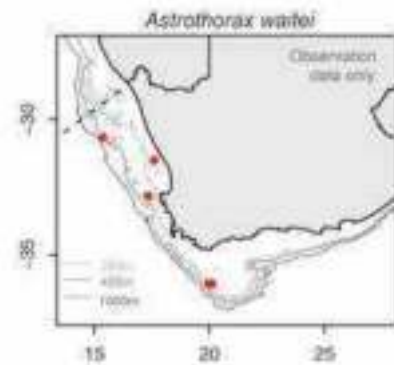
None.

References

Okanishi M. 2012. *Systematic study of the Order Euryalida (Echinodermata, Ophiuroidea) from the Western Pacific*. Seto Marine Biological Laboratory. Kyoto, Kyoto University. pp. 56.

***Astrothorax waitei* (AstWai)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Euryalida
Family:	Gorgonocephalidae
Genus:	<i>Astrothorax</i>
Species:	<i>waitei</i>
Common name:	Apricot basket star



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.

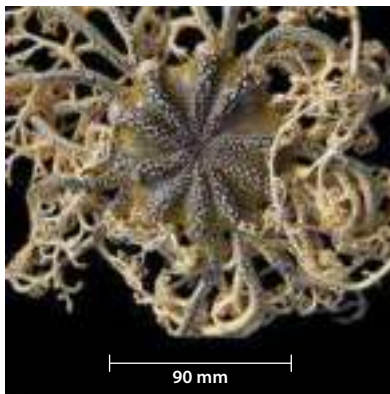
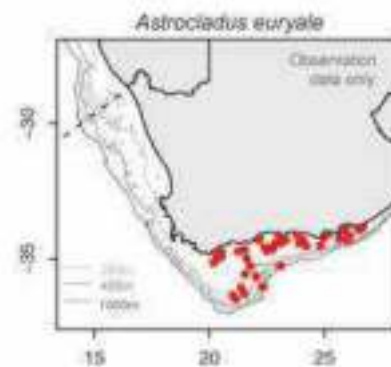
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Olbers JM. 2016. *Taxonomy, Biodiversity and Biogeography of the Ophiuroidea of South Africa*. PhD dissertation, Department of Biological Sciences, University of Cape Town, South Africa. pp. 149-150. (434pp.).

***Astrocladus euryale* (AstEur)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Euryalida
Family:	Gorgonocephalidae
Genus:	<i>Astrocladus</i>
Species:	<i>euryale</i>
Common name:	Black and white basket star



Radial shields and arm bases



Oral papillae

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

Astrodermum capensis, which is purple to pink in colour, with tubercles that do not extend down arms.

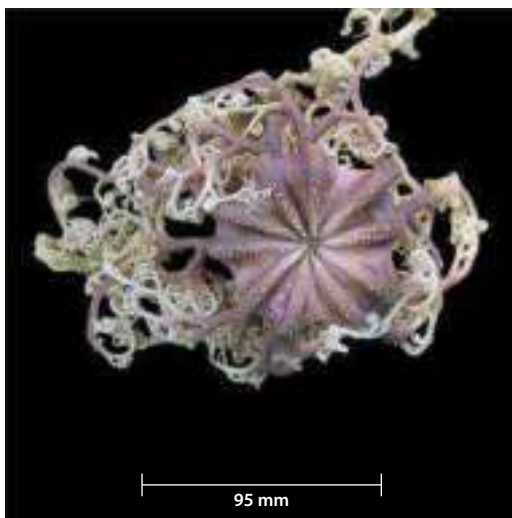
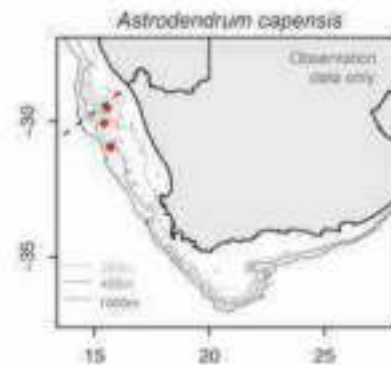
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Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). p. 131. (277pp.).

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)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Euryalida
Family:	Gorgonocephalidae
Genus:	<i>Astrodendrum</i>
Species:	<i>capensis</i>
Common name:	Purple basket star



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 spiniform, 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

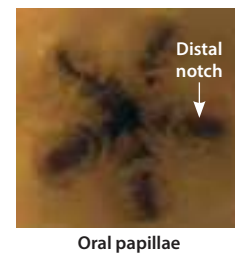
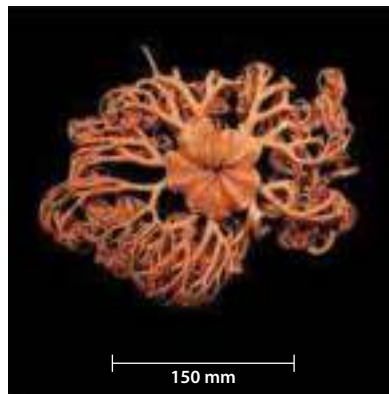
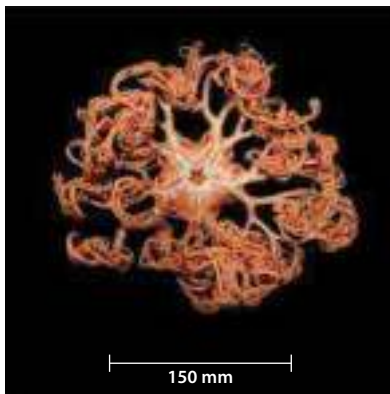
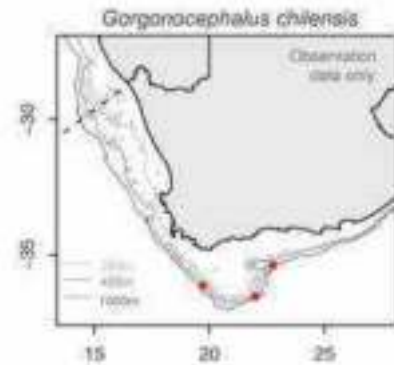
Gorgonocephalus chilensis and *Astrocladus euryale*. Tubercles are wide at base in comparison to *G. chilensis* and *Astrodendrum capensis* is purple to red in colour.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). p. 132. (277pp.).
- 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)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Euryalida
Family:	Gorgonocephalidae
Genus:	<i>Gorgonocephalus</i>
Species:	<i>chilensis</i>
Common name:	Red basket star/Chilean basket star



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 interradiar 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

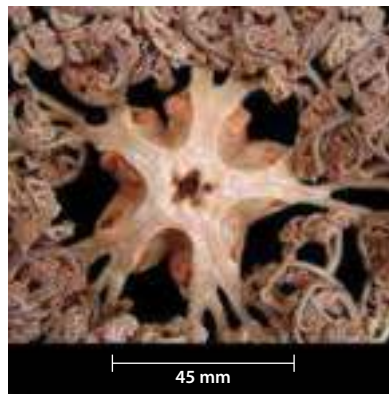
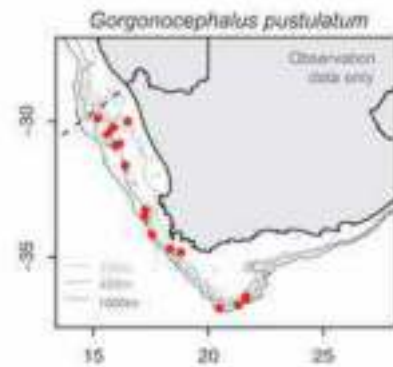
Gorgonocephalus pustulatum and *Astrodendrum capensis*, but *G. chilensis* has more tubercles on radial shields and is red or pink in colour.

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.).

Gorgonocephalus pustulatum (GorEuc)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Euryalida
Family:	Gorgonocephalidae
Genus:	<i>Gorgonocephalus</i>
Species:	<i>pustulatum</i>
Common name:	Brown basket star



Oral papillae

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

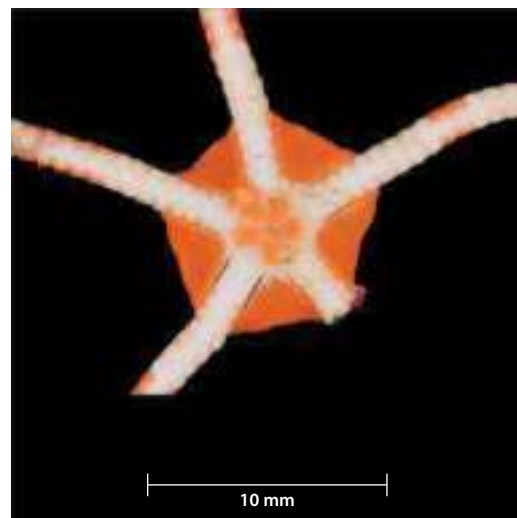
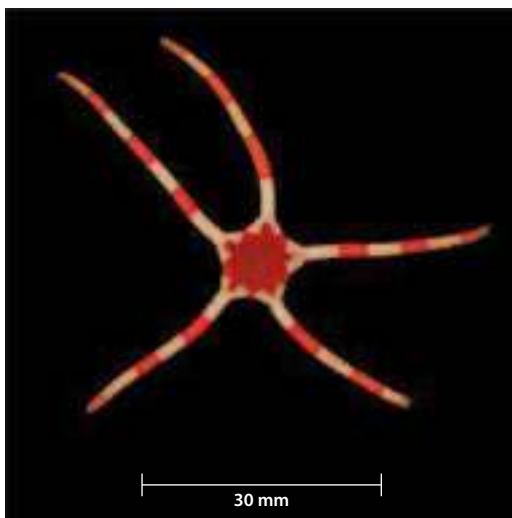
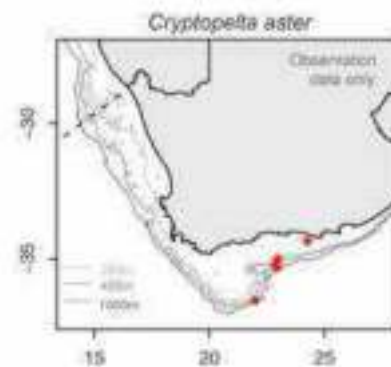
Gorgonocephalus chilensis and *Astrodermum capensis*. *G. pustulatum* has fewer tubercles on radial shields and is usually darker in the centre.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). p. 133. (277pp.).
- 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. 152-154. (434pp.).

***Cryptopelta aster* (Ophiu5)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiodermatidae
Genus:	<i>Cryptopelta</i>
Species:	<i>aster</i>
Common name:	Red and white banded brittle star

**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

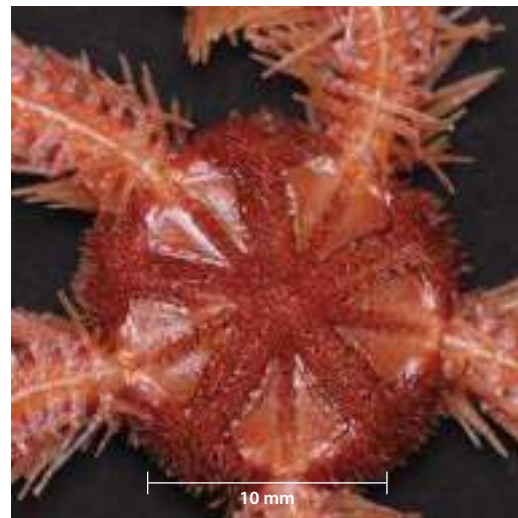
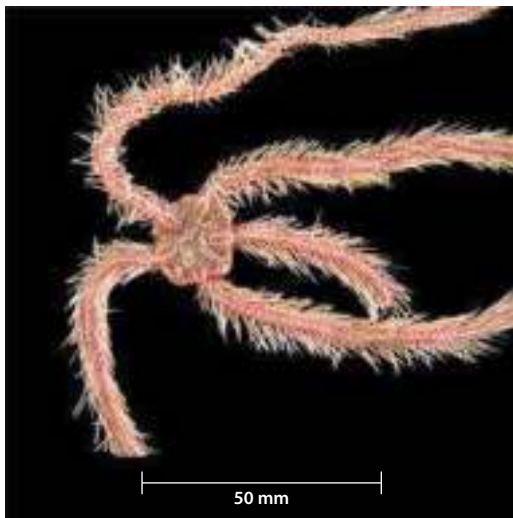
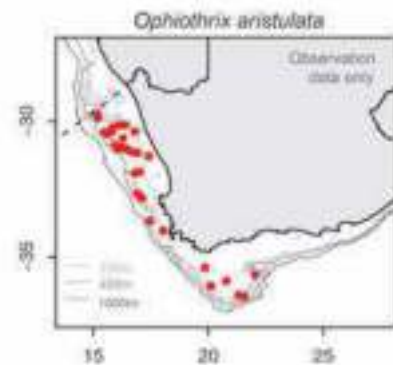
None. Distinctive red-and-white-banded arms make this species unmistakable.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). p. 182. (277pp.).
- 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. 316-317. (434pp.).

Ophiothrix aristulata (OphFra)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiotrichidae
Genus:	<i>Ophiothrix</i>
Species:	<i>aristulata</i>
Common name:	Feathery brittle star



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.

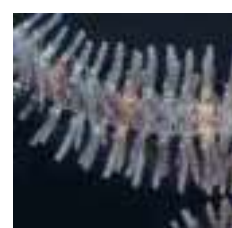
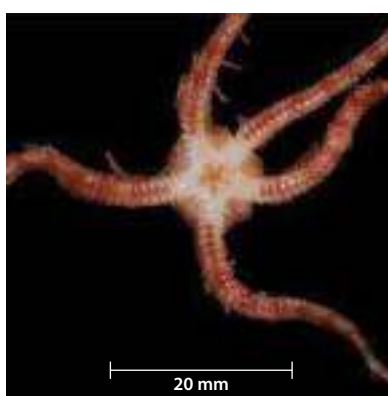
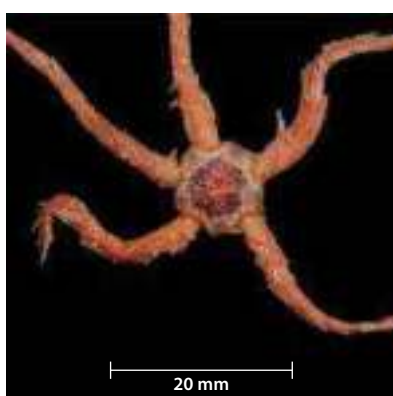
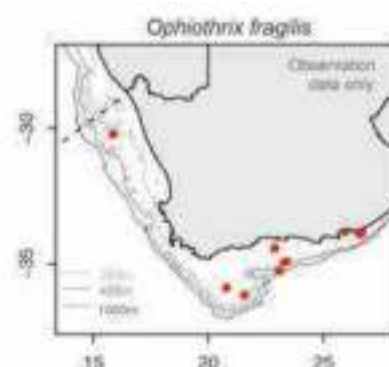
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 142-143. (277pp.).

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. 284-285. (434pp.).

***Ophiothrix fragilis* (Ophiu4)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiothrichidae
Genus:	<i>Ophiothrix</i>
Species:	<i>fragilis</i>
Common name:	Bristly brittle star



Arm spines

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

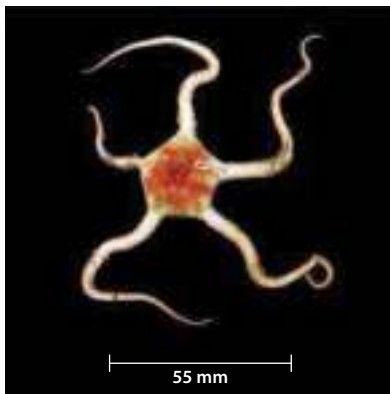
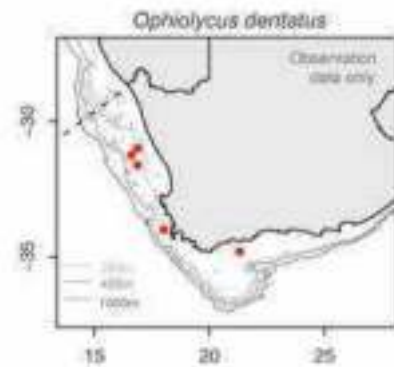
Ophiothrix abyssicola and *O. aristulata*, which have longer arms and naked radial shields while *O. fragilis* has spines on radial shields and shorter arms.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 144-145. (277pp.).
- 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. 288-290. (434pp.).

Ophiolycus dentatus (OphDen)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiomyxidae
Genus:	<i>Ophiolycus</i>
Species:	<i>dentatus</i>
Common name:	Toothed brittle star



Arm spines



Oral papillae

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

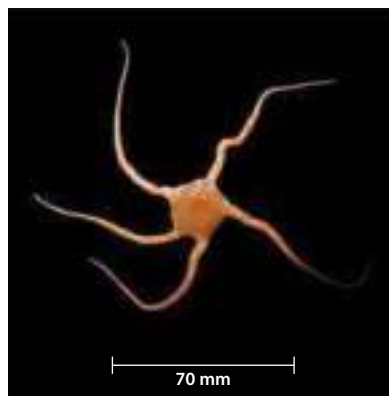
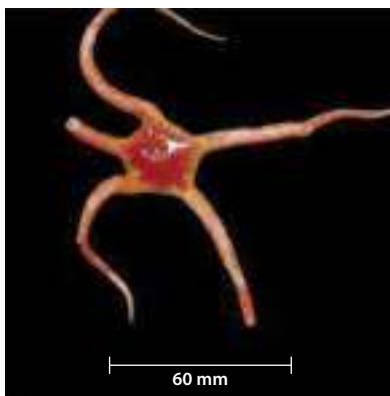
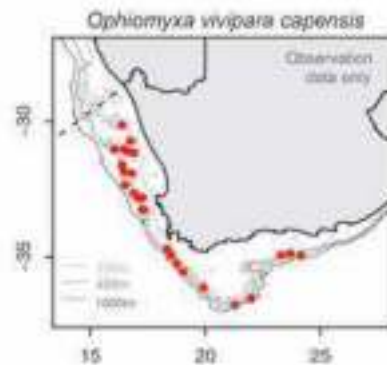
Ophiomyxa vivipara capensis is glossier in appearance and *Ophiolycus dentatus* has larger, more obvious arm spines and many spine-shaped oral papillae.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). p. 135. (277pp.).
- 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. 160-162. (434pp.).

***Ophiomyxa vivipara capensis* (Ophiu2)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiomyxa</i>
Species:	<i>vivipara capensis</i>
Common name:	Bright red disc brittle star



Arm spines



Oral papillae

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

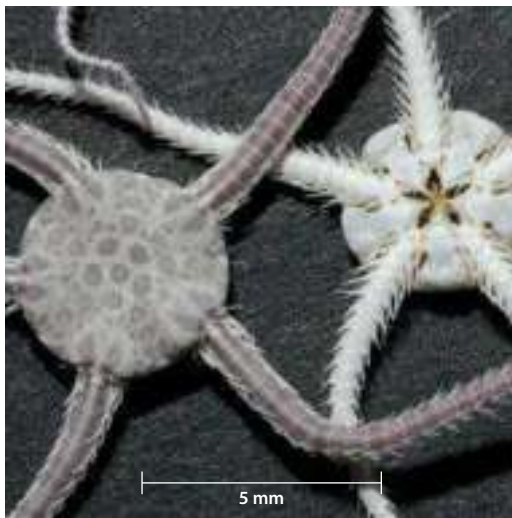
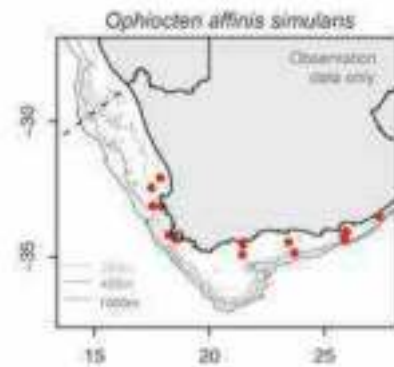
Ophiolycus dentatus, but *Ophiomyxa vivipara capensis* has a smoother appearance, arm spines are shorter (not obvious) and thorny but often covered in skin. Teeth flat and glassy.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 134-135. (277pp.).
- 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.).

Ophiecten affinis simulans (OphAff)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiecten</i>
Species:	<i>affinis simulans</i>
Common name:	Stepping stone brittle star



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

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 192-193. (277pp.).

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. 173-174. (434pp.).

Ophiomisdium pulchellum (Ophiu)

Phylum: Echinodermata

Class: Ophiuroidea

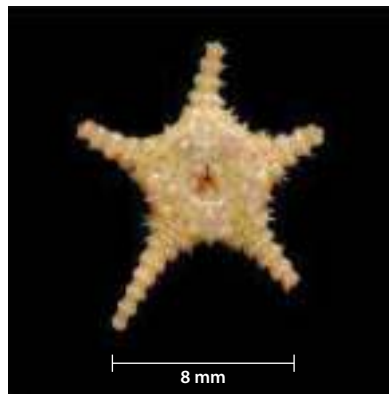
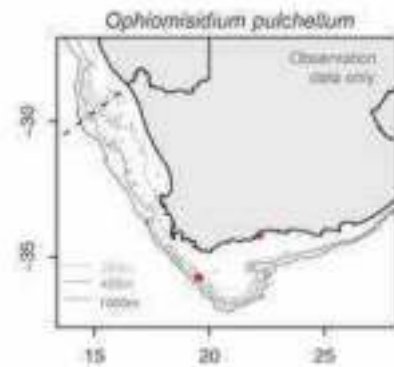
Order: Ophiurida

Family: Ophiuridae

Genus: *Ophiomisdium*

Species: *pulchellum*

Common name: Spiky orange brittle star



Radial shields

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.

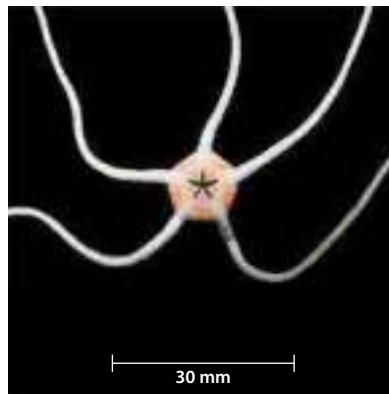
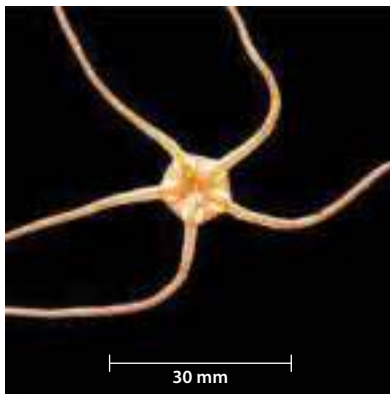
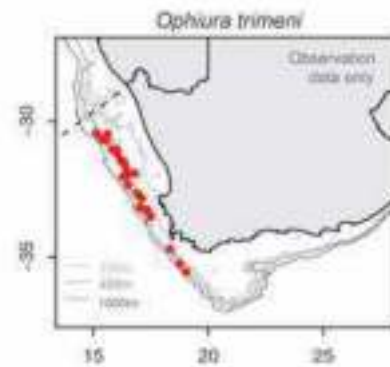
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 190-191. (277pp.).

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. 178-179. (434pp.).

Ophiura trimeni (Ophiu3)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiura</i> (<i>Ophiura</i>)
Species:	<i>trimeni</i>
Common name:	Orange stripe brittle star



Arm spines



Oral papillae

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.

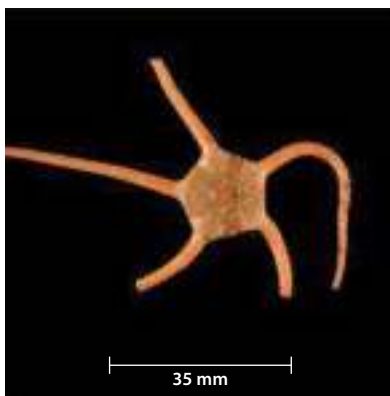
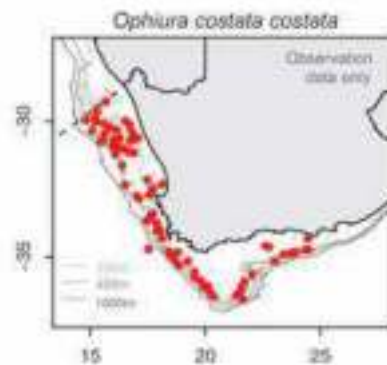
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 194-195. (277pp.).

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)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiura</i> (<i>Ophiuroglypha</i>)
Species:	<i>costata costata</i>
Common name:	Rigid orange brittle star



Arm spines

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.

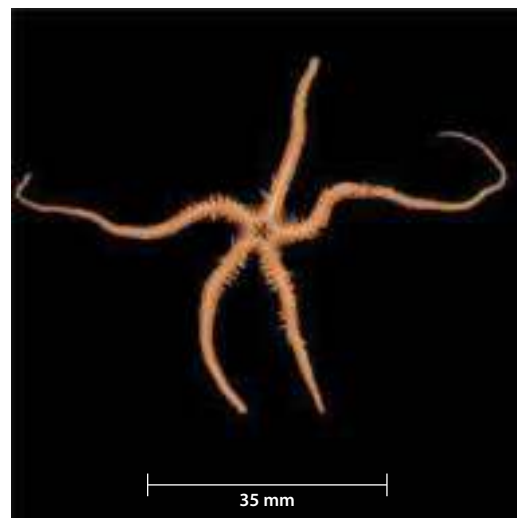
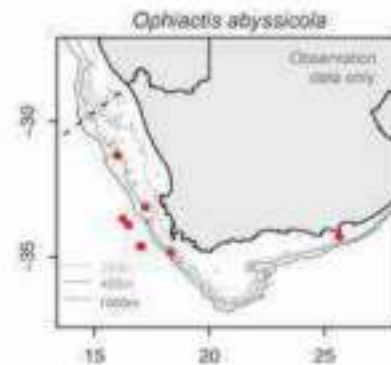
References

Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 195-196. (277pp.).

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.).

Ophiactis abyssicola (OphAby)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiactis</i>
Species:	<i>abyssicola</i>
Common name:	Abyss brittle star



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

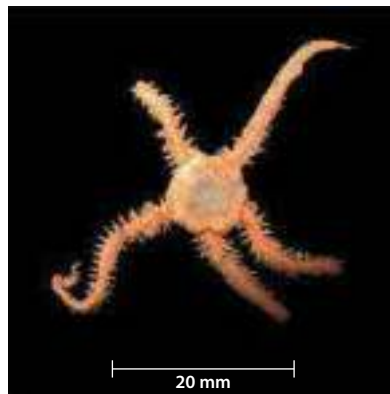
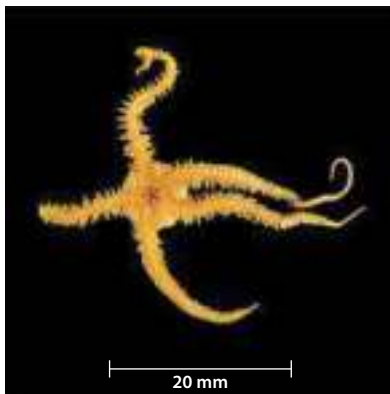
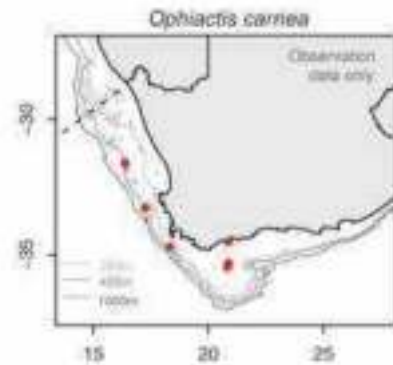
Ophiothrix fragilis, *Ophiothrix aristulata* and *Ophiactis carnea*, but *Ophiactis abyssicola* is distinguished by conical spines on disc and naked radial shields.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). p. 161. (277pp.).
- Clark HL. 1923. The echinoderm fauna of South Africa. *Annals of the South African Museum* 13(7): 221-438. pp. 232-233.
- 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. 230-231. (434pp.).

Ophiactis carnea (OphCar)

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiactis</i>
Species:	<i>carnea</i>
Common name:	Fleshy brittle star



D-shaped radial shields

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

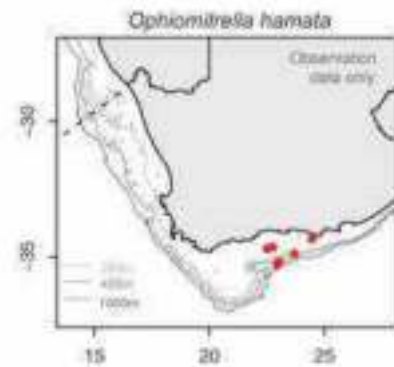
Ophiactis fragilis and *Ophiactis abyssicola*, but *Ophiactis carnea* has D-shaped radial shields.

References

- Clark AM and Courtman-Stock J. 1976. *The Echinoderms of Southern Africa*. London, British Museum (Natural History). pp. 161-162. (277pp.).
- 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. 232-233. (434pp.).

***Ophiomitrella hamata* (OphHam)**

Phylum:	Echinodermata
Class:	Ophiuroidea
Order:	Ophiurida
Family:	Ophiuridae
Genus:	<i>Ophiomitrella</i>
Species:	<i>hamata</i>
Common name:	Coal stack brittle star



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.

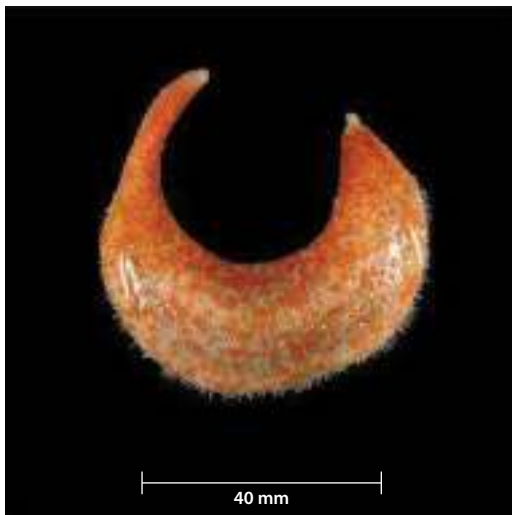
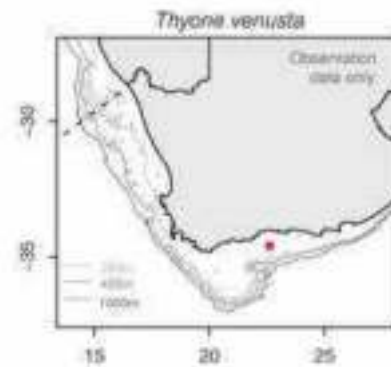
References

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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. 301-302. (434pp.).

***Thyone venusta* (ThyVen)**

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Dendrochirotida
Family:	Thyonidae
Genus:	<i>Thyone</i>
Species:	<i>venusta</i>
Common name:	Orange and white speckled sea cucumber

**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.

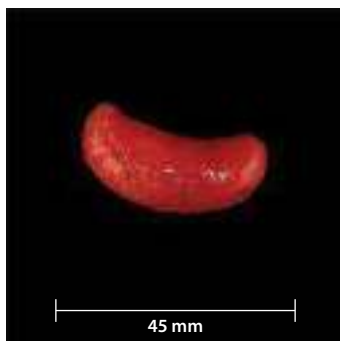
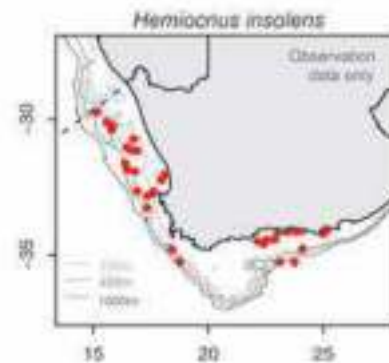
References

Thandar AS and Rambaran R. 2015. On some sea cucumbers (Echinodermata: Holothuroidea) from off the south and west coasts of South Africa collected by the South African Environmental and Observation Network (SAEON). *Zootaxa* 3999 (1): 41-61.

Species identification by Ahmed Thandar.

Hemiocnus insolens (PseIns)

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Dendrochirotida
Family:	Cucumariidae
Genus:	<i>Hemiocnus</i>
Species:	<i>insolens</i>
Common name:	Red-chested sea cucumber (sometimes other colours)



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

- Mjobo Sand Thandar AS. 2016. A new genus and a new species in the sea cucumber subfamily Colochirinae (Echinodermata: Holothuroidea: Dendrochirotida: Cucumariidae) in the Mediterranean Sea. *Zootaxa* 4189 (1): 156-164.
- Thandar AS. 2008. Additions to the holothuroid fauna of the southern African temperate faunistic provinces, with descriptions of new species. *Zootaxa* 1697: 1-57.
- Thandar AS and Rambaran R. 2015. On some sea cucumbers (Echinodermata: Holothuroidea) from off the south and west coasts of South Africa collected by the South African Environmental and Observation Network (SAEON). *Zootaxa* 3999 (1): 41-61.
- Species identification by Ahmed Thandar.

***Psolus griffithsi* (PsoGri)**

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Dendrochirotida
Family:	Psolidae
Genus:	<i>Psolus</i>
Species:	<i>griffithsi</i>
Common name:	Scaled sea cucumber

**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

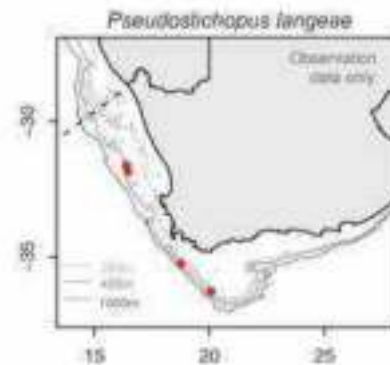
Psolus agulhasicus.

References

Thandar AS. 2009. New species and a new record of sea cucumbers from deep waters of the South African temperate region (Echinodermata: Holothuroidea). *Zootaxa* 2013: 30–42.

***Pseudostichopus langeae* (Mesoth)**

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Aspidochirotida
Family:	Synallactidae
Genus:	<i>Pseudostichopus</i>
Species:	<i>langeae</i>
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.

Colour

Skin is covered in sand grains, but when the encrustations are washed off, the skin is opaque, off-white to cream in colour.

Size

Up to 70 mm in length, 8-10 mm diameter.

Distribution

Endemic. West and South Coasts of South Africa, ranging in depth from \pm 100-400 m.

Similar species

Pseudostichopus echinatus from the East Coast.

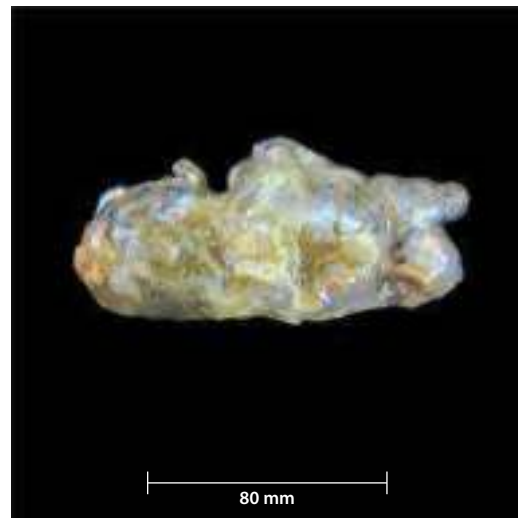
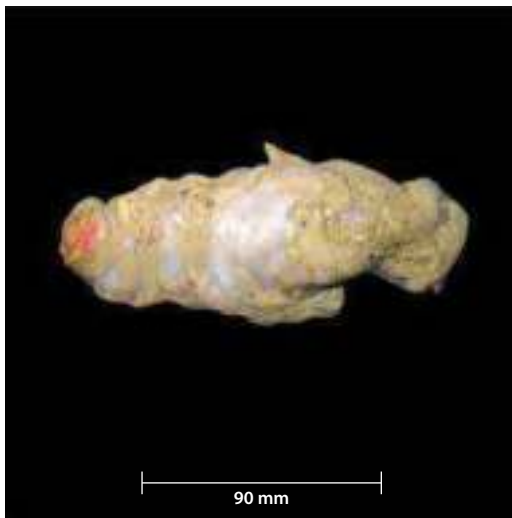
References

Thandar AS. 2009. New species and a new record of sea cucumbers from deep waters of the South African temperate region (Echinodermata: Holothuroidea). *Zootaxa* 2013: 30-42.

Species identification by Ahmed Thandar.

Zygothuria lactea (MesLac)

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Aspidochirotida
Family:	Mesothuriidae
Genus:	<i>Zygothuria</i>
Species:	<i>lactea</i>
Common name:	Slimy deep-water sea cucumber



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.

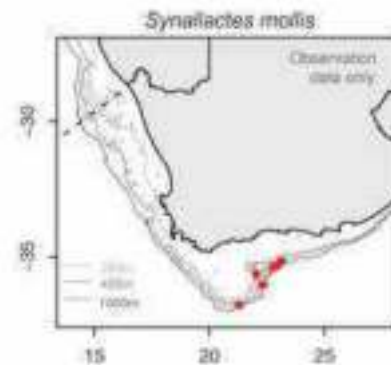
References

Thandar AS and Rambaran R. 2015. On some sea cucumbers (Echinodermata: Holothuroidea) from off the south and west coasts of South Africa collected by the South African Environmental and Observation Network (SAEON). *Zootaxa* 3999 (1): 41-61.

Species identification by Ahmed Thandar.

Synallactes mollis (SynMol)

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Aspidochirotida
Family:	Synallactidae
Genus:	<i>Synallactes</i>
Species:	<i>mollis</i>
Common name:	South coast purple sea cucumber



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.

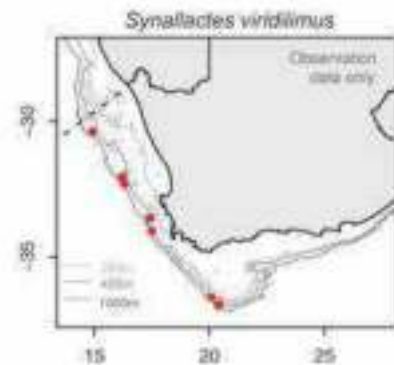
References

Thandar AS and Rambaran R. 2015. On some sea cucumbers (Echinodermata: Holothuroidea) from off the south and west coasts of South Africa collected by the South African Environmental and Observation Network (SAEON). *Zootaxa* 3999 (1): 41-61.

Species identification by Ahmed Thandar.

***Synallactes viridilimus* (PurCuc)**

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Aspidochirotida
Family:	Synallactidae
Genus:	<i>Synallactes</i>
Species:	<i>viridilimus</i>
Common name:	Purple sea cucumber

**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. Vento-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.

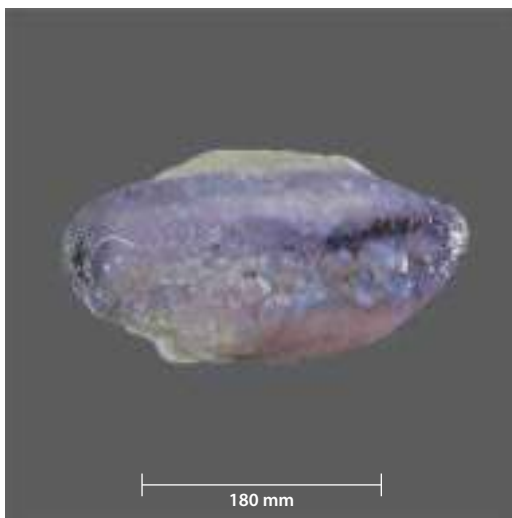
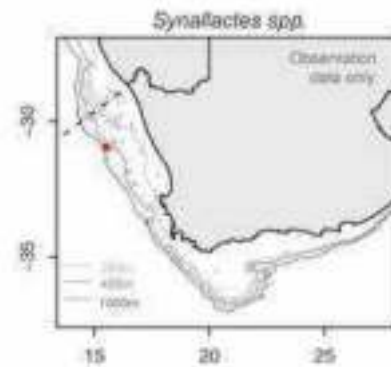
References

Thandar AS and Rambaran R. 2015. On some sea cucumbers (Echinodermata: Holothuroidea) from off the south and west coasts of South Africa collected by the South African Environmental and Observation Network (SAEON). *Zootaxa* 3999 (1): 41-61.

Species identification by Ahmed Thandar.

Synallactes sp. (Synall)

Phylum:	Echinodermata
Class:	Holothuroidea
Order:	Aspidochirotida
Family:	Synallactidae
Genus:	<i>Synallactes</i>
Species:	sp.
Common name:	Large lilac sea cucumber



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

Benthoodytes spp.

References

Tentative generic identification by Ahmed Thandar, but may be a species of *Benthoodytes*. Further taxonomic study is required, hence all specimens found should be retained.



PHYLUM: CHORDATA

Authors

Shirley Parker-Nance¹ and Lara Atkinson²

Citation

Parker-Nance S. and Atkinson LJ. 2018. Phylum Chordata In: Atkinson LJ and Sink KJ (eds) Field Guide to the Offshore Marine Invertebrates of South Africa, Malachite Marketing and Media, Pretoria, pp. 477-490.

¹ South African Environmental Observation Network, Elwandle Node, Port Elizabeth

² South African Environmental Observation Network, Egagasini Node, Cape Town

Phylum: **CHORDATA** Subphylum: Tunicata

Sea squirts and salps

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 Ascidiacea (Sea squirts)

Ascidians are solitary or colonial animals with a firm, incompressible body wall called a test or tunic. This test or tunic surrounding the body of ascidians is made up of a cellulose-like compound, tunicin, resembling that found in plants. These organisms are generally sessile and almost all are hermaphroditic, producing both sperm and eggs, but self-fertilisation does not occur. Larvae may develop externally or within the individual or zooid. The larvae resemble tadpoles; the tail helping them move in the water column until they are fully developed and a suitable habitat is found. Many colonial species also reproduce asexually through stolons or budding, forming new zooids.

The most recent checklist compiled for this group indicates 147 reported species for South Africa. Global estimates indicate more than 2 800 species.

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 blastozoids (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

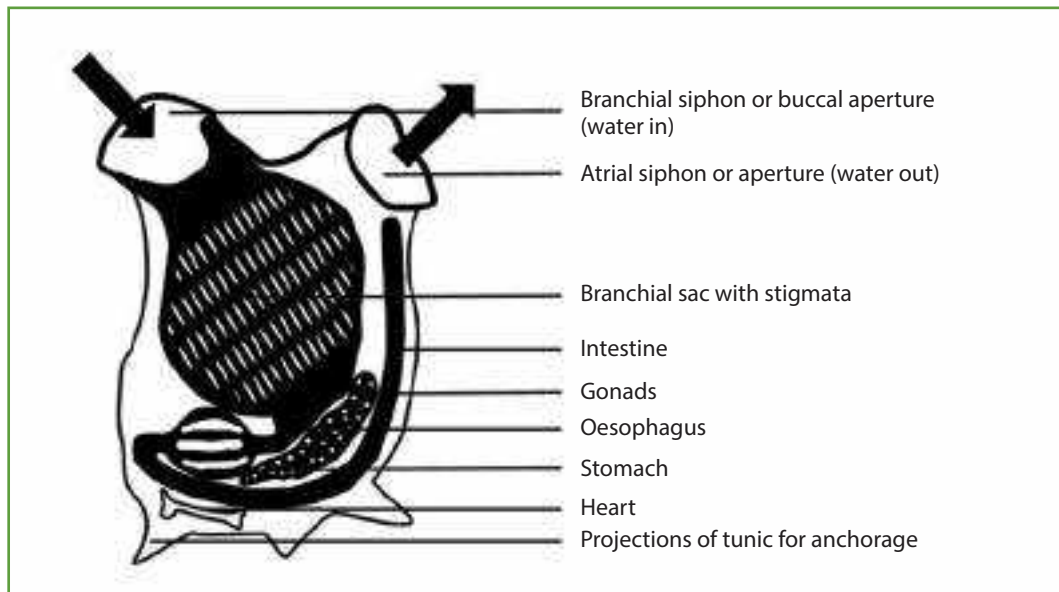
Tunicates require microscopic examination for identification beyond genus level. Tunicates should be relaxed in seawater with menthol crystals for 2 to 4 hours and then preserved by adding 5-10% buffered formalin to the relaxed specimen without disturbing the animal. Ascidians have muscular bodies and 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 anaesthetised 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.

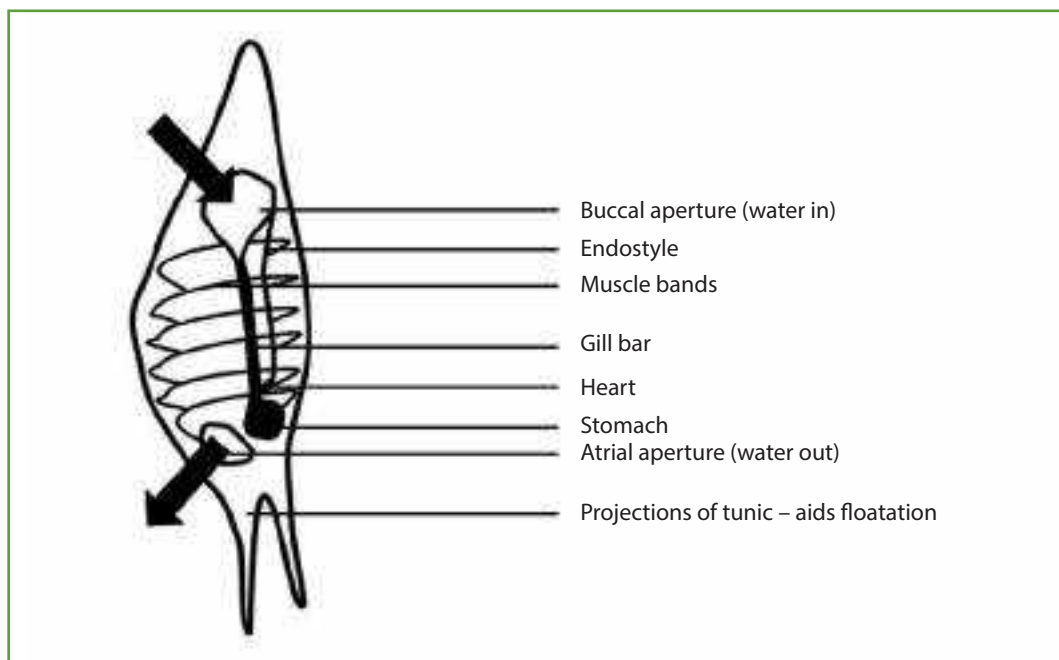
References

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- Campbell NA, Reece JB and Mitchell LG. 1999. *Biology* (5th Ed). Benjamin/Cummings Publishing Company, Inc. Menlo Park, CA. (plus earlier editions)
- Deibel D and Lowen B. 2011. A review of the life cycle and life-history adaptations of pelagic tunicates to environmental conditions. *ICES Journal of Marine Science* 69(3): 358-369.
- Jones G. 2008. *A field guide to the marine animals of the Cape peninsula*. Southern Underwater Research Group Press, Hout Bay, Cape Town, South Africa 271pp.
- Kott P. 1985. The Australian Ascidiacea part 1, Phlebobranchia and Stolidobranchia. *Memoirs of the Queensland Museum* 23:1-440.
- Kott P. 1990. The Australian Ascidiacea part 2, Aplousobranchia (1). *Memoirs of the Queensland Museum* 29:1-266.
- Kott P. 1992. The Australian Ascidiacea part 3, Aplousobranchia (2). *Memoirs of the Queensland Museum* 32:375-620.
- Kott P. 2005. Pycnoclavella (Tunicata: Ascidiacea) species from the western Indian ocean. *African Zoology* 40(2):205-212.
- Monniot C, Monniot F and Laboute P. 1991. *Coral Reef Ascidiaceans of New Caledonia*. Paris: Éditions de l'ORSTOM.
- Williams GC and van Syoc, RJ. 2007. Methods of preservation and anesthetization of marine invertebrates. *Preservation and Anesthetization*: 36-41.
- Zhang, Z.-Q. (Ed.). 2013. Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013). *Zootaxa*, 3703, 1-82.

A) Sea squirt general body plan:

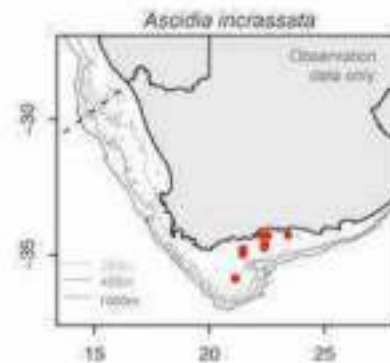


B) Salp general body plan:



Ascidia incrassata (Asclnc)

Phylum:	Chordata
Subphylum:	Tunicata
Class:	Asciacea (sea squirts)
Order:	Phlebobranchia
Family:	Asciidae
Genus:	<i>Ascidia</i>
Species:	<i>incrassata</i>
Common name:	Orange sea squirt



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

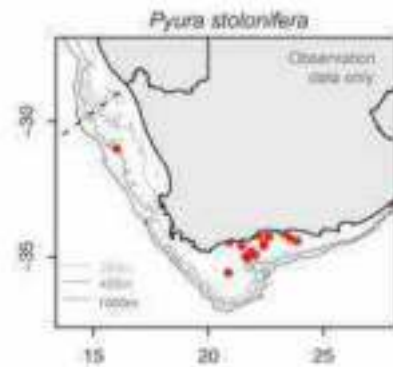
Pyura stolonifera (red bait) is yellow brown and has a tough, leathery tunic but no red bands on siphons.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature, Cape Town. p. 246.
- Carman MR, Bullard SG, Rocha RM, Lambert G, Dijkstra JA, Roper JJ, Goodwin A, Carman MM and Vail EM. 2011. Ascidians at the Pacific and Atlantic entrances to the Panama Canal. *Aquatic Invasions* 6(4): 371-380.
- Jones J. 2008. *A field guide to the marine animals of the Cape Peninsula*. Southern Underwater Research Group Press, Hout Bay, Cape Town, South Africa. 271pp.
- Millar RH. 1956. CXIX. Ascidians from Mozambique, East Africa. *Journal of Natural History* 9(108):913-932.

Pyura stolonifera (Rbait)

Phylum:	Chordata
Subphylum:	Tunicata
Class:	Ascidiacea (sea squirts)
Order:	Stolidobranchia
Family:	Pyuridae
Genus:	<i>Pyura</i>
Species:	<i>stolonifera</i>
Common name:	Red bait



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

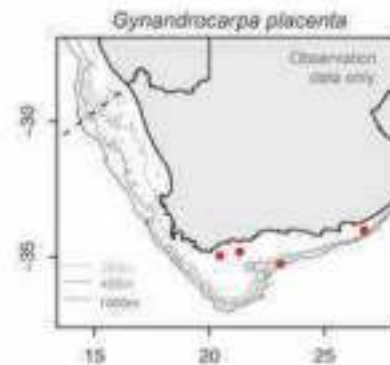
Pyura herdmani, which has large, pointed papillae on the tunic particularly around the siphons. Not as abundant as *P. stolonifera* and occurs in sheltered areas.

References

- Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature, Cape Town. p. 246.
- Monniot C, Monniot F, Griffiths C and Schleyer M. 2001. Ascidians of South Africa. *Annals of the South African Museum* 108(1): 1-141. pp. 113-114.

Gynandrocarpa placenta (GynPla)

Phylum:	Chordata
Subphylum:	Tunicata
Class:	Asciacea (sea squirts)
Order:	Stolidobranchia
Family:	Styelidae
Genus:	<i>Gynandrocarpa</i>
Species:	<i>placenta</i>
Common name:	Elephant's ears ascidian



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.

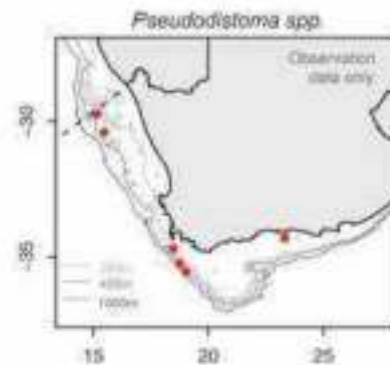
References

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature, Cape Town. p. 248.

Monniot C, Monniot F, Griffiths C and Schleyer M. 2001. Ascidians of South Africa. *Annals of the South African Museum* 108(1): 1-141. pp. 88-91.

***Pseudodistoma* spp. (AscBul)**

Phylum:	Chordata
Subphylum:	Tunicata (Tunicate)
Class:	Asciacea (sea squirts)
Order:	Aplousobranchia
Family:	Pseudodistomidae
Genus:	<i>Pseudodistoma</i>
Species:	spp.
Common name:	Soft lightbulb ascidian



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

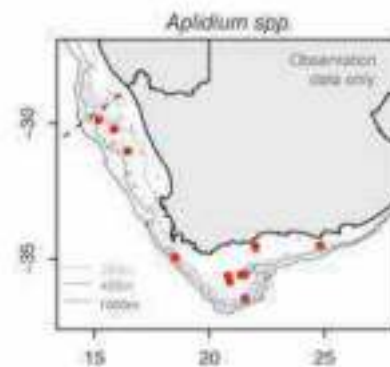
Pseudodistoma delicatum, *P. fragile* and *P. obscurum*, however microscopic examination is required to distinguish further.

References

Monniot C, Monniot F, Griffiths C and Schleyer M. 2001. Ascidians of South Africa. *Annals of the South African Museum* 108(1): 1-141.

***Aplidium* spp. (AscSan)**

Phylum:	Chordata
Subphylum:	Tunicata (Tunicate)
Class:	Asciacea (sea squirts)
Order:	Aplousobranchia
Family:	Polyclinidae
Genus:	<i>Aplidium</i>
Species:	spp.
Common name:	Sandy club ascidian

**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

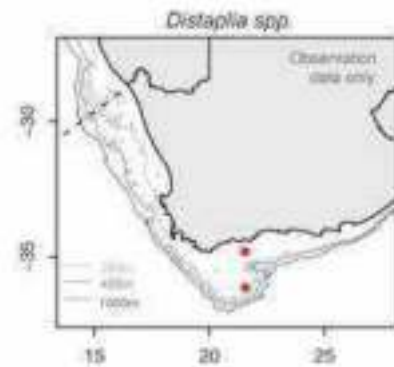
Aplidium colelloides (Herdman, 1886) off Cape of Good Hope (Miller, 1962); *Aplidium australiense* Kott, 1963 West and South Australia.

References

- Herdman WA. 1886. Report on the Tunicata collected during the voyage of H.M.S. Challenger, during the years 1873-1876. Part II. Ascidiae Compositae. *Report on the scientific results of the voyage of H.M.S. Challenger during the years 1873-76*. Ed. Wyville Thomson and John Murray Publisher: Neill & Co., Edinburgh.
- Kott P. 1992. The Australian Asciacea Part 3, Aplousobranchia (2). *Memoirs of the Queensland Museum* 32(2):375-620.
- Millar RH. 1962. Further descriptions of South African ascidians. *Annals of the South African Museum* 56 (7): 113- 221.

Distaplia spp. (AscSta)

Phylum:	Chordata
Subphylum:	Tunicata
Class:	Asciacea (sea squirts)
Order:	Aplousobranchia
Family:	Holozoidae
Genus:	<i>Distaplia</i>
Species:	spp.
Common name:	Stalked ascidian



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

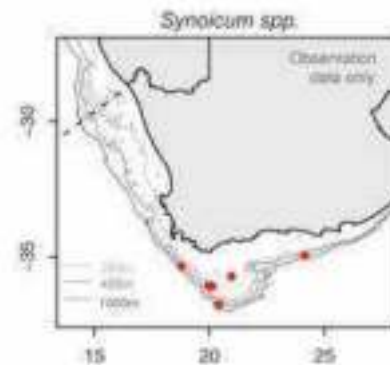
Distaplia durbanensis Millar, 1964 (collected off Durban, 411 m, sandy mud habitat).

References

Millar RH. 1964. South African ascidians collected by Th. Mortensen with some additional material. *Videnskabelige meddelelsen fra Dansk Naturhistorisk Forening* 127: 159-180.

Synoicum spp. (BbBat)

Phylum:	Chordata
Subphylum:	Tunicata
Class:	Asciacea (sea squirts)
Order:	Aplousobranchia
Family:	Polyclinidae
Genus:	<i>Synoicum</i>
Species:	spp.
Common name:	Baseball bat ascidian



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

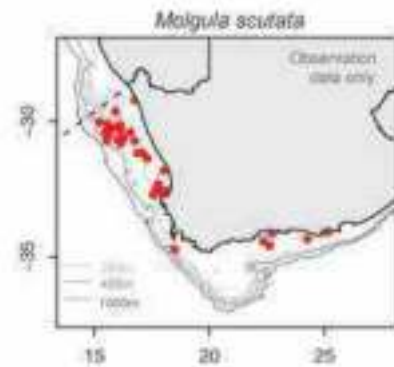
Synoicum capense Millar, 1962 (False Bay, South Africa).

References

Millar RH. 1962. Further descriptions of South African ascidians. *Annals of the South African Museum* 56(7):113-221.

Molgula scutata (SanCol)

Phylum:	Chordata
Subphylum:	Tunicata (Tunicate)
Class:	Ascidacea (sea squirts)
Order:	Stolidobranchia
Family:	Molgulidae
Genus:	<i>Molgula</i>
Species:	<i>scutata</i>
Common name:	Sand ascidian



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/translucent.

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

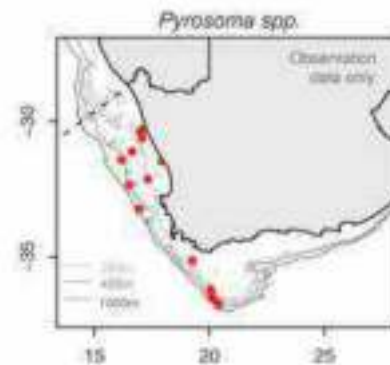
Molgula cryptica Millar, 1962 (False Bay, South Africa); *Molgula conchata* Sluiter, 1898 (South West Indian Ocean); *Molgula manhattensis* (invasive), however microscopic examination is required to distinguish further.

References

- Millar RH. 1955. On a collection of ascidians from South Africa. *Proceedings of the Linnean Society* 125(1):169-221.
- Millar RH. 1962. Further descriptions of South African ascidians. *Annals of the South African Museum* 56(7):113-221.
- Sluiter CP. 1898. Beiträge zur Kenntniss der Fauna von Süd-Afrika. Ergebnisse einer Reise von Prof. Max Weber in Jahre 1894. II. *Tunicaten von Süd-Afrika* 11:(1-64).

***Pyrosoma* spp. (Pyrosom)**

Phylum:	Chordata
Subphylum:	Tunicata (Tunicate)
Class:	Thaliacea (salps)
Order:	Pyrosomatida
Family:	Pyrosomatidae
Genus:	<i>Pyrosoma</i>
Species:	spp.
Common name:	Fire roller

**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 aheniosum; *Pyrosoma atlanticum*, however microscopic examination is required to distinguish further.

References

Branch GM, Griffiths CL, Branch ML and Beckley LE. 2016. *Two Oceans. A guide to the marine life of southern Africa*. Fourth edition. Struik Nature, Cape Town. p. 244.

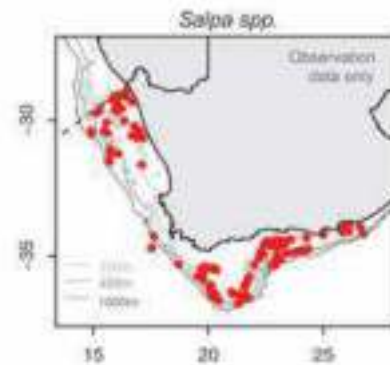
Lazarus BI and Dowler D. 1979. Pelagic tunicata off the west and south-west coasts of South Africa, 1964-1965. *Fisheries Bulletin South Africa*. 12:93-119.

Van Zyl RP. 1960. *A preliminary study of the salps and doliolids off the west and south coasts of South Africa*. Investigational Report, Division of Fisheries, Union of South Africa. v.40, 31pp.

Iziko Museums of South Africa Biodiversity Explorer <http://www.biodiversityexplorer.org/mm/tunicates/pyrosomatidae.htm>. (Accessed February 2018).

Translucent salp (Salps)

Phylum:	Chordata
Subphylum:	Tunicata (Tunicate)
Class:	Thaliacea (salps)
Order:	Salpida
Family:	Salpidae
Genus:	<i>Salpa</i>
Species:	spp.
Common name:	Sea salps



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*, *Ihleia*, *Metcalfina*, *Pegea*, *Ritteriella*, *Salpa*, *Soestia*, *Thalia*, *Thetys*, *Traustedtia* and *Weelia* spp.

References

Lazarus BI and Dowler D. 1979. Pelagic tunicata off the west and south-west coasts of South Africa, 1964-1965. *Fisheries Bulletin South Africa*. 12:93-119.

Van Zyl RP. 1960. *A preliminary study of the salps and doliolids off the west and south coasts of South Africa. Investigational Report, Division of Fisheries, Union of South Africa*. v.40, 31 pp.

Iziko Museums of South Africa Biodiversity Explorer <http://www.biodiversityexplorer.org/mm/tunicates/salpidae.htm>. (Accessed February 2018).



PHYLUM: HEMICHORDATA

Authors

Lara Atkinson¹

Citation

Atkinson LJ. 2018. Phylum Hemichordata In: Atkinson LJ and Sink KJ (eds)
Field Guide to the Offshore Marine Invertebrates of South Africa,
Malachite Marketing and Media, Pretoria, pp. 491-493.

¹ South African Environmental Observation Network, Egagasini Node, Cape Town

Phylum: HEMICHORDATA

Cephalodiscus gilchristi

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.

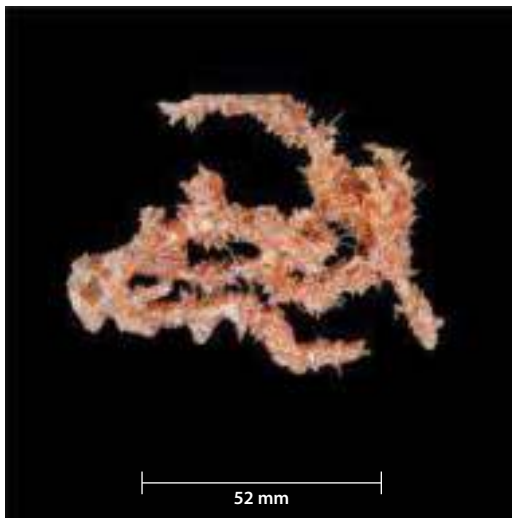
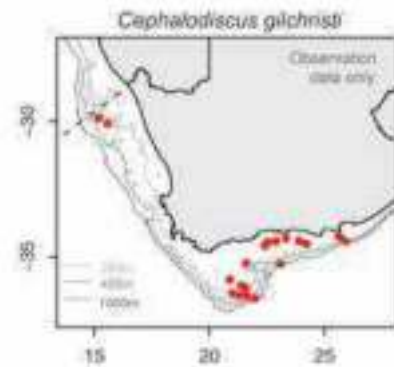
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- Gilchrist JD. 1917. On the development of the Cape Cephalodiscus. *Quarterly Journal of Microscopical Science* 189-211.
- Konikoff C and van der Land J. 2015. *Hemichordata*. Accessed through World Register of Marine Species, www.marinespecies.org on 2016-01-06.
- Mierzejewski P. Graptolite net website: <http://www.graptolite.net/Graptolithoidea.html>. Accessed May 2017.
- Ruppert EE and Barnes RD. 1994. *Invertebrate Zoology*. Sixth edition. Saunders College Publishing, Fort Worth. Sourced through the website <http://www.ucmp.berkeley.edu/chordata/hemichordata.html>.
- van der Land J. 2015. *Cephalodiscus gilchristi* Ridewood, 1908. In: Shenkar N, Swalla BJ, van der Land J. 2015. *Hemichordata World Database*. Accessed through World Register of Marine Species, www.marinespecies.org, on 2016-01-06.
- Zhang, Z.-Q. (Ed.) 2013. Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013). *Zootaxa*, 3703, 1–82.

Potential VME

Cephalodiscus gilchristi (AGAMAL)

Phylum:	Hemichordata
Class:	Graptolithoidea
Order:	Cephalodiscoidea
Family:	Cephalodiscidae
Genus:	<i>Cephalodiscus</i>
Species:	<i>gilchristi</i>
Common name:	Agar animal



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

Gilchrist JD. 1917. On the development of the Cape *Cephalodiscus*. *Quarterly Journal of Microscopical Science* 189-211.

Ridewood WG. 1908. A new species of *Cephalodiscus* from the Cape seas. *Marine investigations in South Africa* 4:174-192.

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