

# Photo Catalogue of the Epibenthic Megafauna of Eastern Shore Islands (Nova Scotia, Canada) Identified from In Situ Images

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## ABSTRACT

Paulin, N., Murillo, F.J., Goodwin, C., Rodriguez, E., Nozères, C., Kenchington, E. 2025. Photo Catalogue of the Epibenthic Megafauna of Eastern Shore Islands (Nova Scotia, Canada) Identified from In Situ Images. Can. Tech. Rep. Fish. Aquat. Sci. 3723: iv +307 p. <https://doi.org/10.60825/w0t5-rp42>

A collection of 6960 images of the seafloor were captured using a towed system's (Campod) downward-facing camera during the HUD2018021 survey between June 30th and July 4th, 2018 in the Eastern Shore Islands Area of Interest (ESI AOI). Of these, 672 images were analysed using the online image annotation software BIIGLE to record taxa presence. All unique organisms observed were identified to the lowest possible taxonomic level using a strictly visual approach. The photo catalogue included in this report compiles all taxa found in the image analysis to summarise the biodiversity found in the ESI AOI. The catalogue for each taxon includes the scientific name, its corresponding World Register of Marine Species (WoRMS) identification number, photos, description, and potential species or genus of the taxon when applicable.

## RÉSUMÉ

Paulin, N., Murillo, F.J., Goodwin, C., Rodriguez, E., Nozères, C., Kenchington, E. 2025. Catalogue Photographique de la Mégafaune Épibenthique des Îles de la Côte Est (Nouvelle-Écosse, Canada) Identifiée à Partir d'Images In Situ. Can. Tech. Rep. Fish. Aquat. Sci. 3723: iv +307 p. <https://doi.org/10.60825/w0t5-rp42>

Un ensemble de 6 960 images du fond marin a été capturé à l'aide d'une caméra orientée vers le bas d'un système remorqué (Campod) lors du relevé HUD2018021, mené entre le 30 juin et le 4 juillet 2018, dans la zone d'intérêt des îles de la côte Est. Parmi celles-ci, 672 images ont été analysées à l'aide du logiciel d'annotation d'images en ligne BIIGLE afin d'enregistrer la présence des taxons. Tous les organismes uniques observés ont été identifiés au niveau taxonomique le plus bas possible, par une approche strictement visuelle. Le catalogue de photos inclus dans ce rapport compile tous les taxons identifiés lors de l'analyse d'images afin de synthétiser la biodiversité de la zone d'intérêt de l'ESI. Le catalogue de chaque taxon comprend le nom scientifique, son numéro d'identification au Registre mondial des espèces marines (WoRMS), des photos, une description et, le cas échéant, l'espèce ou le genre potentiel du taxon.

# 1 INTRODUCTION

This photo catalogue summarises the diversity of flora and fauna identified in the Eastern Shore Islands Area of Interest (ESI AOI) off Nova Scotia, Canada from benthic images taken during the HUD2018021 survey aboard the CCGS *Hudson* between June 30th and July 4th, 2018. The purpose of this report was to catalogue all visually distinctive specimens for two purposes: 1) to compile data on the presence of taxa relevant to future biodiversity and community analyses, and 2) to provide a reference of what could be expected to be observed in benthic imagery analysis. Documenting the nomenclature applied to the images is important for future monitoring activities in this area.

## 2 METHODS

### 2.1 IMAGE CAPTURE, SELECTION, AND ANNOTATION

A total of 6960 images were taken across four transects which progressed from nearshore to offshore. Images were captured using the towed Campod system (Gordon et al. 2000). Campod is a light-weight tripod camera system built and housed at the Bedford Institute of Oceanography (Dartmouth, Nova Scotia). This system is controlled via a winch on deck, and current operating depth is limited by cable length to about 1,000 m. It was equipped with a forward-facing DeepSea Power and Light HD Multi SeaCam with Dome Port (HDMSC-3145), a downward-facing Sony HDC-P1 camera, and a downward-facing Nikon D810 digital still camera. Although video was collected during the Campod dives, only the digital still images were analyzed as part of this study. The images were collected at approximately 30 second intervals with Campod landed on the seabed. The height of the downward-facing digital still camera above seabed is ~1 m when Campod is landed. Campod is equipped with two laser beams calibrated at 10 cm apart that are used as a size reference in the video and images. The Campod system also included a SeaBird 39 pumping CTD (SBE 39) which took *in situ* measurements of temperature and depth and an altitude package to record altitude (i.e. distance above the sea floor) at the moment each image was captured. These data were relayed in real time via a fibre optical cable to the tow ship.

A subset of images were selected for analysis by selecting images ~100 m apart based on their x-y coordinates starting from the first image of each transect. The closest image to that 100 m distance was initially selected and then appraised to verify if that image could be used for taxonomic identification. If the image was deemed too dark, too blurry, or too obstructed by high turbidity, the next closest image to the 100 m mark was selected in turn until an image of adequate quality was found. This method resulted in a subset of 672 images for taxonomic identification (Figure 1). The image locations ranged from 37.6 m to 131.7 m depth following the seabed profile, with generally shallower sites near-shore at the start of transects transitioning to deeper sites as they got further offshore (Figure 2).

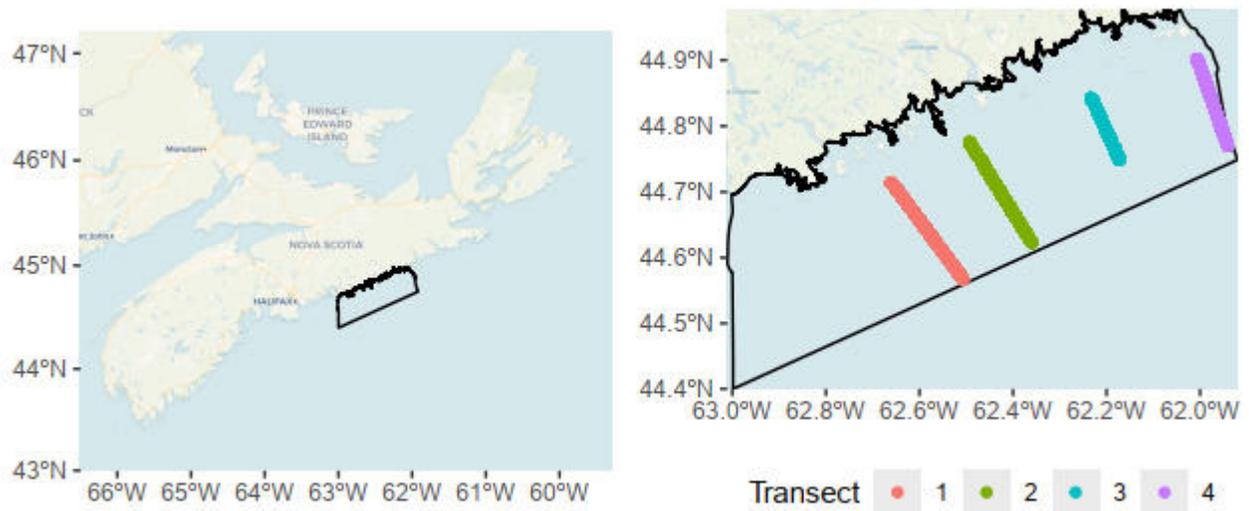


Figure 1: Location of the 672 analysed images by transect showing the general location of the study area relative to Nova Scotia (left panel) and the location of the transects within the ESI AOI (right panel). Black line indicates extent of ESI AOI.

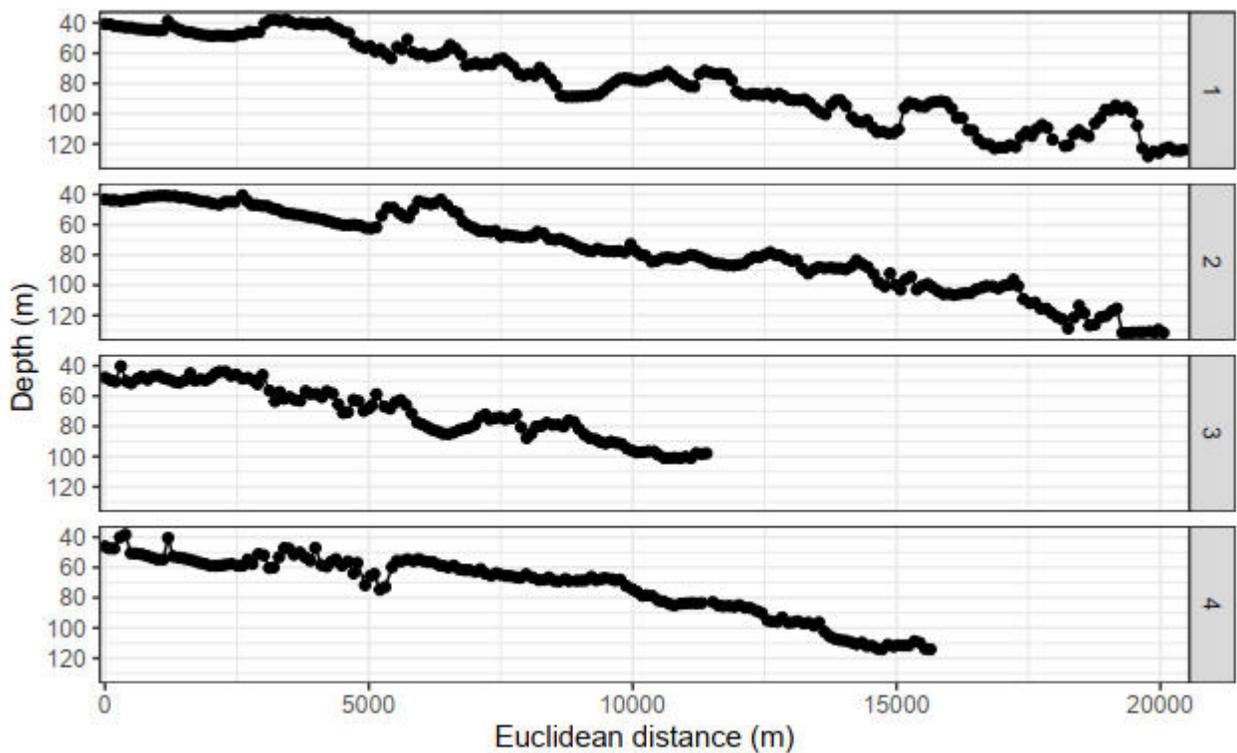


Figure 2: Image location depth profiles over the length of each transect. Transect numbers are indicated to the right of the graphs and their location shown in Figure 1.

The selected images were uploaded to the online image annotation software BIIGLE (Langenkämper et al. 2017). Organisms were marked by drawing a rectangular bounding box around the organism. In BIIGLE, an organism identified within a bounding box is referred to as an “annotation” which is assigned a “label” representing the identity of the organism. In this report, the terms “annotation”, “specimen”, and “organism” are used interchangeably, while a label is referred to as an Operational Taxonomic Unit (OTU) (sensu Sokal and Sneath 1963). For the purposes of this report, an OTU is a visually distinctive grouping of organisms. Ideally, this would classify distinctive species. However, some taxa have high intra- and inter-specific morphological variation which makes precise species-level identification difficult using a strictly visual approach. As such, OTUs are a combination of species (when confident), morphological variant groupings that may or may not belong to the same species as other labels but are visually distinctive (“var.”), and broader classification groupings if impossible to identify to a more specific level (“type”) (see Section 2.5 for a summary of these terms).

Images were analysed in a randomised fashion across all transects. Images were annotated by starting at the top left corner of the image at a zoom of around 1.4x (viewport zoom level indicated by BIIGLE) and scanning over the image in a lawnmower pattern at the width of the viewport (Figure 3). Only OTU presence data rather than abundance were to be collected, therefore only one annotation of each OTU was needed per image. The first image review classified organisms to the phylum-level in a label tree. All the phyla identified were then analysed using the BIIGLE “largo” tool to batch-relabel organisms into more specific classifications using generic names (i.e., Cnidaria var 1). Images were then reviewed a second time to make sure that all unique OTUs were indeed identified in each photo. Any missed OTUs were identified and added as done previously. An example of a fully annotated image hosted on the BIIGLE platform can be seen in Figure 4.

## **2.2 SELECTION AND EDITING OF SPECIMEN IMAGES**

Organisms annotated in BIIGLE were cropped from the original images in which they were found to square dimensions to compile images for each OTU. For the purposes of this photo catalogue, one focal image and up to a maximum of 24 other randomly selected images were used as representative images for each OTU. The focal image was manually selected to be one of the best quality images of the entire library for each respective OTU. The other 24 images were randomly selected (if the OTU has more than 24 annotations to draw from) to be representative of the range in quality/conditions of the original images in which the annotations were found and are therefore not necessarily the highest quality images available. Some images were unable to be cropped to square dimensions if the annotation was at the edge of the original image. To keep the specimen centered, these images were cropped to rectangular dimensions. Square images were preferably selected over rectangular images for the photo catalogue, however rectangular images were selected if no other square images were available. Other than cropping, catalogue images were left unedited aside from a few focal images where image brightness was increased or arrows were overlaid to better showcase the organism.



Scale bars provided in the catalogue were calculated using the two laser points emitted from the Campod which provide a size reference for specimens observed in the images. The laser points were annotated in BIIGLE. Image areas were calculated by inputting the known distance between the laser points (10 cm) into BIIGLE's built-in image area computation tool. The areas calculated by BIIGLE were provided in m<sup>2</sup> and were converted to cm<sup>2</sup> by multiplying the areas by 10,000. These image areas were retrieved from BIIGLE and the number of pixels per cm was calculated using the equation  $\sqrt{\text{area}_p} / \sqrt{\text{area}_c}$ , where  $\text{area}_p$  is the area of the image in pixels<sup>2</sup> and  $\text{area}_c$  is the area of the image in cm<sup>2</sup>. A scale bar matching the calculated pixel count for 1 cm was graphically overlaid at the bottom of the specimen images using base R plotting functions. For particularly small specimens, some scale bars were recalculated to 1 mm increments in cases where 1 cm would cover > 50% of the image width. Some specimen images in the catalogue do not have scale bars in instances where one or both laser points were not visible in the original image from which they originated since image area could not be calculated without reference.

## 2.3 TAXONOMY

OTUs were assigned tentative taxonomic classifications using available photo guides and taxonomic databases based on visual similarity and known distribution. These guides and databases include photo guides provided by Claude Nozères (Nozères 2022a, 2022b, 2022c, 2022d, 2022e), the World Register of Marine Species (WoRMS) (WoRMS Editorial Board 2025), the Actinaria website (Sanamyan et al. 2024), and iNaturalist (iNaturalist 2024). Final OTU names and groupings were designated in consultation with experts. At this time the nomenclature used to identify epibenthic species from underwater imagery in the Maritimes Region (i.e., Korabik et al. 2021) has not been harmonised, although such an exercise would render the data relevant to larger spatial scales. At present the documents stand as separate photo libraries which remain relevant to future monitoring of the region's conservation areas.

As previously mentioned, the purpose of the report was not only to compile data relevant to biodiversity and community analyses, but to also note all specimens observed in benthic imagery. As a result, some OTUs are comprised of specimens that would not necessarily be considered for use in biodiversity analyses, but are retained to record all unique specimens observed. Examples of such OTUs include broad groupings which comprise multiple potential species/taxonomic groups (i.e., "types" - see Section 2.5 below), dead/detached organisms, remnants of organisms (such as empty polychaete tubes), or various unknown/unidentifiable labels where taxonomy is unclear. To clarify this distinction, a note was added under the description of each OTU which indicates if an OTU might be considered valid for use in any future biodiversity analyses.

In the photo catalogue, OTUs are organised by phylum which are arranged in the order of increasing biological complexity. Within each phylum, OTUs are ordered alphabetically by Class, then Order, then Family, and finally Species.

## 2.4 DATA MANAGEMENT

The Campod images as well as the environmental data collected alongside them were uploaded and are accessible through Mendeley.

The uploaded data include:

- the 672 Campod images analysed in BIIGLE in Part 1: Transects 1 and 4 (Paulin et al. 2025a) and Part 2: Transects 2 and 3 (Paulin et al. 2025b);
- environmental data collected *in situ* including latitude, longitude, Campod depth, temperature, altimeter (i.e. distance of Campod above bottom), calculated bottom depth derived from Campod depth and altimeter readings.

## 2.5 ABBREVIATIONS AND KEY TERMS

- annotation: an organism identified within a bounding box. The terms “annotation”, “specimen”, and “organism” are used interchangeably.
- OTU: short for Operational Taxonomic Unit, and referred to as a “label” in BIIGLE. An OTU represents a visually distinct grouping of specimens (or “annotations”) of varying taxonomic specificity.
- var.: short for “variant”, in this case representing an OTU that may or may not be of the same taxonomic group (species, genus, etc) as another OTU, although the OTUs themselves are visually distinctive and considered separately.
- type: an umbrella grouping OTU that contains a mix of potential OTUs or species that were unable to be assigned a more specific label because of an inability to identify key traits (due to poor image quality, bad angle, etc) and which could, by lack of these identifiable traits, overlap with several OTUs (for example, retracted sea anemones).
- potential taxa: a non-exhaustive list of potential taxa the OTU could be if the OTU is not species-specific based on visual similarities to taxa known to be in the region. Note that multiple OTUs can share some of the same listed taxa, but it only means either OTU could be those taxa. It is unknown which one could be that potential taxon, or if they are morphological variants of the listed taxa. For the purposes of this guide, they are considered distinct OTUs due to this uncertainty.

### 3 RESULTS

#### 3.1 RHODOPHYTA

Number of OTU in phylum: 8

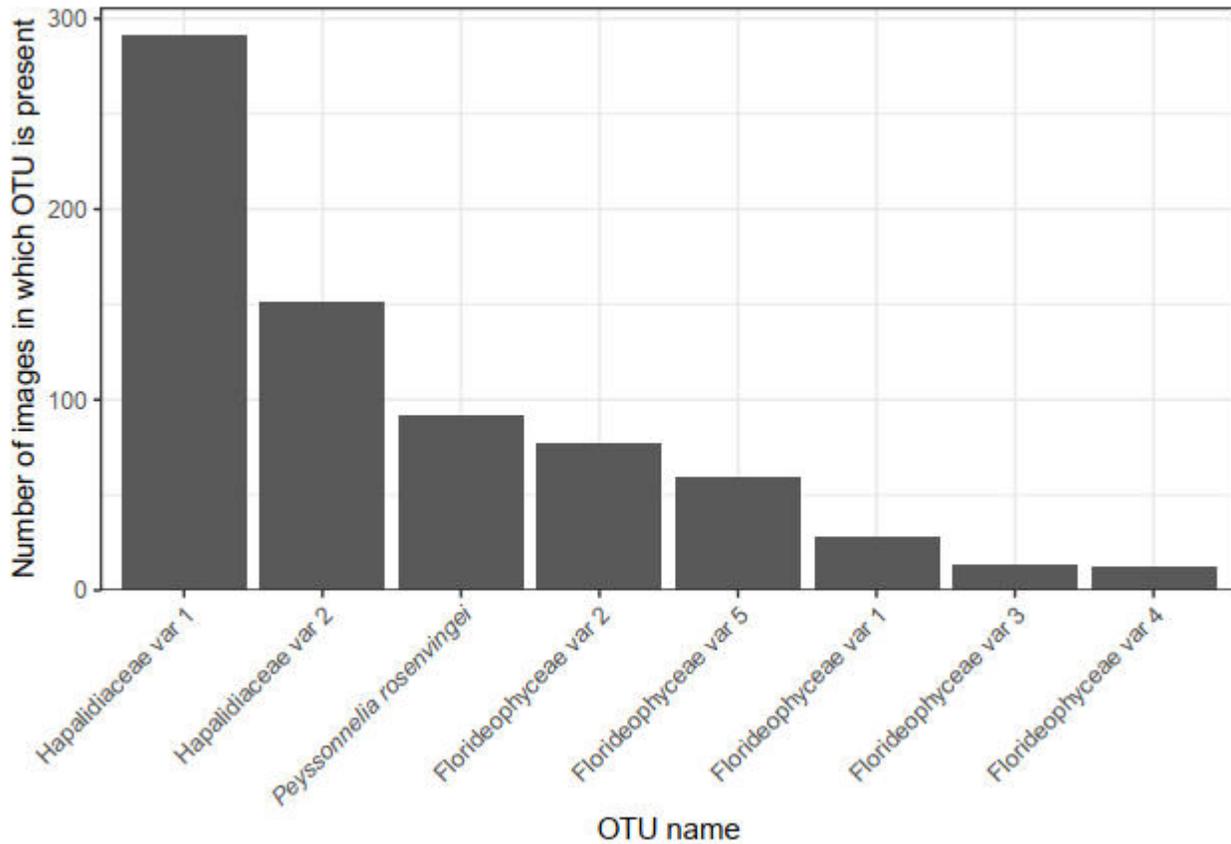


Figure 5: Number of images in which each Operational Taxonomic Unit (OTU) is present for the phylum Rhodophyta out of a total of 672 images.

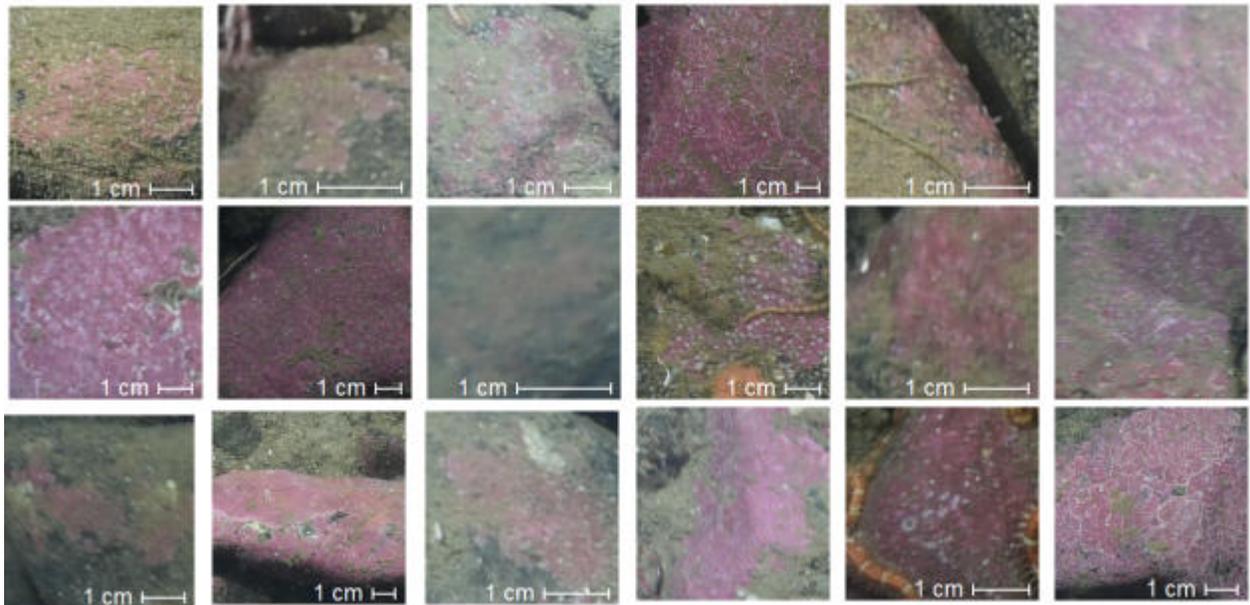
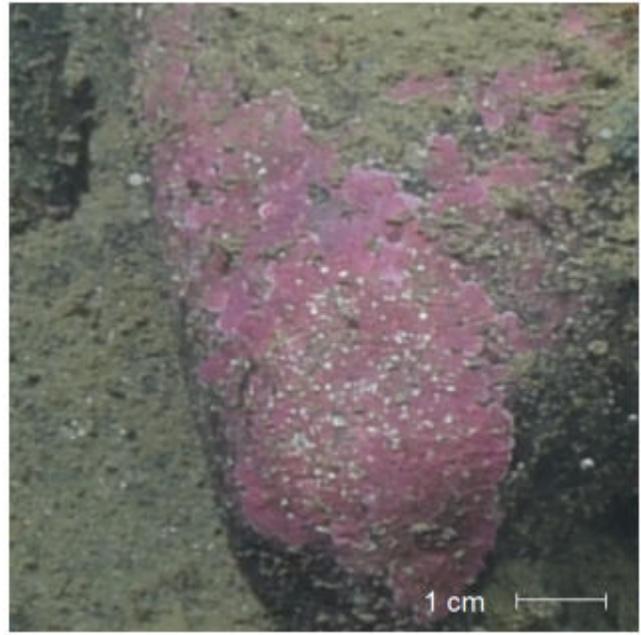
Phylum Rhodophyta → Class Florideophyceae → Order Hapalidiales → Family Hapalidiaceae

**Hapalidiaceae var 1** J.E.Gray, 1864

WoRMS Info | Name: Hapalidiaceae | AphiaID: 368755 | [Link →](#)

**Description:** Smooth pink/purple crust.  
Protuberances (if present) are small.

**Considered for use in analyses:** Yes



Phylum Rhodophyta → Class Florideophyceae → Order Hapalidiales → Family Hapalidiaceae

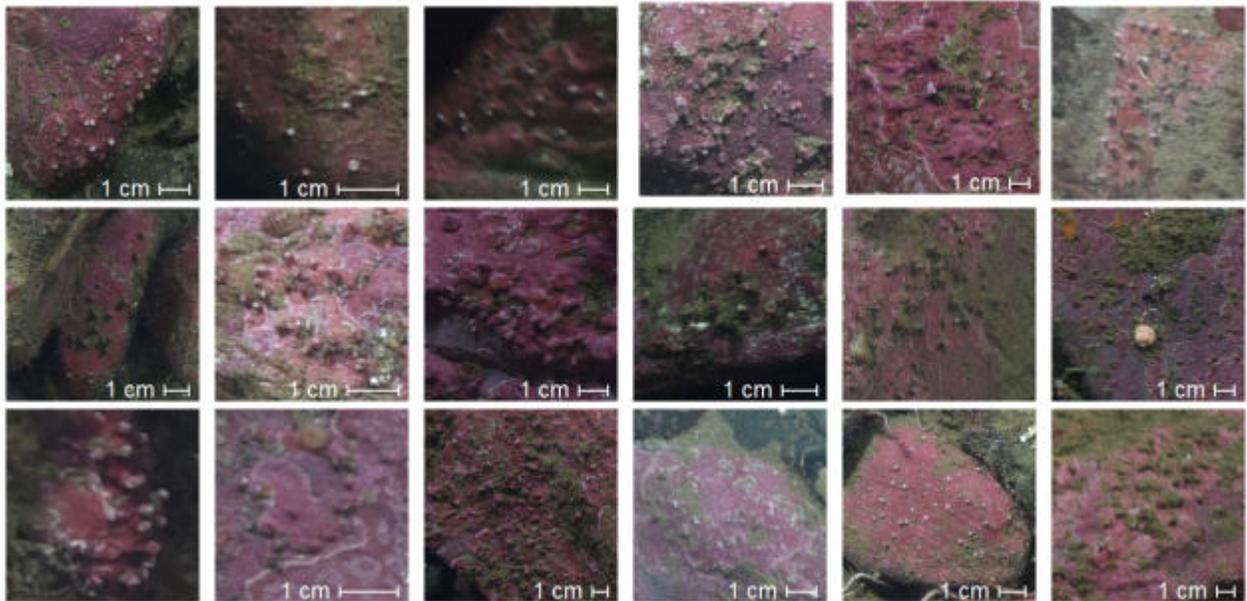
**Hapalidiaceae var 2** J.E.Gray, 1864

WoRMS Info | Name: Hapalidiaceae | AphiaID: 368755 | [Link →](#)

**Description:** Thin pink crust with large protuberances giving a warty appearance.

**Potential taxa:** *Boreolithothamnion glaciale*

**Considered for use in analyses:** Yes



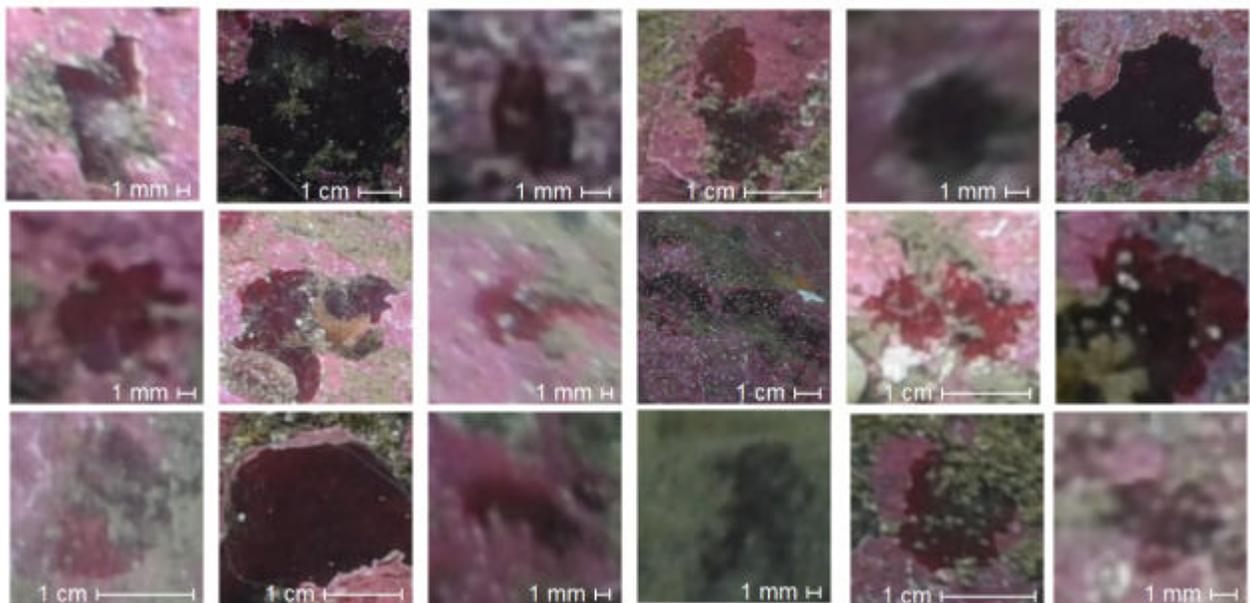
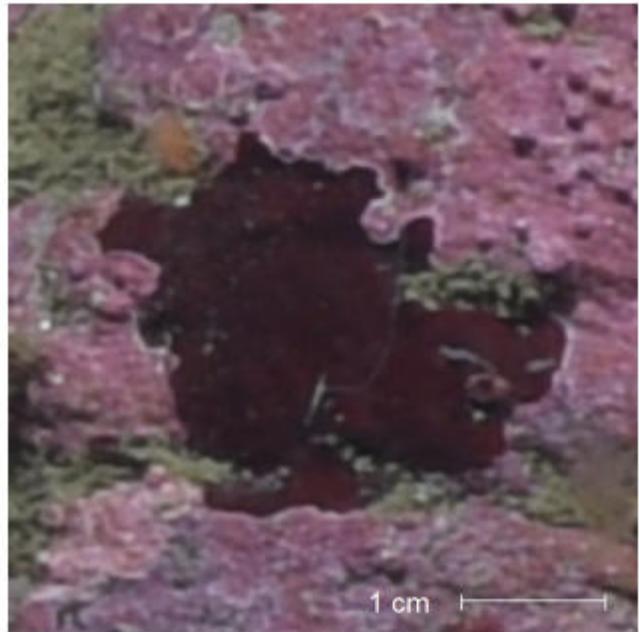
Phylum Rhodophyta → Class Florideophyceae → Order Peyssonneliales → Family Peyssonneliaceae

***Peyssonnelia rosenvingei*** F.Schmitz, 1893

WoRMS Info | Name: *Peyssonnelia rosenvingei* | AphiaID: 374814 | [Link →](#)

**Description:** Dark wine-red crust on rocks.

**Considered for use in analyses:** Yes



Phylum Rhodophyta → Class Florideophyceae

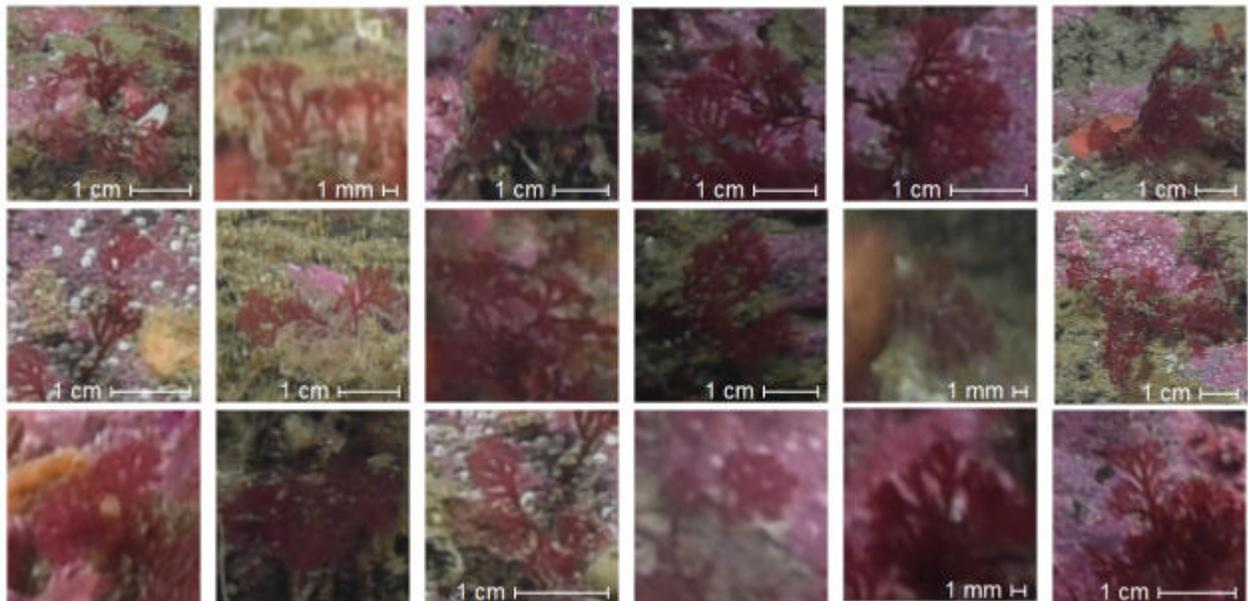
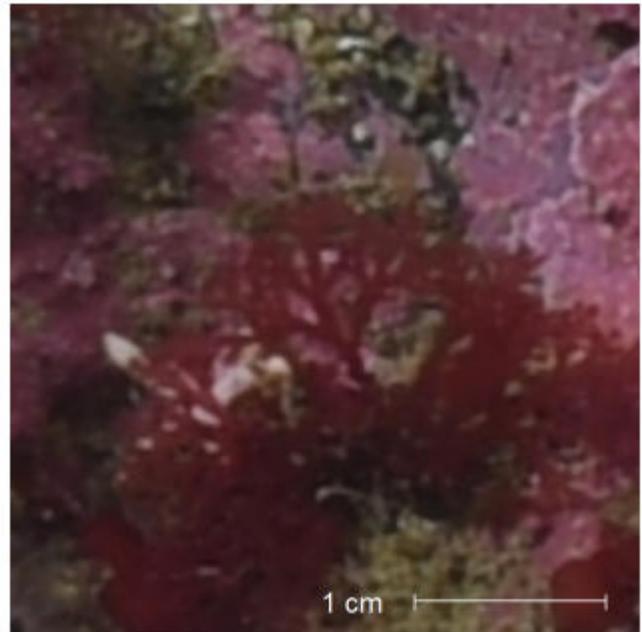
**Florideophyceae var 1** Cronquist, 1960

WoRMS Info | Name: Florideophyceae | AphiaID: 368670 | [Link →](#)

**Description:** Foliose red algae with lace-like branching structure.

**Potential taxa:** *Chondrus*

**Considered for use in analyses:** Yes



Phylum Rhodophyta → Class Florideophyceae

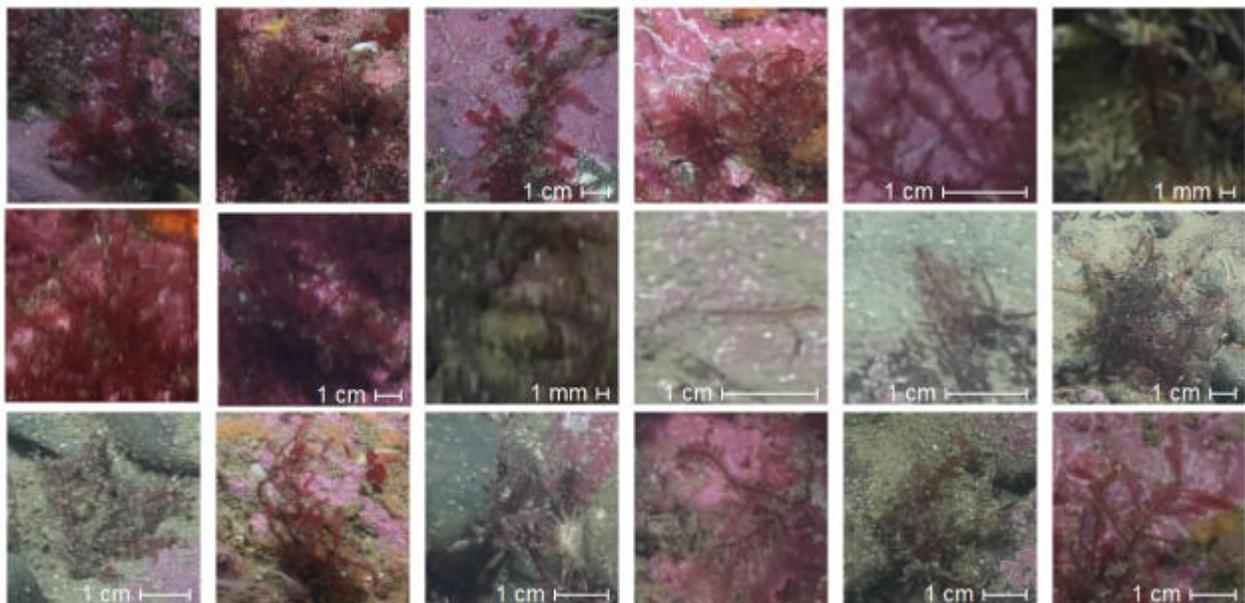
**Florideophyceae var 2** Cronquist, 1960

WoRMS Info | Name: Florideophyceae | AphiaID: 368670 | [Link →](#)

**Description:** Foliose red algae with finely branched thallus with opposite, pinnate branching and claw-like lagging branches.

**Potential taxa:** *Ptilota serrata*

**Considered for use in analyses:** Yes



Phylum Rhodophyta → Class Florideophyceae

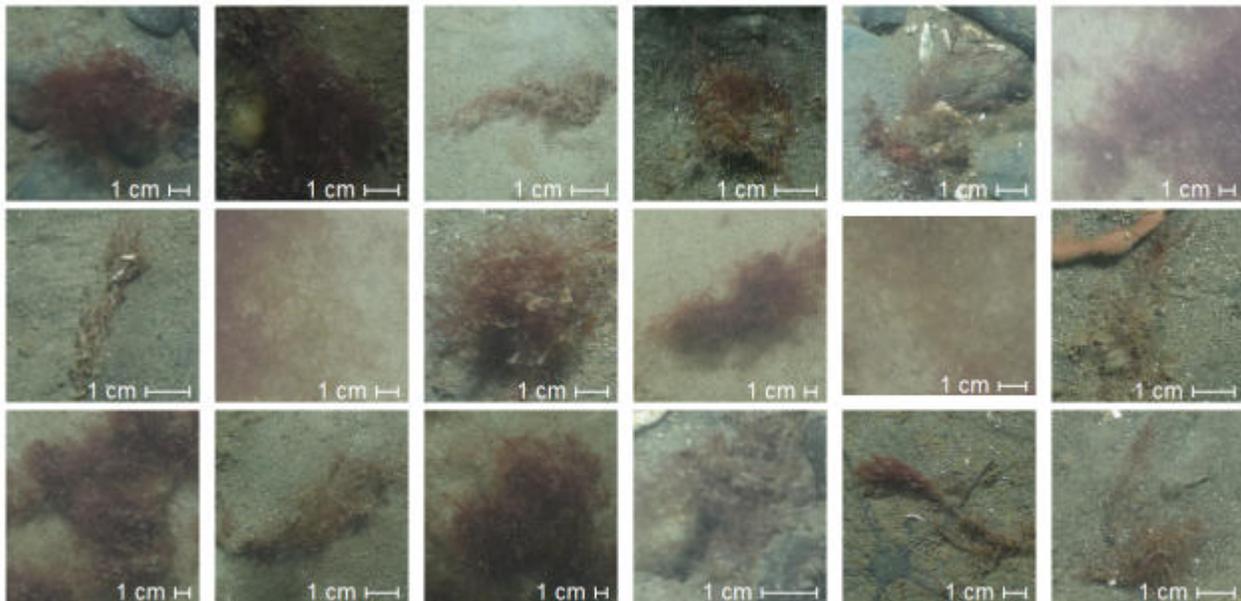
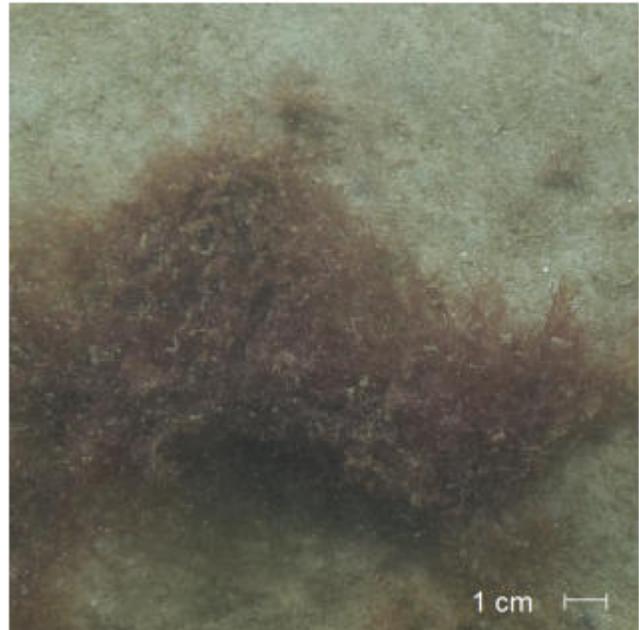
**Florideophyceae var 3** Cronquist, 1960

WoRMS Info | Name: Florideophyceae | AphiaID: 368670 | [Link →](#)

**Description:** Fluffy, string-like red algae.

**Potential taxa:** *Spermothamnion*

**Considered for use in analyses:** Yes



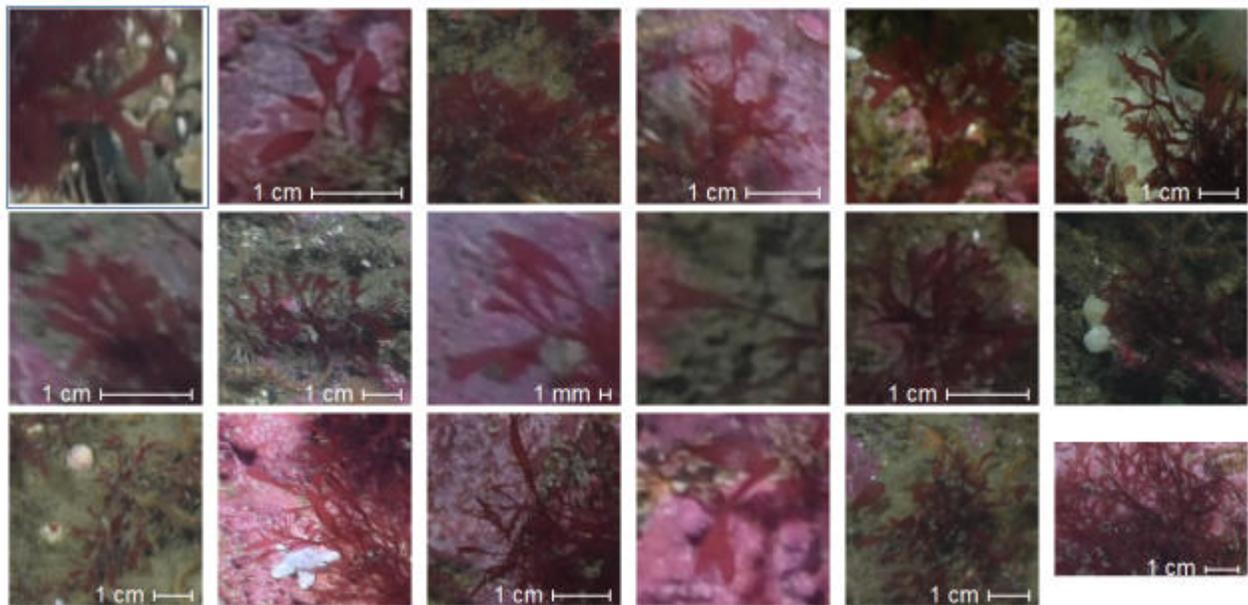
Phylum Rhodophyta → Class Florideophyceae

**Florideophyceae var 4** Cronquist, 1960

WoRMS Info | Name: Florideophyceae | AphiaID: 368670 | [Link →](#)

**Description:** Red algae with thin dichotomous branches.

**Considered for use in analyses:** Yes



Phylum Rhodophyta → Class Florideophyceae

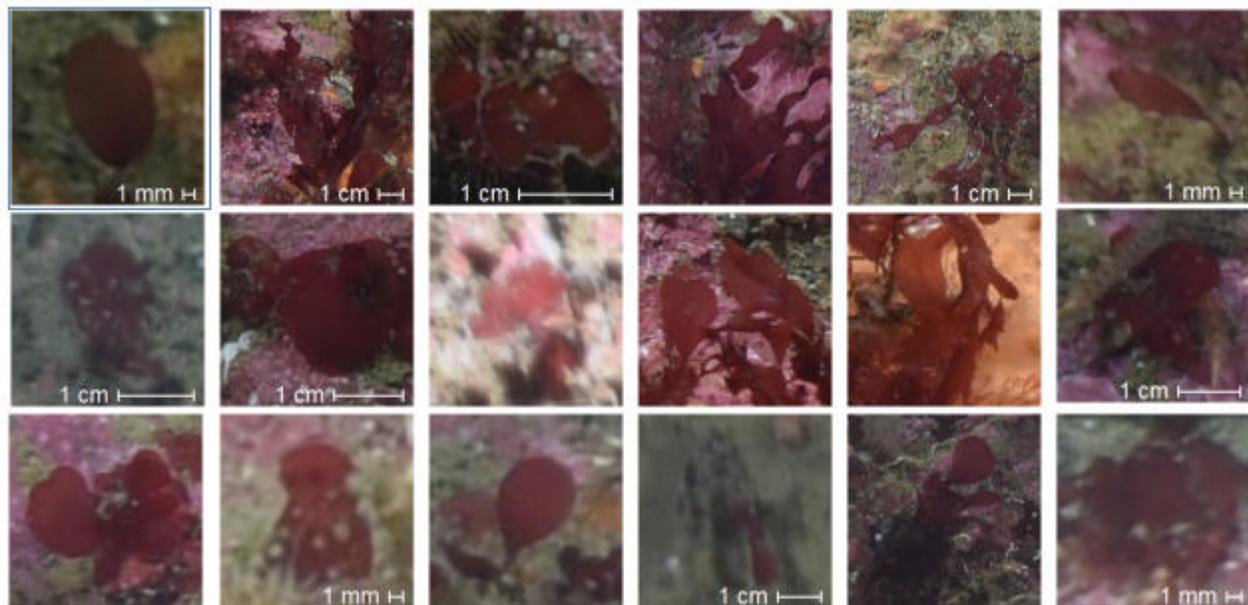
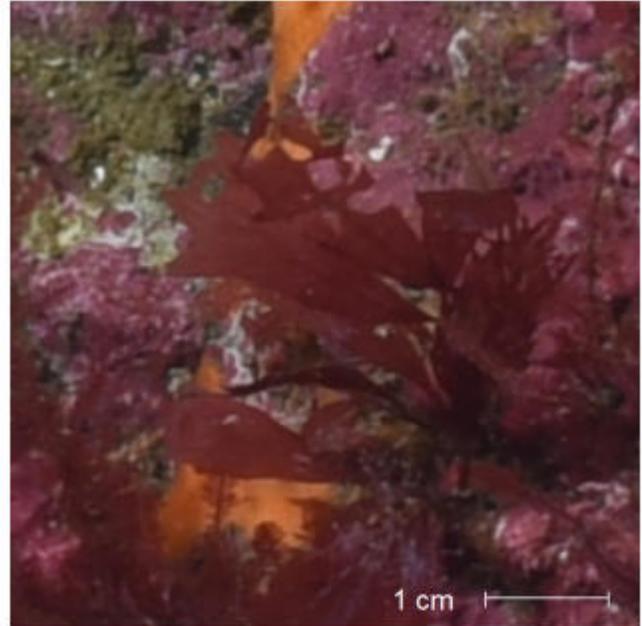
**Florideophyceae var 5** Cronquist, 1960

WoRMS Info | Name: Florideophyceae | AphiaID: 368670 | [Link →](#)

**Description:** Red algae with generally broad rounded palmate branching but can come in various forms.

**Potential taxa:** *Palmaria palmata*

**Considered for use in analyses:** Yes



### 3.2 OCHROPHYTA

---

Number of OTU in phylum: 3

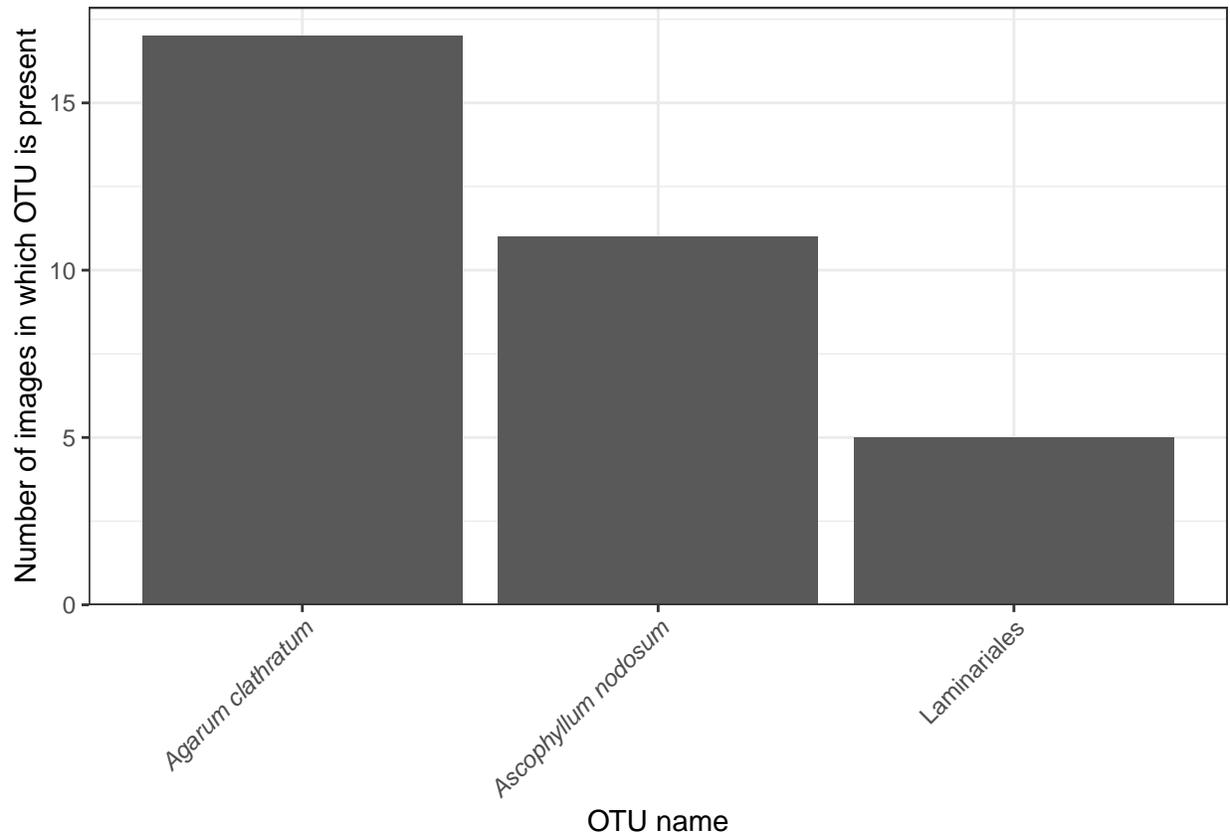


Figure 6: Number of images in which each Operational Taxonomic Unit (OTU) is present for the phylum Ochrophyta out of a total of 672 images.

Phylum Ochrophyta → Class Phaeophyceae → Order Fucales → Family Fucaaceae

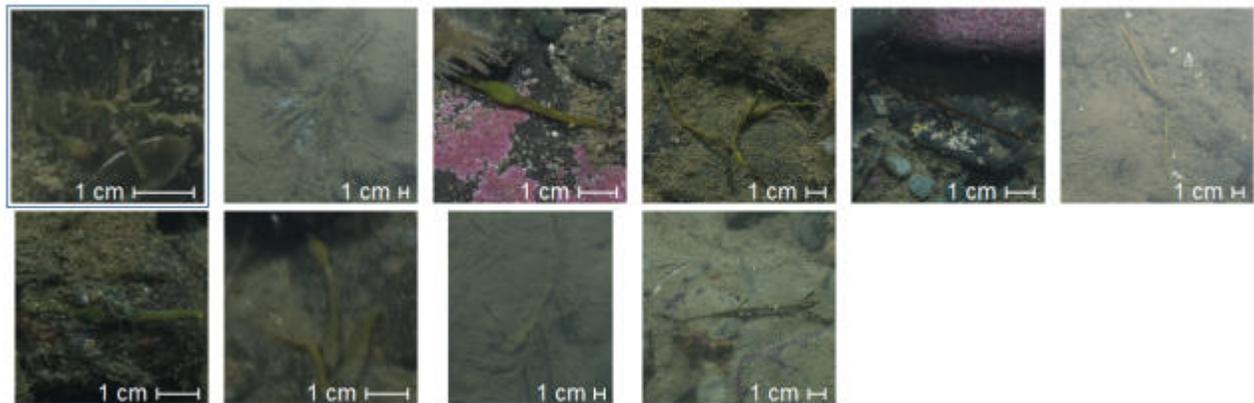
***Ascophyllum nodosum*** (Linnaeus) Le Jolis, 1863

WoRMS Info | Name: *Ascophyllum nodosum* | AphiaID: 145541 | [Link →](#)

**Description:** Green branching fronds with characteristic nodules (air sacs) along fronds. Only drift specimens observed.

**Considered for use in analyses:** No

**Reasoning:** Drift specimens.



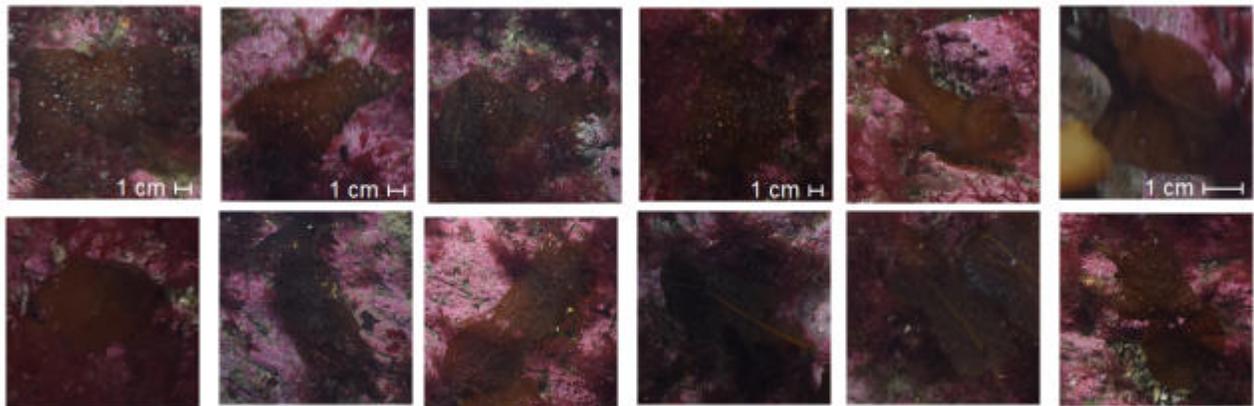
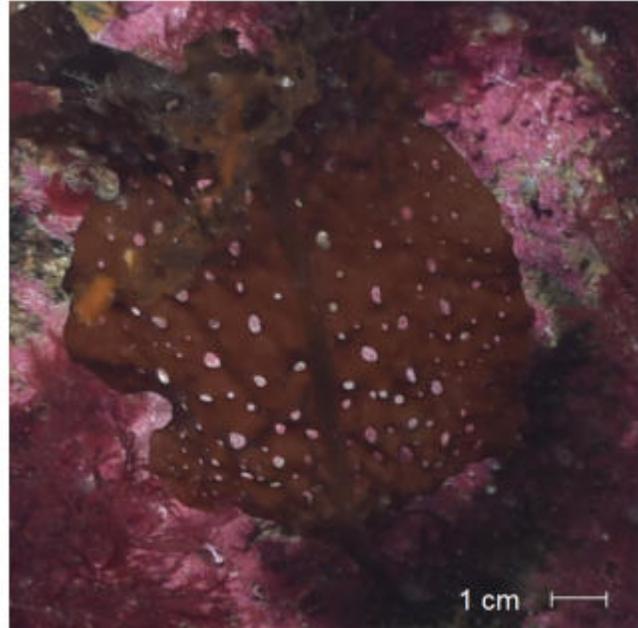
Phylum Ochrophyta → Class Phaeophyceae → Order Laminariales → Family Agaraceae

***Agarum clathratum*** Dumortier, 1822

WoRMS Info | Name: *Agarum clathratum* | AphiaID: 157207 | [Link →](#)

**Description:** Small kelp with a central midrib and numerous small natural holes on its thallus.

**Considered for use in analyses:** Yes



Phylum Ochrophyta → Class Phaeophyceae → Order Laminariales

**Laminariales** Migula, 1909

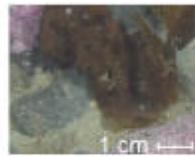
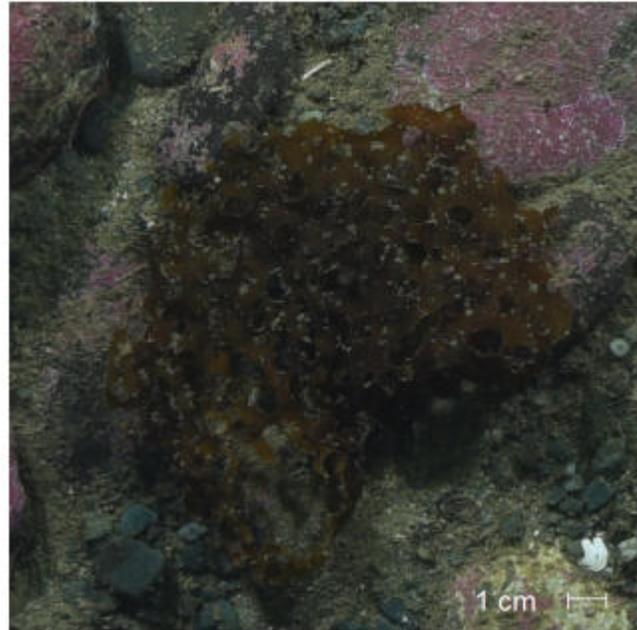
WoRMS Info | Name: Laminariales | AphiaID: 845 | [Link →](#)

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**Description:** Green flat or crumpled thalluses of kelp that appear adrift and detached from substrate.

**Considered for use in analyses:** No

**Reasoning:** Drift specimens.



### 3.3 TRACHEOPHYTA

---

Only one OTU was found for this phylum, *Zostera marina*, which was present in 22 out of 672 images.

Phylum Tracheophyta → Class Magnoliopsida → Order Alismatales → Family Zosteraceae

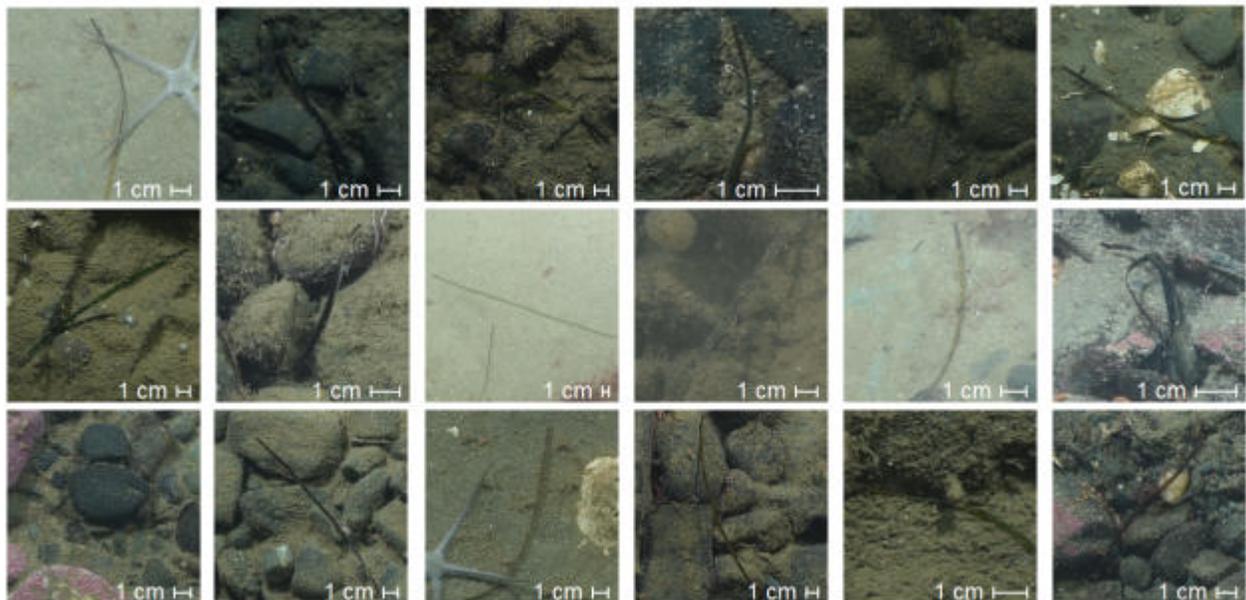
***Zostera marina*** Linnaeus, 1753

WoRMS Info | Name: *Zostera marina* | AphiaID: 495077 | [Link →](#)

**Description:** Long, thin, and flat green or brown ribbon-like leaves. Only drift specimens observed.

**Considered for use in analyses:** No

**Reasoning:** Drift specimens.



### 3.4 PORIFERA

Number of OTU in phylum: 41

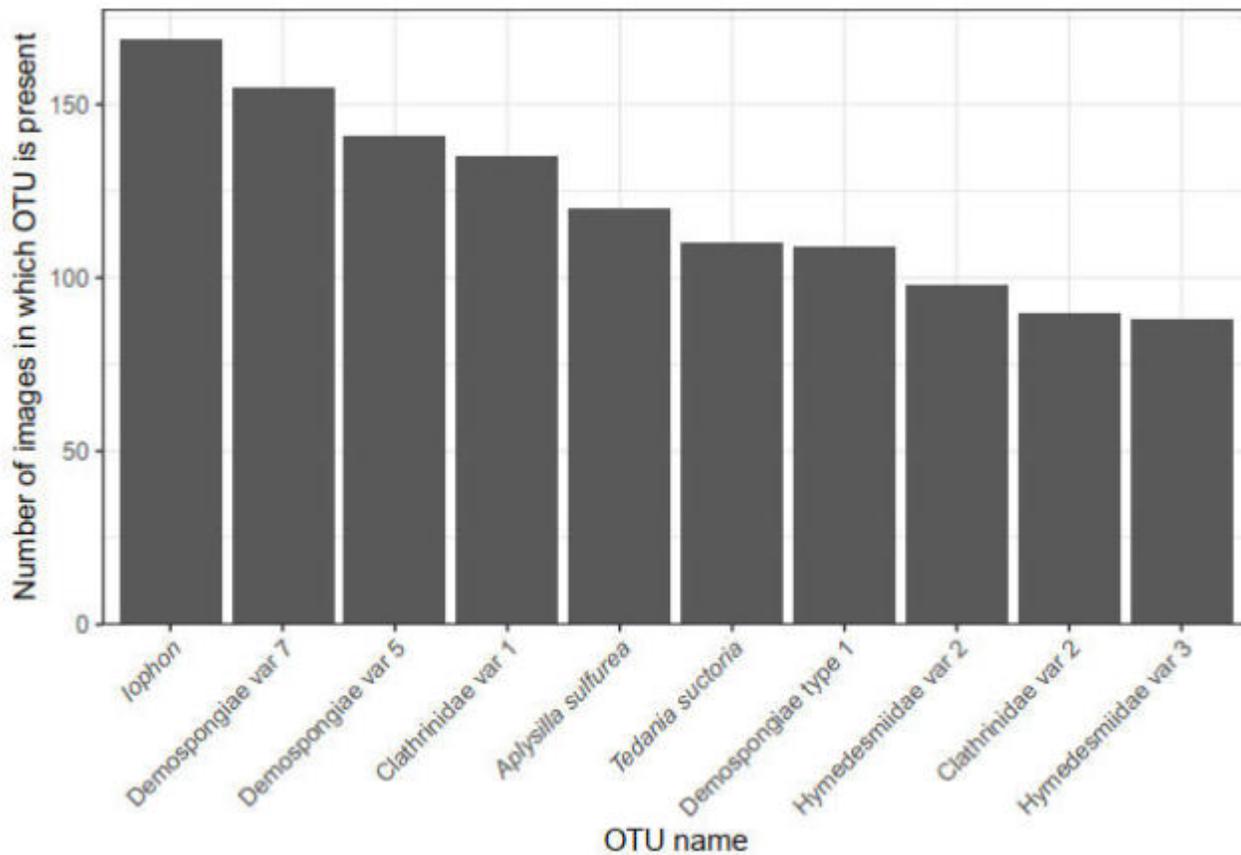


Figure 7: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Porifera out of a total of 672 images.

Phylum Porifera → Class Calcarea → Order Clathrinida → Family Clathrinidae

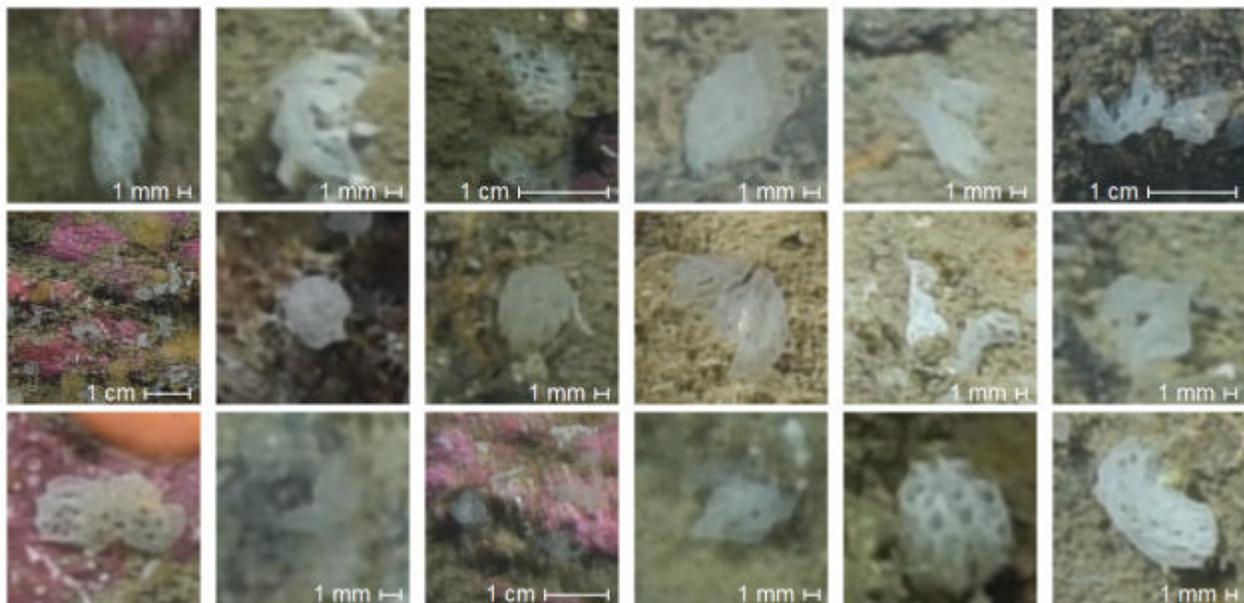
**Clathrinidae var 1** Minchin, 1900

WoRMS Info | Name: Clathrinidae | AphiaID: 131619 | [Link →](#)

**Description:** White/grey encrusting sponge formed of intertwined tubes. Patches of various sizes.

**Potential taxa:** *Clathrina*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Calcarea → Order Clathrinida → Family Clathrinidae

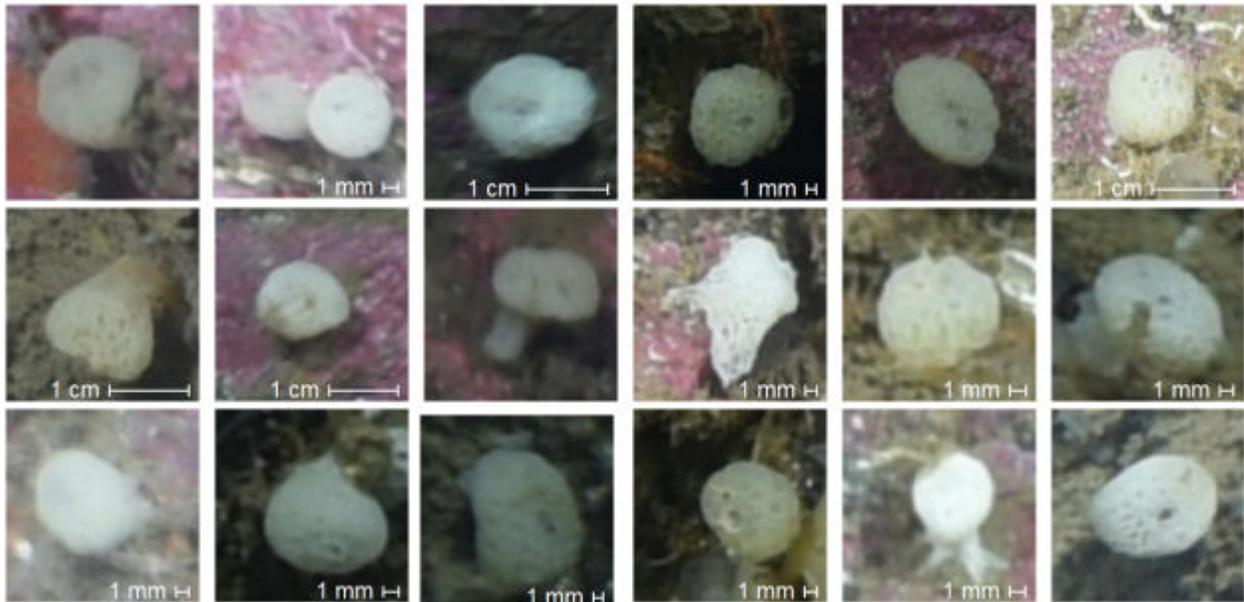
**Clathrinidae var 2** Minchin, 1900

WoRMS Info | Name: Clathrinidae | AphiaID: 131619 | [Link →](#)

**Description:** Stalked, round sponges formed of intertwined tubes.

**Potential taxa:** *Brattegardia*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Calcarea

**Calcarea var 1** Bowerbank, 1862

WoRMS Info | Name: Calcarea | AphiaID: 559 | [Link →](#)

**Description:** Thin white sheet often forming a (sometimes deformed-looking) cup or bowl shape.

**Considered for use in analyses:** Yes



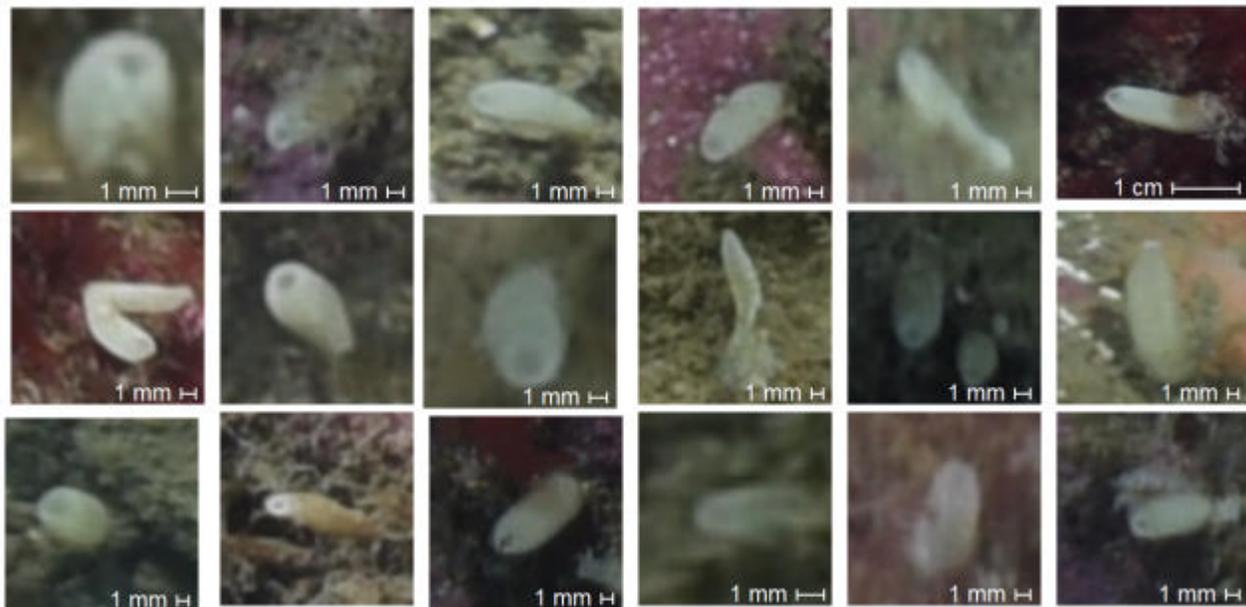
Phylum Porifera → Class Calcarea

**Calcarea var 2** Bowerbank, 1862

WoRMS Info | Name: Calcarea | AphiaID: 559 | [Link →](#)

**Description:** Small slightly translucent white tubes coming out from substrate with a large central osculum.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Calcarea

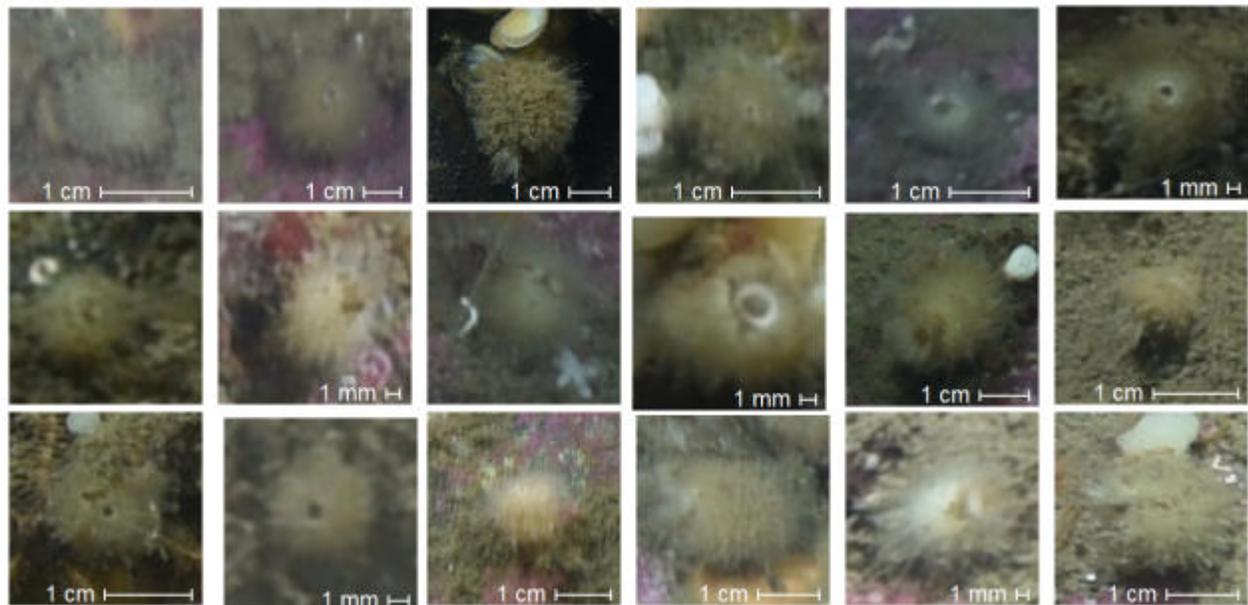
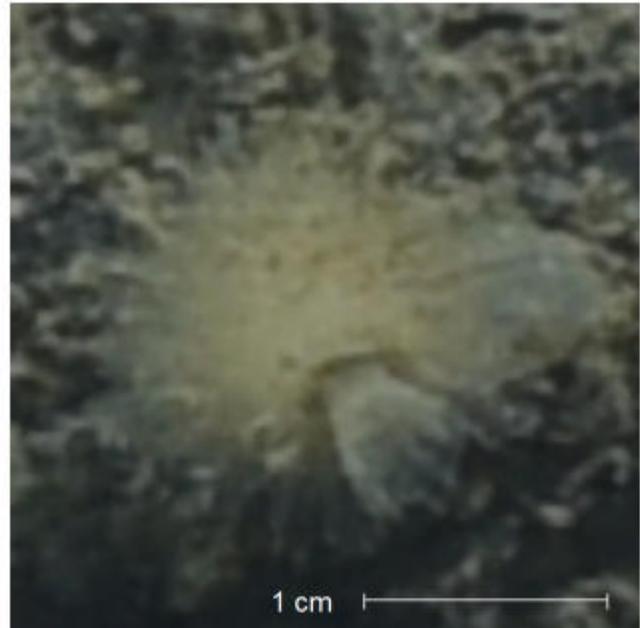
**Calcarea var 3** Bowerbank, 1862

WoRMS Info | Name: Calcarea | AphiaID: 559 | [Link →](#)

**Description:** White, beige, or greenish cylindrical sponge with a terminal osculum. Can look spherical in images. Surface hispid and often a fringe is present around the terminal osculum.

**Potential taxa:** *Sycon*

**Considered for use in analyses:** Yes



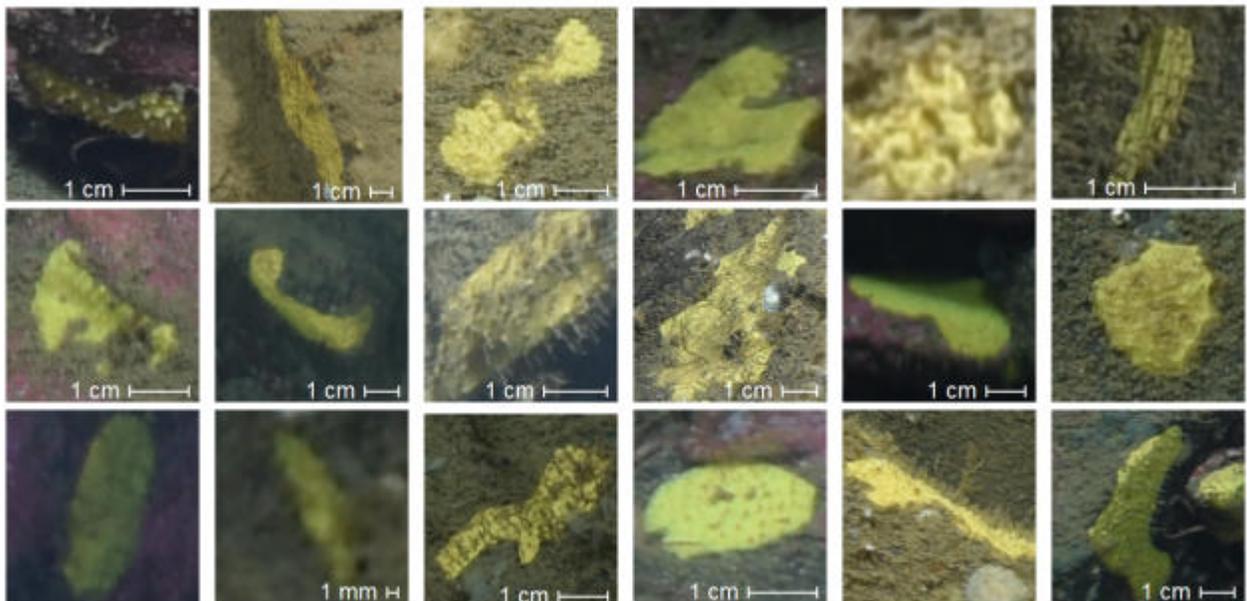
Phylum Porifera → Class Demospongiae → Order Dendroceratida → Family Darwinellidae

***Aplysilla sulfurea*** Schulze, 1878

WoRMS Info | Name: *Aplysilla sulfurea* | AphiaID: 236120 | [Link →](#)

**Description:** Bright yellow encrusting sponge with conules over its surface.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Haplosclerida → Family Niphatidae

***Hemigellius*** Burton, 1932

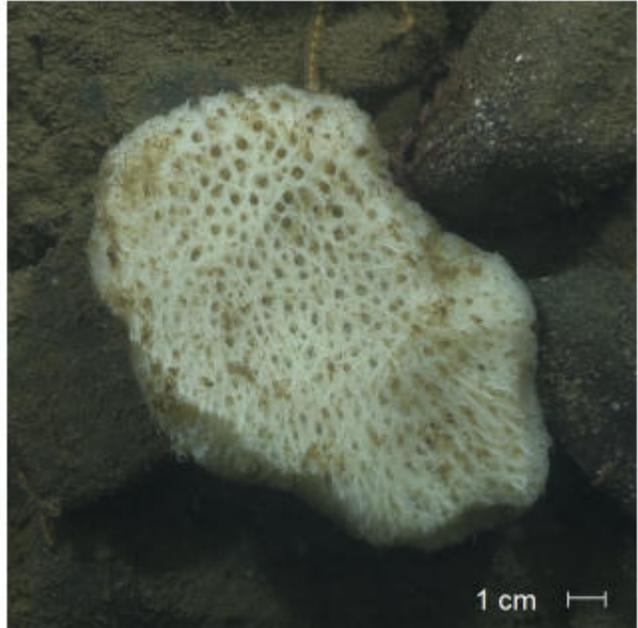
WoRMS Info | Name: *Hemigellius* | AphiaID: 131843 | [Link →](#)

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**Description:** Large, flattened, pale yellow lobe. Surface with large pores and visible spongin fibres.

**Potential taxa:** *Hemigellius arcofer*

**Considered for use in analyses:** Yes



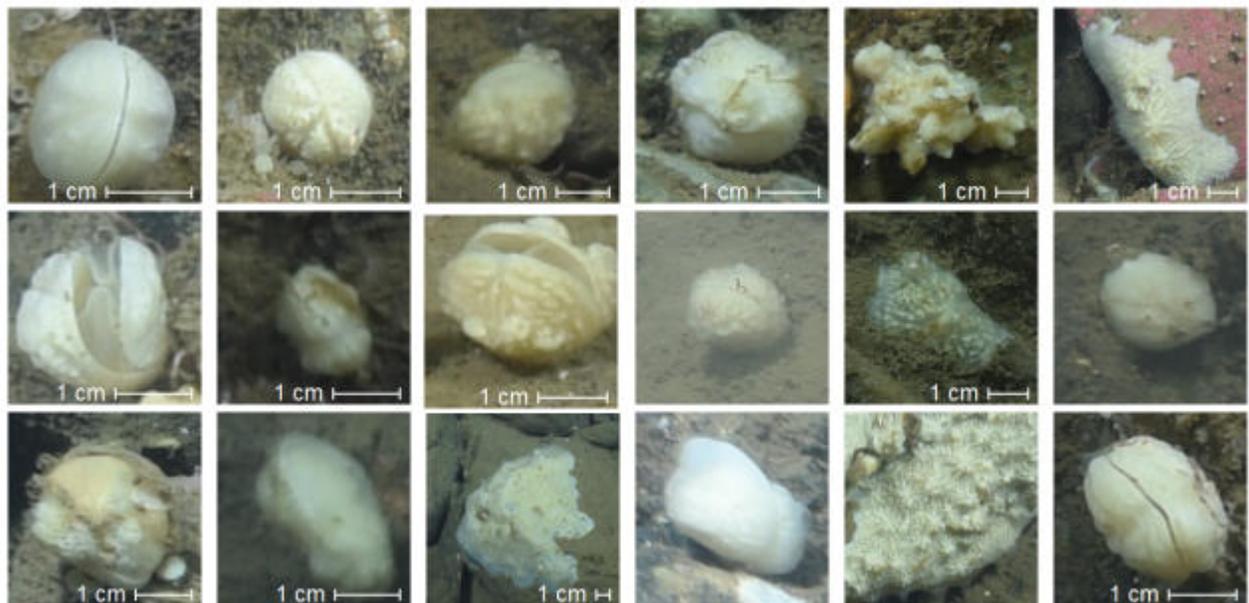
Phylum Porifera → Class Demospongiae → Order Poecilosclerida → Family Acarnidae

***lophon*** Gray, 1867

WoRMS Info | Name: *lophon* | AphiaID: 131863 | [Link →](#)

**Description:** White or pale (sometimes darker) yellow sponge which is commonly found on the valves of brachiopods. Some sponges have lumpy surface projections.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Poecilosclerida → Family Hymedesmiidae

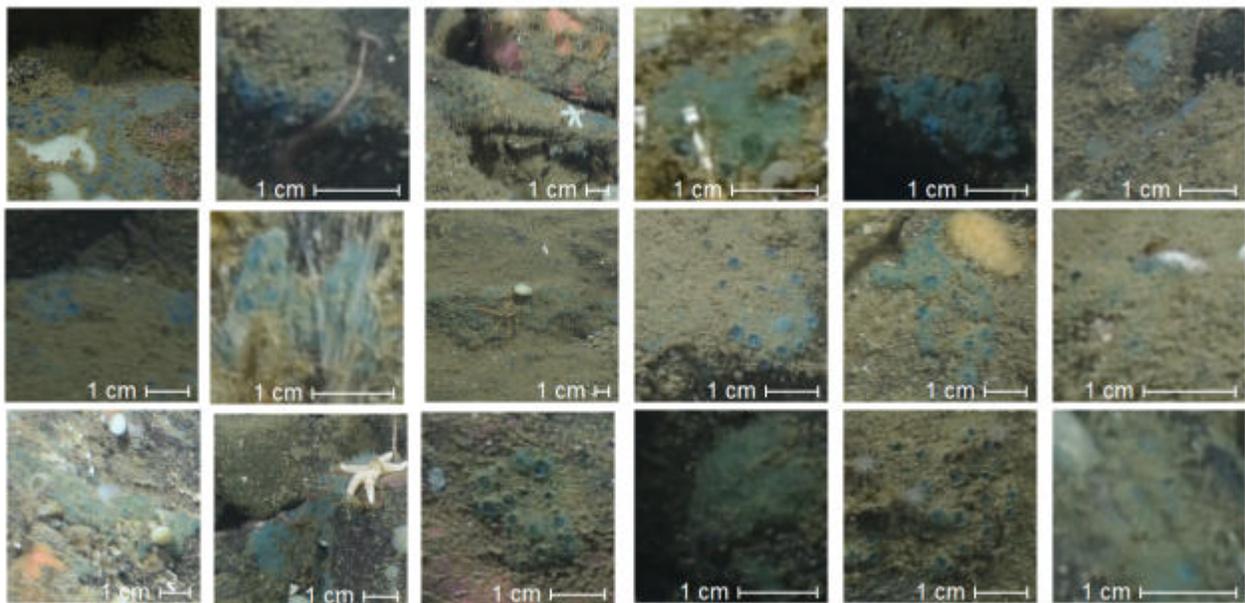
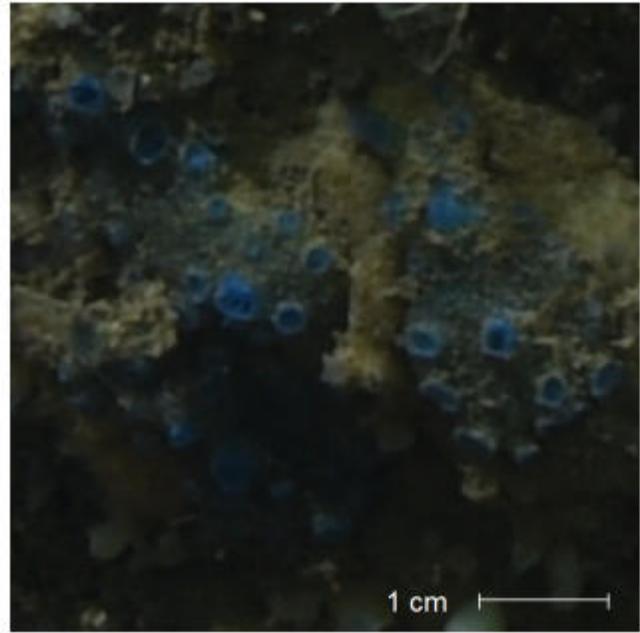
**Hymedesmiidae var 1** Topsent, 1928

WoRMS Info | Name: Hymedesmiidae | AphiaID: 131655 | [Link →](#)

**Description:** Blue/green encrusting sponge with characteristic pore sieves.

**Potential taxa:** *Hymedesmia paupertas*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Poecilosclerida → Family Hymedesmiidae

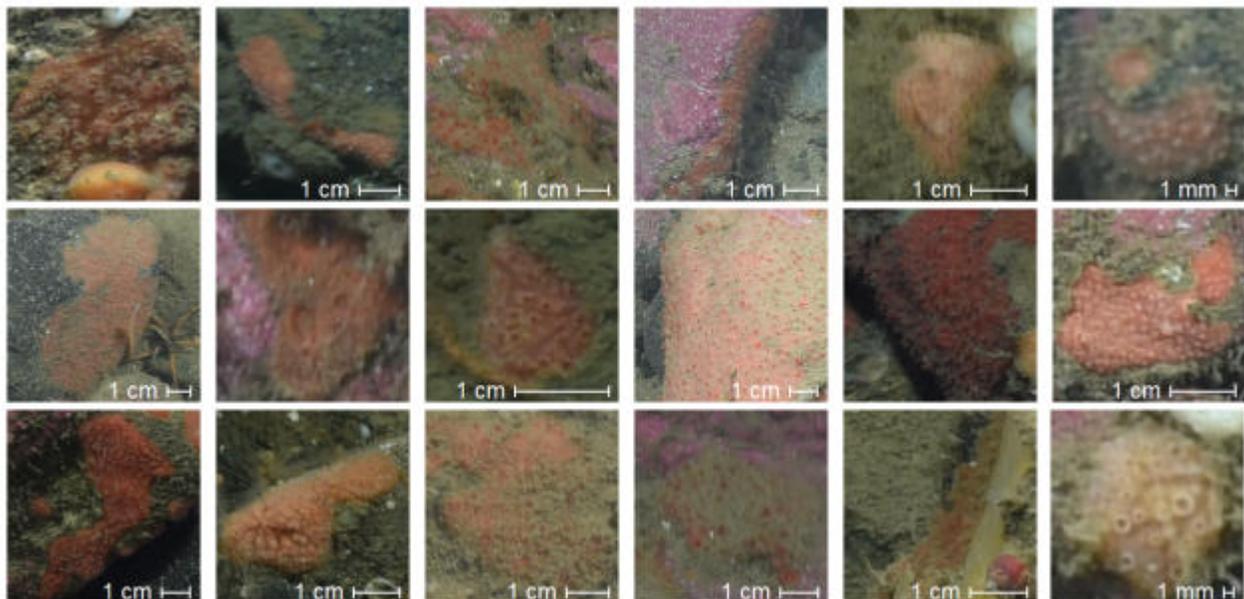
**Hymedesmiidae var 2** Topsent, 1928

WoRMS Info | Name: Hymedesmiidae | AphiaID: 131655 | [Link →](#)

**Description:** Red encrusting sponge with characteristic pore sieves.

**Potential taxa:** *Hymedesmia jecusculum*,  
*Hymedesmia canadensis*

**Considered for use in analyses:** Yes



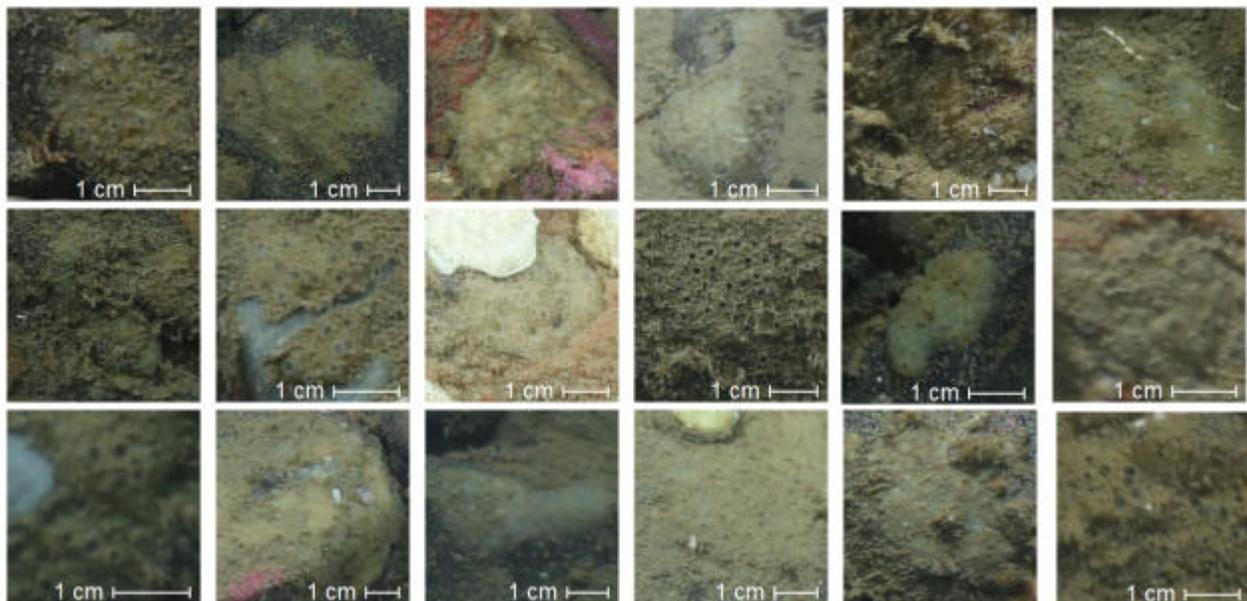
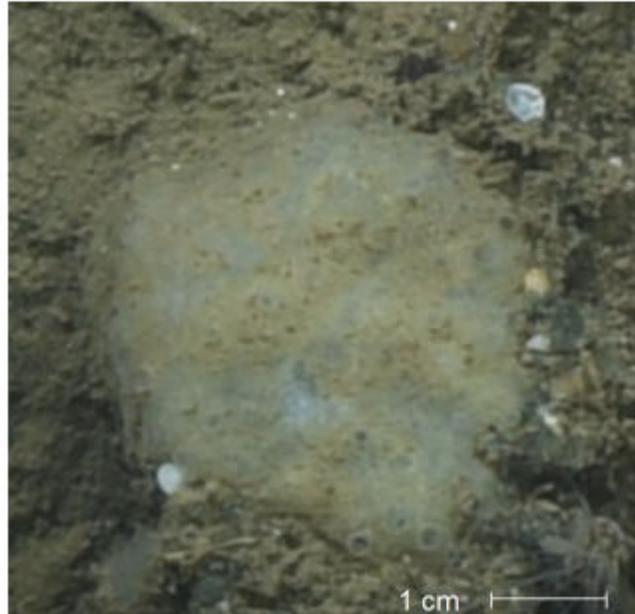
Phylum Porifera → Class Demospongiae → Order Poecilosclerida → Family Hymedesmiidae

**Hymedesmiidae var 3** Topsent, 1928

WoRMS Info | Name: Hymedesmiidae | AphiaID: 131655 | [Link →](#)

**Description:** White/pale encrusting sponge with characteristic pore sieves and sometimes visible veined pattern.

**Considered for use in analyses:** Yes



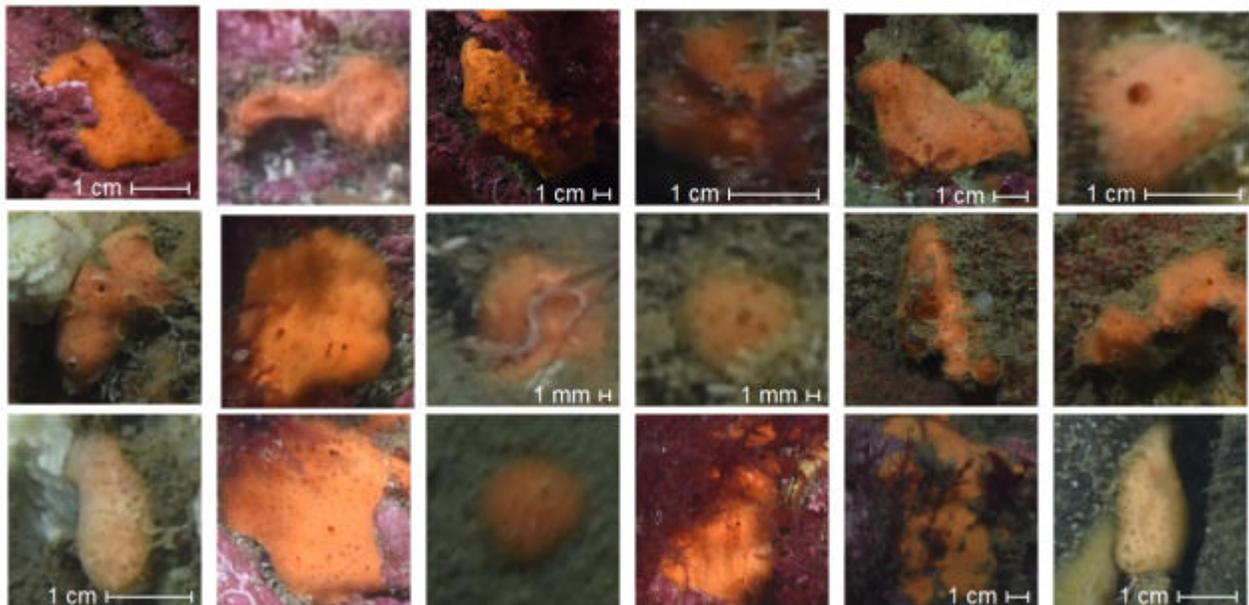
Phylum Porifera → Class Demospongiae → Order Poecilosclerida → Family Myxillidae

***Myxilla fimbriata*** (Bowerbank, 1866)

WoRMS Info | Name: *Myxilla (Myxilla) fimbriata* | AphiaID: 169461 | [Link →](#)

**Description:** Bright orange massively encrusting sponge. Surface with many pores and scattered large oscula.

**Considered for use in analyses:** Yes



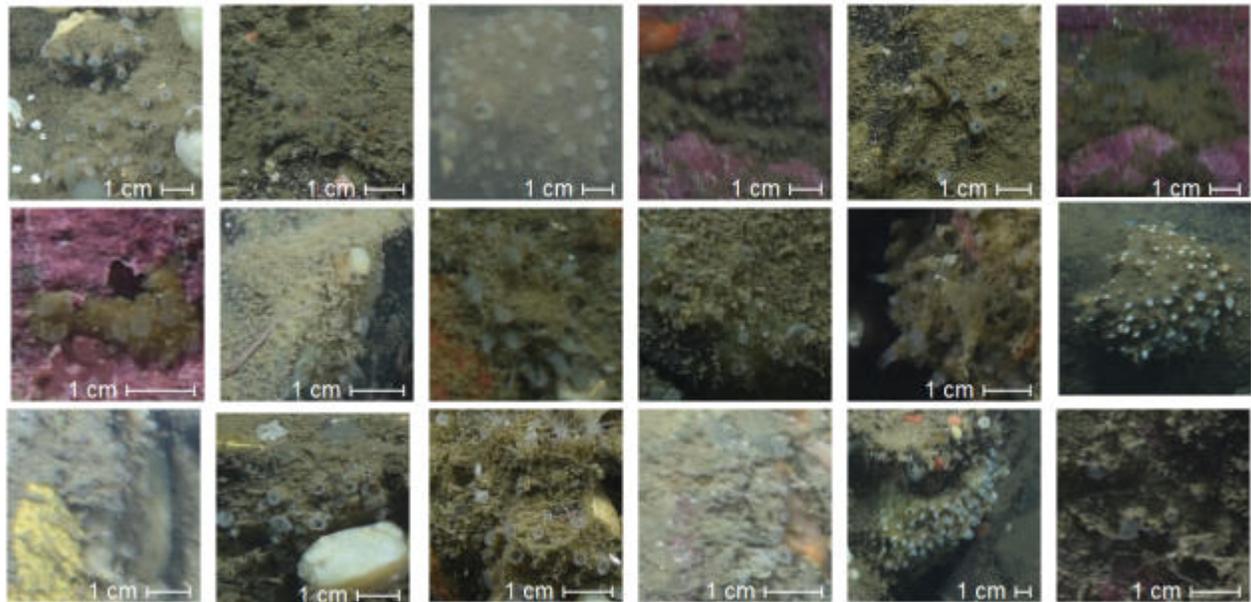
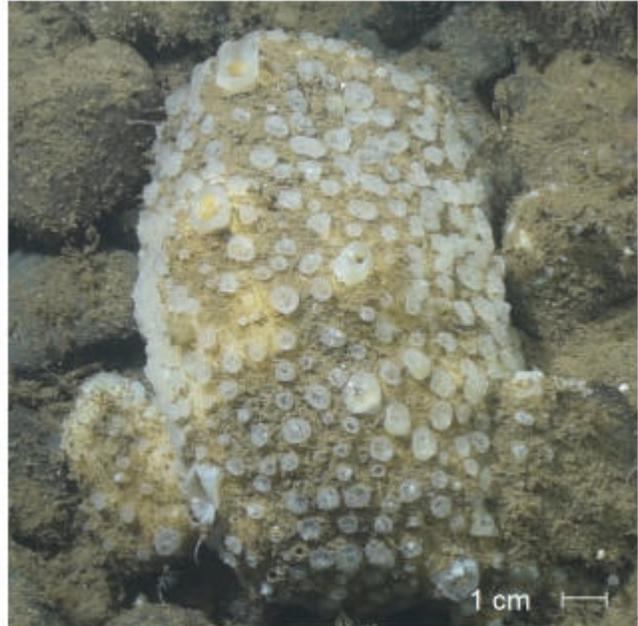
Phylum Porifera → Class Demospongiae → Order Poecilosclerida → Family Tedaniidae

***Tedania suctoria*** Schmidt, 1870

WoRMS Info | Name: *Tedania (Tedania) suctoria* | AphiaID: 169587 | [Link →](#)

**Description:** Massively encrusting white or pale yellow sponge. Surface with many pore sieves. Often the sponge is covered in silt and only the pore sieves are visible.

**Considered for use in analyses:** Yes



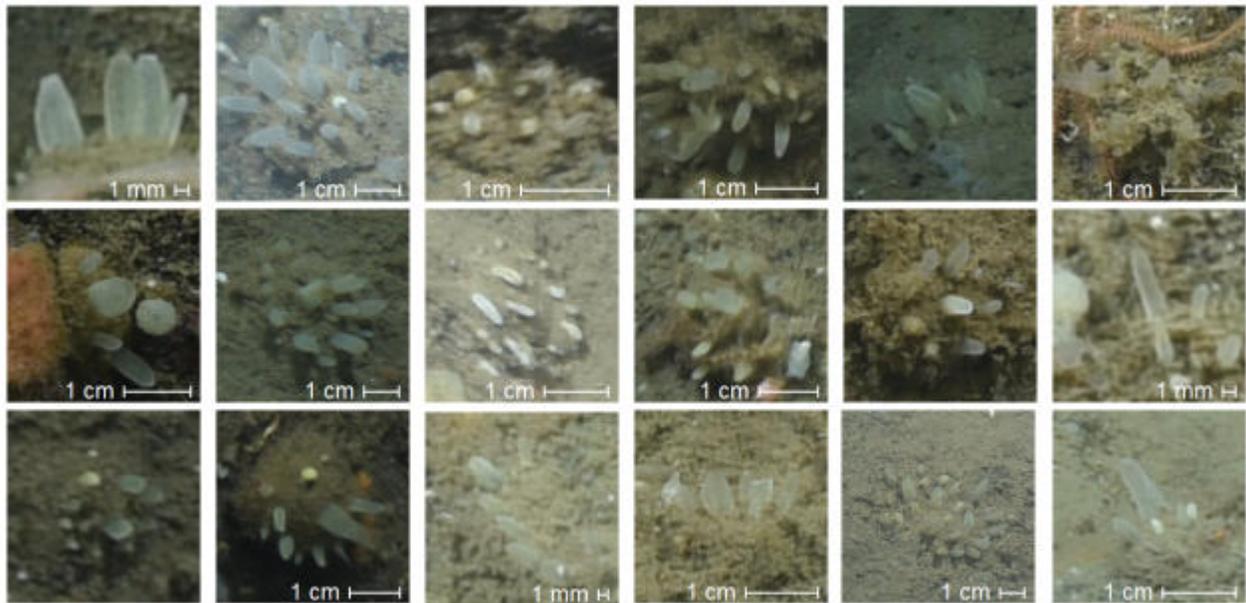
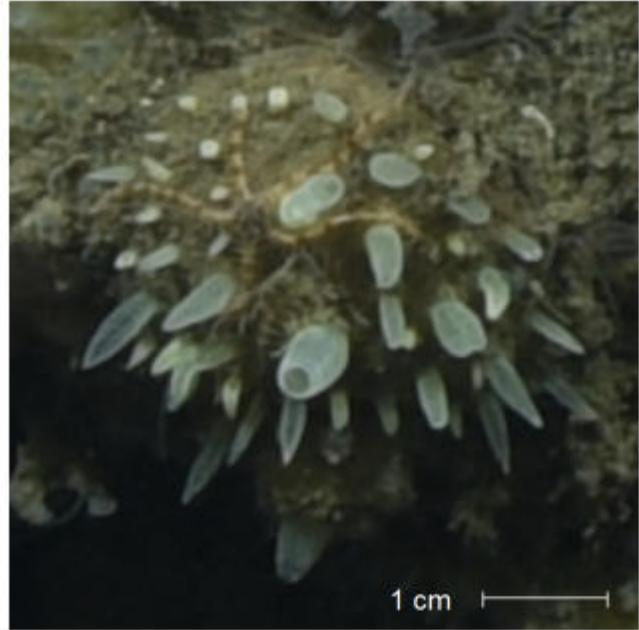
Phylum Porifera → Class Demospongiae → Order Polymastiida → Family Polymastiidae

***Polymastia andrica*** de Laubenfels, 1949

WoRMS Info | Name: *Polymastia andrica* | AphiaID: 157415 | [Link →](#)

**Description:** Massively encrusting sponge with many papillae, some of these have terminal oscula. Often much of the sponge is covered in sediment and only the papillae are visible.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Polymastiida → Family Polymastiidae

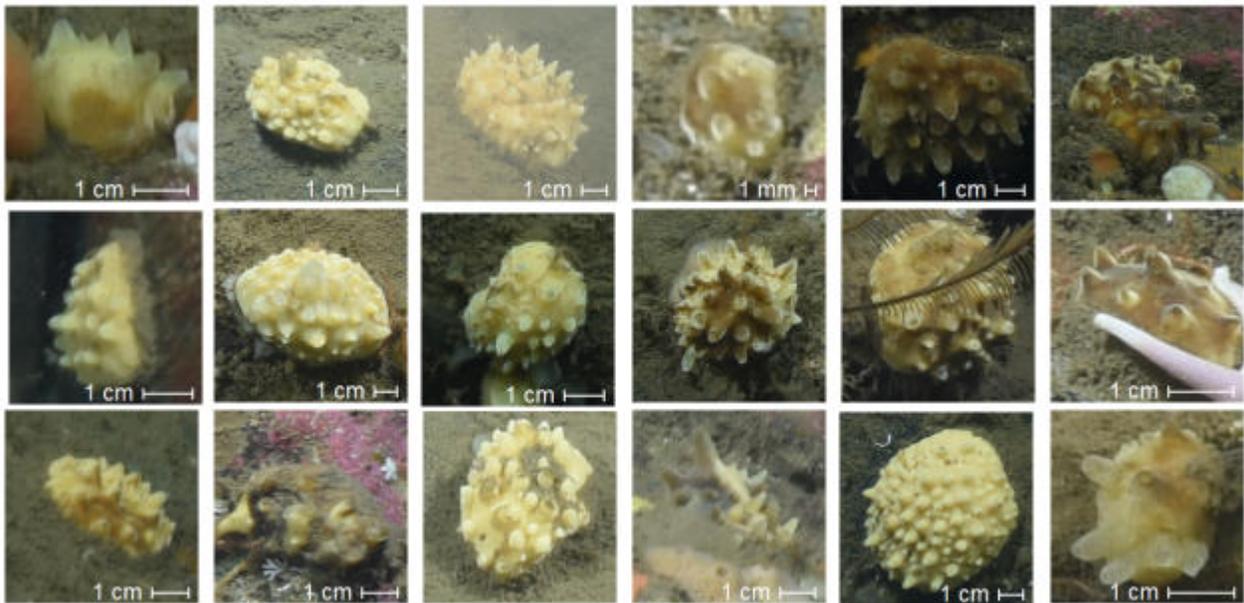
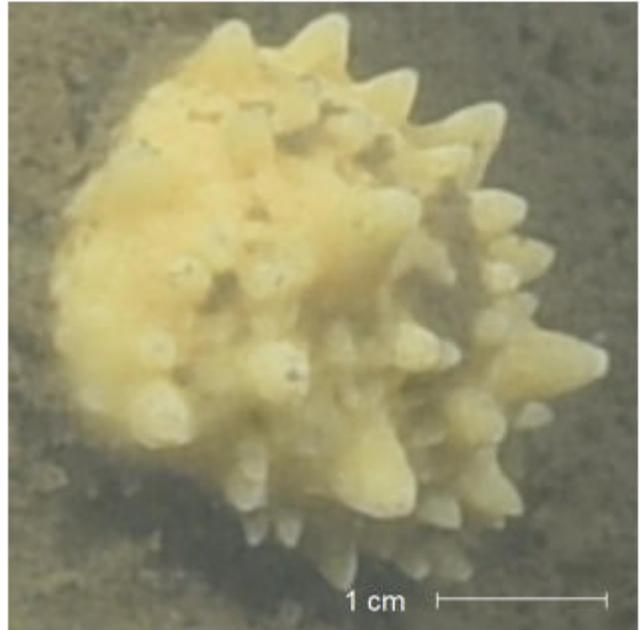
**Polymastiidae var 1** Gray, 1867

WoRMS Info | Name: Polymastiidae | AphiaID: 131673 | [Link →](#)

**Description:** Pale yellow massively encrusting sponge with many papillae over its surface. At the base, the edge of the sponge has a brown hispid fringe.

**Potential taxa:** *Polymastia uberrima*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Polymastiida → Family Polymastiidae

**Polymastiidae var 2** Gray, 1867

WoRMS Info | Name: Polymastiidae | AphiaID: 131673 | [Link →](#)

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**Description:** Massively encrusting yellow sponge with many papillae.

**Potential taxa:** *Sphaerotylus*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Polymastiida → Family Polymastiidae

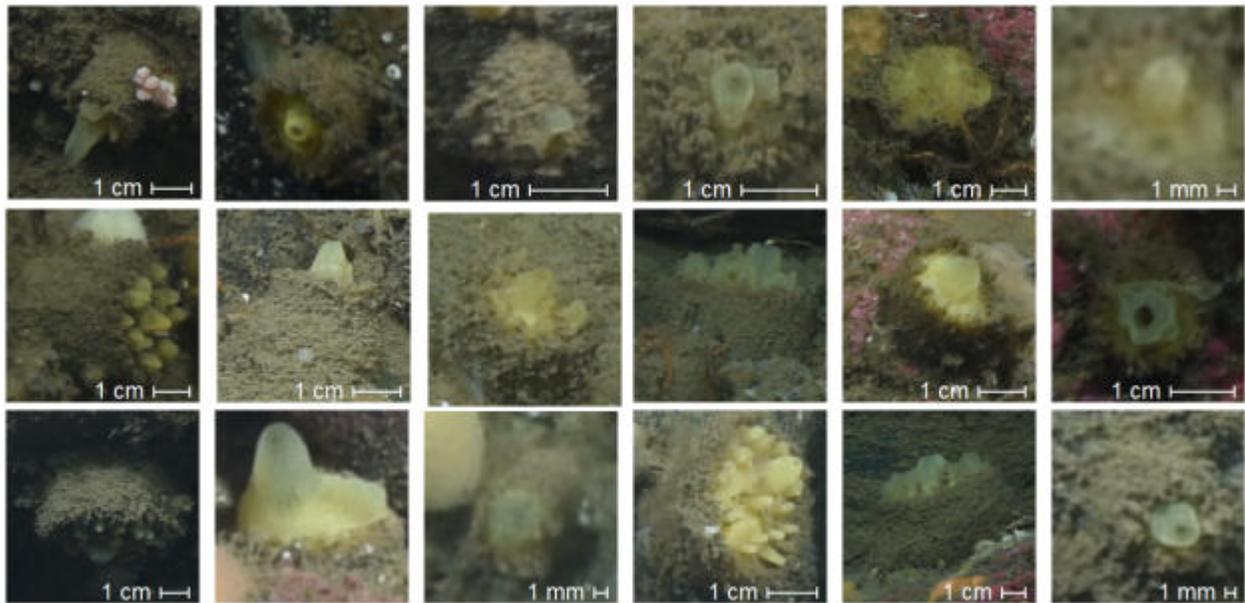
**Polymastiidae var 3** Gray, 1867

WoRMS Info | Name: Polymastiidae | AphiaID: 131673 | [Link →](#)

**Description:** Massive yellow sponge forming low mounds. Sides of mounds brown and hispid. Top with a variable number of yellow papillae, some can be very large.

**Potential taxa:** *Trachyteleia hispida*

**Considered for use in analyses:** Yes



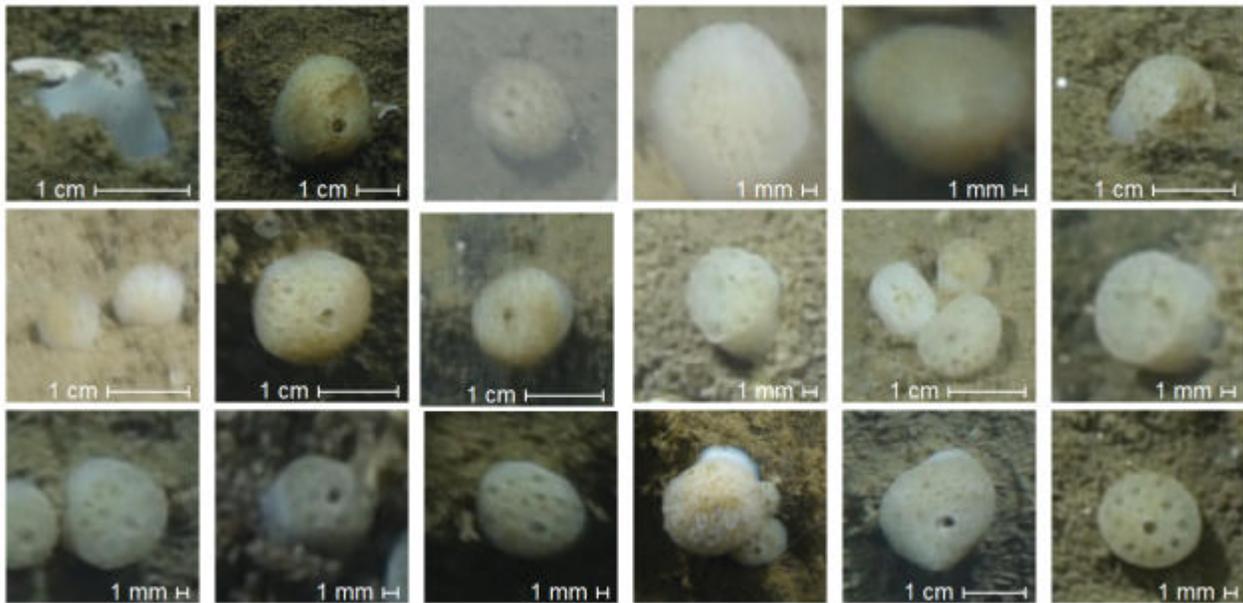
Phylum Porifera → Class Demospongiae → Order Polymastiida → Family Polymastiidae

***Tentorium semisuberites*** (Schmidt, 1870)

WoRMS Info | Name: *Tentorium semisuberites* | AphiaID: 134224 | [Link →](#)

**Description:** Small mushroom-shaped white or beige sponge. Top often has a central osculum and many smaller pores.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Order Suberitida → Family Halichondriidae

***Halichondria panicea*** (Pallas, 1766)

WoRMS Info | Name: *Halichondria (Halichondria) panicea* | AphiaID: 165853 | [Link →](#)

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**Description:** Massively encrusting sponge. Green surface likely caused by symbiotic algae. Has mounds over its surface with terminal oscula.

**Considered for use in analyses:** Yes



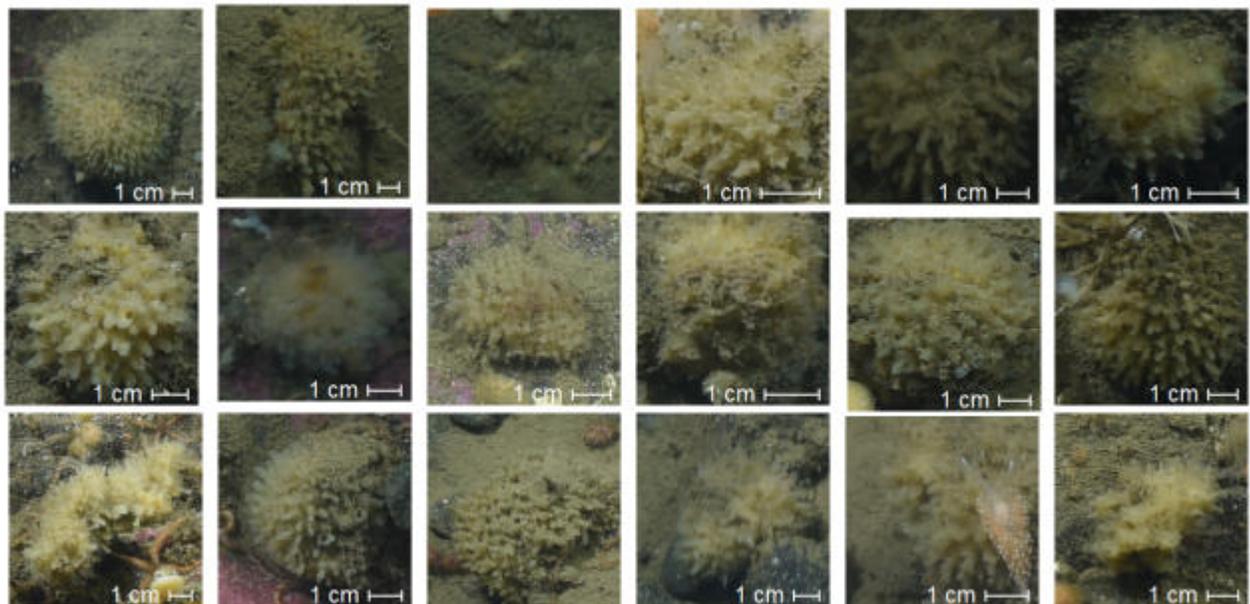
Phylum Porifera → Class Demospongiae → Order Suberitida → Family Halichondriidae

***Halichondria sitiens*** (Schmidt, 1870)

WoRMS Info | Name: *Halichondria (Eumastia) sitiens* | AphiaID: 165789 | [Link →](#)

**Description:** Massively encrusting yellow sponge with many small, finger-like surface projections. The projections give the sponge a fuzzy appearance.

**Considered for use in analyses:** Yes



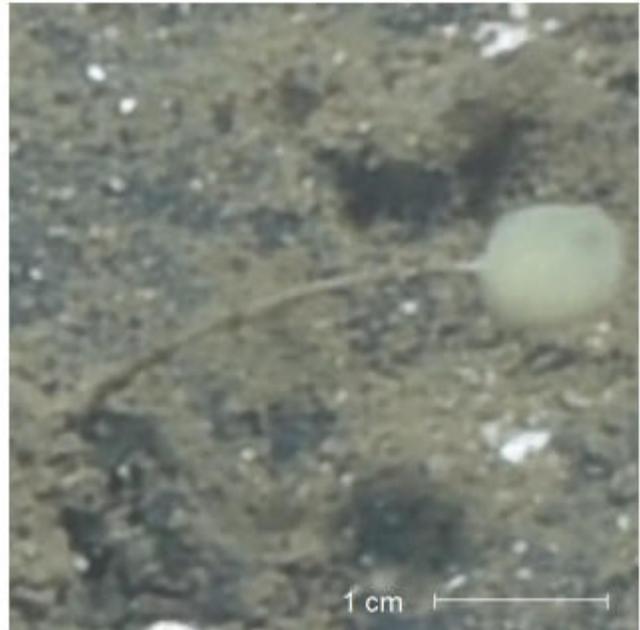
Phylum Porifera → Class Demospongiae → Order Suberitida → Family Stylocordylidae

***Stylocordyla borealis*** (Lovén, 1868)

WoRMS Info | Name: *Stylocordyla borealis* | AphiaID: 134240 | [Link →](#)

**Description:** Oval, cylindrical, or tulip shaped white or beige sponge with a long stalk.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Subclass Heteroscleromorpha

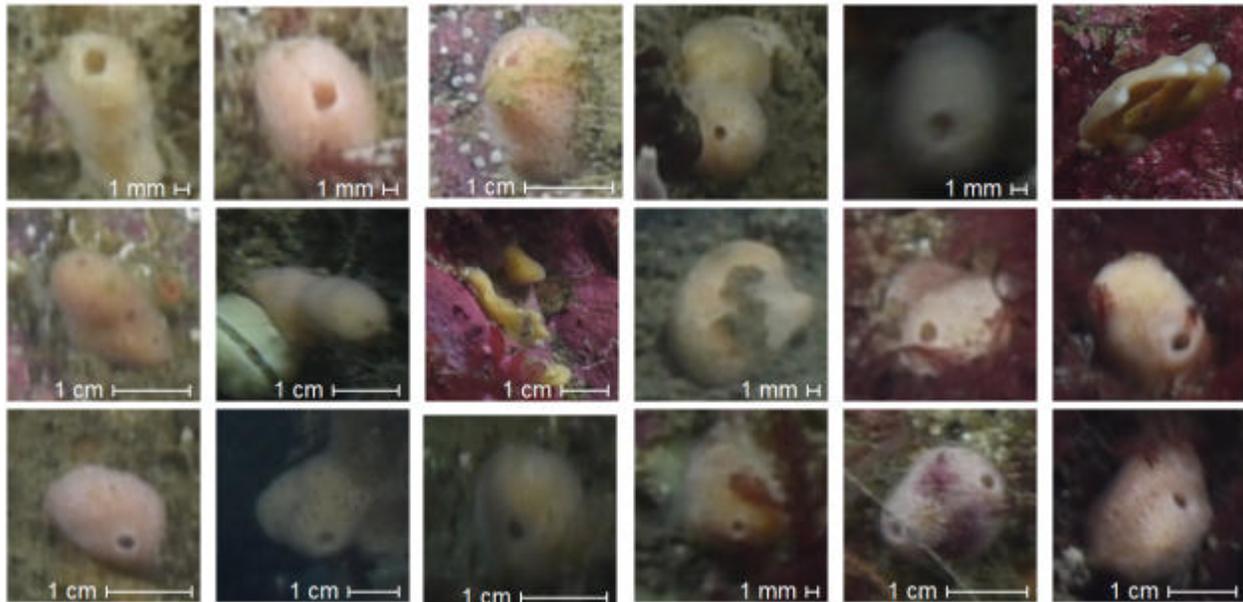
**Heteroscleromorpha var 1** Cárdenas, Pérez & Boury-Esnault, 2012

WoRMS Info | Name: Heteroscleromorpha | AphiaID: 607950 | [Link →](#)

**Description:** Massively encrusting pale pink or beige sponge in the form of a small lobe. Often has a single large osculum towards the centre of the lobe.

**Potential taxa:** *Haliclona* (*Haliclona*) *oculata*, *Isodictya*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae → Subclass Heteroscleromorpha

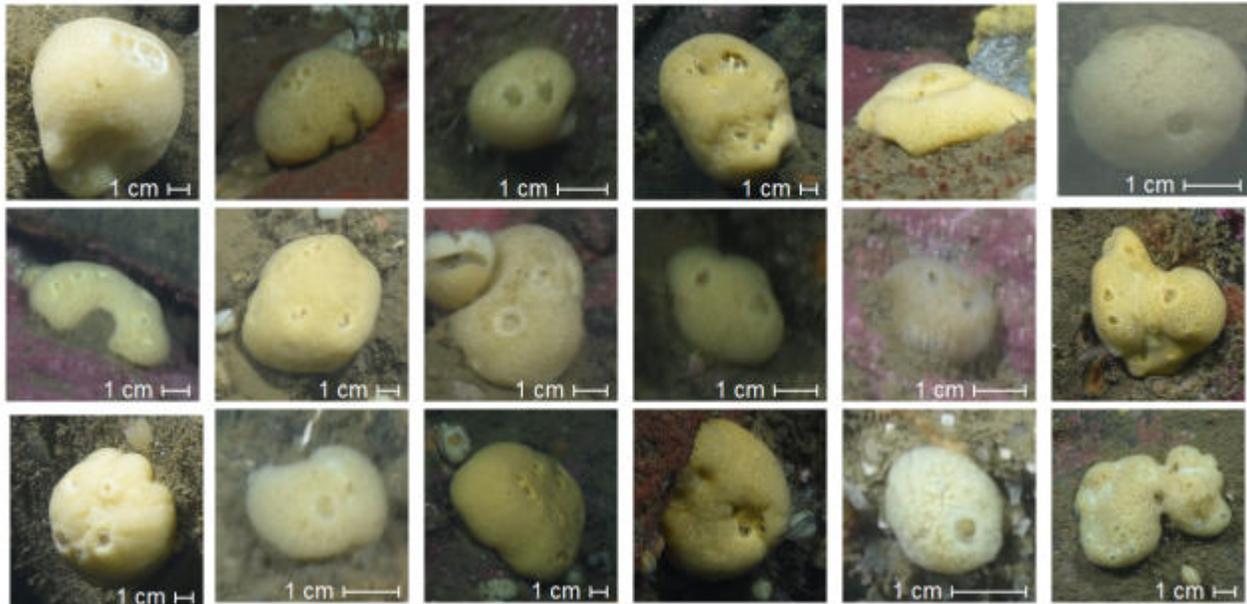
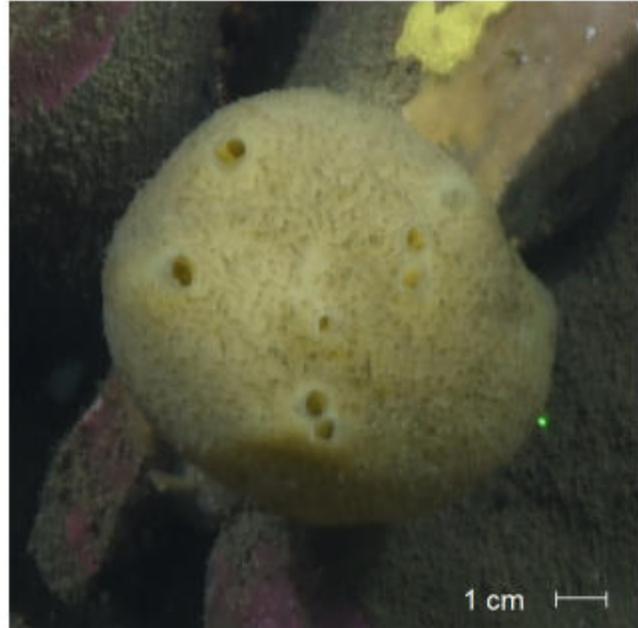
**Heteroscleromorpha var 2** Cárdenas, Pérez & Boury-Esnault, 2012

WoRMS Info | Name: Heteroscleromorpha | AphiaID: 607950 | [Link →](#)

**Description:** Pale yellow massive sponge with porous surface forming rounded lobes of various sizes. This grouping is likely comprised of a mix of *Mycale lingua* and a *Halichondria sitiens*. The former has characteristic channels on its surface while the latter is lacking those channels, however it is difficult to visually confirm these traits from these images.

**Potential taxa:** *Mycale lingua*,  
*Halichondria sitiens*

**Considered for use in analyses:** Yes



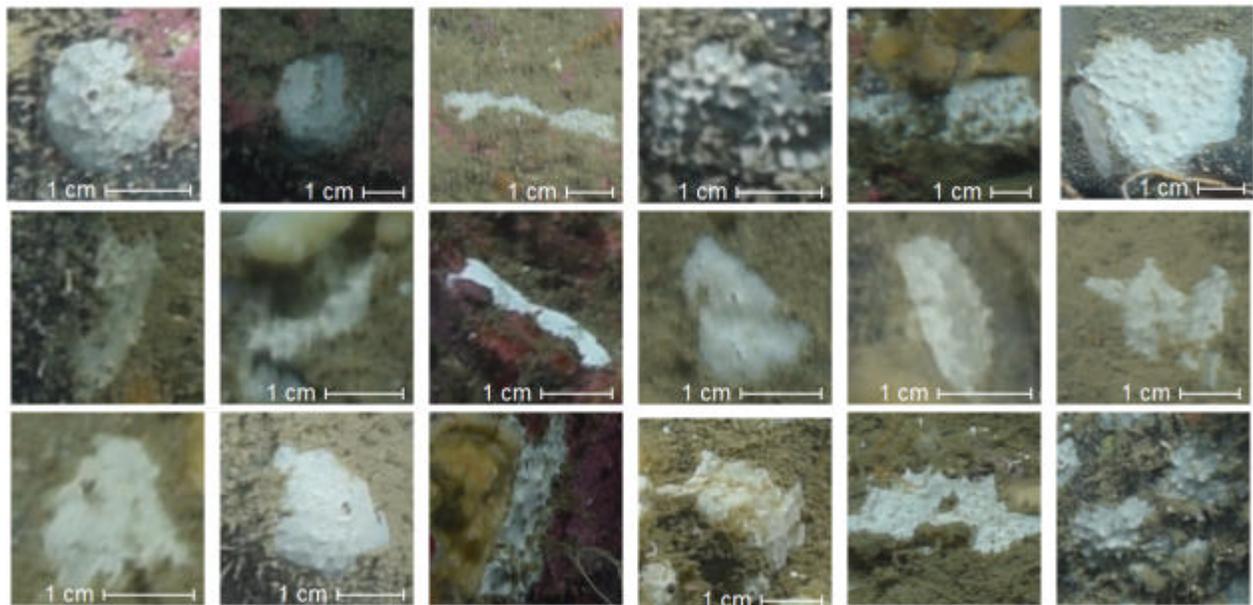
Phylum Porifera → Class Demospongiae

**Demospongiae var 1** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Bright white encrusting sponge with conules over its surface.

**Considered for use in analyses:** Yes



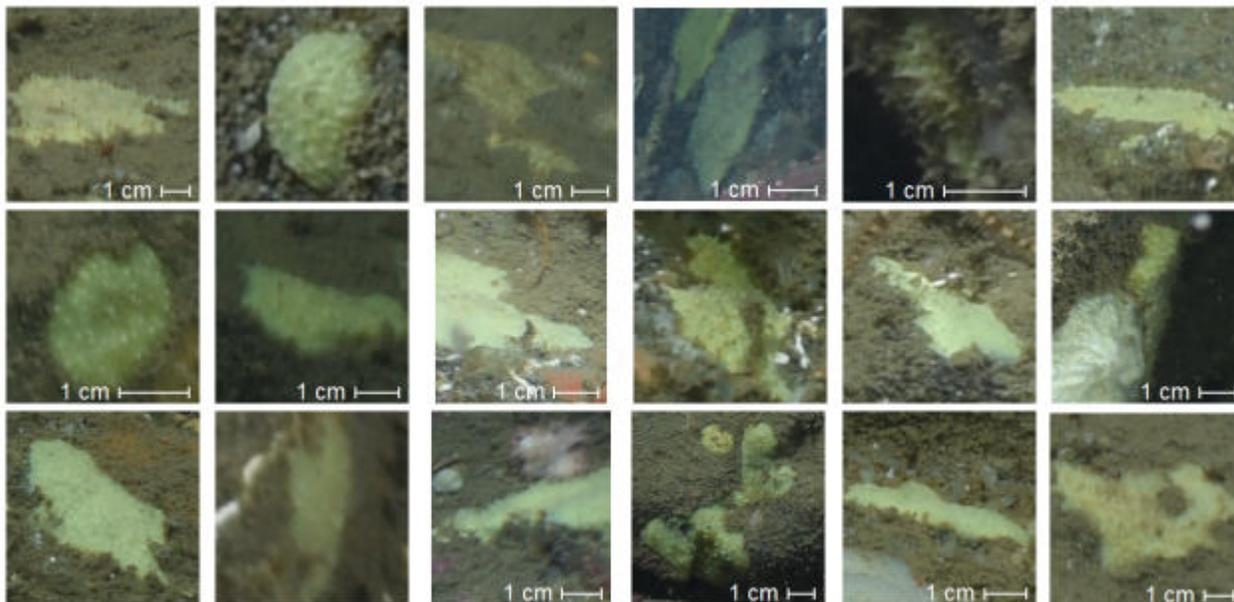
Phylum Porifera → Class Demospongiae

**Demospongiae var 2** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Light yellow/lime encrusting sponge with conules over its surface.

**Considered for use in analyses:** Yes



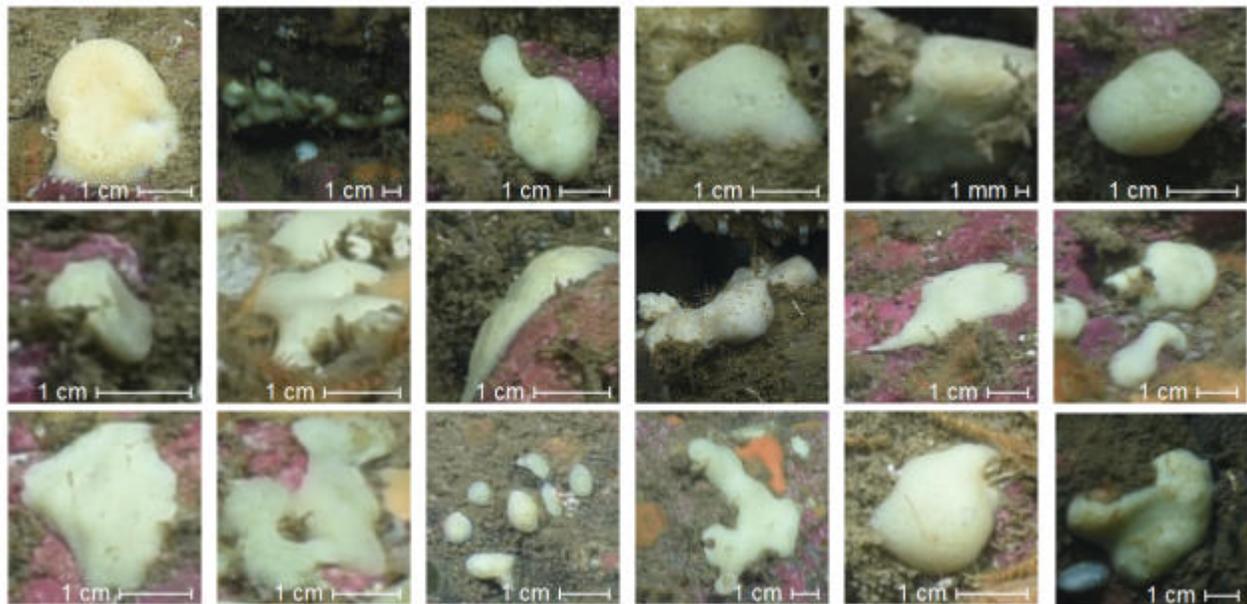
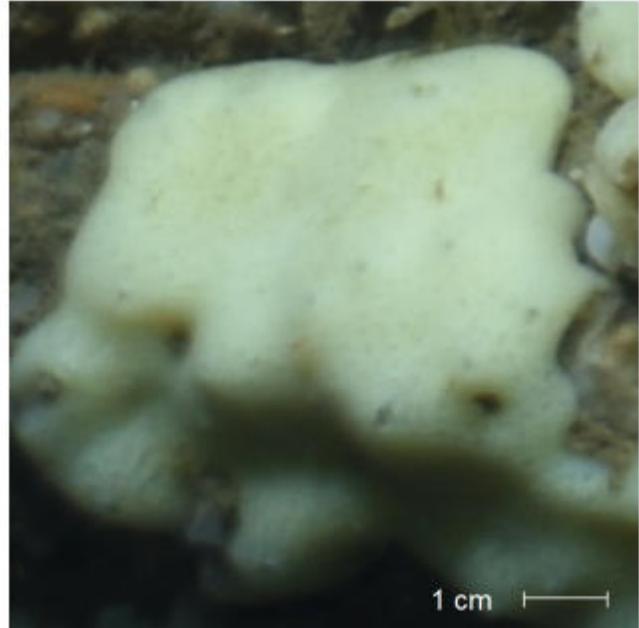
Phylum Porifera → Class Demospongiae

**Demospongiae var 3** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** White encrusting sponge with very smooth texture.

**Considered for use in analyses:** Yes



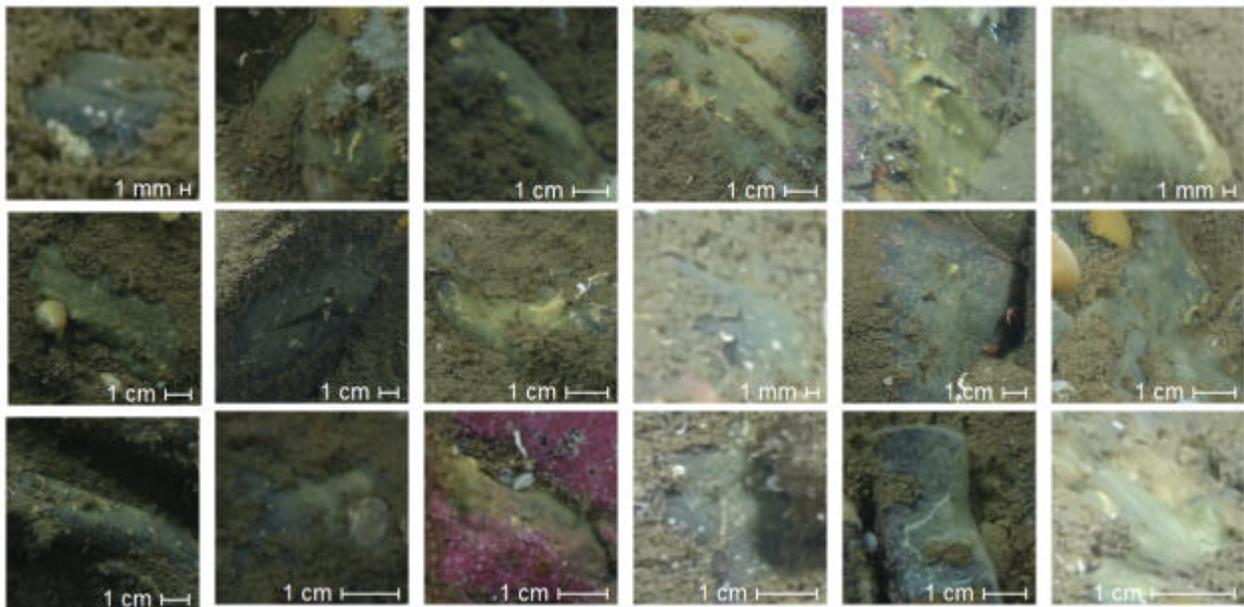
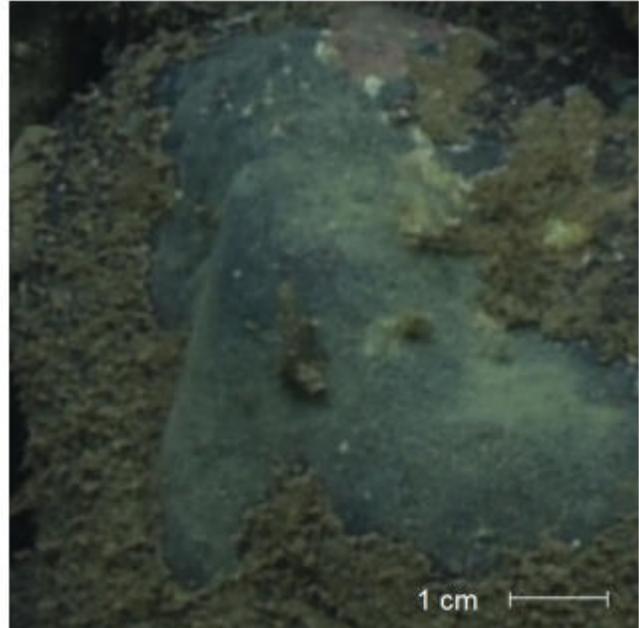
Phylum Porifera → Class Demospongiae

**Demospongiae var 4** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Thinly encrusting pale yellow sponge.

**Considered for use in analyses:** Yes



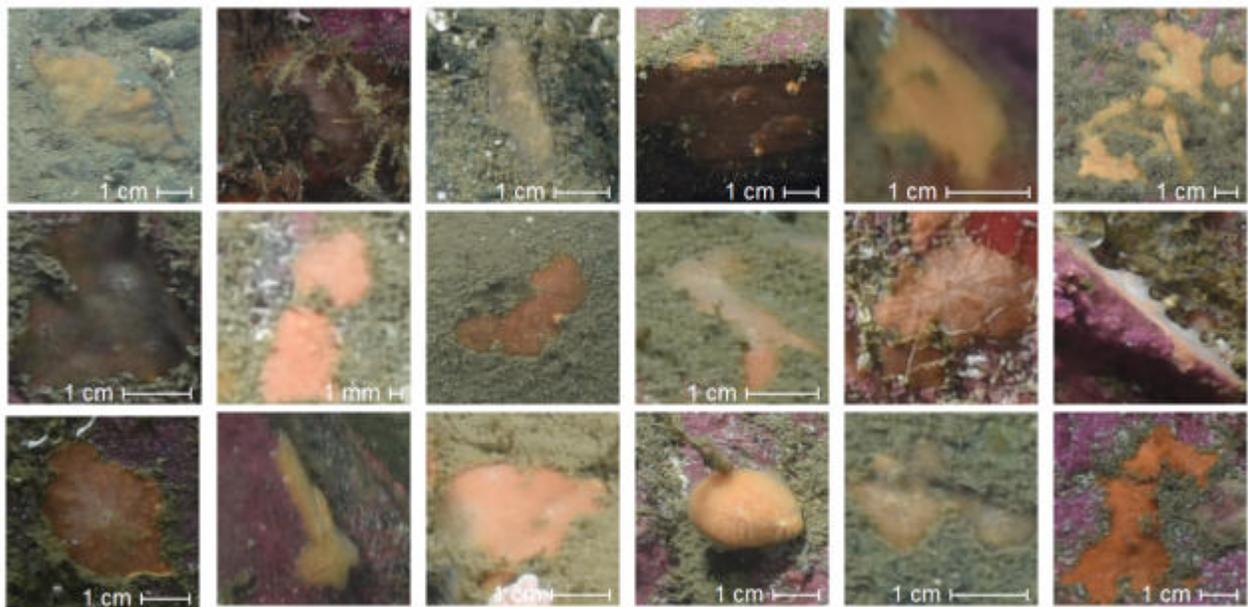
Phylum Porifera → Class Demospongiae

**Demospongiae var 5** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Thinly encrusting peach or pale orange sponge with large surface veins radiating from oscula.

**Considered for use in analyses:** Yes



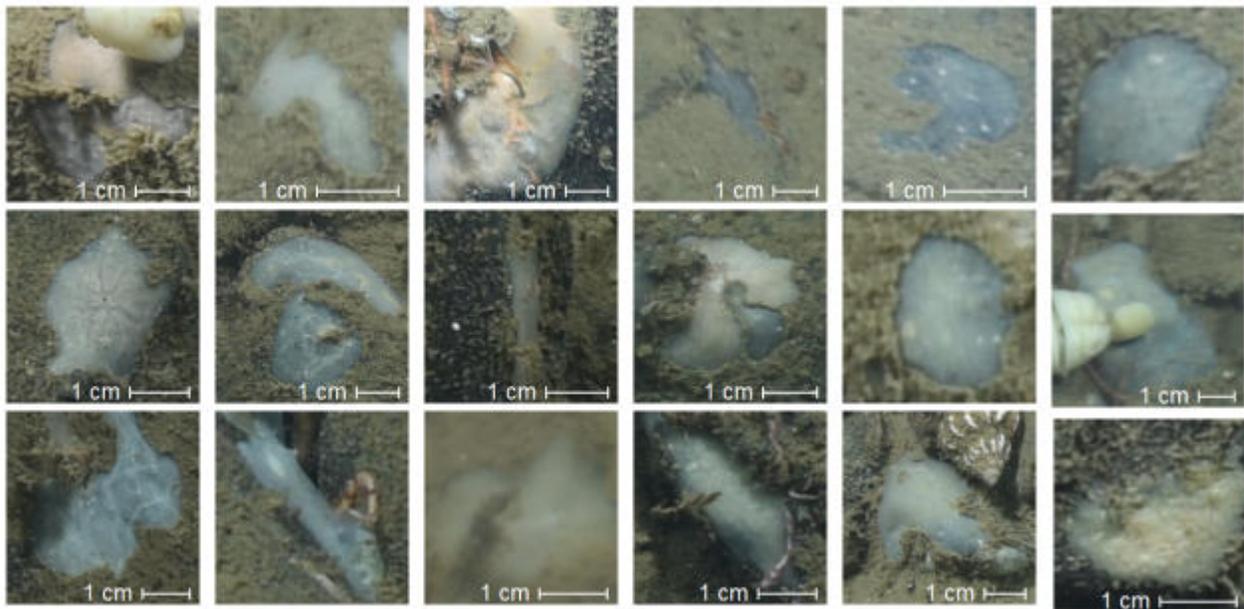
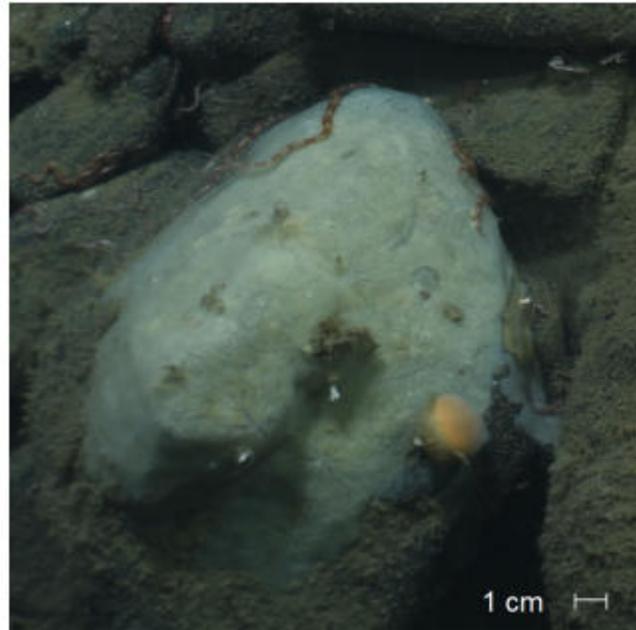
Phylum Porifera → Class Demospongiae

**Demospongiae var 6** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Thinly encrusting white sponge with surface veins.

**Considered for use in analyses:** Yes



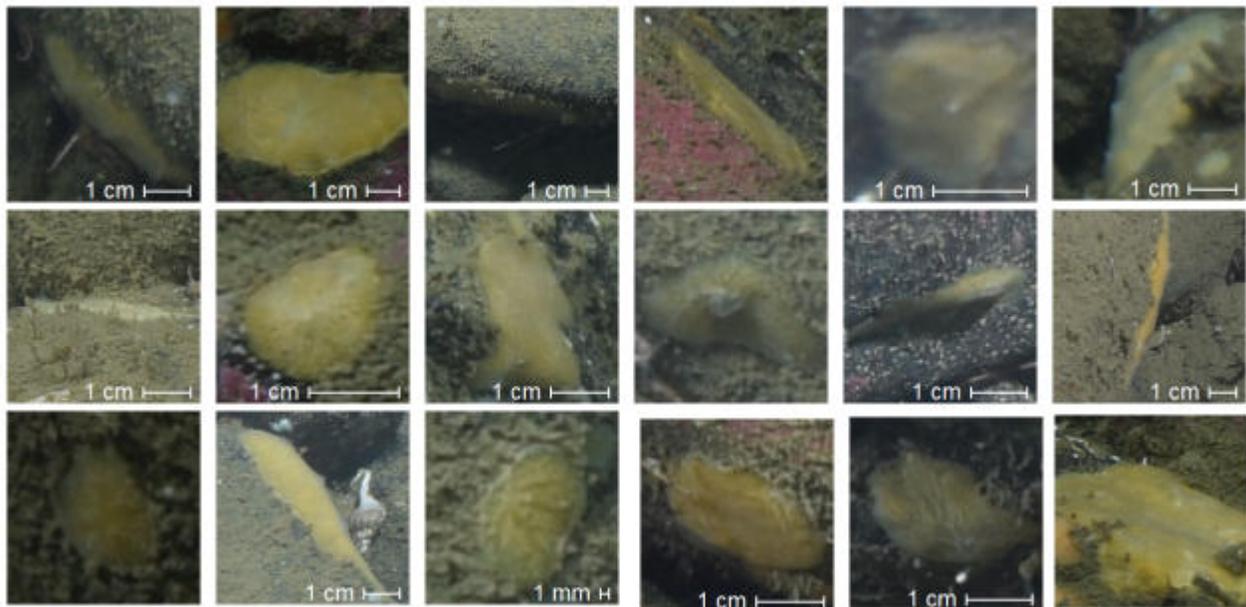
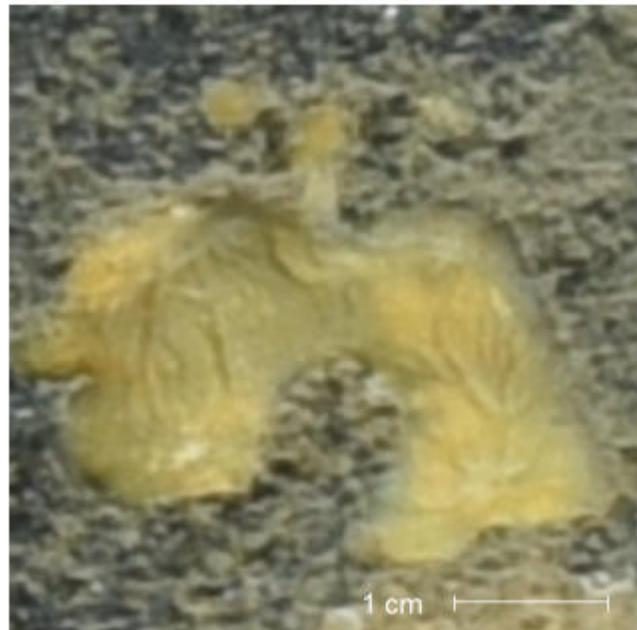
Phylum Porifera → Class Demospongiae

**Demospongiae var 7** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Thinly encrusting bright yellow sponge with surface veins.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

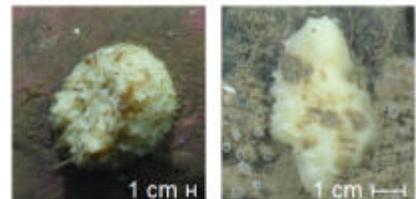
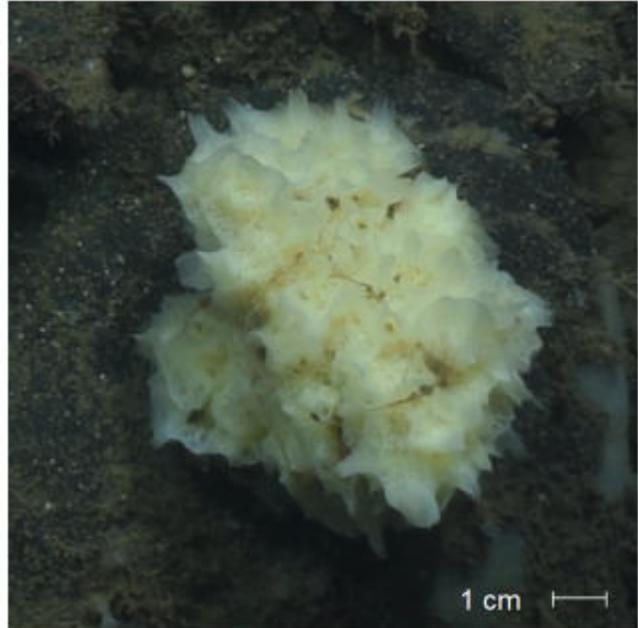
**Demospongiae var 8** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

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**Description:** White fluffy bulbous sponge.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

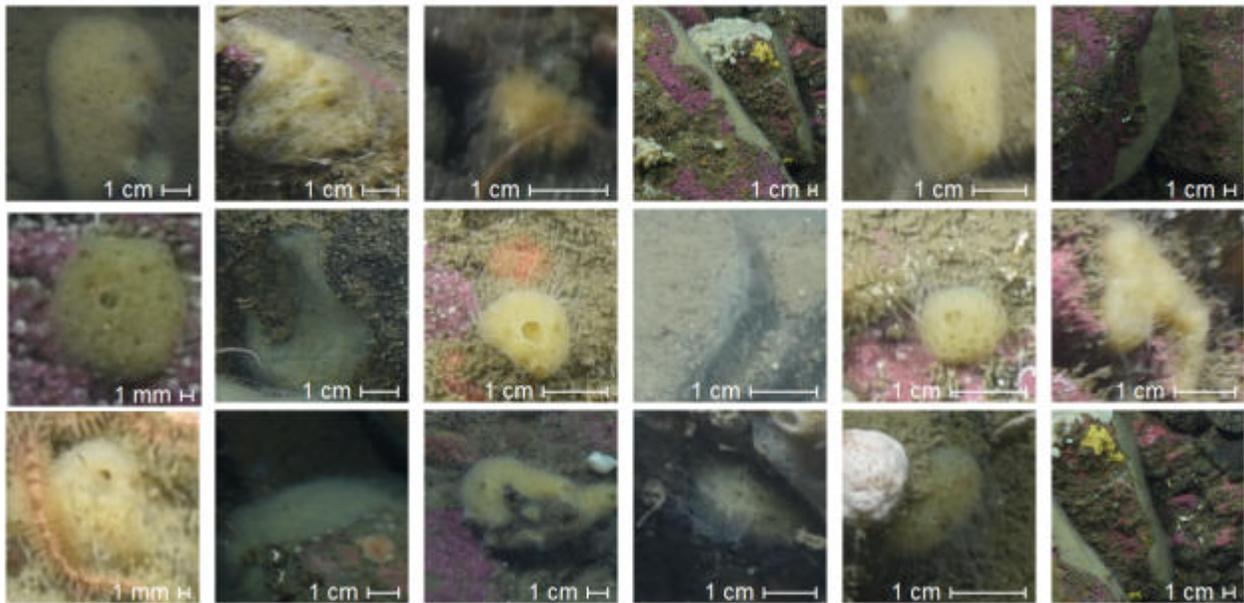
**Demospongiae var 9** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Massively encrusting pale yellow sponge with surface projections, porous surface, and often a large central osculum.

**Potential taxa:** *Halichondria sitiens*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

**Demospongiae var 10** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Pale yellow or beige encrusting sponge with branches or finger-like projections. May represent a growth form of one of the other species present in the area.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

**Demospongiae var 11** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

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**Description:** Beige tubular sponge with each tube having a large terminal osculum.

**Considered for use in analyses:** Yes



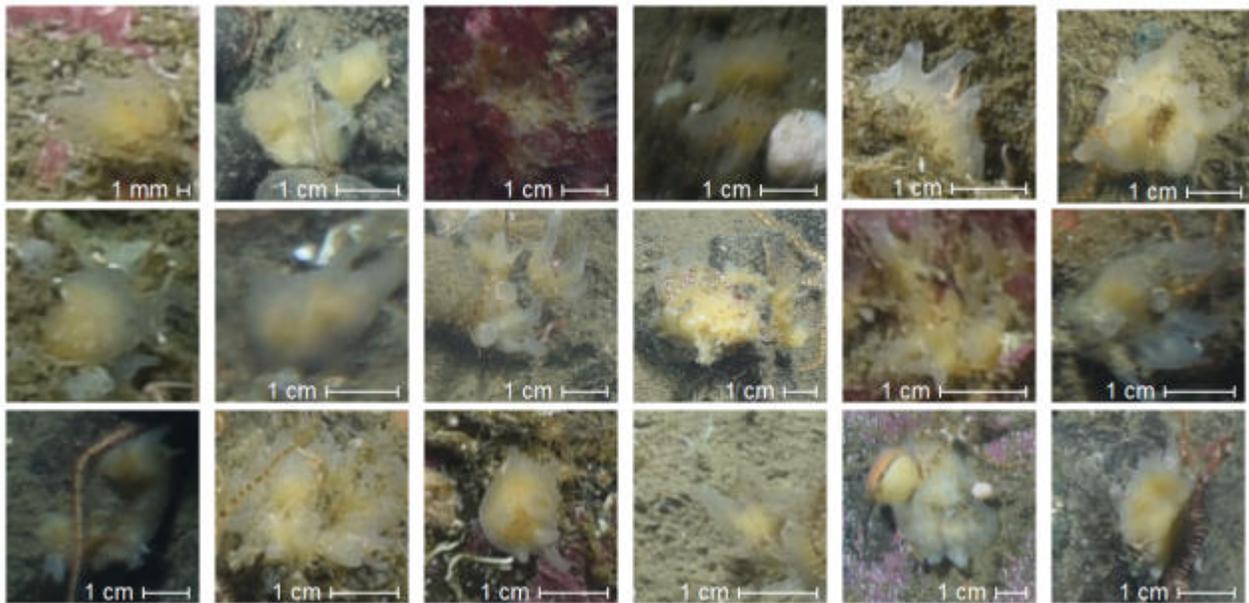
Phylum Porifera → Class Demospongiae

**Demospongiae var 12** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Yellow round core with translucent/wispy tubular pores.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

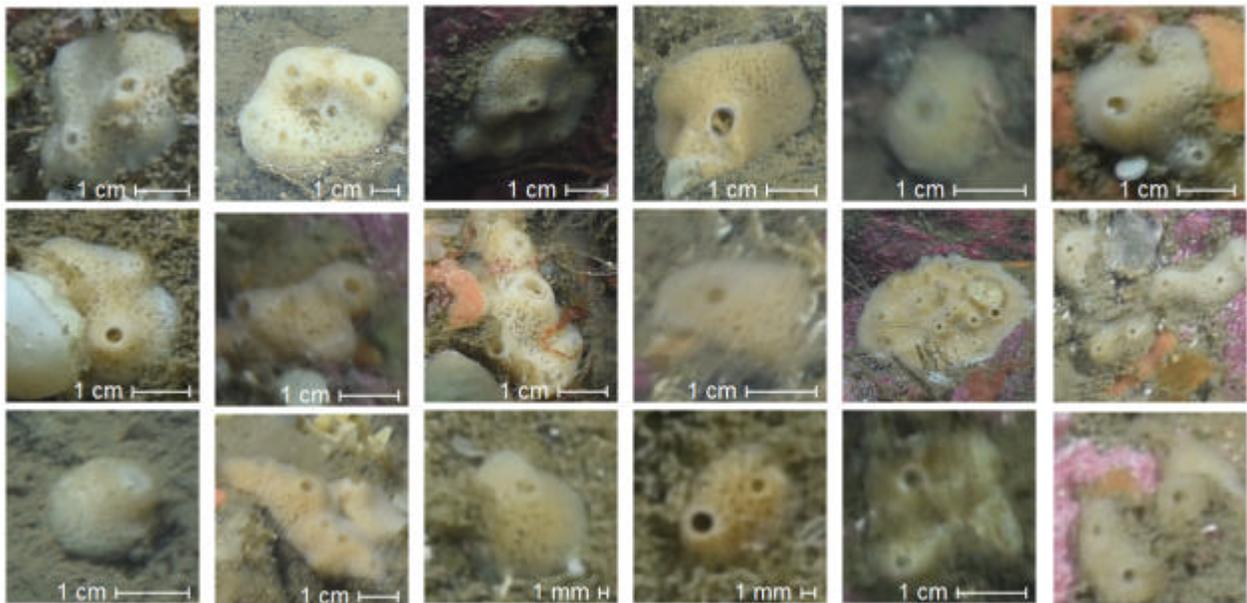
**Demospongiae var 13** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** White/beige bulbous sponge with porous surface and several larger oscula. Typically oscula will be raised above the rest of the surface.

**Potential taxa:** *Amphilectus ovulum*

**Considered for use in analyses:** Yes



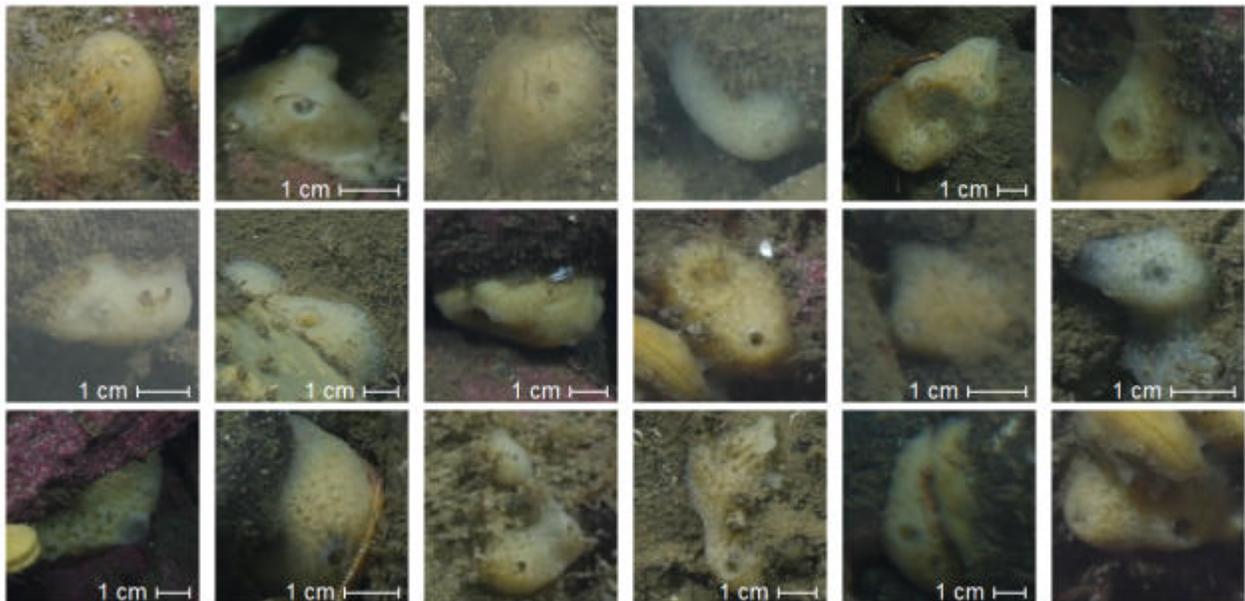
Phylum Porifera → Class Demospongiae

**Demospongiae var 14** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** White/yellow rounded bulbous sponge with porous surface and several larger oscula. Somewhat similar to Demospongiae var 14, except oscula do not protrude from surface of sponge.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

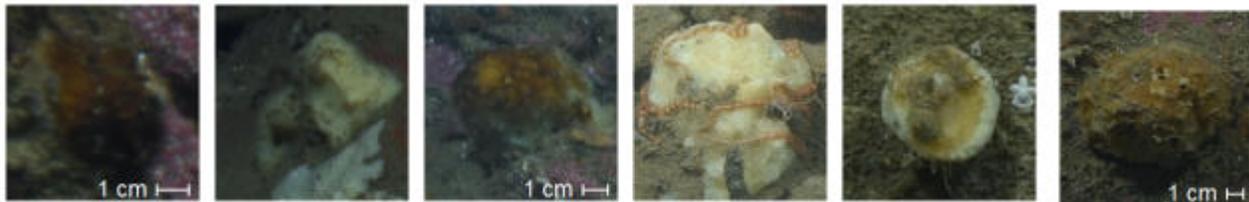
**Demospongiae var 15** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

---

**Description:** Massively encrusting beige sponge with brownish tint to its surface.

**Considered for use in analyses:** Yes



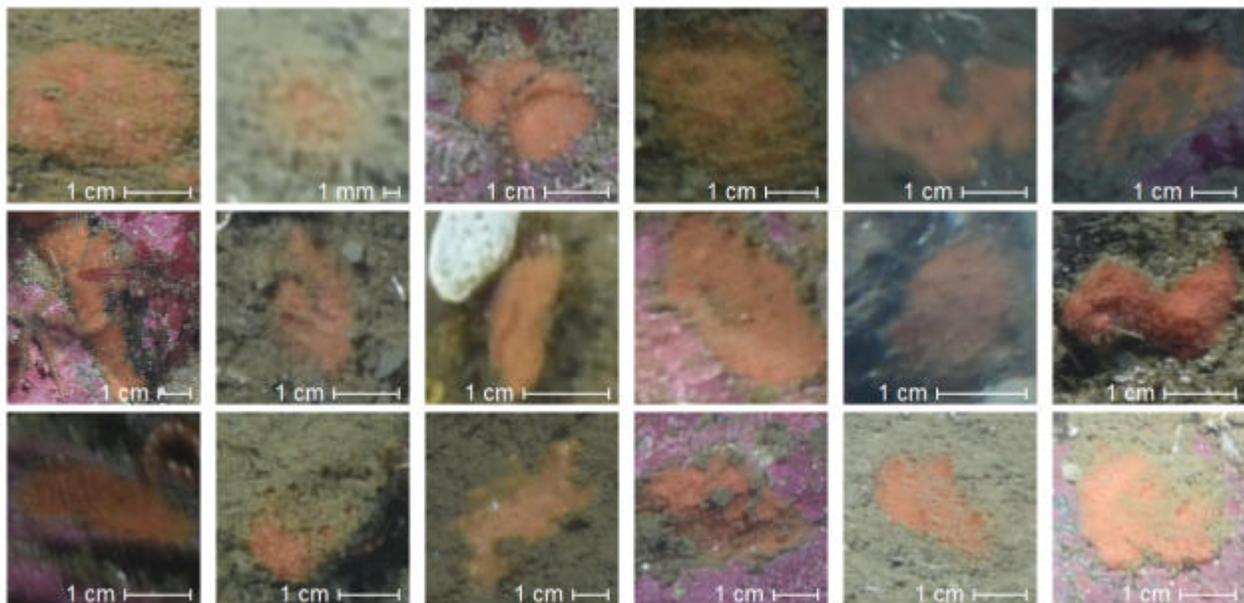
Phylum Porifera → Class Demospongiae

**Demospongiae var 16** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Thinly encrusting peach or pale orange sponge without obvious pore sieves. Likely to represent several different species.

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

**Demospongiae var 17** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

---

**Description:** Cup shaped yellow or beige sponge with porous surface.

**Potential taxa:** *Plicatellopsis bowerbanki*

**Considered for use in analyses:** Yes



Phylum Porifera → Class Demospongiae

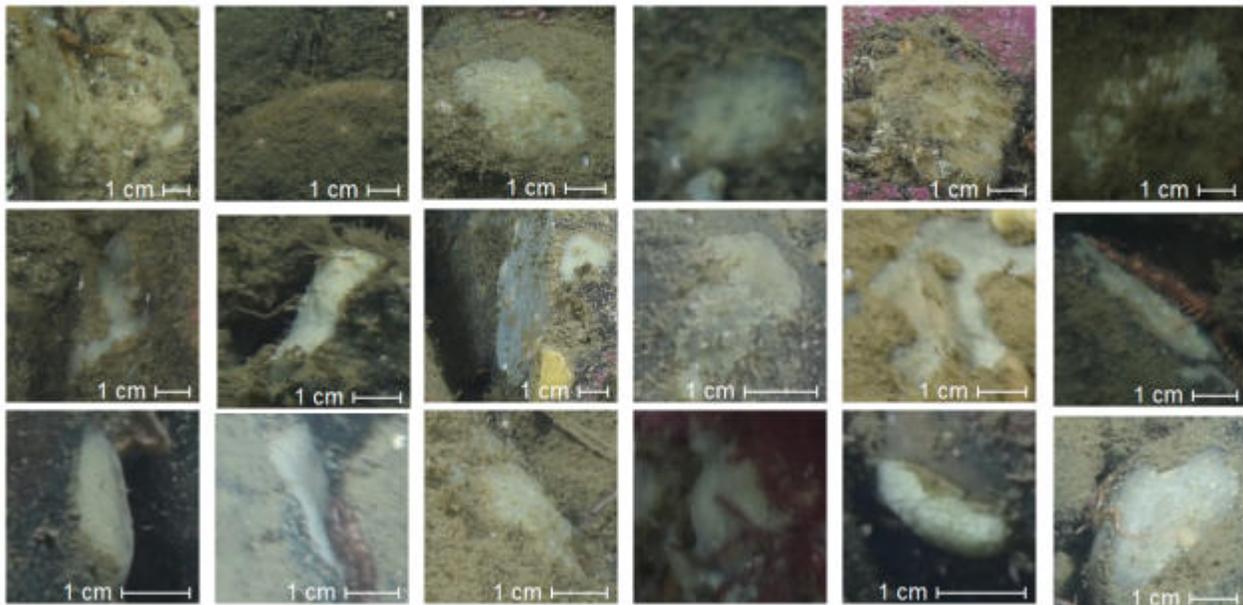
**Demospongiae type 1** Sollas, 1885

WoRMS Info | Name: Demospongiae | AphiaID: 164811 | [Link →](#)

**Description:** Thinly encrusting white sponges that do not clearly align to any of the other white encrusting sponge groups identified.

**Considered for use in analyses:** No

**Reasoning:** OTU type that could overlap with other var. OTUs.



### 3.5 CNIDARIA

Number of OTU in phylum: 49

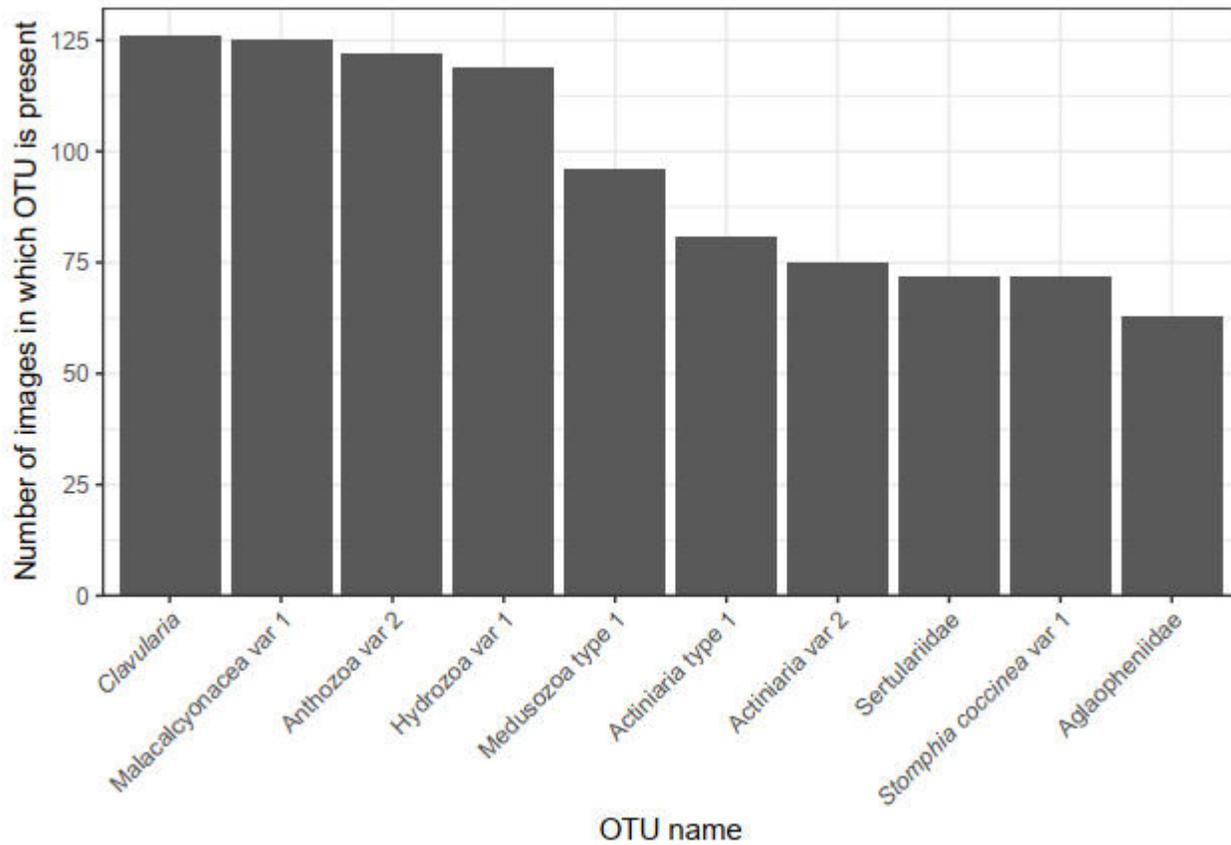


Figure 8: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Cnidaria out of a total of 672 images.

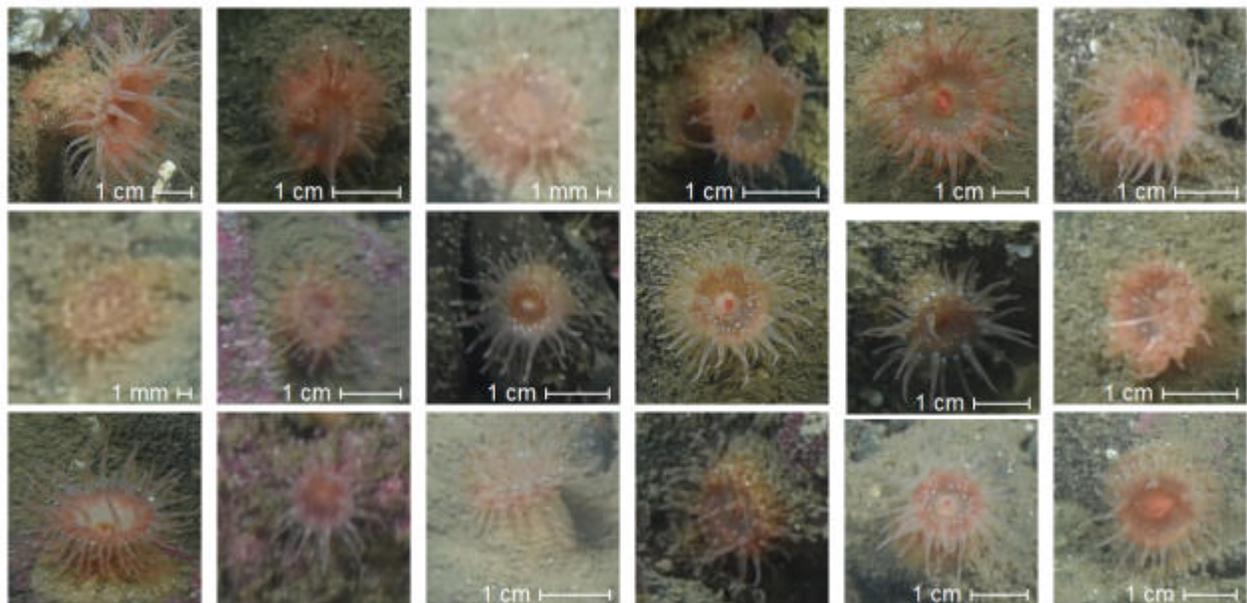
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Actinostolidae

***Stomphia coccinea* var 1** (Müller, 1776)

WoRMS Info | Name: *Stomphia coccinea* | AphiaID: 100854 | [Link →](#)

**Description:** Orange/pink anemones with striped tentacles and white dots along disc.

**Considered for use in analyses:** Yes



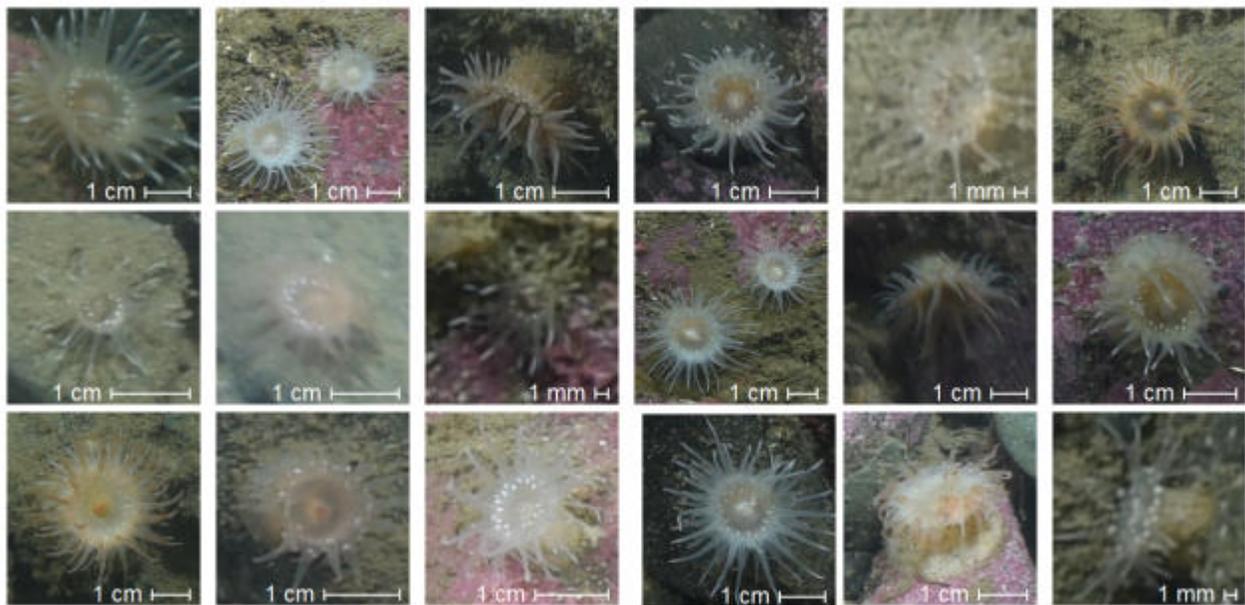
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Actinostolidae

***Stomphia coccinea* var 2** (Müller, 1776)

WoRMS Info | Name: *Stomphia coccinea* | AphiaID: 100854 | [Link →](#)

**Description:** White/pale anemones with white dots along disc.

**Considered for use in analyses:** Yes



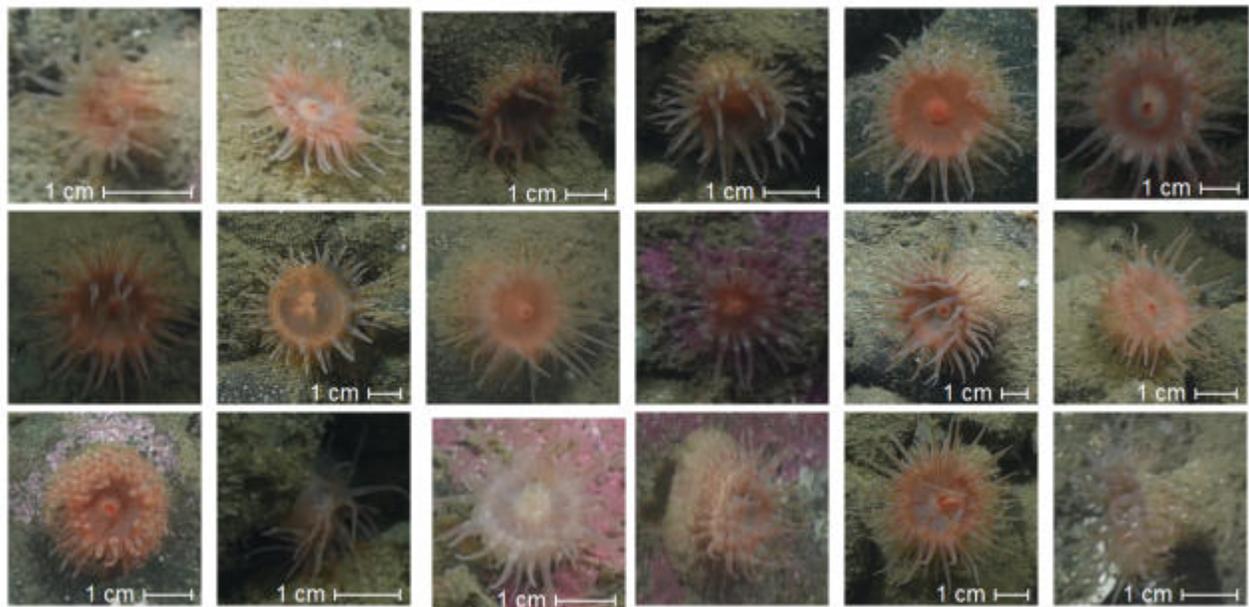
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Actinostolidae

***Stomphia coccinea* var 3** (Müller, 1776)

WoRMS Info | Name: *Stomphia coccinea* | AphiaID: 100854 | [Link →](#)

**Description:** Variant colourations and no visible dots along disc but has striped tentacles.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Halcampoididae

***Halcampoides*** Danielssen, 1890

WoRMS Info | Name: *Halcampoides* | AphiaID: 100743 | [Link →](#)

---

**Description:** Burrowing sea anemone. Grey–brown striped pattern. Specimen observed had 12 arms.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Hormathiidae

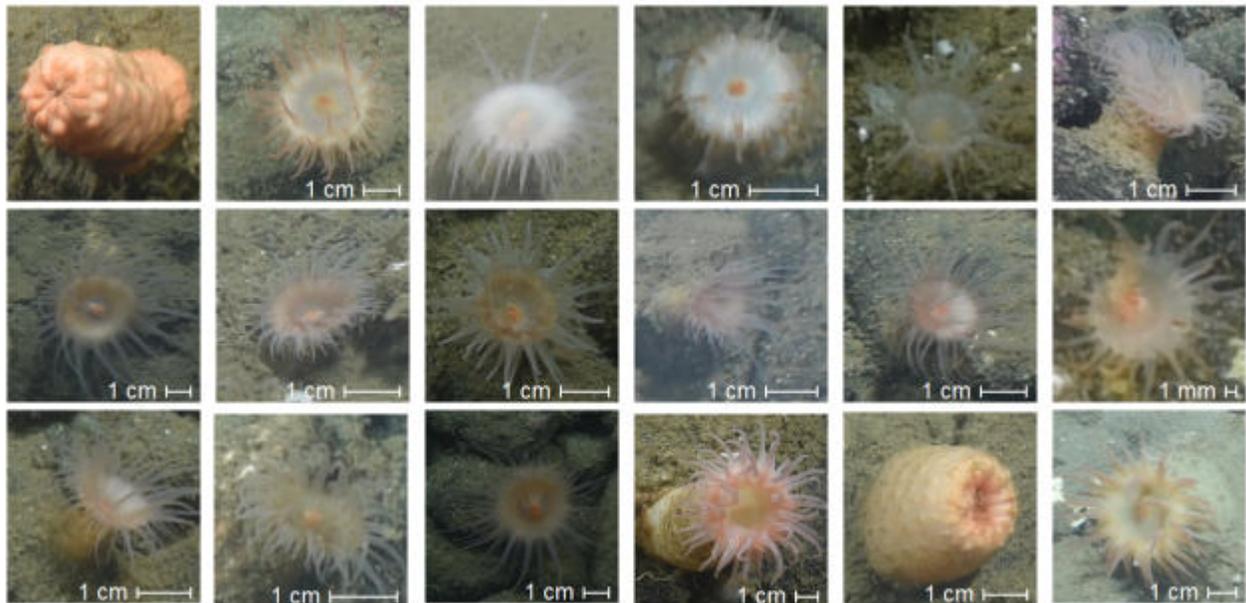
**Hormathiidae** Carlgren, 1932

WoRMS Info | Name: Hormathiidae | AphiaID: 100672 | [Link →](#)

**Description:** Very pale white/orange/pink disc with pale tentacles around the periphery.

**Potential taxa:** *Hormathia nodosa*,  
*Hormathia digitata*

**Considered for use in analyses:** Yes



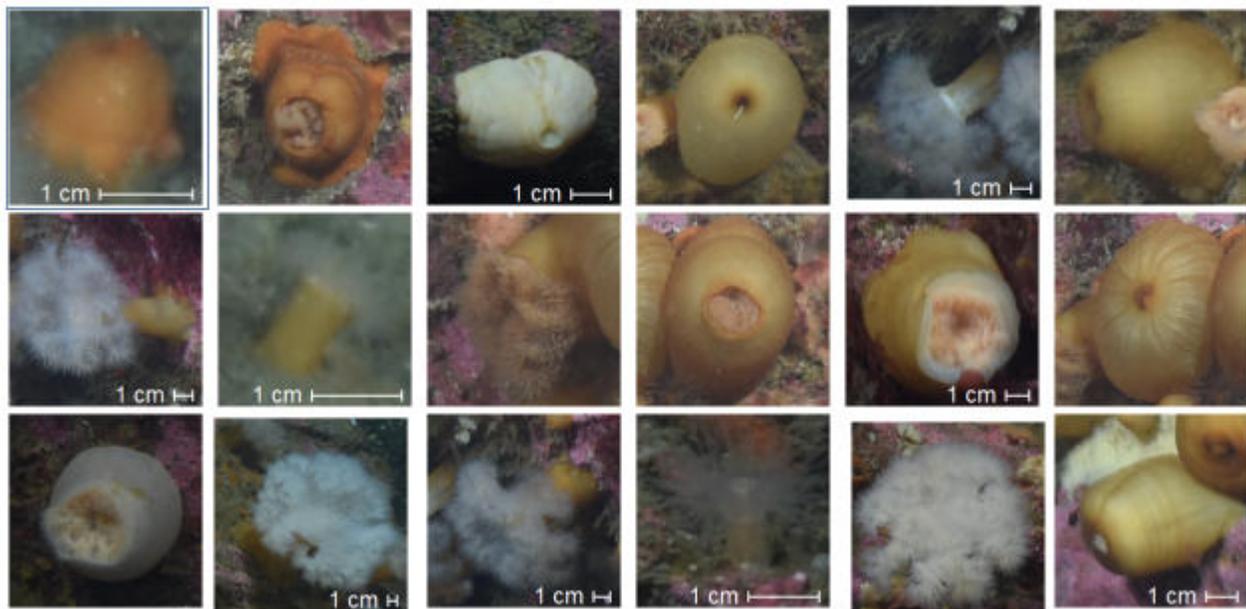
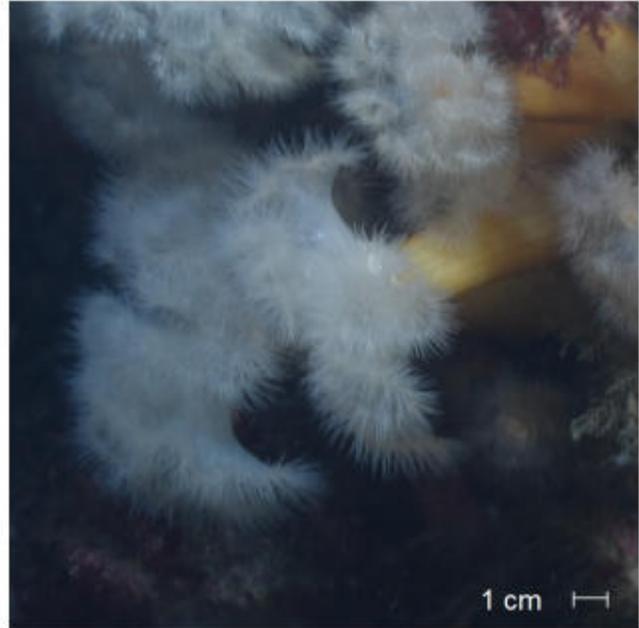
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Metridiidae

***Metridium senile*** (Linnaeus, 1761)

WoRMS Info | Name: *Metridium senile* | AphiaID: 100982 | [Link →](#)

**Description:** Orange or white column with very numerous, fluffy tentacles.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria → Family Ptychodactinidae

***Ptychodactis patula*** Appellöf, 1893

WoRMS Info | Name: *Ptychodactis patula* | AphiaID: 101020 | [Link →](#)

---

**Description:** White/yellow sea anemone that appears droopy, gelatinous.

**Considered for use in analyses:** Yes



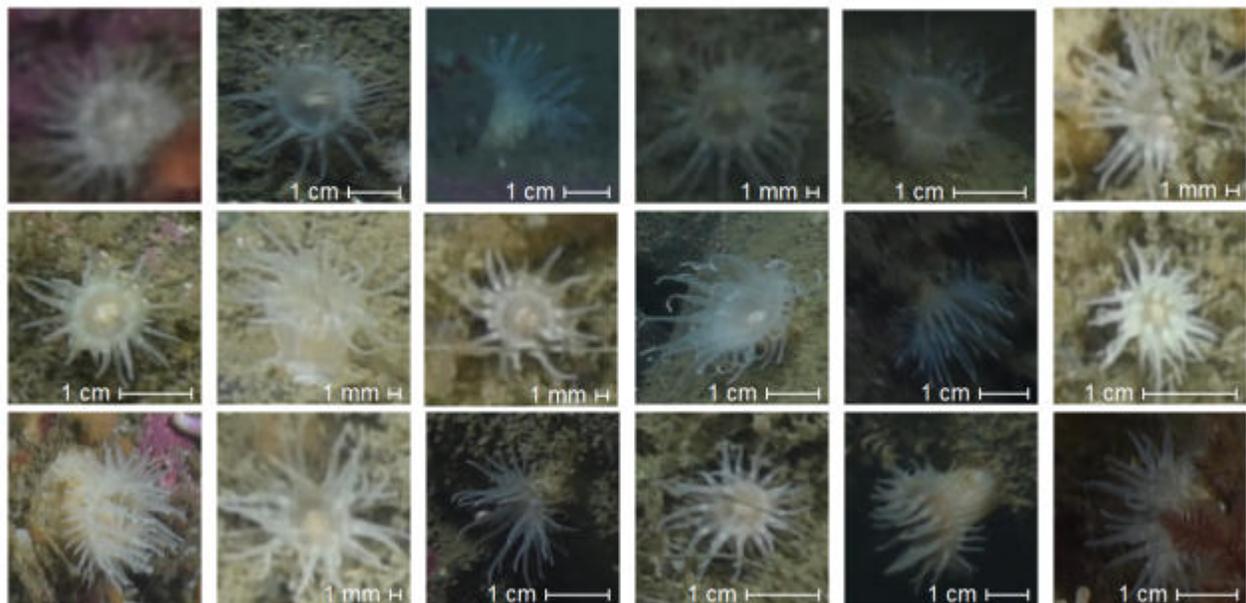
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 1** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** White disc, white mouth, white tentacles.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

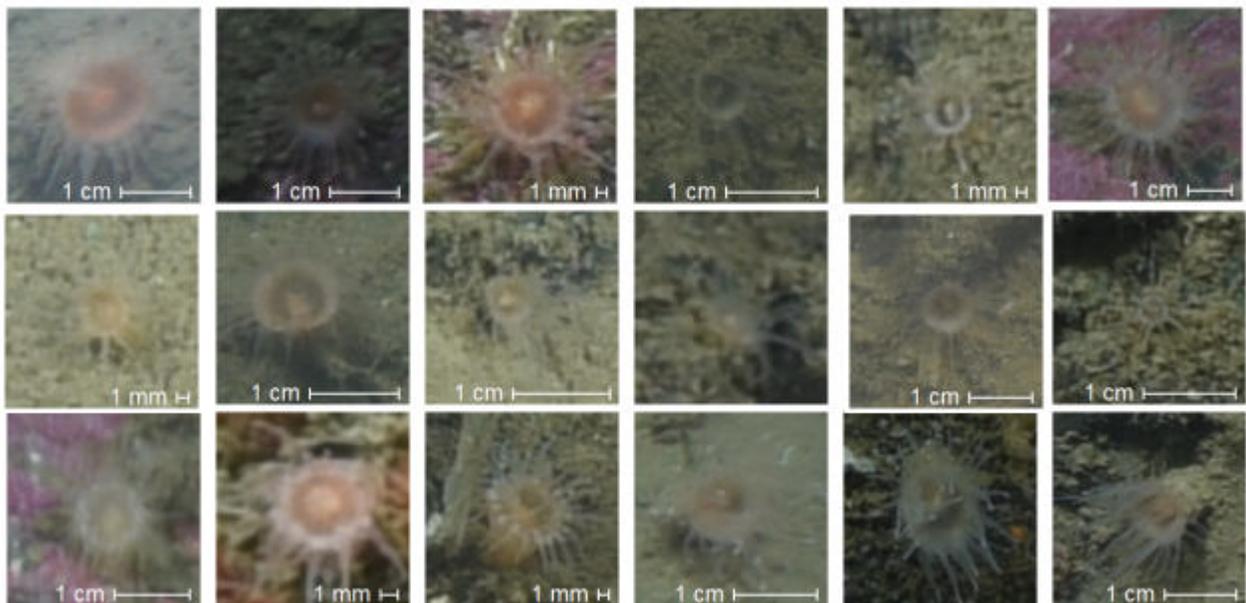
**Actiniaria var 2** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Skinny tentacles, small pale grey/green/orange disc.

**Potential taxa:** *Stomphia coccinea*

**Considered for use in analyses:** Yes



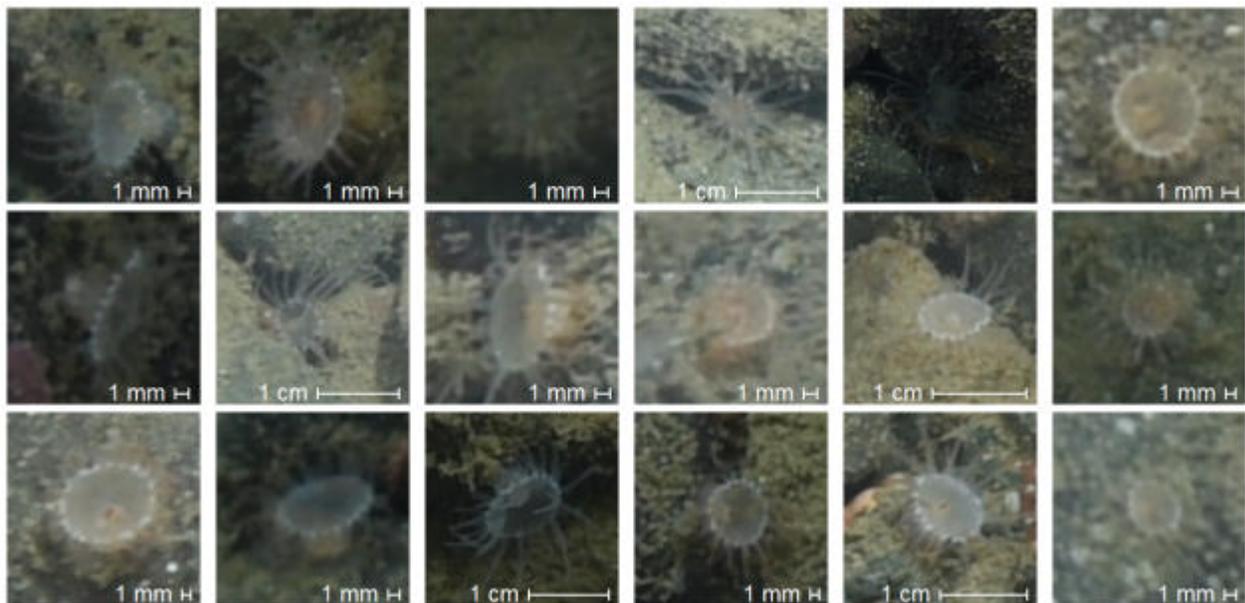
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 3** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Skinny tentacles, small pale disc, white rim around disc.

**Considered for use in analyses:** Yes



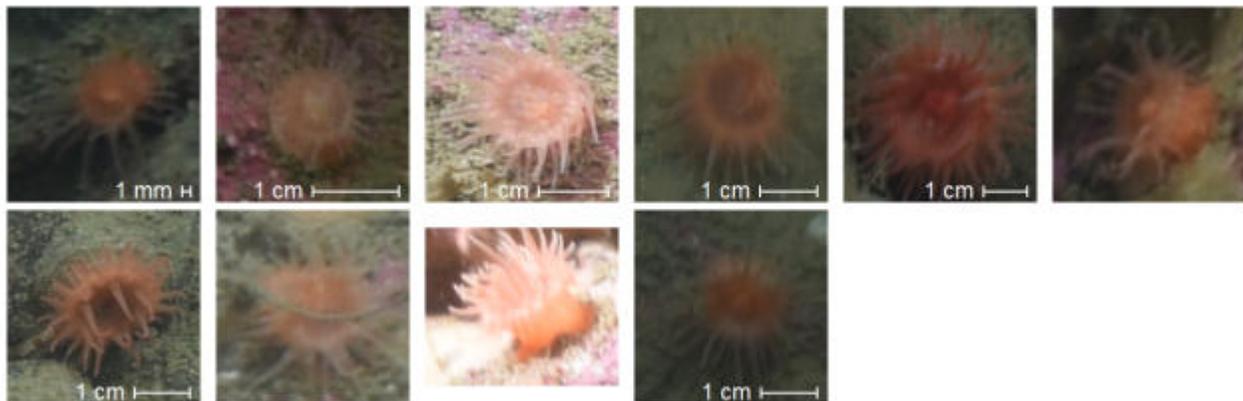
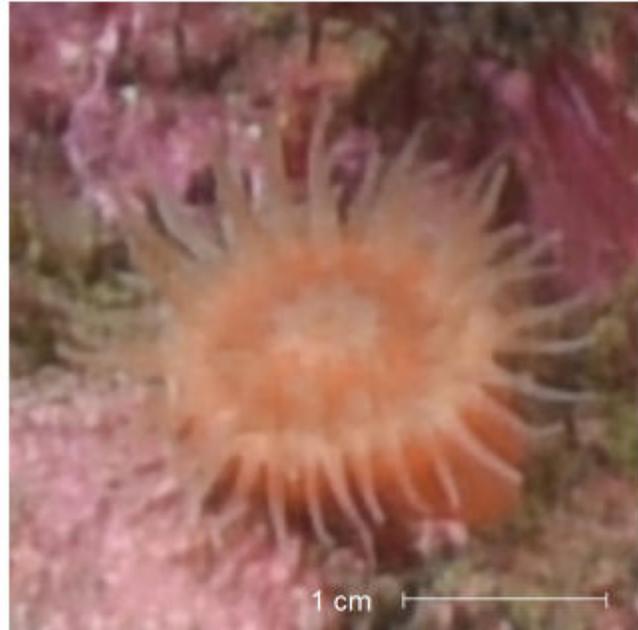
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 4** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Bright orange/pink/red anemones with no distinct features.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 6** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Many short striped tentacles.  
Colourful patterns in disc.

**Potential taxa:** *Urticina crassicornis*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 7** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Pale pink anemone with red dots around mouth.

**Considered for use in analyses:** Yes



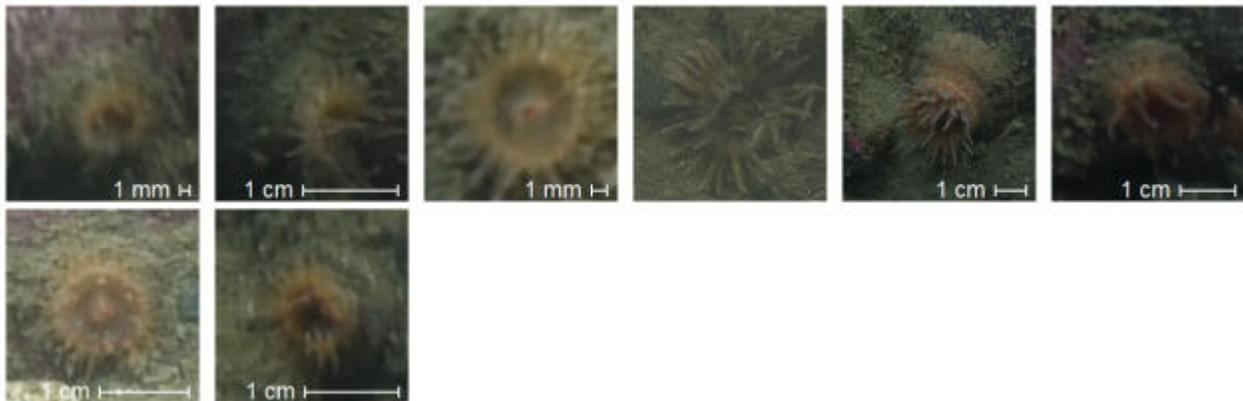
Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 8** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Dark orange and green anemone with striped tentacles.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

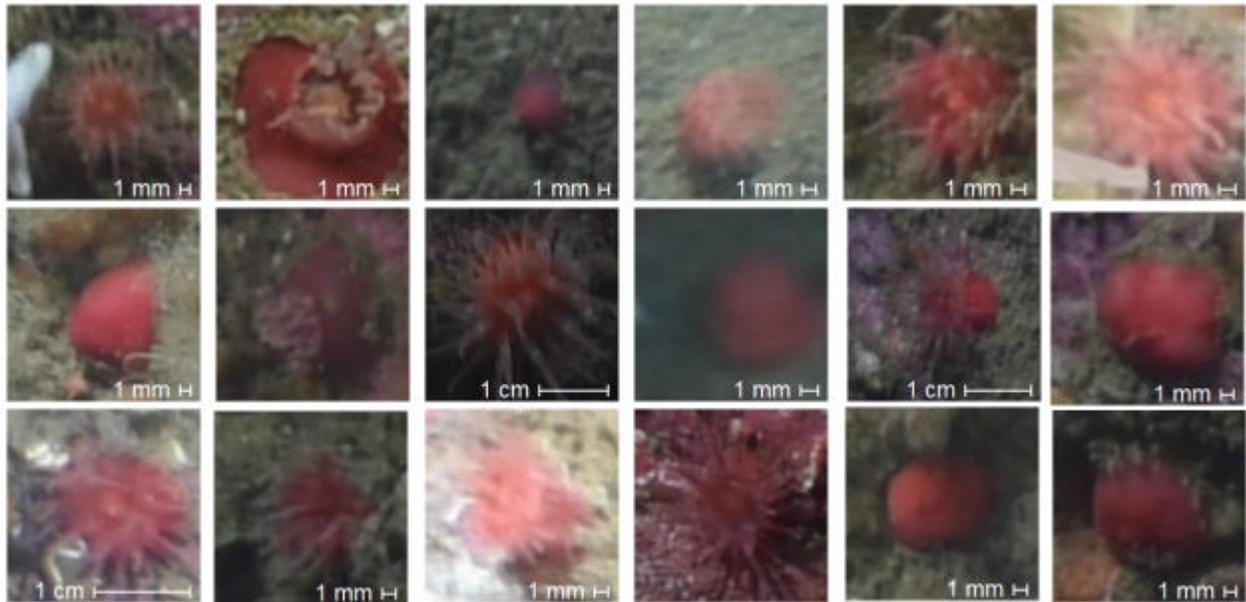
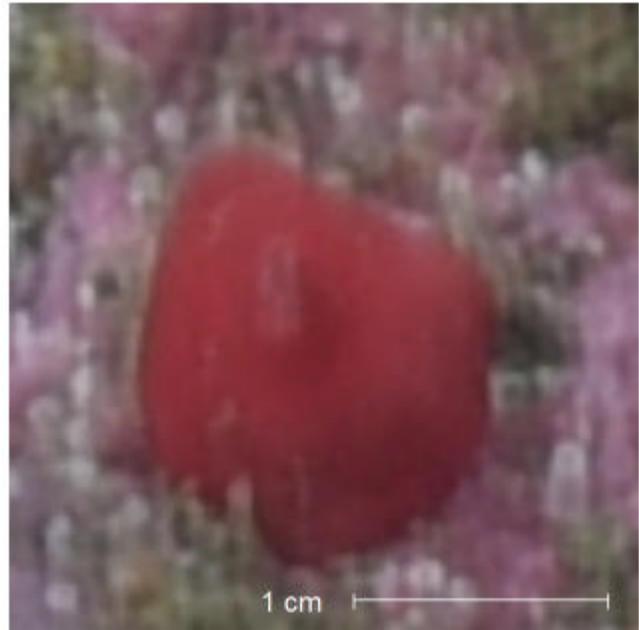
**Actiniaria var 9** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Dark red/pink anemone.

**Potential taxa:** *Stomphia*, Actiniidae

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 10** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

---

**Description:** Light pink tentacles with white centre. Sturdy-looking.

**Potential taxa:** *Stomphia*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria var 11** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

---

**Description:** Green and white striped column and very skinny white tentacles.

**Potential taxa:** *Diadumene lineata*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

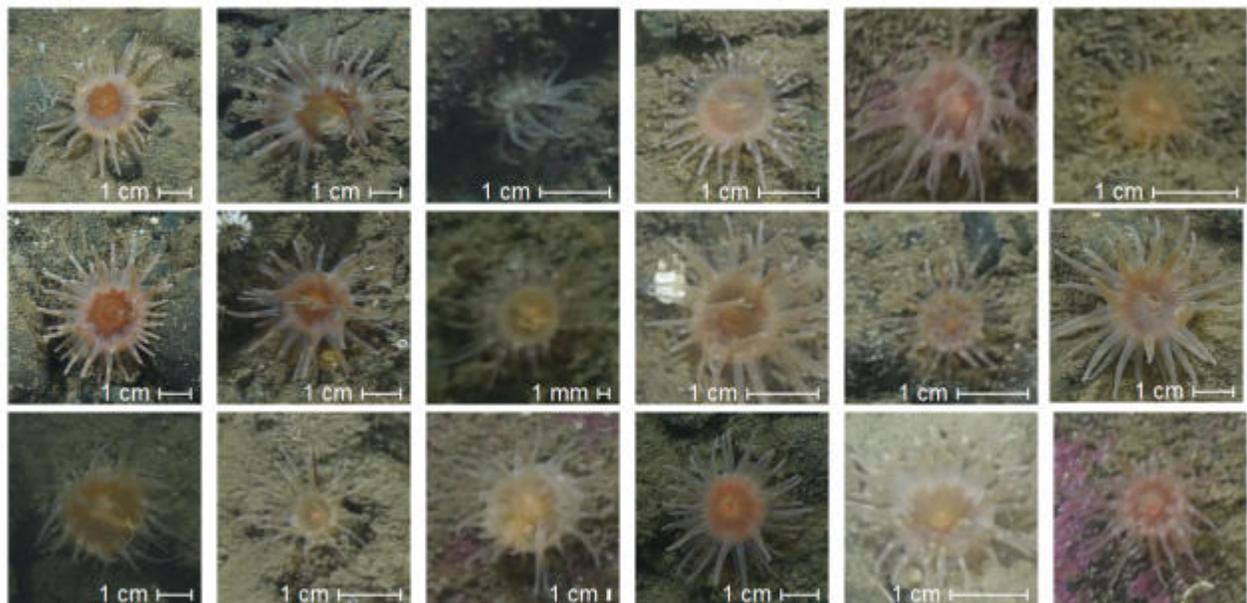
**Actiniaria var 12** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Greenish–yellow.  
Shimmering tentacles.

**Potential taxa:** *Aulactinia stella*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

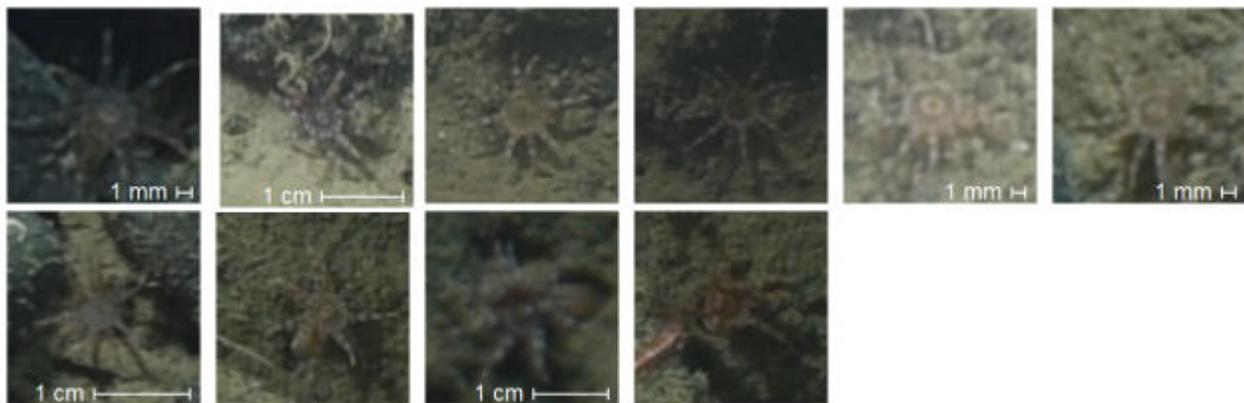
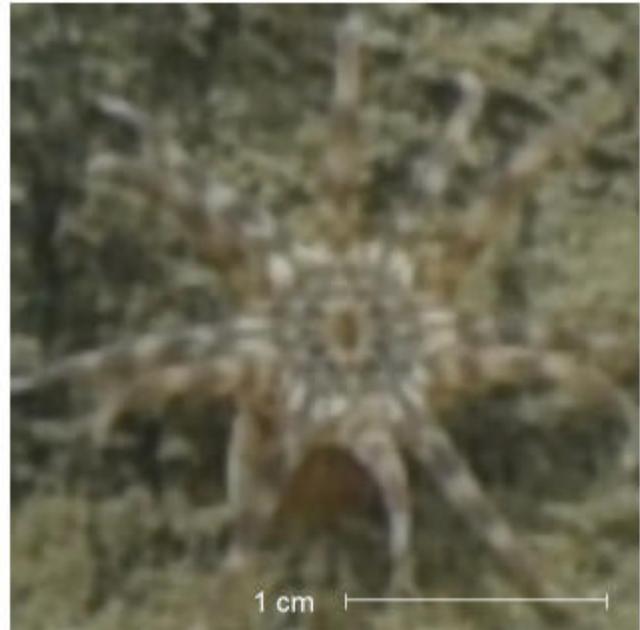
**Actiniaria var 13** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Dark striped disc with matching thick tentacles. Flat and just above substrate.

**Potential taxa:** *Halccampa*, *Peachia*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

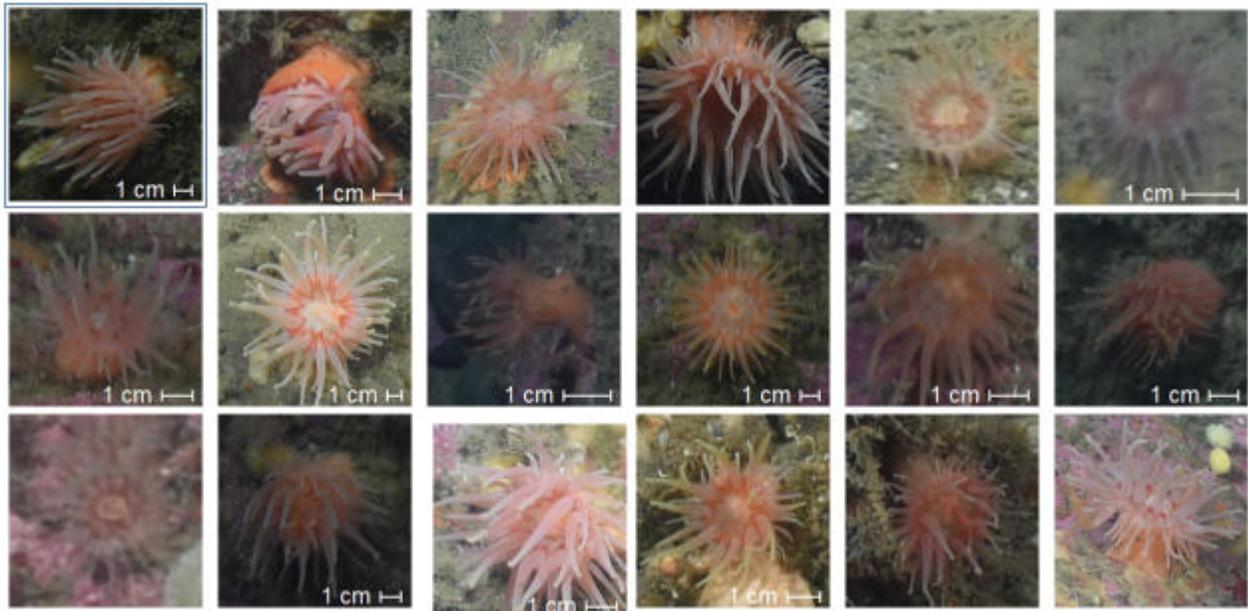
**Actiniaria var 14** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Orange/pink. Distinct red patterning in disc. Pink/pale tentacles with yellow tips. Column often not clearly visible, however if white verrucae are present then *Cribrinopsis similis*, if not then *Urticina*.

**Potential taxa:** *Cribrinopsis similis*, *Urticina crassicornis*, *Urticina eques*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

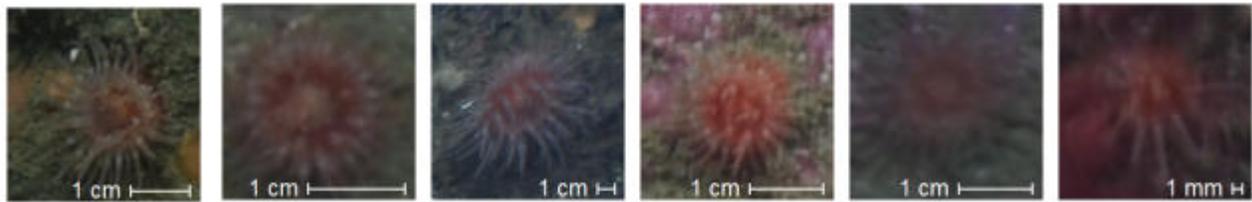
**Actiniaria var 15** Hertwig, 1882

WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Larger-looking, brightly-coloured red/pink/white/orange striped sea anemone with a high density of tentacles.

**Potential taxa:** *Urticina crassicornis*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hexacorallia → Order Actiniaria

**Actiniaria type 1** Hertwig, 1882

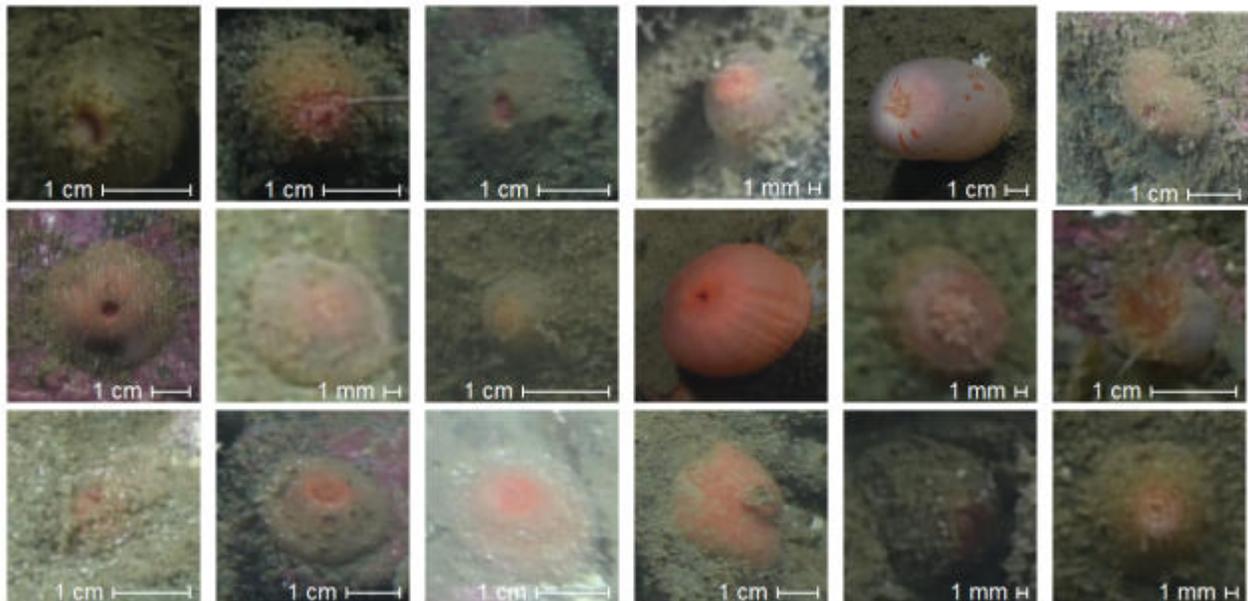
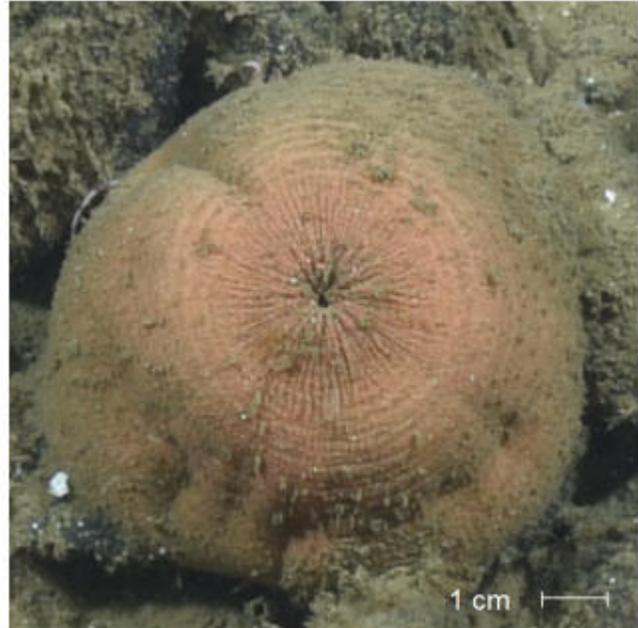
WoRMS Info | Name: Actiniaria | AphiaID: 1360 | [Link →](#)

**Description:** Retracted sea anemones that belong to a variety of species.

**Potential taxa:** *Stomphia coccinea*

**Considered for use in analyses:** No

**Reasoning:** OTU type that could overlap with other var. OTUs.



Phylum Cnidaria → Class Hexacorallia → Order Ceriantharia → Family Cerianthidae

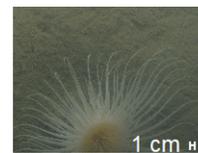
***Pachycerianthus borealis*** (Verrill, 1873)

WoRMS Info | Name: *Pachycerianthus borealis* | AphiaID: 283816 | [Link →](#)

---

**Description:** Many long thin pale tentacles emanating from column.

**Considered for use in analyses:** Yes



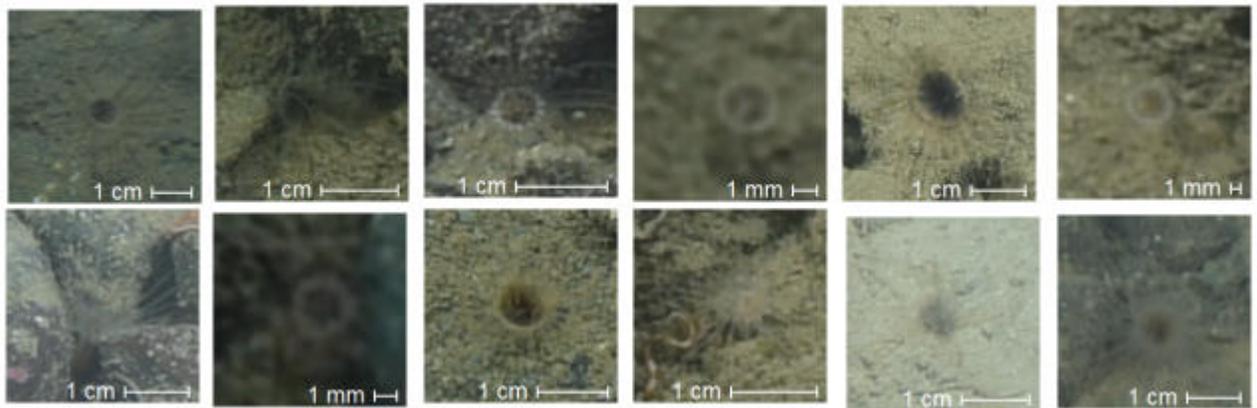
Phylum Cnidaria → Class Hexacorallia → Order Ceriantharia

**Ceriantharia** Perrier, 1893

WoRMS Info | Name: Ceriantharia | AphiaID: 1361 | [Link →](#)

**Description:** Brown/beige ring right above substrate with long tentacles extending from periphery.

**Considered for use in analyses:** Yes



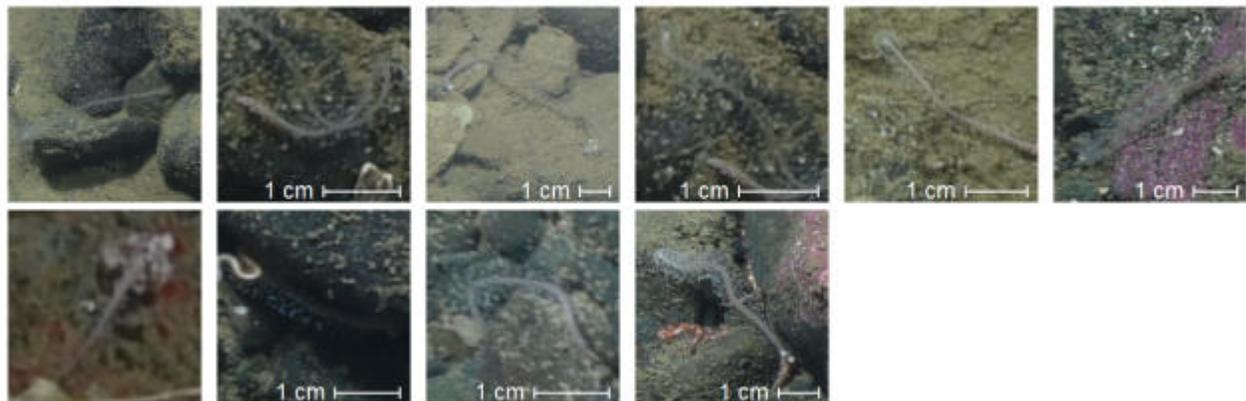
Phylum Cnidaria → Class Hydrozoa → Order Anthoathecata → Family Candelabridae

***Candelabrum phrygium*** (Fabricius, 1780)

WoRMS Info | Name: *Candelabrum phrygium* | AphiaID: 117420 | [Link →](#)

**Description:** Pink worm-shaped organism covered with white-spotted tentacles giving it a furry appearance.

**Considered for use in analyses:** Yes



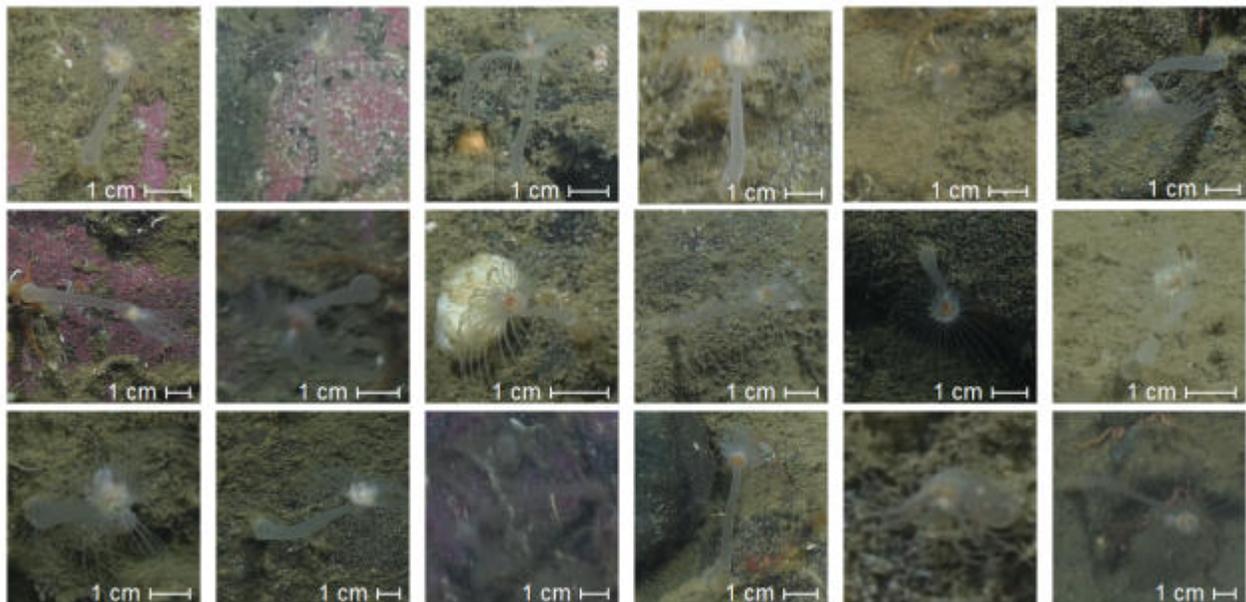
Phylum Cnidaria → Class Hydrozoa → Order Anthoathecata → Family Corymorphidae

***Corymorpha pendula*** L. Agassiz, 1862

WoRMS Info | Name: *Corymorpha pendula* | AphiaID: 157927 | [Link →](#)

**Description:** Long translucent stalk with circle of tentacles at the end and a red/pink tip.

**Considered for use in analyses:** Yes



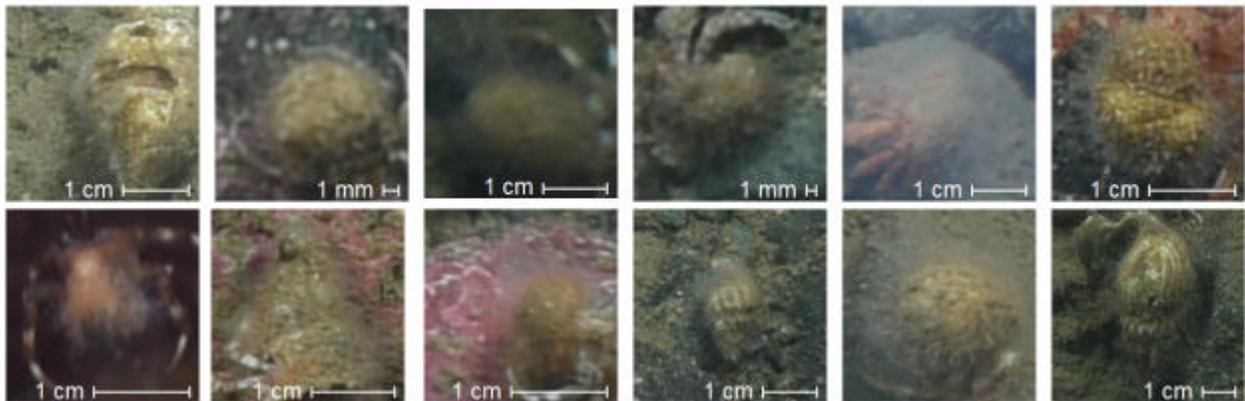
Phylum Cnidaria → Class Hydrozoa → Order Anthoathecata → Family Hydractiniidae

***Hydractinia echinata*** (Fleming, 1828)

WoRMS Info | Name: *Hydractinia echinata* | AphiaID: 117644 | [Link →](#)

**Description:** Fine hydroid which gives a fluffy appearance to the shells which are its substrate. Usually associated with hermit crab shells.

**Considered for use in analyses:** Yes



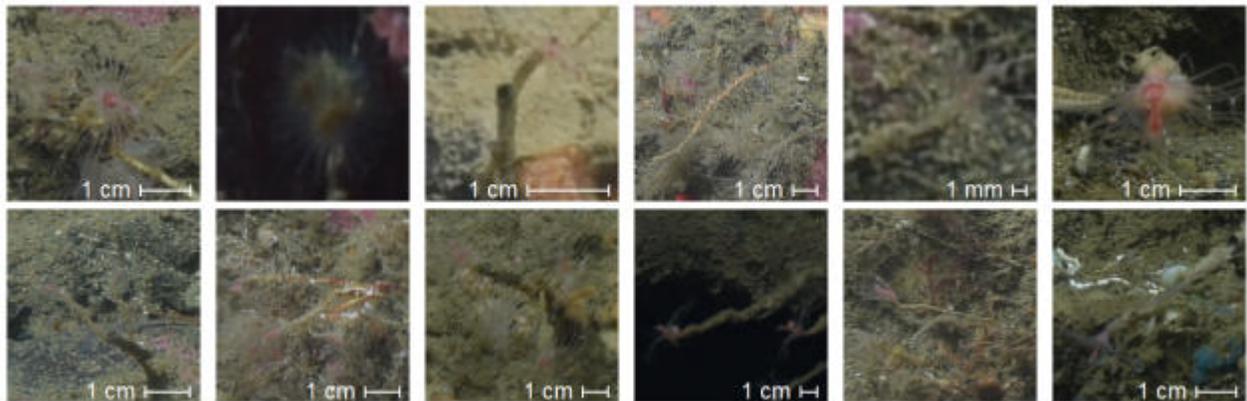
Phylum Cnidaria → Class Hydrozoa → Order Anthoathecata → Family Tubulariidae

***Ectopleura crocea*** (Agassiz, 1862)

WoRMS Info | Name: *Ectopleura crocea* | AphiaID: 117981 | [Link →](#)

**Description:** Long beige stems with circle of tentacles and pink tip at the end.

**Considered for use in analyses:** Yes



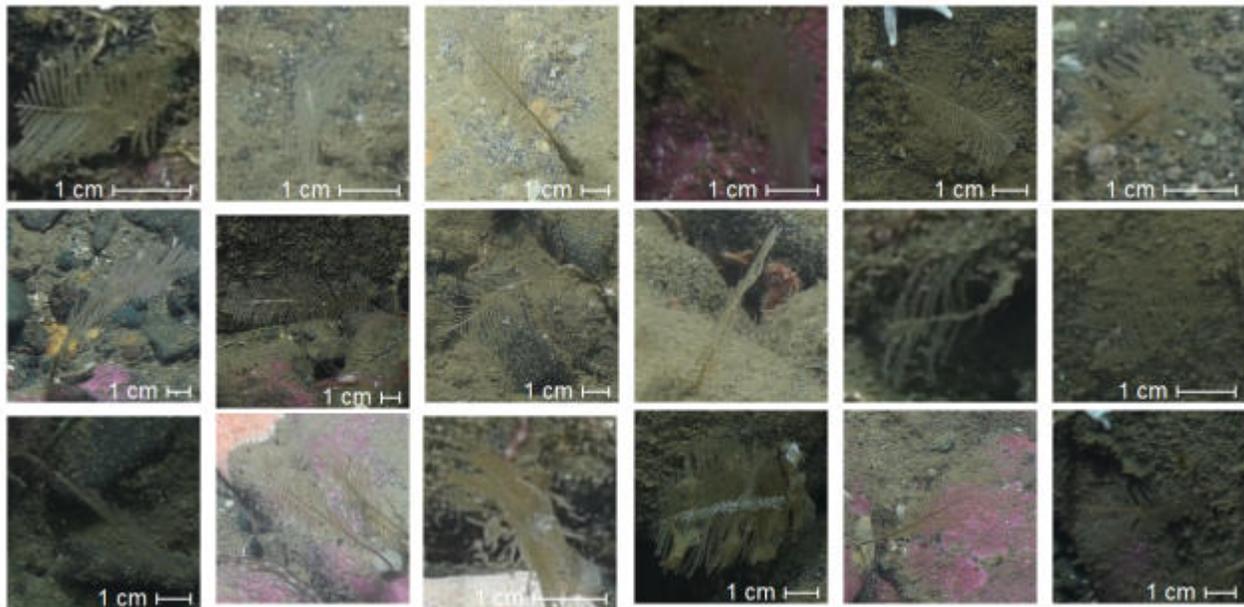
Phylum Cnidaria → Class Hydrozoa → Order Leptothecata → Family Aglaopheniidae

**Aglaopheniidae** Marktanner-Turneretscher, 1890

WoRMS Info | Name: Aglaopheniidae | AphiaID: 1605 | [Link →](#)

**Description:** Resembles a very fine feather. Branches parallel and mostly perpendicular to main stem which grows erect from substrate.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa → Order Leptothecata → Family Campanulariidae

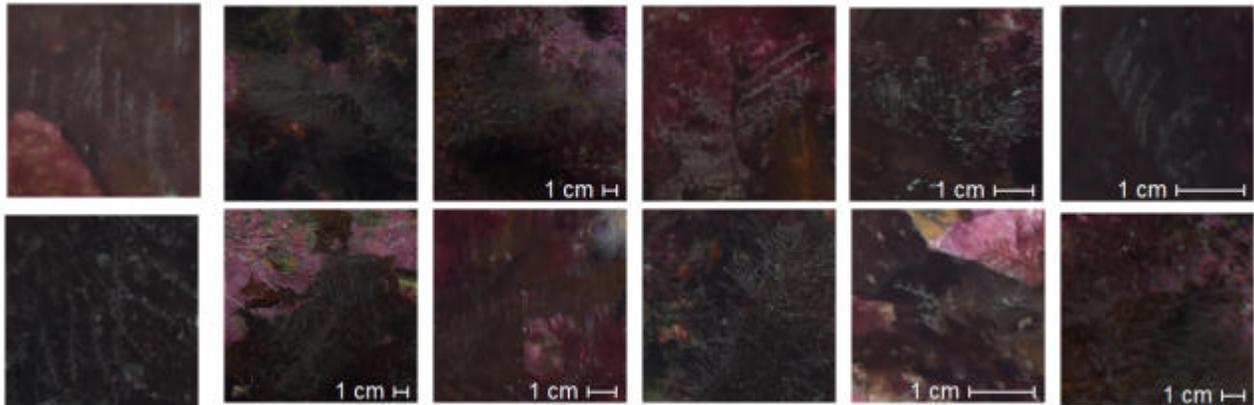
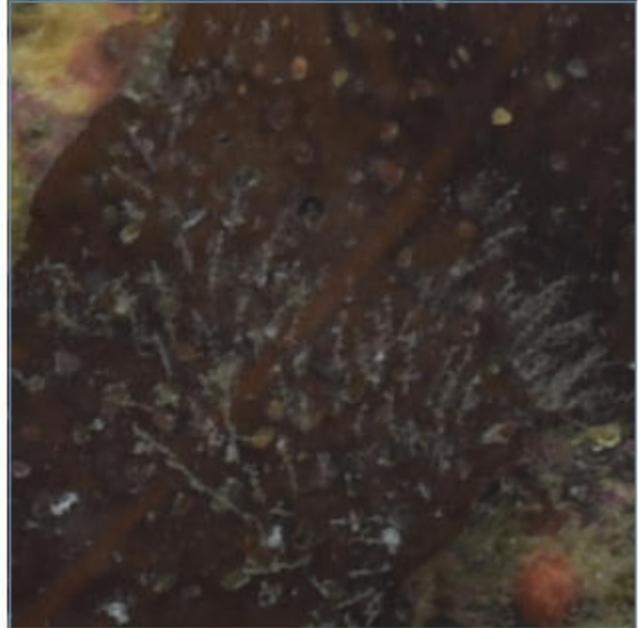
***Obelia*** Péron & Lesueur, 1810

WoRMS Info | Name: *Obelia* | AphiaID: 117034 | [Link →](#)

**Description:** Very fine squiggly white branches that typically grow from kelp.

**Potential taxa:** *Obelia geniculata*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa → Order Leptothecata → Family Sertulariidae

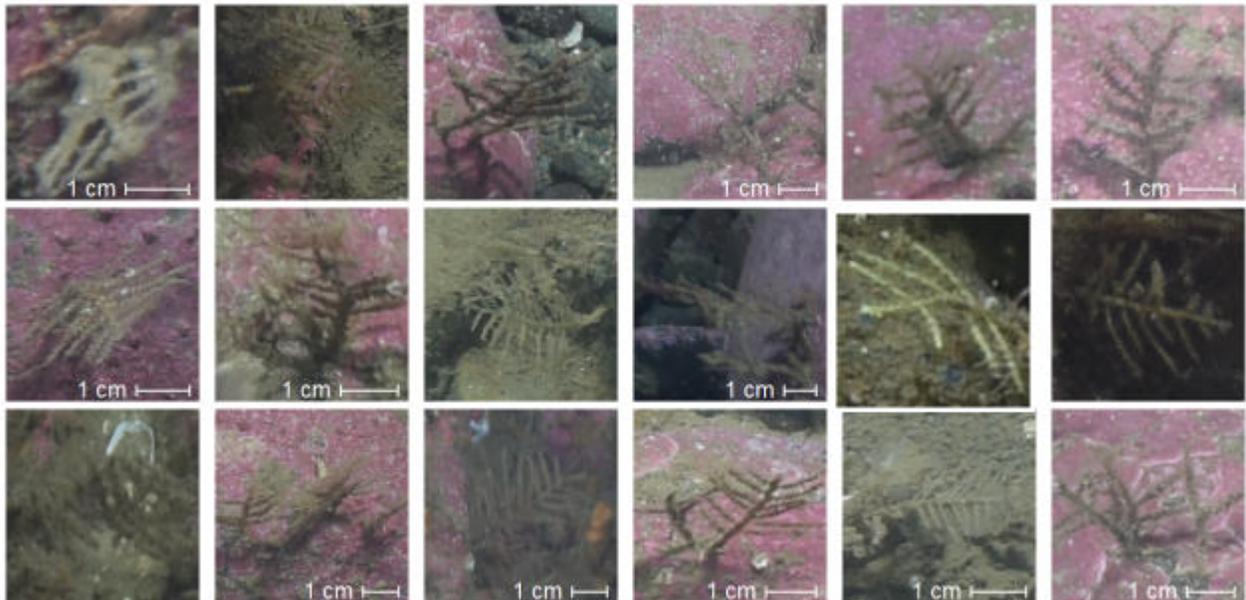
***Abietinaria*** Kirchenpauer, 1884

WoRMS Info | Name: *Abietinaria* | AphiaID: 117225 | [Link →](#)

**Description:** Brown, feather-shaped hydroid with thick squiggly branches.

**Potential taxa:** *Abietinaria abietina*

**Considered for use in analyses:** Yes



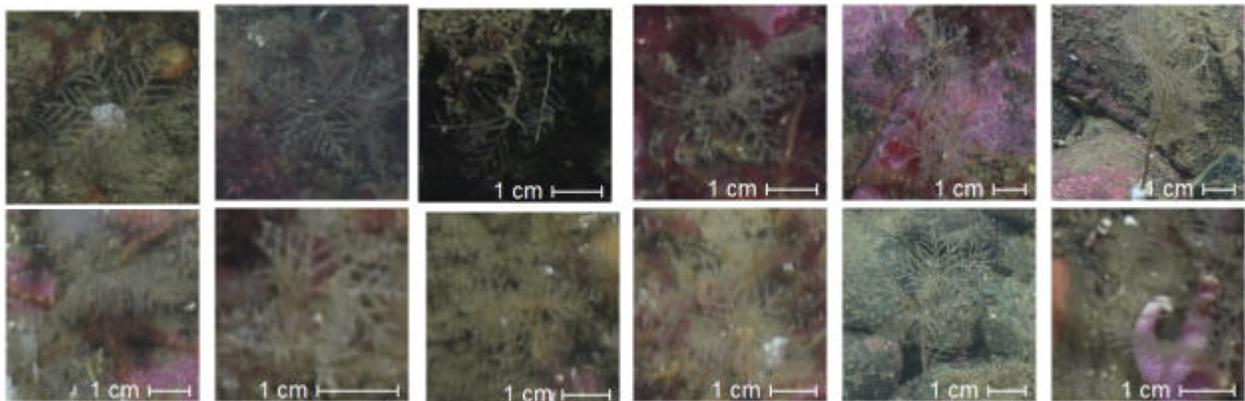
Phylum Cnidaria → Class Hydrozoa → Order Leptothecata → Family Sertulariidae

***Hydrallmania falcata*** (Linnaeus, 1758)

WoRMS Info | Name: *Hydrallmania falcata* | AphiaID: 117890 | [Link →](#)

**Description:** Bushels of thin stems with characteristic spiral branching pattern. Side branches are feather-shaped.

**Considered for use in analyses:** Yes



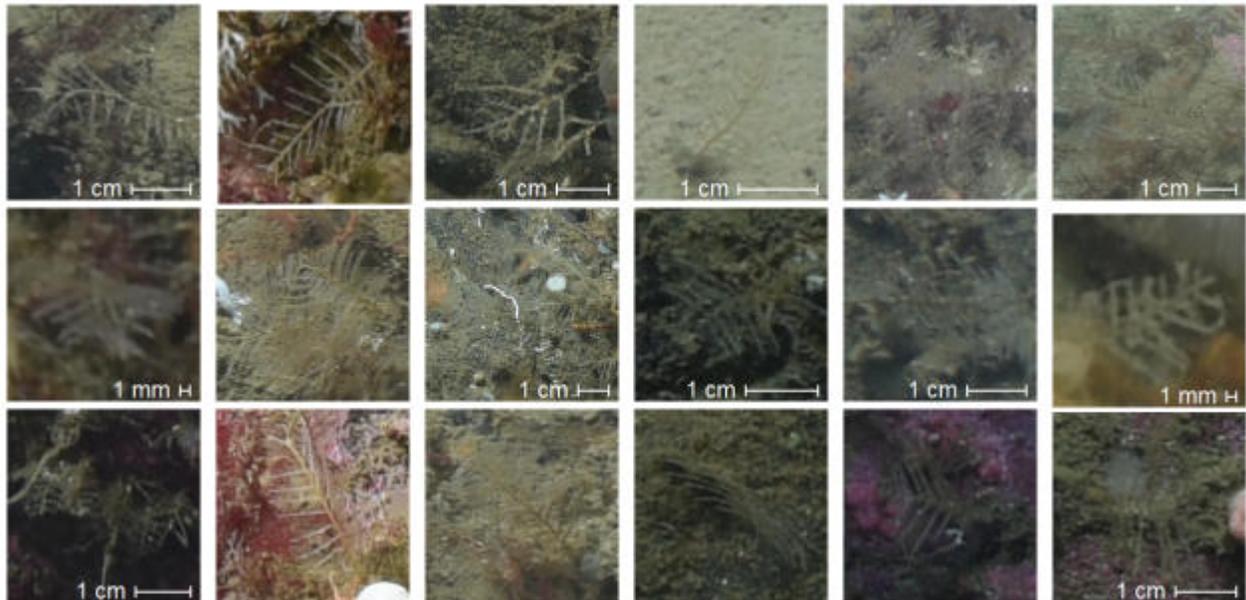
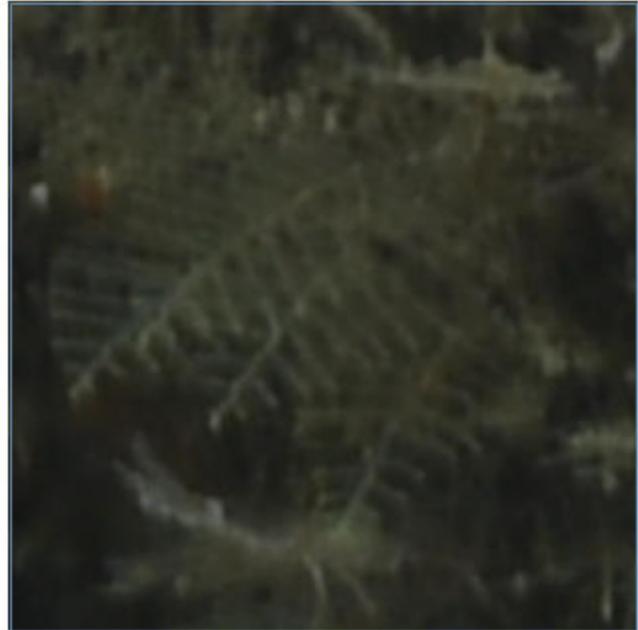
Phylum Cnidaria → Class Hydrozoa → Order Leptothecata → Family Sertulariidae

**Sertulariidae** Lamouroux, 1812

WoRMS Info | Name: Sertulariidae | AphiaID: 1614 | [Link →](#)

**Description:** Beige, thin branches coming off of a central stem. Often clustered.

**Considered for use in analyses:** Yes



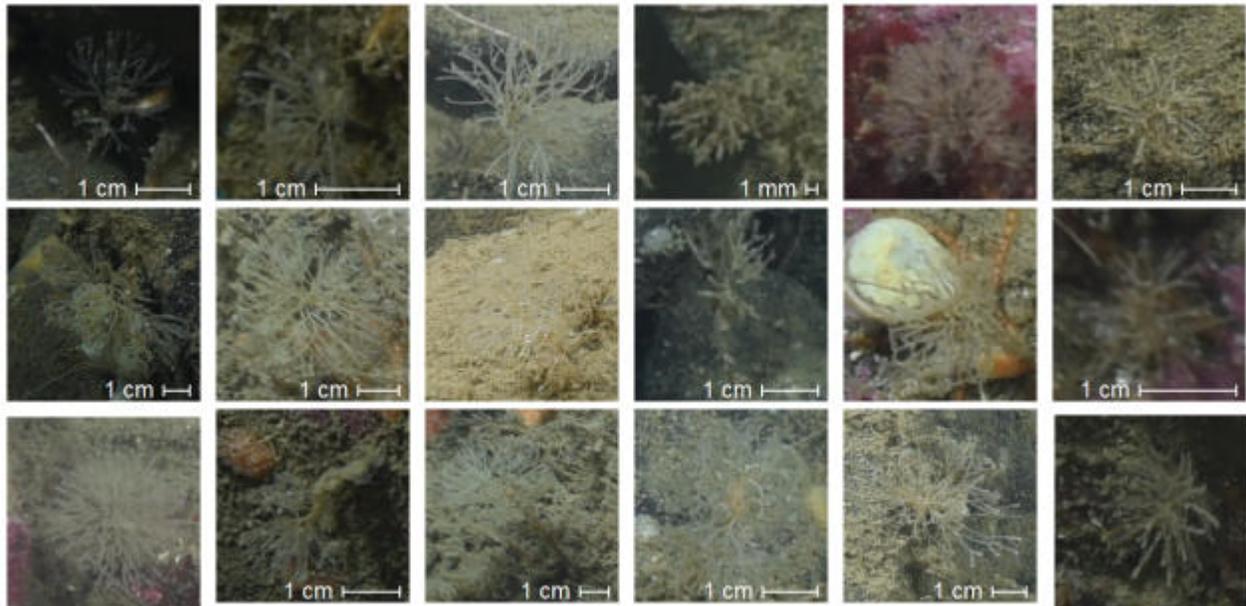
Phylum Cnidaria → Class Hydrozoa → Order Leptothecata → Family Sertulariidae

***Thuiaria laxa*** Allman, 1874

WoRMS Info | Name: *Thuiaria laxa* | AphiaID: 158196 | [Link →](#)

**Description:** Bushels of thin scaly-looking branches typically at the end of a longer stem.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa → Order Leptothecata

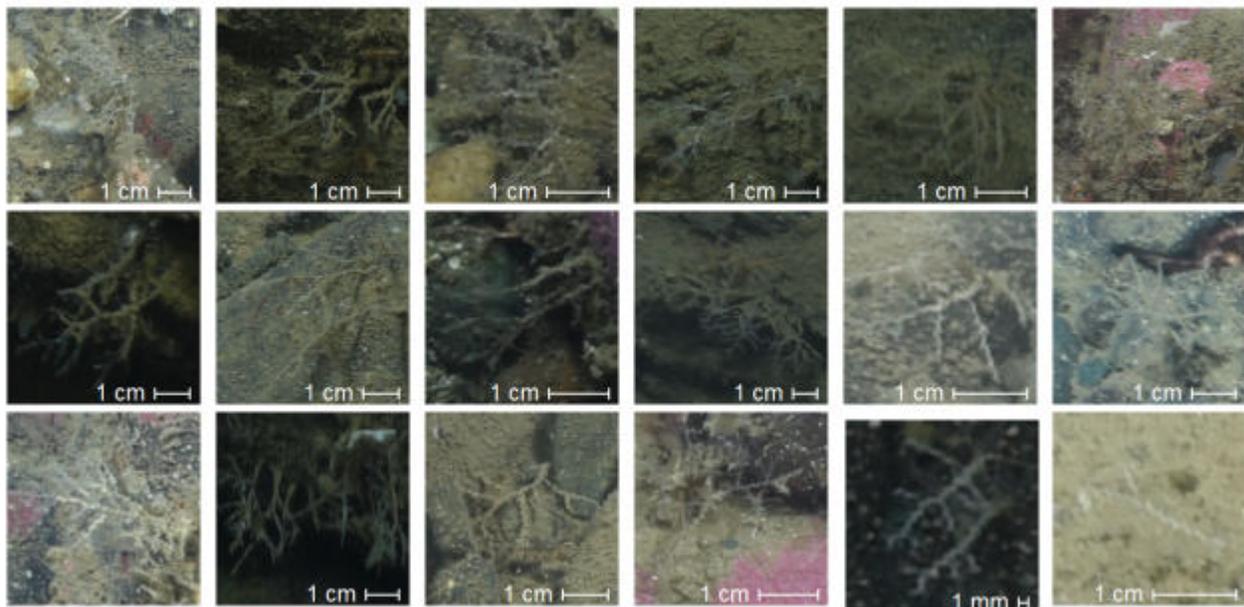
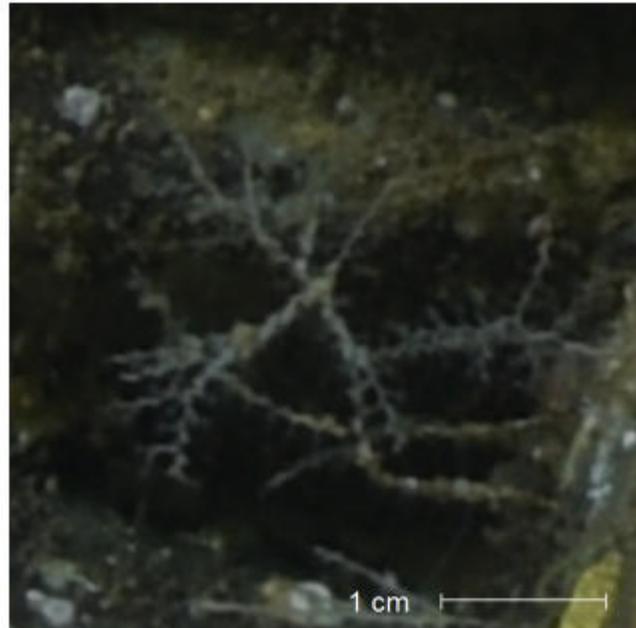
**Leptothecata var 1** Cornelius, 1992

WoRMS Info | Name: Leptothecata | AphiaID: 13552 | [Link →](#)

**Description:** Uncoordinated squiggly branches.

**Potential taxa:** *Halecium*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa → Order Leptothecata

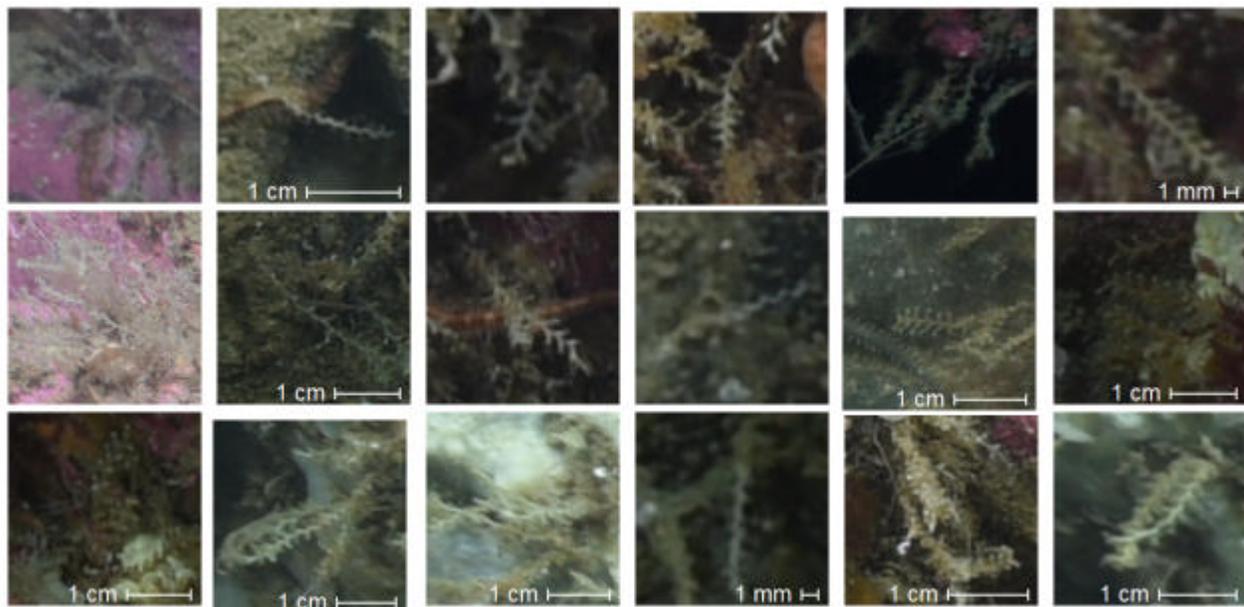
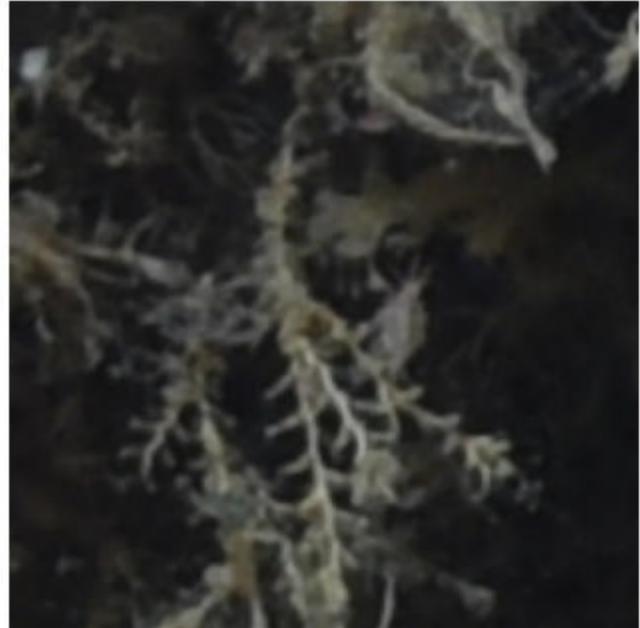
**Leptothecata var 2** Cornelius, 1992

WoRMS Info | Name: Leptothecata | AphiaID: 13552 | [Link →](#)

**Description:** Squiggly stems with alternating short stubby branches only on one plane (not all around the stem).

**Potential taxa:** Sertularellidae

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa

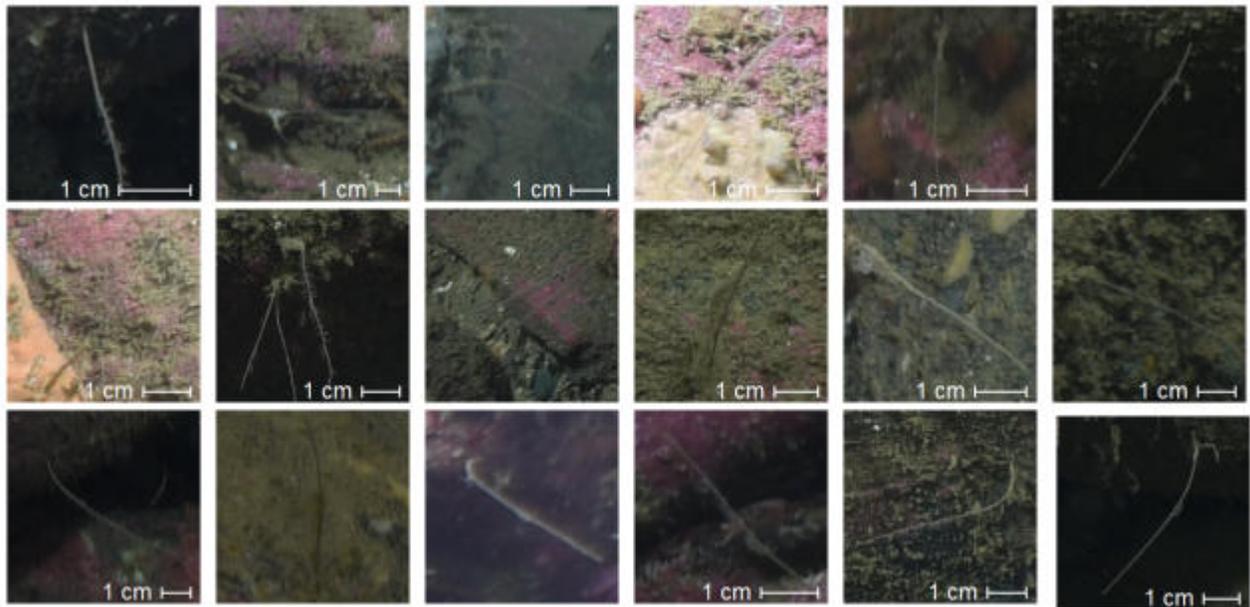
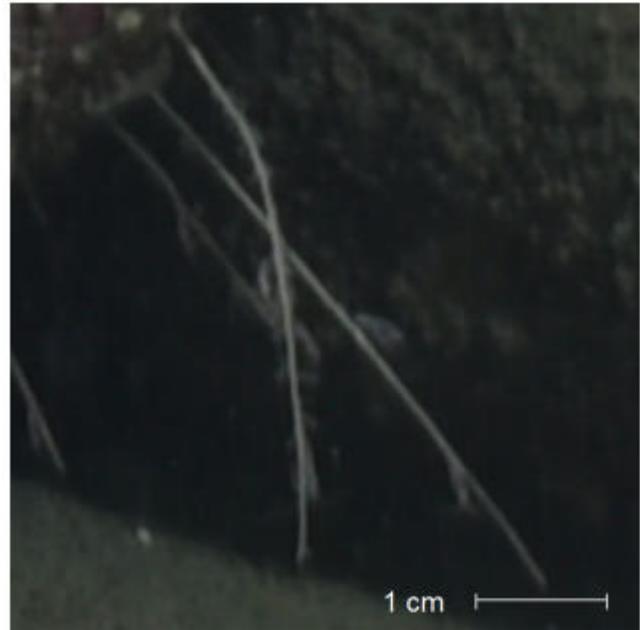
**Hydrozoa var 1** Owen, 1843

WoRMS Info | Name: Hydrozoa | AphiaID: 1337 | [Link →](#)

**Description:** Long thin sticks.

**Potential taxa:** *Nemertesia*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa

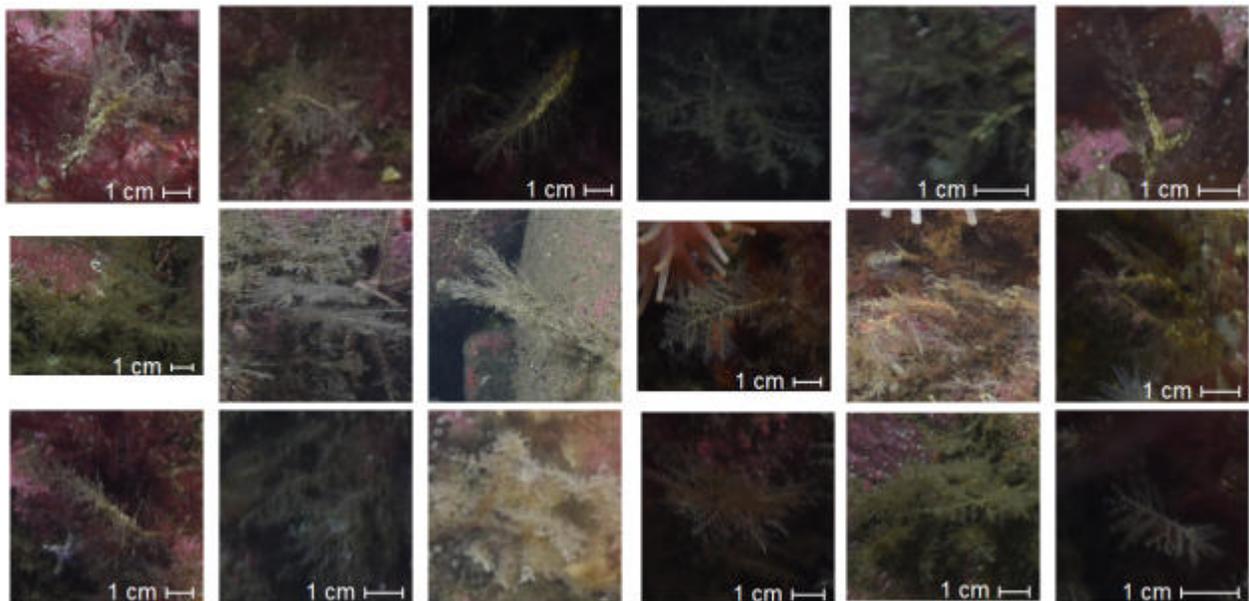
**Hydrozoa var 2** Owen, 1843

WoRMS Info | Name: Hydrozoa | AphiaID: 1337 | [Link →](#)

**Description:** Stems with squiggly electric-looking branches.

**Potential taxa:** *Halecium halecinum*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Hydrozoa

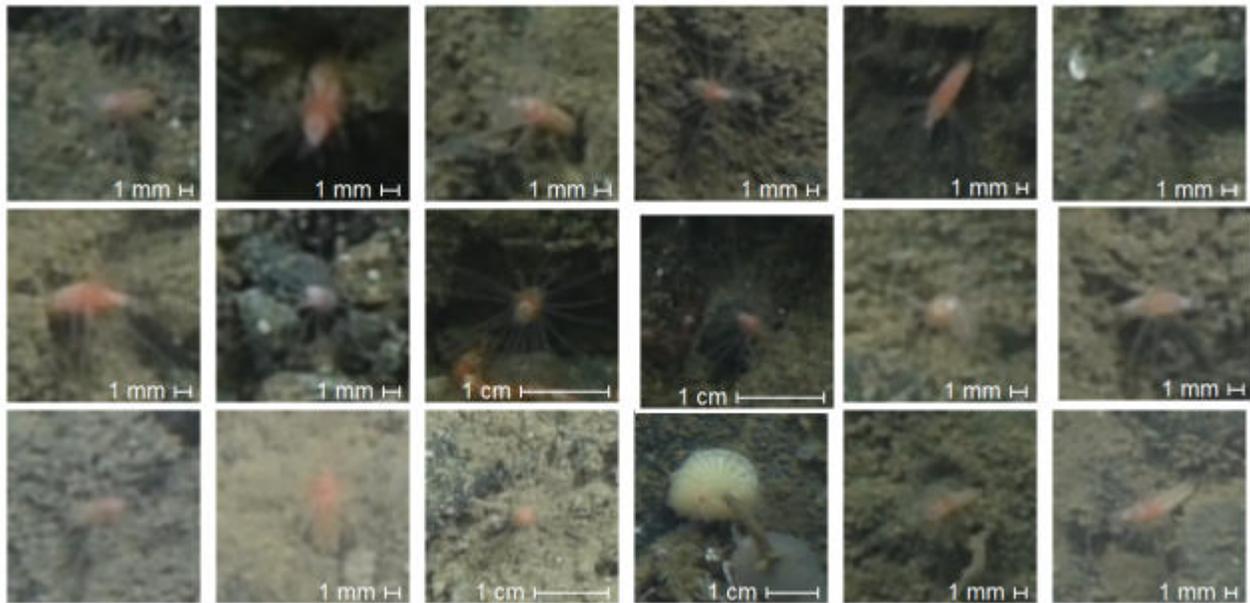
**Hydrozoa var 3** Owen, 1843

WoRMS Info | Name: Hydrozoa | AphiaID: 1337 | [Link →](#)

**Description:** Little beige stem poking out from substrate with pink tip and very thin circle of tentacles surrounding tip.

**Potential taxa:** *Clava multicornis*

**Considered for use in analyses:** Yes



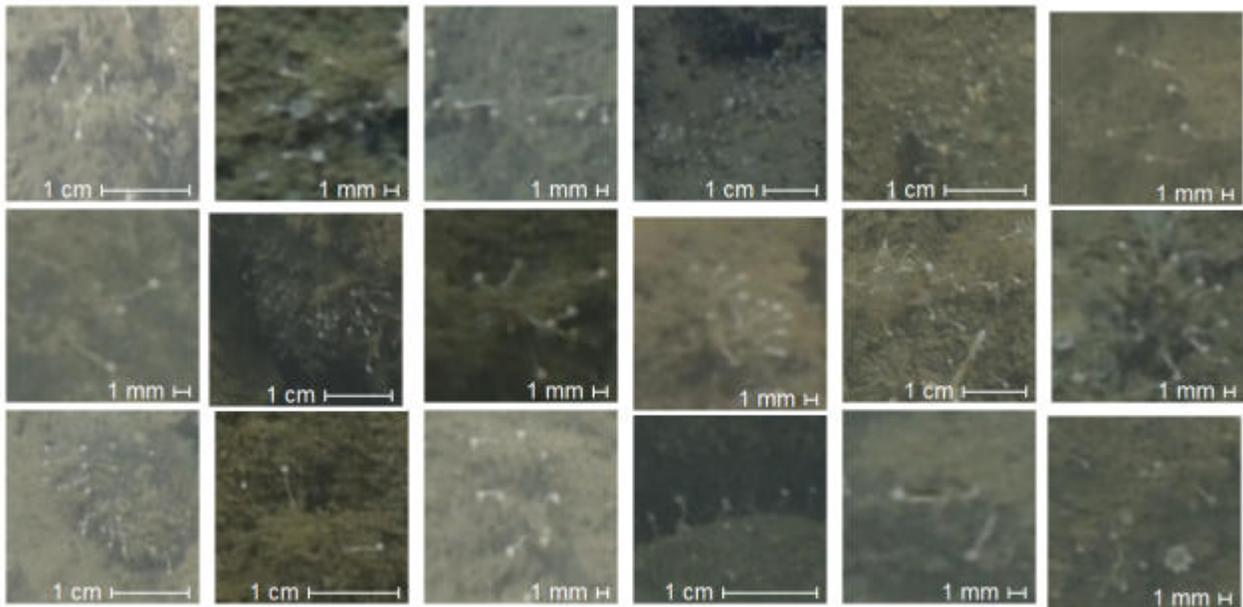
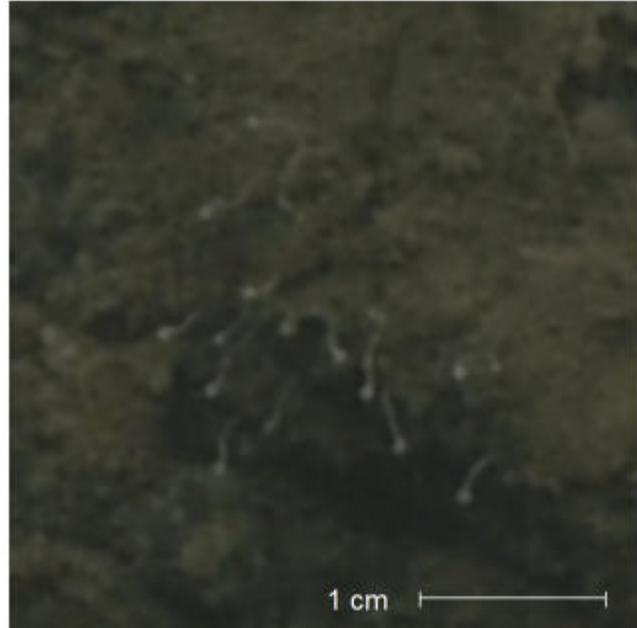
Phylum Cnidaria → Class Hydrozoa

**Hydrozoa var 4** Owen, 1843

WoRMS Info | Name: Hydrozoa | AphiaID: 1337 | [Link →](#)

**Description:** Very thin white stems that sprout from substrate with small little white spheres at the tips. Typically clustered together to form little bushels.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Octocorallia → Order Malacalcyonacea → Family Clavulariidae

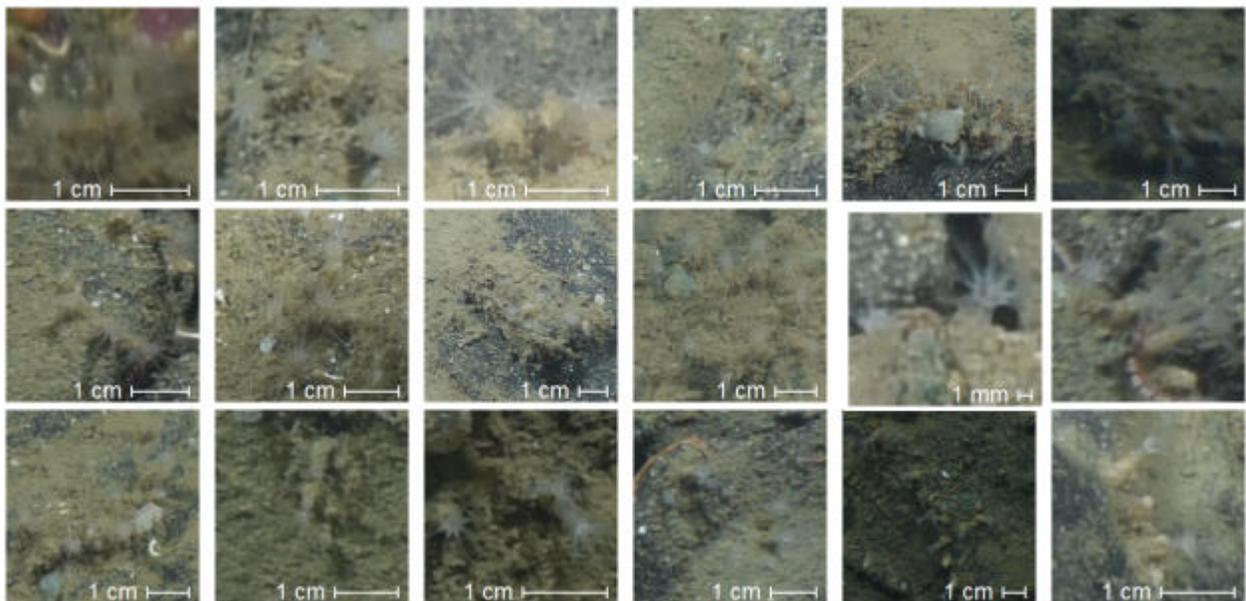
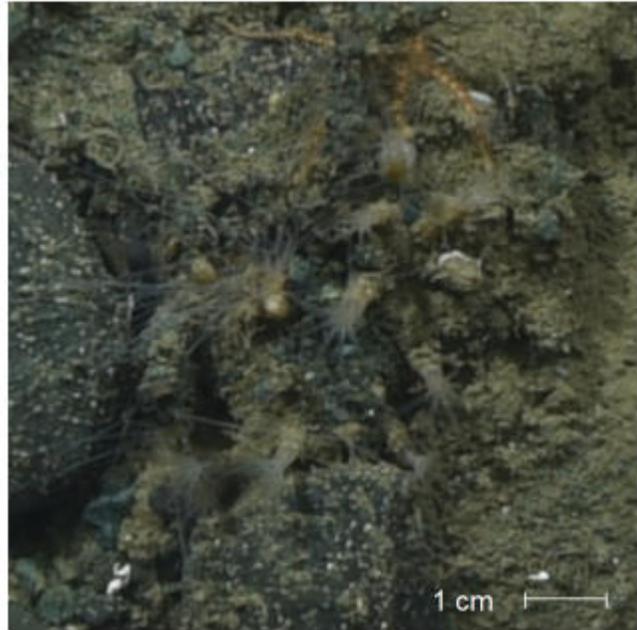
**Clavularia** Blainville, 1830

WoRMS Info | Name: *Clavularia* | AphiaID: 125286 | [Link →](#)

**Description:** Short and stubby tentacles growing from a beige stem attached to substrate. Typically appear in rows or clusters.

**Potential taxa:** *Clavularia modesta*

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Octocorallia → Order Malacalcyonacea

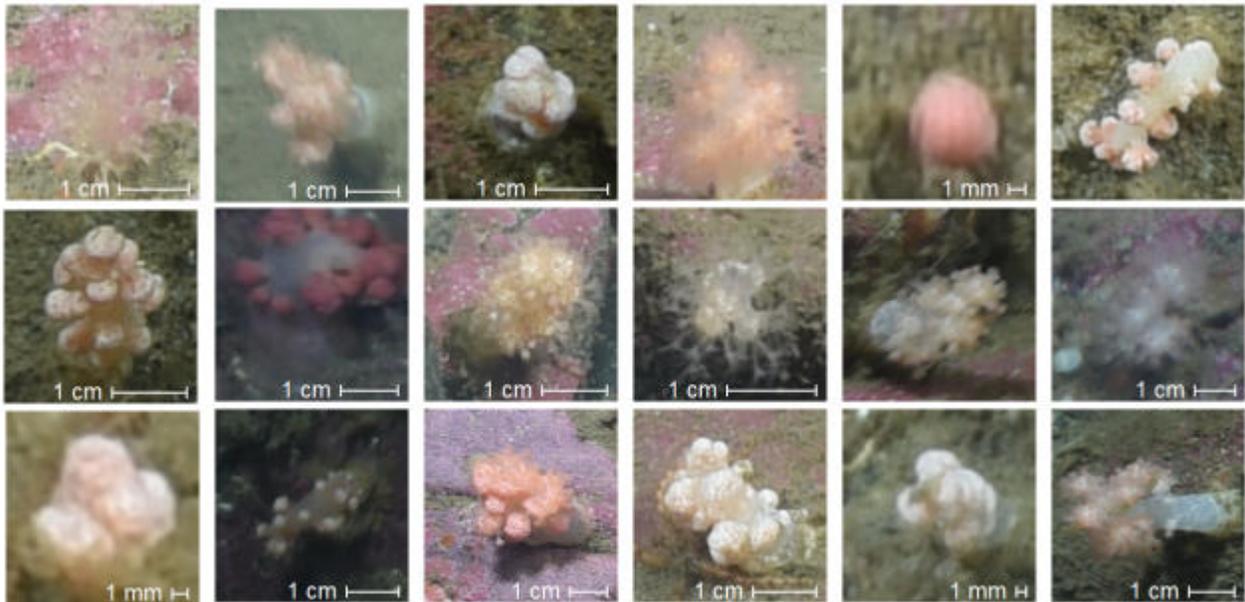
**Malacalcyonacea var 1** McFadden, van Ofwegen & Quattrini, 2022

WoRMS Info | Name: Malacalcyonacea | AphiaID: 1609357 | [Link →](#)

**Description:** Pink/orange/red lumps (retracted) or florettes growing from central stalk.

**Potential taxa:** *Gersemia rubiformis*, *Gersemia fruticosa*, *Drifa glomerata*

**Considered for use in analyses:** Yes



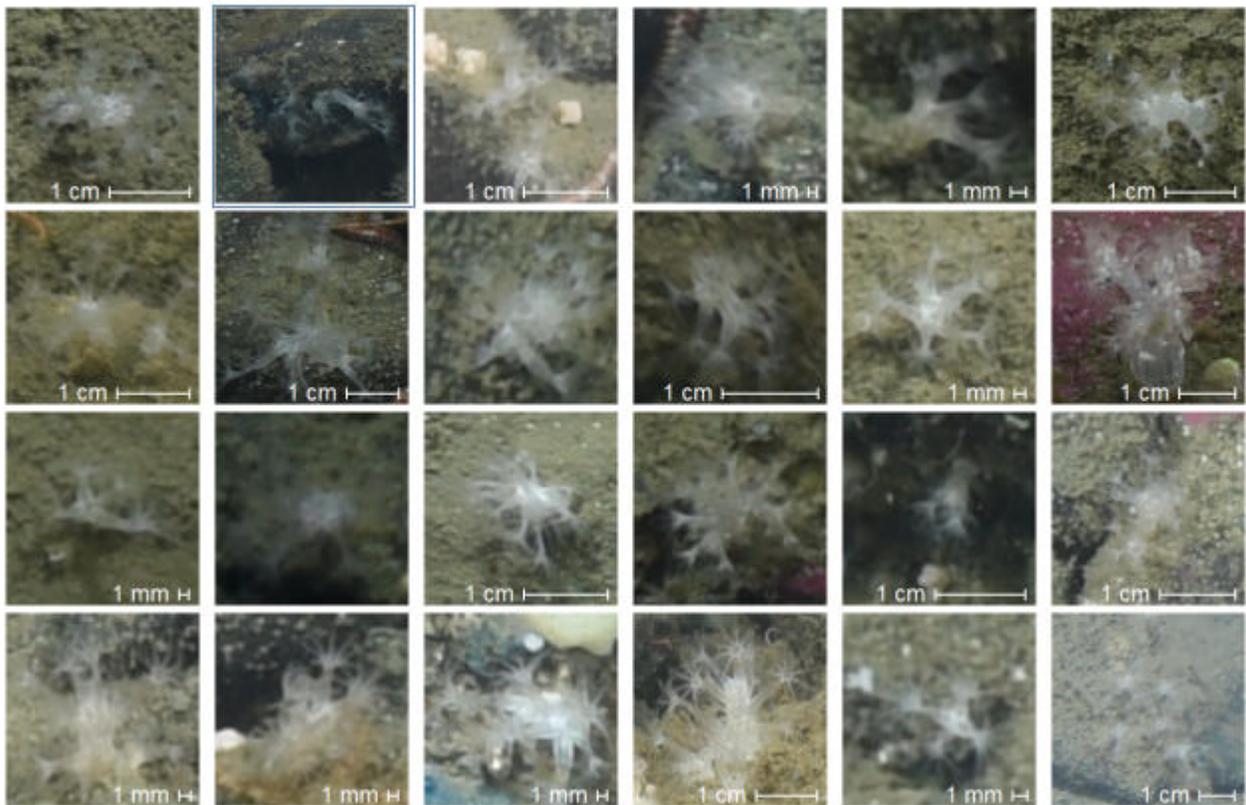
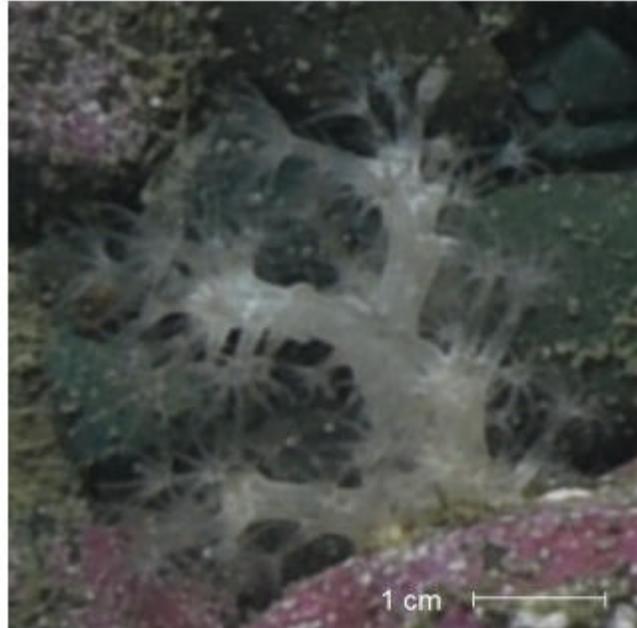
Phylum Cnidaria → Class Octocorallia → Order Malacalcyonacea

**Malacalcyonacea var 2** McFadden, van Ofwegen & Quattrini, 2022

WoRMS Info | Name: Malacalcyonacea | AphiaID: 1609357 | [Link →](#)

**Description:** Translucent clusters of stalks with tentacle florettes at the end.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Octocorallia → Order Scleralcyonacea → Family Pennatulidae

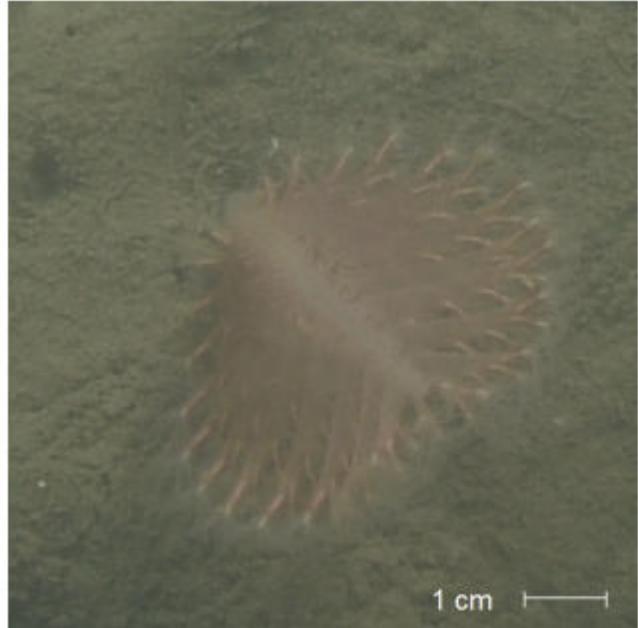
***Pennatula aculeata*** Danielssen, 1860

WoRMS Info | Name: *Pennatula aculeata* | AphiaID: 128515 | [Link →](#)

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**Description:** Sea pen. Resembles a feather extending from substrate.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Class Staurozoa → Order Stauromedusae → Suborder Myostaurida

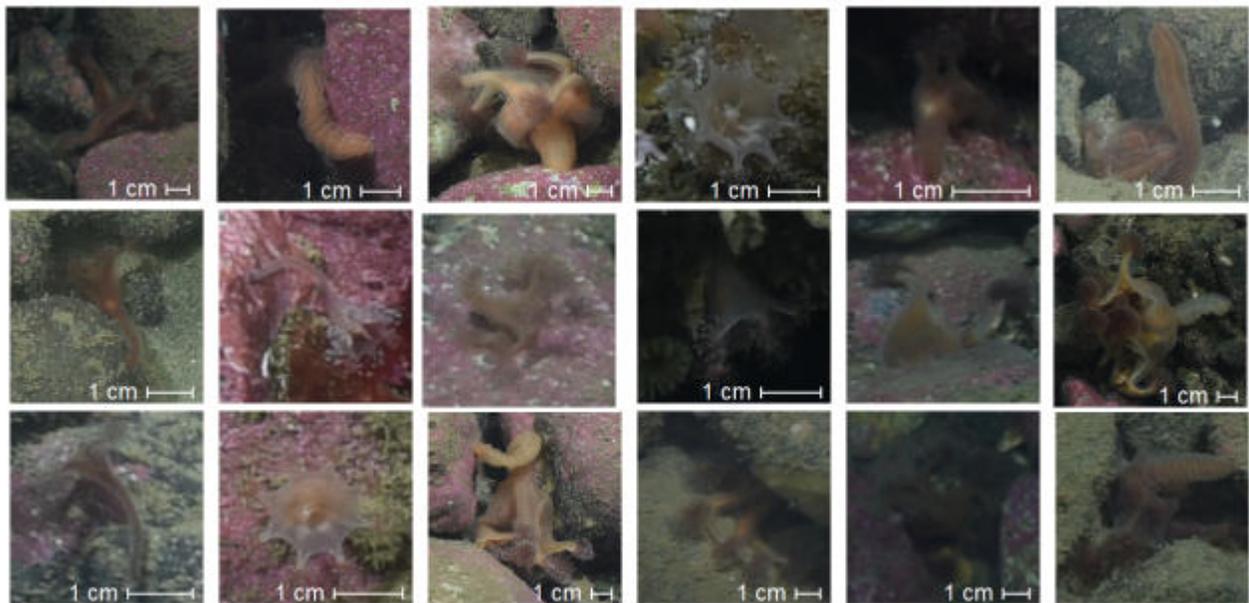
**Myostaurida** Miranda, Hirano, Mills, Falconer, Fenwick, Marques & Collins, 2016

WoRMS Info | Name: Myostaurida | AphiaID: 875440 | [Link →](#)

**Description:** Brown, gelatinous, umbrella-shaped organism with 8 darker poms at the extremities.

**Potential taxa:** *Lucernaria quadricornis*, Haliclystidae

**Considered for use in analyses:** Yes



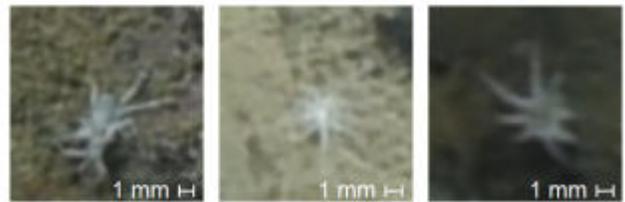
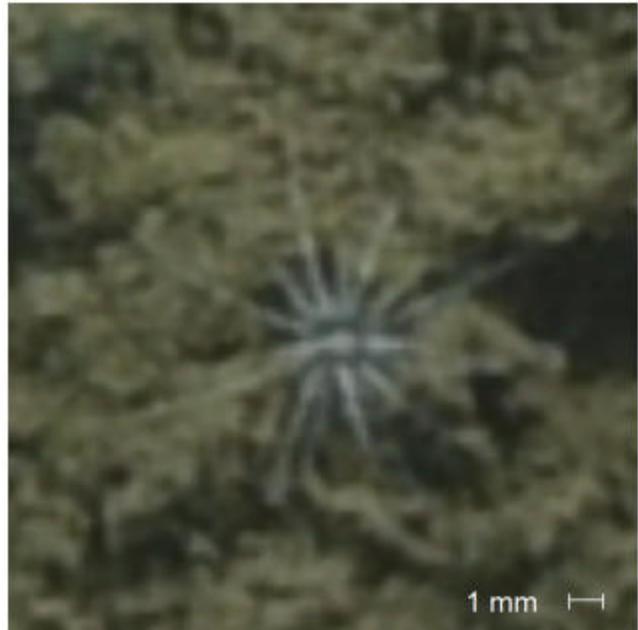
Phylum Cnidaria → Subphylum Anthozoa

**Anthozoa var 1** Ehrenberg, 1834

WoRMS Info | Name: Anthozoa | AphiaID: 1292 | [Link →](#)

**Description:** White and grey anthozoan with many arms.

**Considered for use in analyses:** Yes



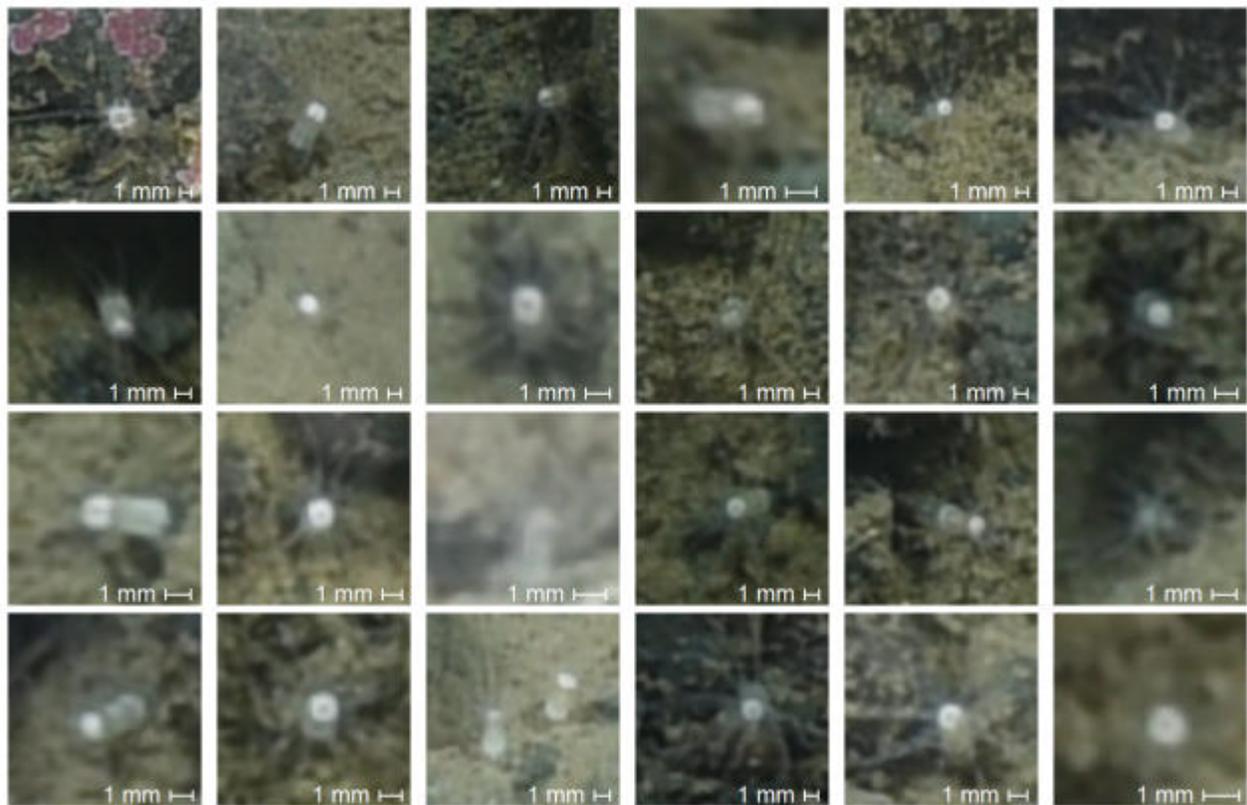
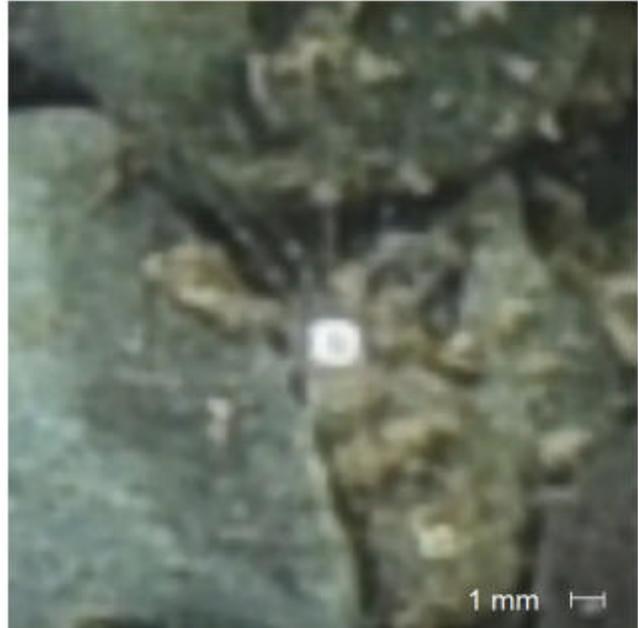
Phylum Cnidaria → Subphylum Anthozoa

**Anthozoa var 2** Ehrenberg, 1834

WoRMS Info | Name: Anthozoa | AphiaID: 1292 | [Link →](#)

**Description:** Anthozoan with white column and thin white and grey tentacles.

**Considered for use in analyses:** Yes



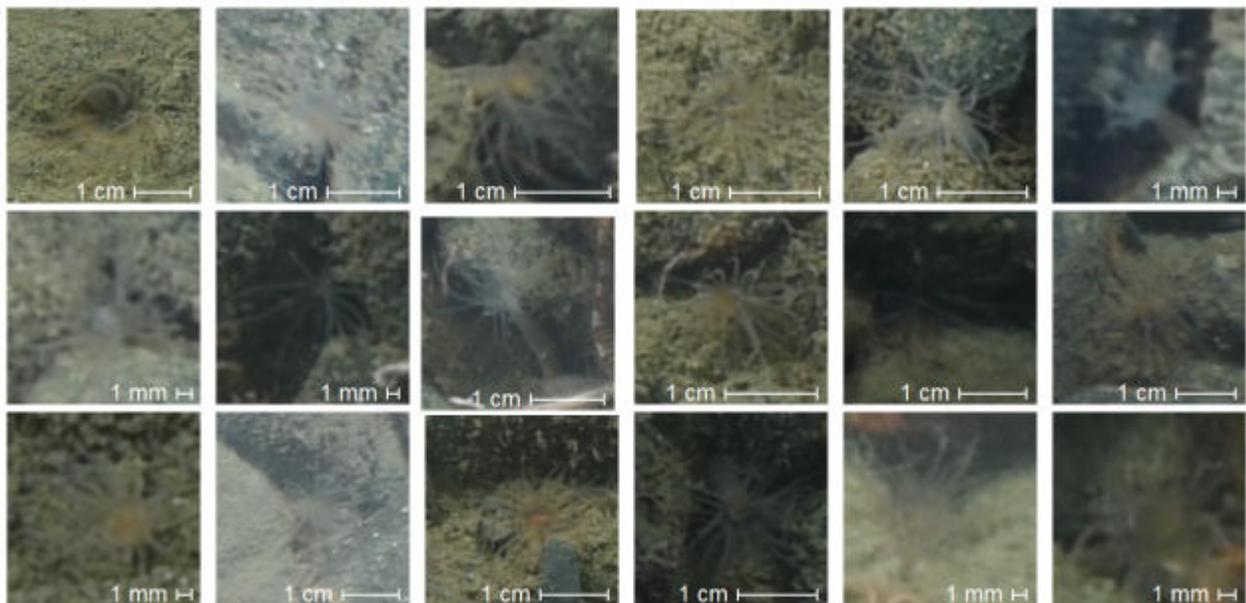
Phylum Cnidaria → Subphylum Anthozoa

**Anthozoa var 3** Ehrenberg, 1834

WoRMS Info | Name: Anthozoa | AphiaID: 1292 | [Link →](#)

**Description:** Anthozoan with peach column and thin peach tentacles. Often in sediment.

**Considered for use in analyses:** Yes



Phylum Cnidaria → Subphylum Medusozoa

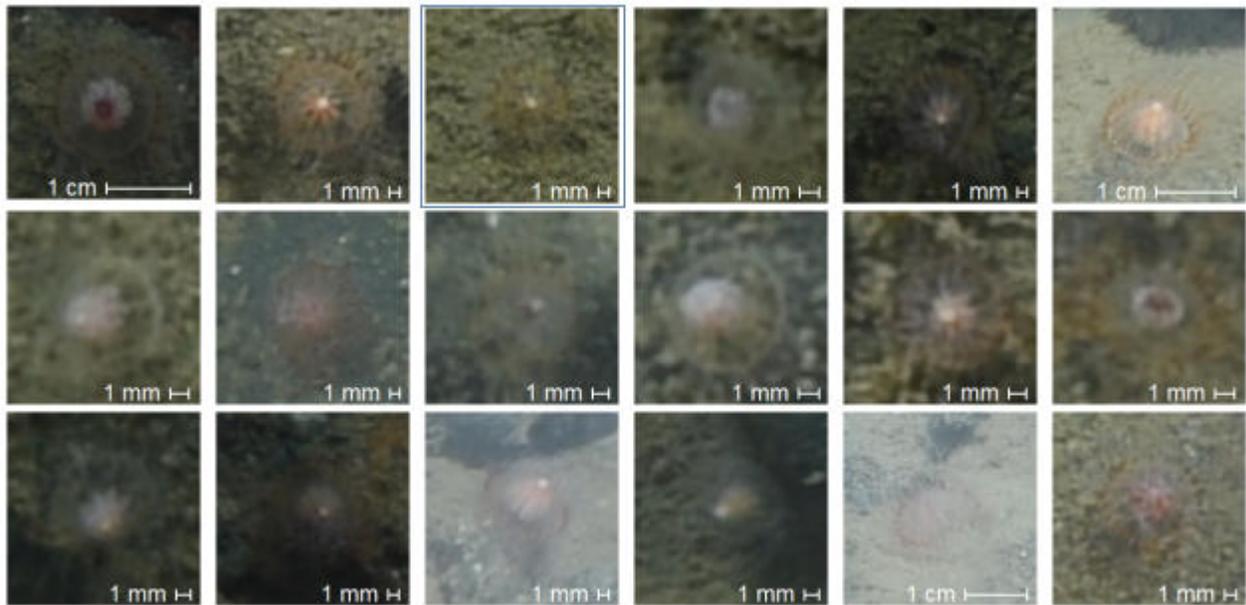
**Medusozoa type 1** Petersen, 1979

WoRMS Info | Name: Medusozoa | AphiaID: 1740301 | [Link →](#)

**Description:** Potential mix of species in the medusa stage. Translucent dome with coloured pink/orange/red centre. Sometimes can see fine tentacles around periphery.

**Considered for use in analyses:** No

**Reasoning:** OTU type that could overlap with other var. OTUs.



### 3.6 NEMERTEA

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Number of OTU in phylum: 7

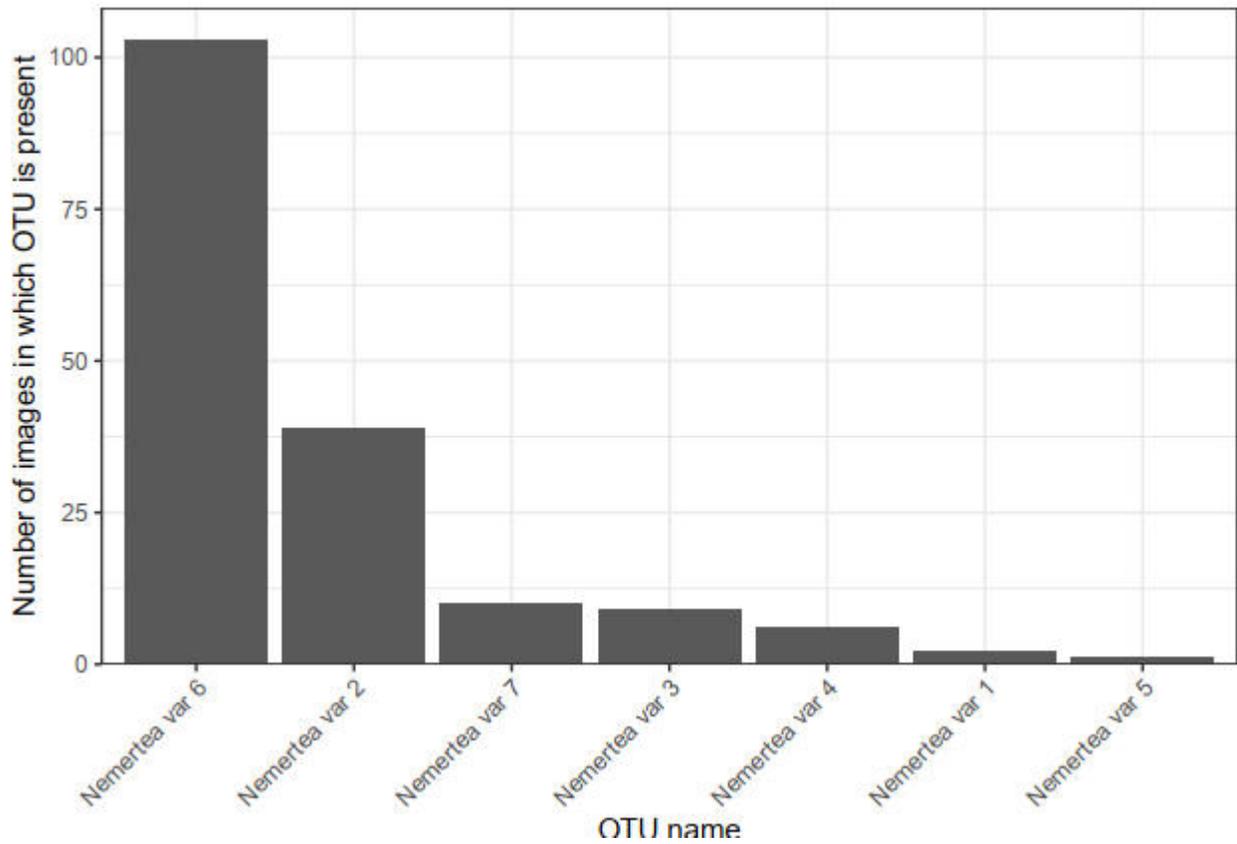


Figure 9: Number of images in which each Operational Taxonomic Unit (OTU) is present for the phylum Nemertea out of a total of 672 images.

Phylum Nemertea

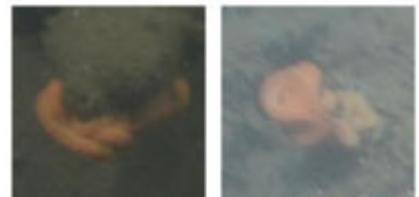
## Nemertea var 1

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

---

**Description:** Bright orange coiled worm.

**Considered for use in analyses:** Yes



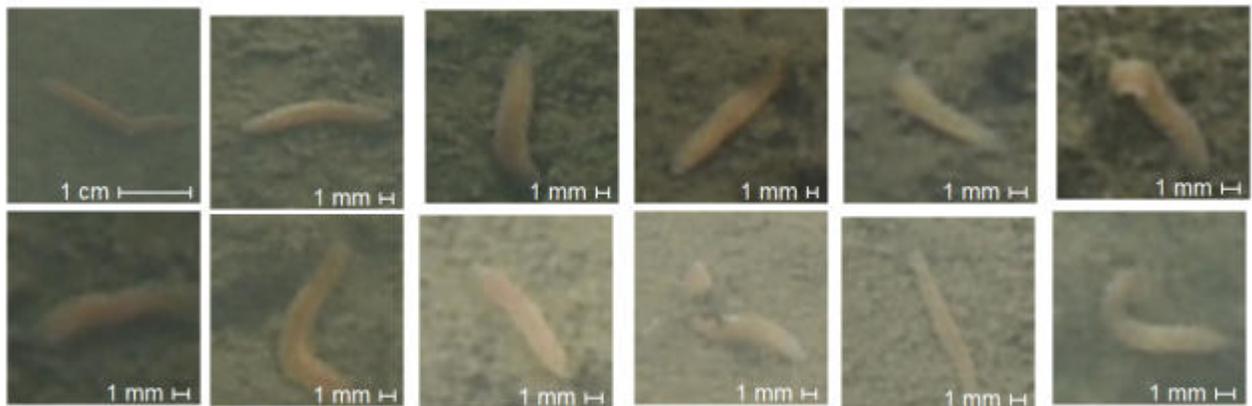
Phylum Nemertea

## Nemertea var 2

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

**Description:** Orange short and stubby worm usually found in mud.

**Considered for use in analyses:** Yes



Phylum Nemertea

### Nemertea var 3

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

**Description:** White/grey smooth long worm.

**Considered for use in analyses:** Yes



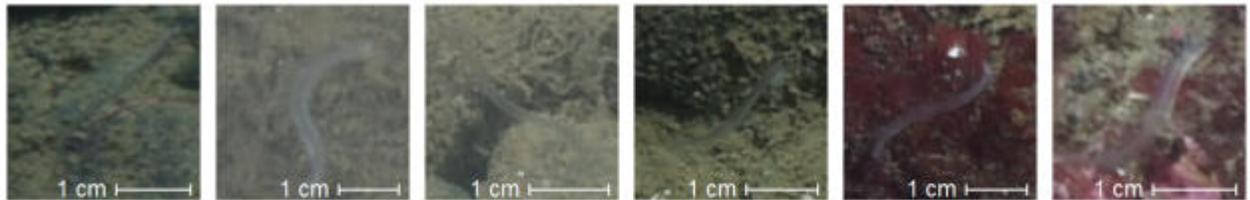
Phylum Nemertea

## Nemertea var 4

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

**Description:** Translucent smooth grey worm.

**Considered for use in analyses:** Yes



Phylum Nemertea

## Nemertea var 5

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

---

**Description:** Long dark purple floppy worm.

**Considered for use in analyses:** Yes



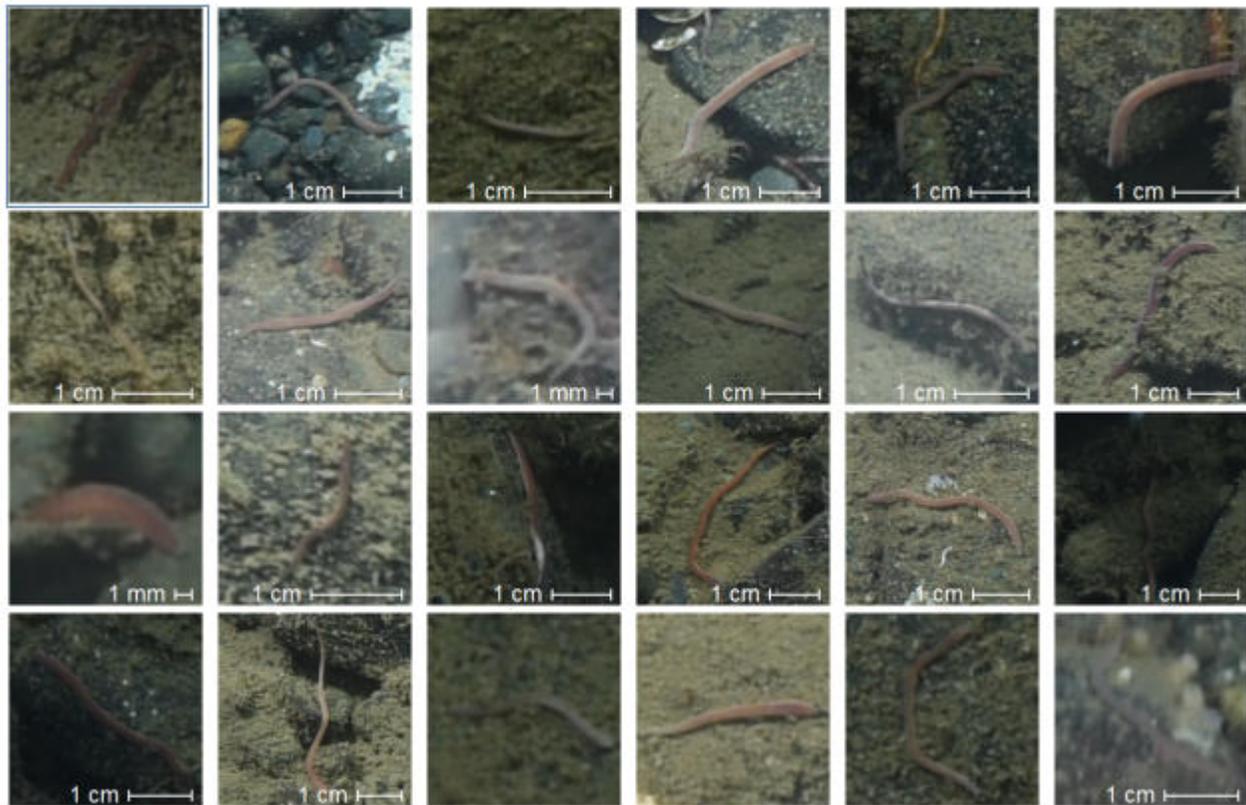
Phylum Nemertea

## Nemertea var 6

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

**Description:** Orange/pink long worm (most common Nemertea variant).

**Considered for use in analyses:** Yes



Phylum Nemertea

## Nemertea var 7

WoRMS Info | Name: Nemertea | AphiaID: 152391 | [Link →](#)

**Description:** Long, dark brown/black worm.

**Considered for use in analyses:** Yes



### 3.7 ANNELIDA

Number of OTU in phylum: 22

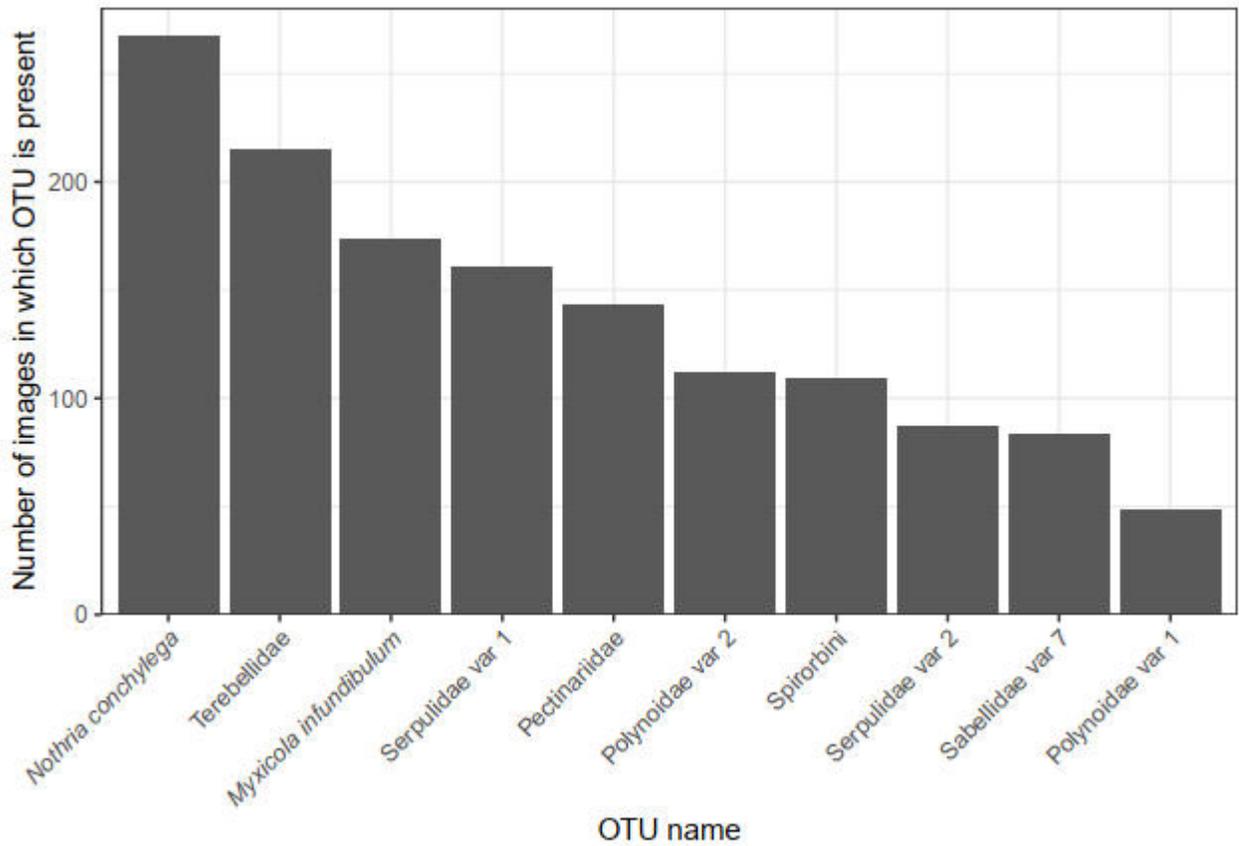


Figure 10: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Annelida out of a total of 672 images.

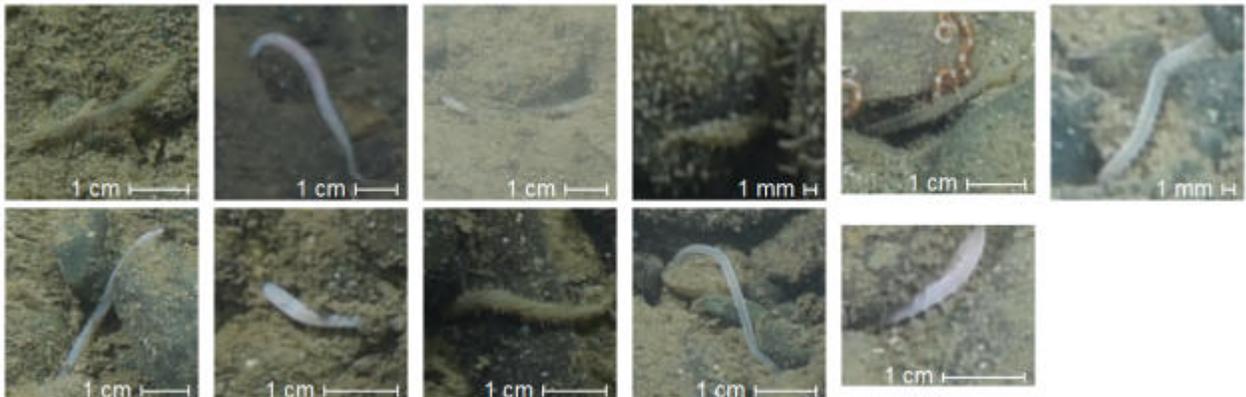
Phylum Annelida → Class Polychaeta → Order Eunicida → Family Lumbrineridae

**Lumbrineridae** Schmarda, 1861

WoRMS Info | Name: Lumbrineridae | AphiaID: 967 | [Link →](#)

**Description:** White or beige worm with visible segmentation and bristles on parapodia.

**Considered for use in analyses:** Yes



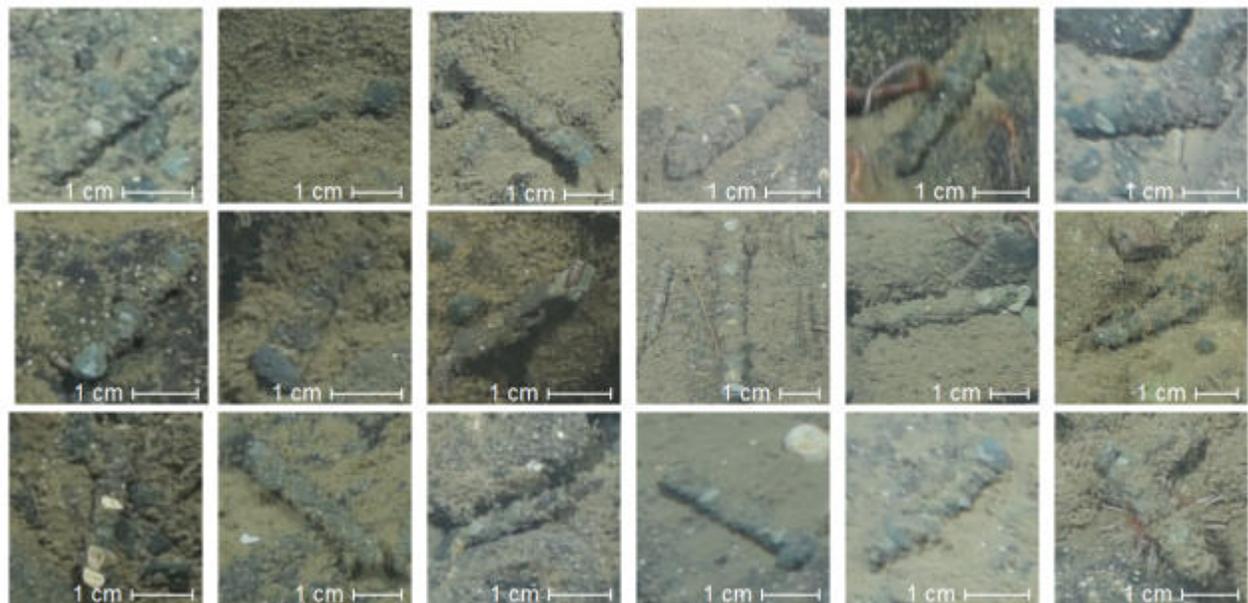
Phylum Annelida → Class Polychaeta → Order Eunicida → Family Onuphidae

***Nothria conchylega*** (Sars, 1835)

WoRMS Info | Name: *Nothria conchylega* | AphiaID: 130467 | [Link →](#)

**Description:** Appears as a straight tube made of small rocks with the annelid hidden inside. Sometimes see the striped organism poking out of the end of the tube. Tubes could be empty if organism is not visible, but impossible to tell if it is absent or just hidden.

**Considered for use in analyses:** Yes



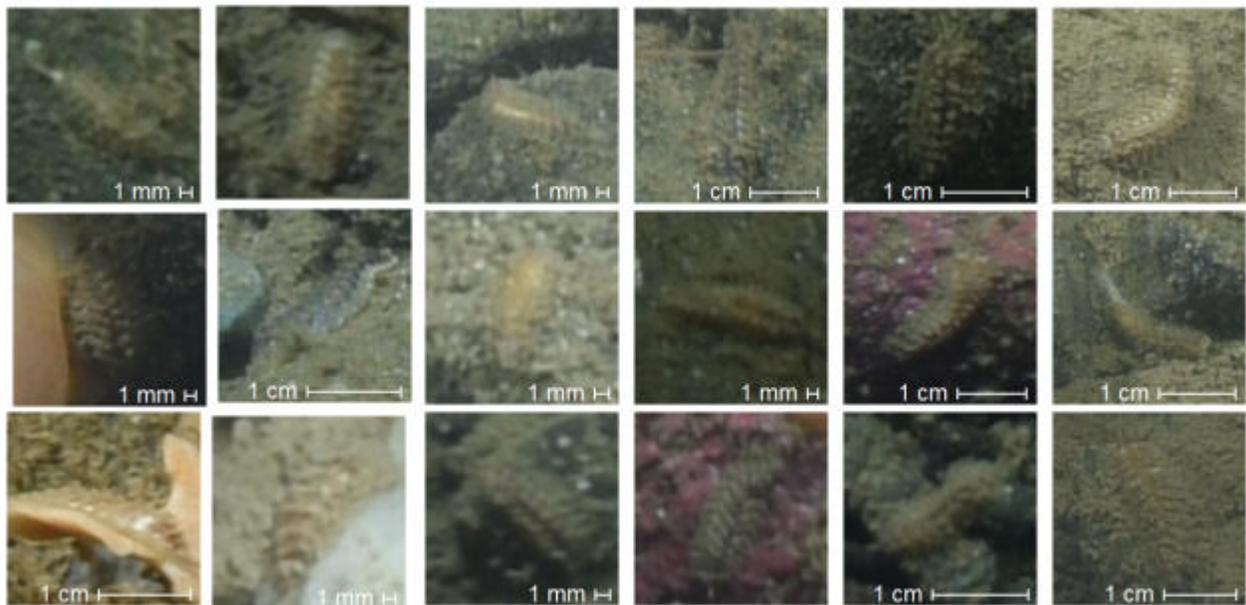
Phylum Annelida → Class Polychaeta → Order Phyllodocida → Family Polynoidae

**Polynoidae var 1** Kinberg, 1856

WoRMS Info | Name: Polynoidae | AphiaID: 939 | [Link →](#)

**Description:** Brown or beige scaleworm, often with sediment adhering to its scales.

**Considered for use in analyses:** Yes



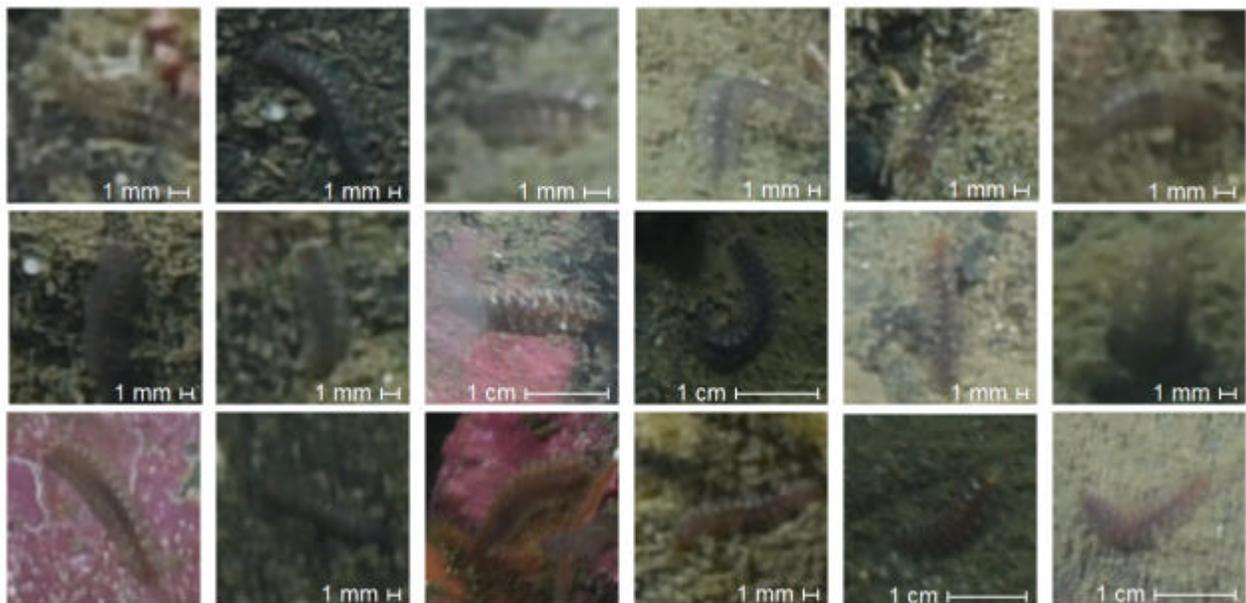
Phylum Annelida → Class Polychaeta → Order Phyllodocida → Family Polynoidae

**Polynoidae var 2** Kinberg, 1856

WoRMS Info | Name: Polynoidae | AphiaID: 939 | [Link →](#)

**Description:** Brown to black scaleworm.  
Scales have white lines along margins.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Phyllodocida → Family Polynoidae

**Polynoidae var 3** Kinberg, 1856

WoRMS Info | Name: Polynoidae | AphiaID: 939 | [Link →](#)

**Description:** Yellow–brown scaleworm.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Phyllodocida → Family Polynoidae

**Polynoidae var 4** Kinberg, 1856

WoRMS Info | Name: Polynoidae | AphiaID: 939 | [Link →](#)

---

**Description:** Large white/beige scaleworm with spiky appearance due to visible parapodia.

**Potential taxa:** *Laetmonice filicornis*

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Phyllodocida → Family Polynoidae

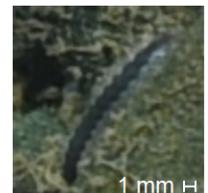
**Polynoidae var 5** Kinberg, 1856

WoRMS Info | Name: Polynoidae | AphiaID: 939 | [Link →](#)

---

**Description:** Black scaleworm with silver edges to scales.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Phyllodocida → Family Syllidae

**Syllidae** Grube, 1850

WoRMS Info | Name: Syllidae | AphiaID: 948 | [Link →](#)

**Description:** Small, white, wide, flat worm. Has transverse ridges and a sometimes-visible palp (looks like a notch) at one end. Pharynx visible in most cases.

**Considered for use in analyses:** Yes



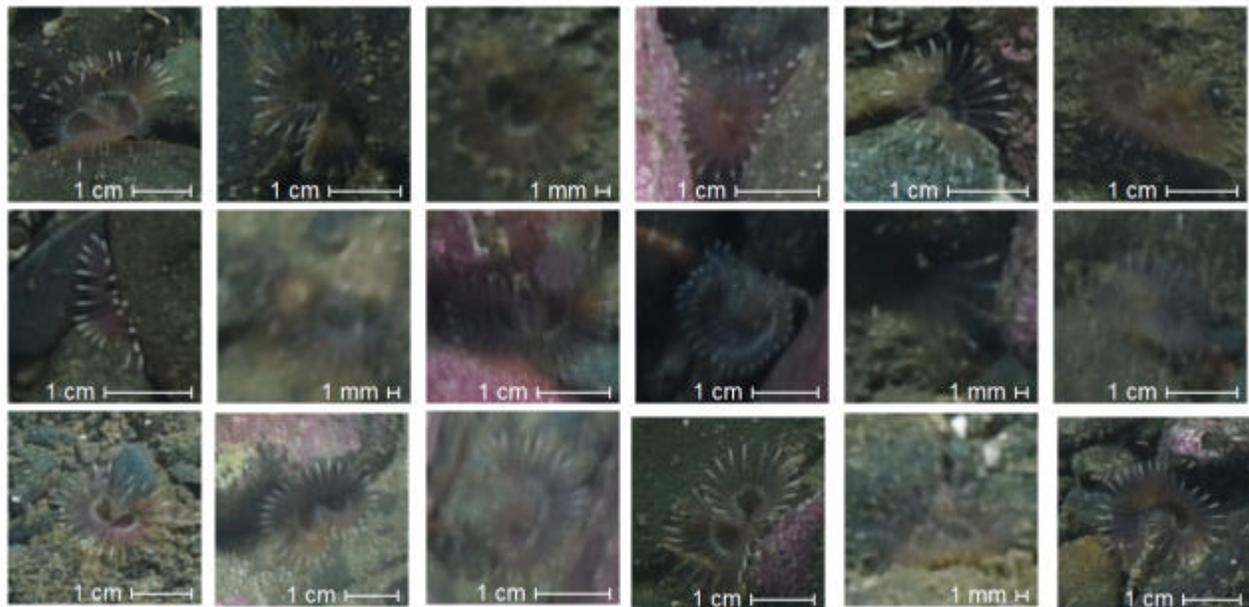
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

***Chone infundibuliformis*** Krøyer, 1856

WoRMS Info | Name: *Chone infundibuliformis* | AphiaID: 130891 | [Link →](#)

**Description:** Fans sectioned in two parts. White tips. Dark brown/purple colour with lighter ring near centre of fan with an even darker tone in the middle. Slightly translucent.

**Considered for use in analyses:** Yes



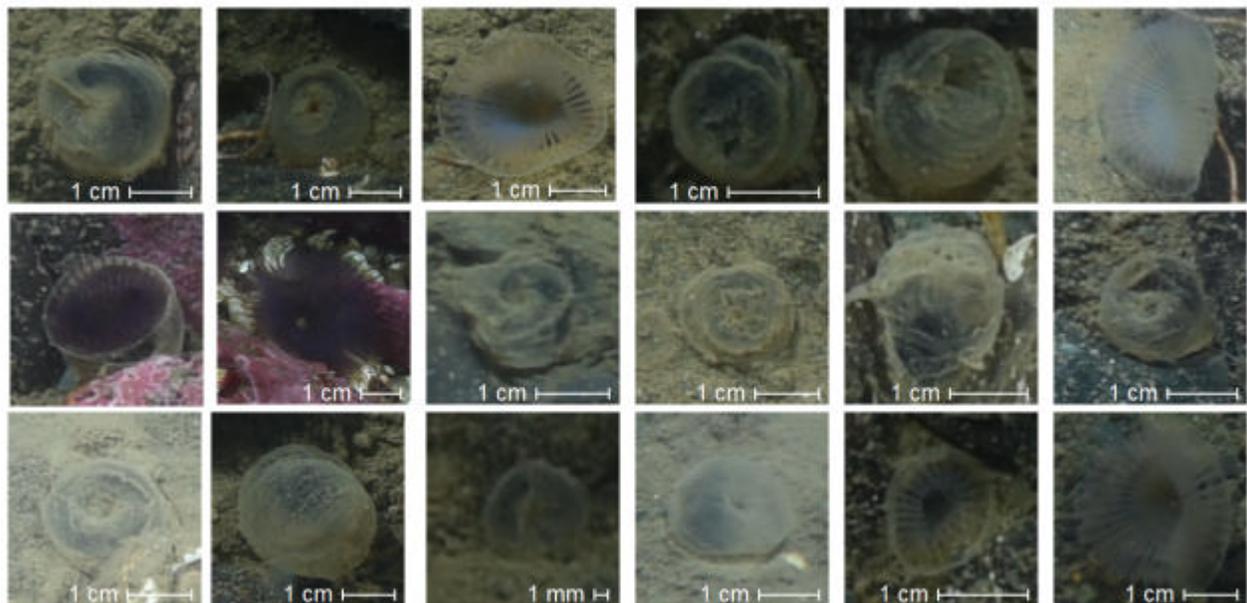
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

***Myxicola infundibulum*** (Montagu, 1808)

WoRMS Info | Name: *Myxicola infundibulum* | AphiaID: 130932 | [Link →](#)

**Description:** Tentacles form single circle.  
When tentacles are retracted, only the green gelatinous tube is visible.

**Considered for use in analyses:** Yes



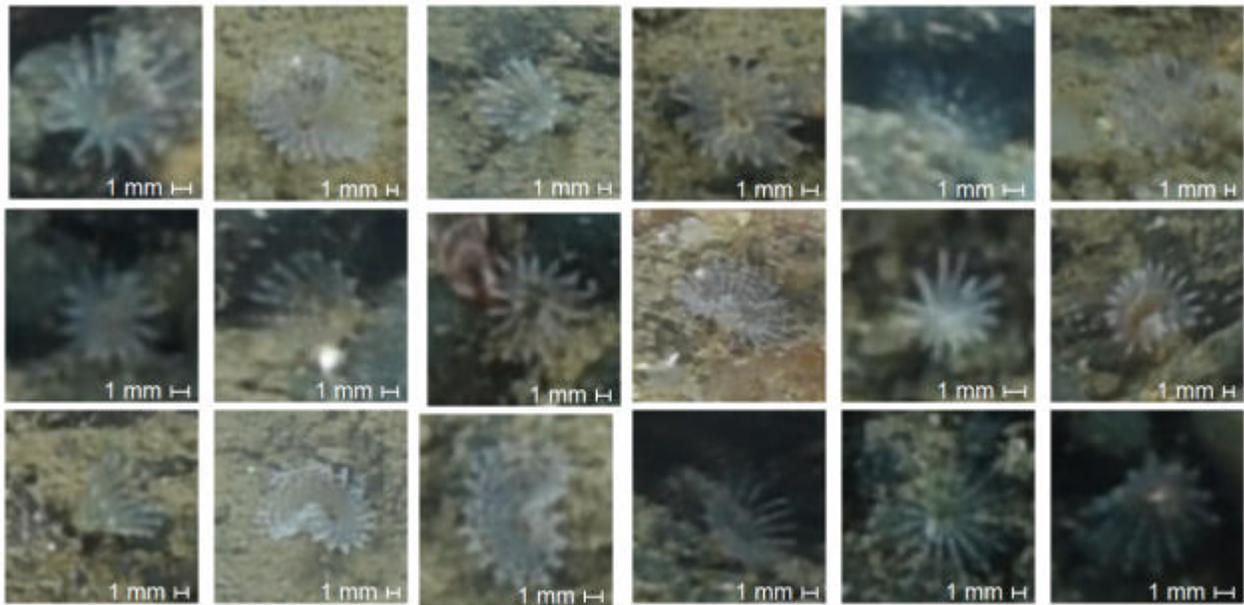
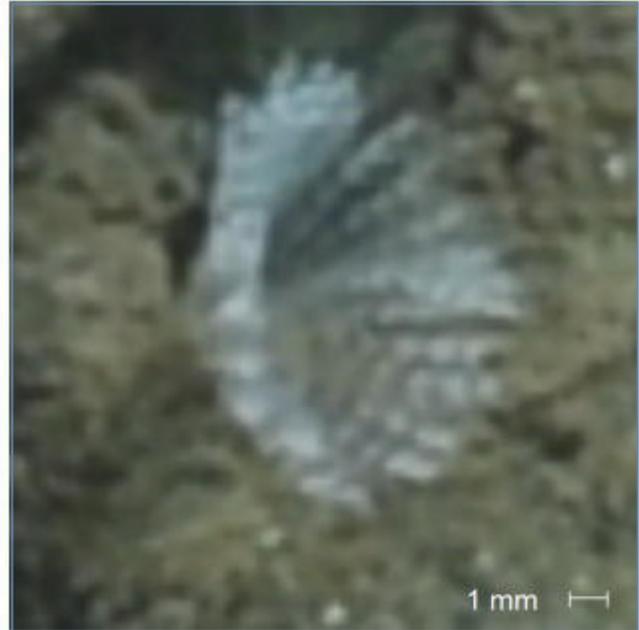
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

**Sabellidae var 1** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

**Description:** White, striped, translucent fans.

**Considered for use in analyses:** Yes



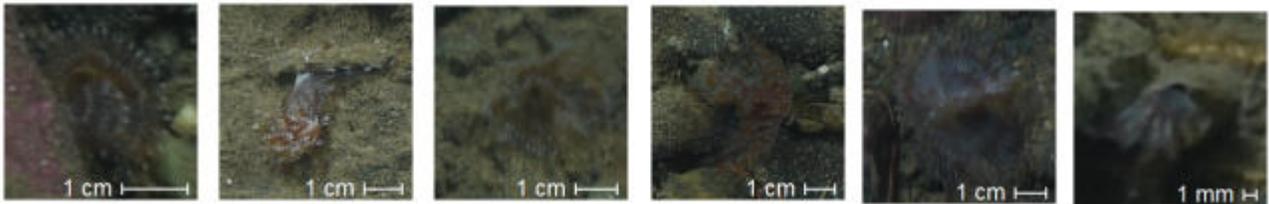
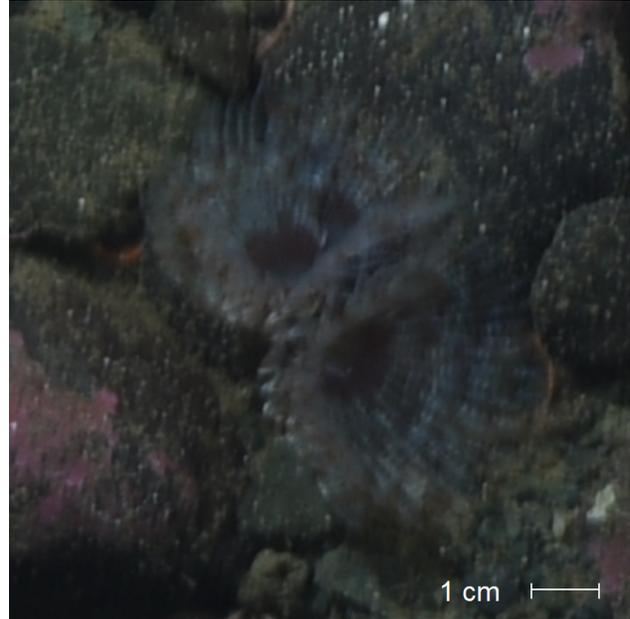
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

**Sabellidae var 2** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

**Description:** Mottled/striped brown/purple/grey fans. Either looks singular or segmented fans.

**Considered for use in analyses:** Yes



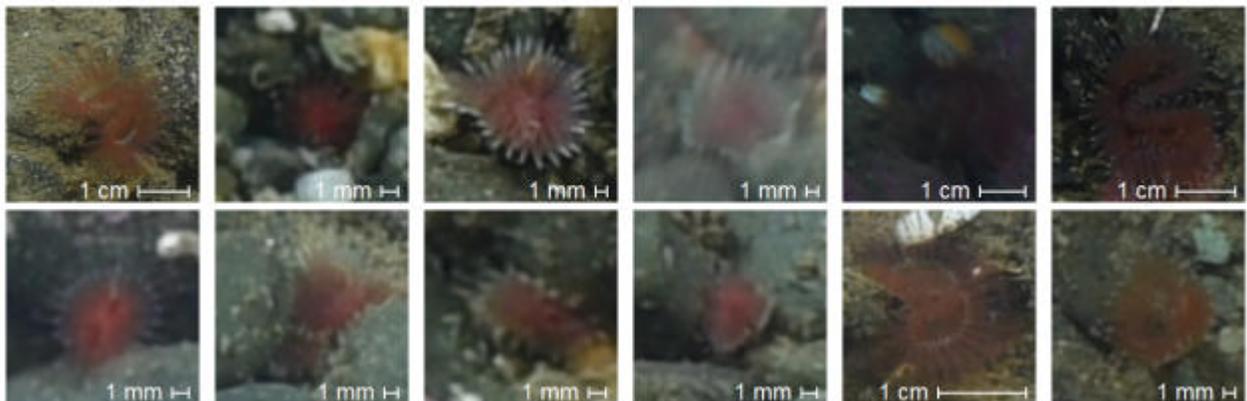
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

**Sabellidae var 3** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

**Description:** Red/orange bi-segmented fans with pale ring near centre of fan.

**Considered for use in analyses:** Yes



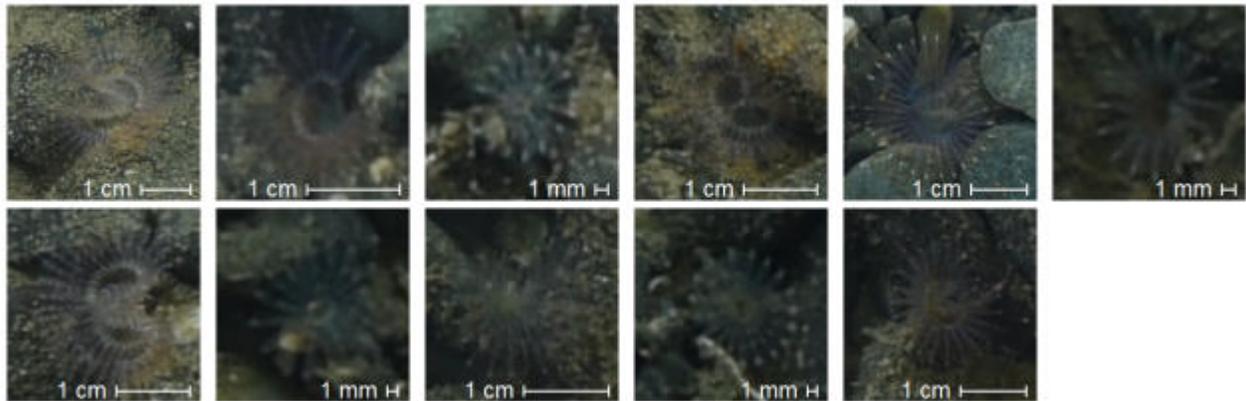
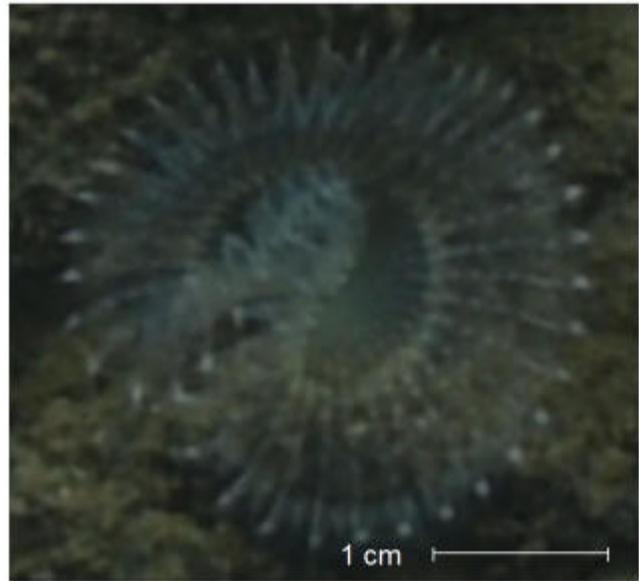
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

**Sabellidae var 4** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

**Description:** Translucent pale pink striped fans sometimes with white tips.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

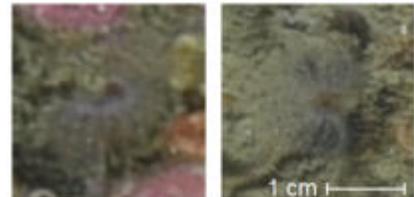
**Sabellidae var 5** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

---

**Description:** Beige translucent striped fans.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

**Sabellidae var 6** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

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**Description:** Opaque white fans.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Sabellida → Family Sabellidae

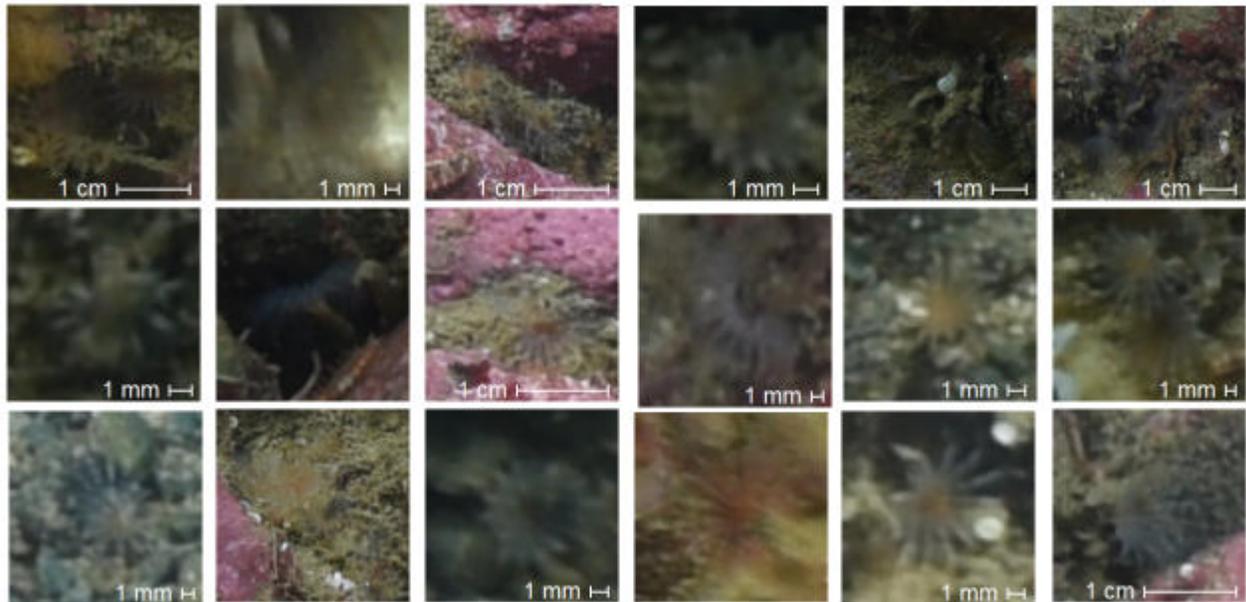
**Sabellidae var 7** Latreille, 1825

WoRMS Info | Name: Sabellidae | AphiaID: 985 | [Link →](#)

**Description:** Small translucent beige/orange circular fans that are often gregarious and sometimes seen coming out of small brown tubes.

**Potential taxa:** *Pseudopotamilla reniformis*

**Considered for use in analyses:** Yes



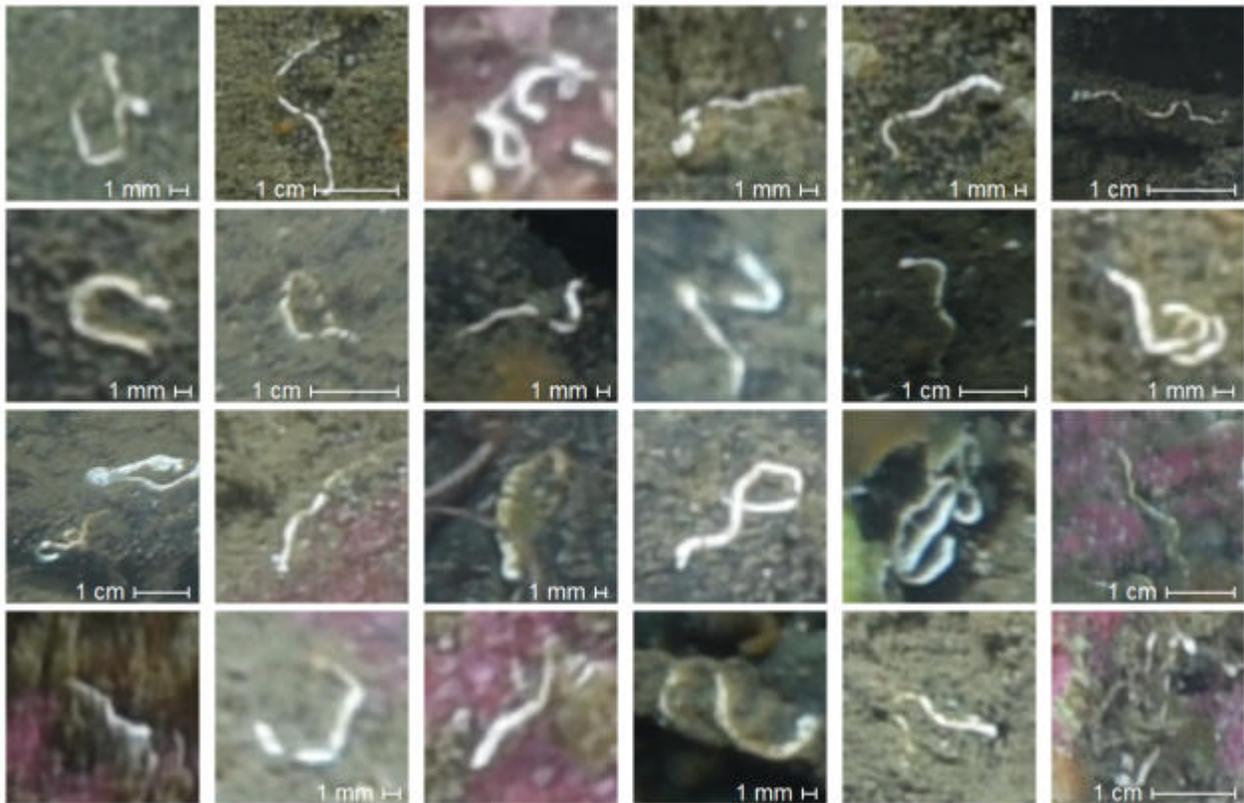
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Serpulidae

**Serpulidae var 1** Rafinesque, 1815

WoRMS Info | Name: Serpulidae | AphiaID: 988 | [Link →](#)

**Description:** White slim serpentine tube. Overall similar appearance to Serpulidae var 2, but a lot smaller and skinnier and more frequently seen.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Sabellida → Family Serpulidae

**Serpulidae var 2** Rafinesque, 1815

WoRMS Info | Name: Serpulidae | AphiaID: 988 | [Link →](#)

**Description:** White thick serpentine tube.  
Sometimes see white, translucent fan  
sticking out of end of tube and other times  
it is retracted.

**Considered for use in analyses:** Yes



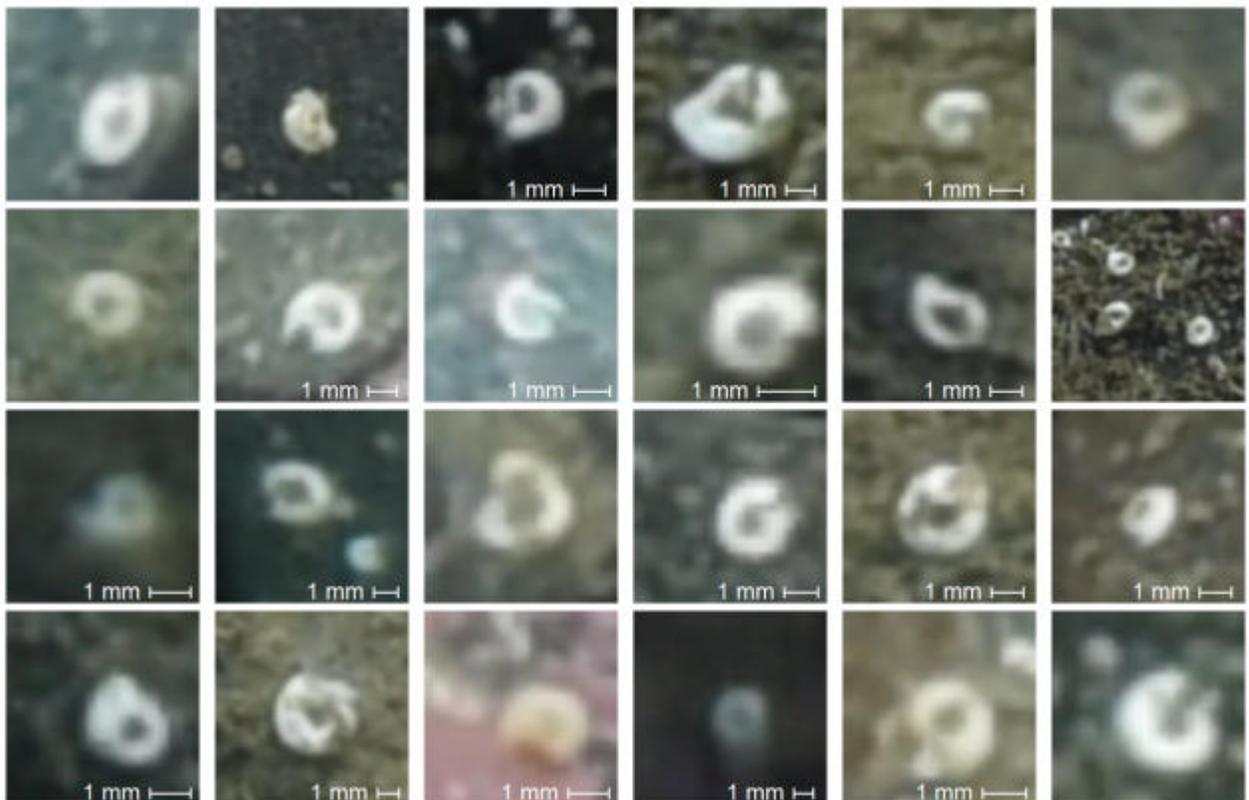
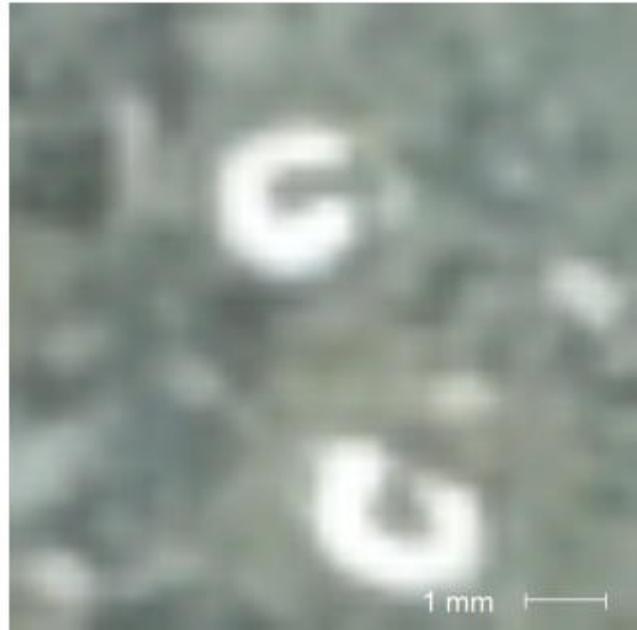
Phylum Annelida → Class Polychaeta → Order Sabellida → Family Serpulidae → Tribe Spirorbini

**Spirorbini** Chamberlin, 1919

WoRMS Info | Name: Spirorbini | AphiaID: 719188 | [Link →](#)

**Description:** White, very small spiral/donut-shaped tube.

**Considered for use in analyses:** Yes



Phylum Annelida → Class Polychaeta → Order Terebellida → Family Pectinariidae

**Pectinariidae** Quatrefages, 1866

WoRMS Info | Name: Pectinariidae | AphiaID: 980 | [Link →](#)

**Description:** Cigar-shaped, brown/orange tube. These appear empty.

**Considered for use in analyses:** No

**Reasoning:** Most likely all empty tubes without any organism inside.



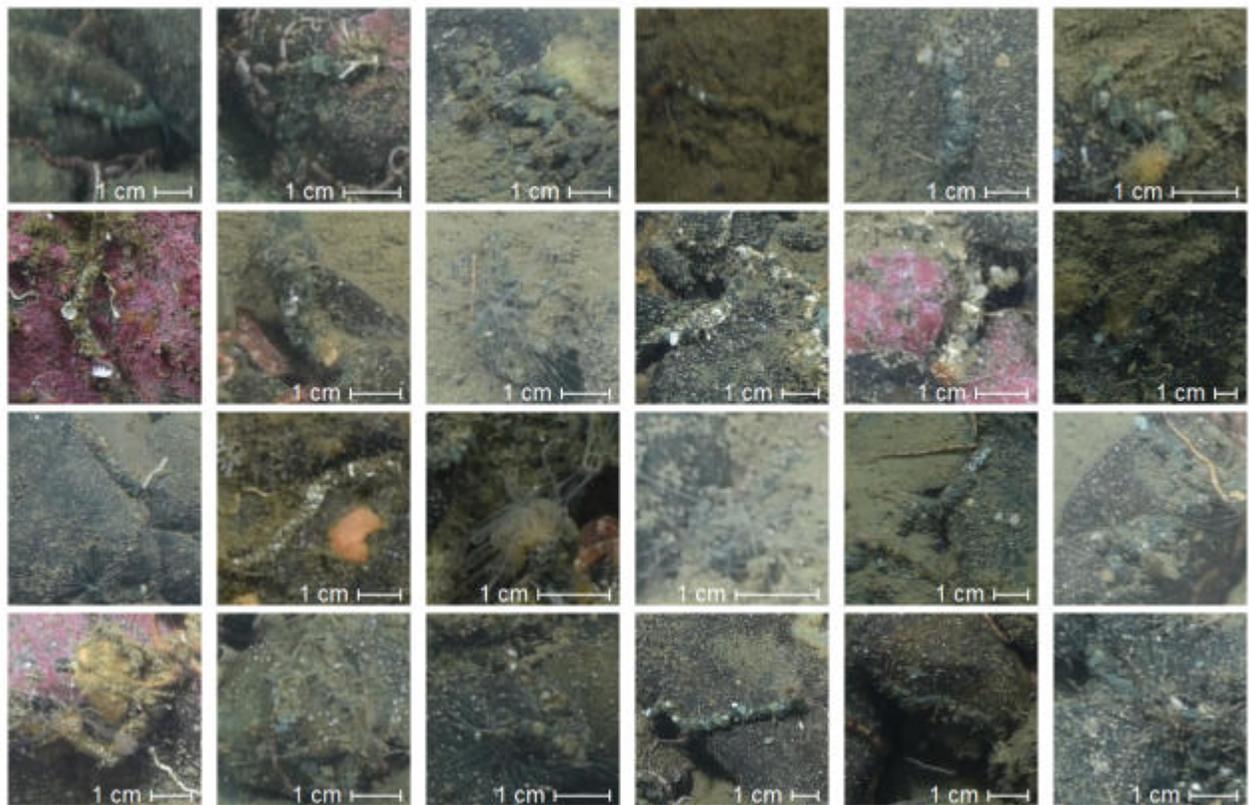
Phylum Annelida → Class Polychaeta → Order Terebellida → Family Terebellidae

**Terebellidae** Johnston, 1846

WoRMS Info | Name: Terebellidae | AphiaID: 982 | [Link →](#)

**Description:** Serpentine tube made of small rocks or white tube with long tendrils extending from one end.

**Considered for use in analyses:** Yes



### 3.8 ARTHROPODA

Number of OTU in phylum: 25

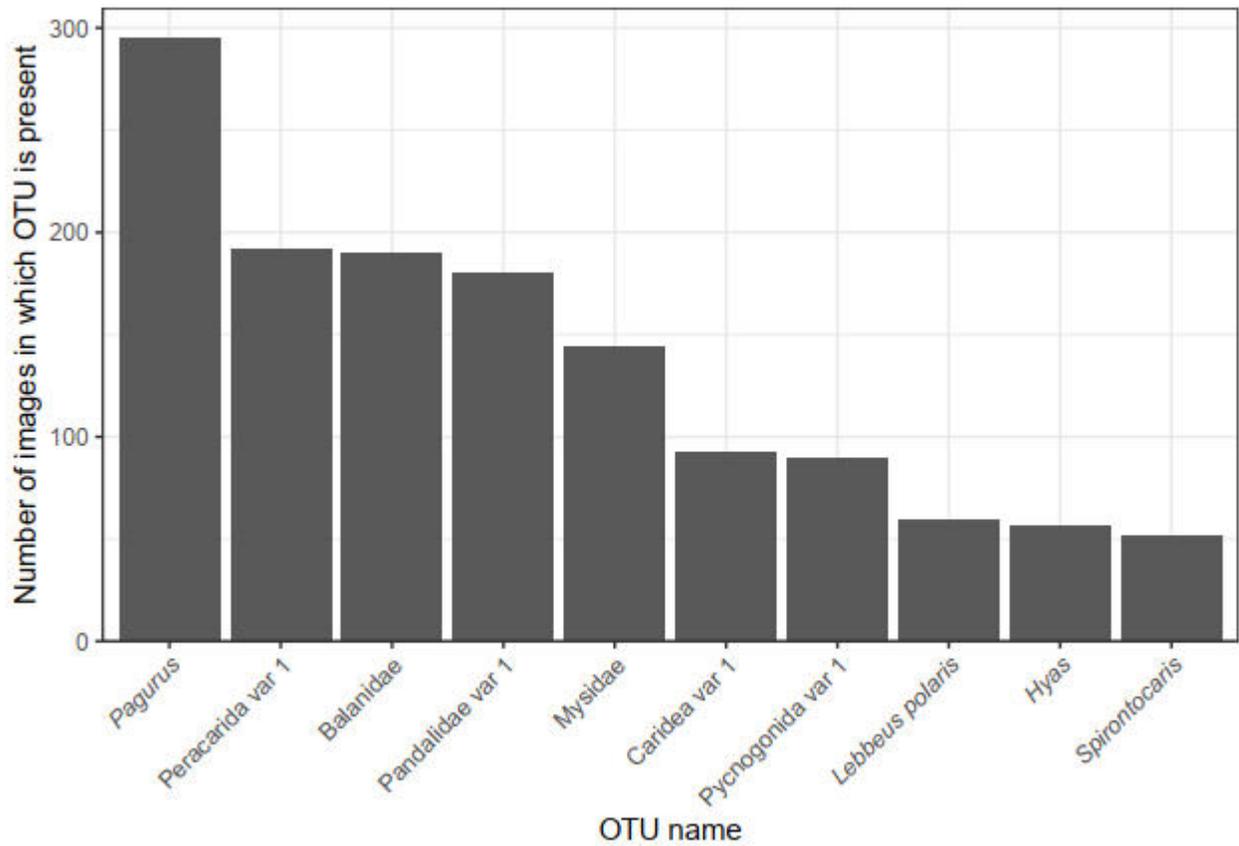


Figure 11: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Arthropoda out of a total of 672 images.

Phylum Arthropoda → Class Malacostraca → Order Amphipoda → Family Caprellidae

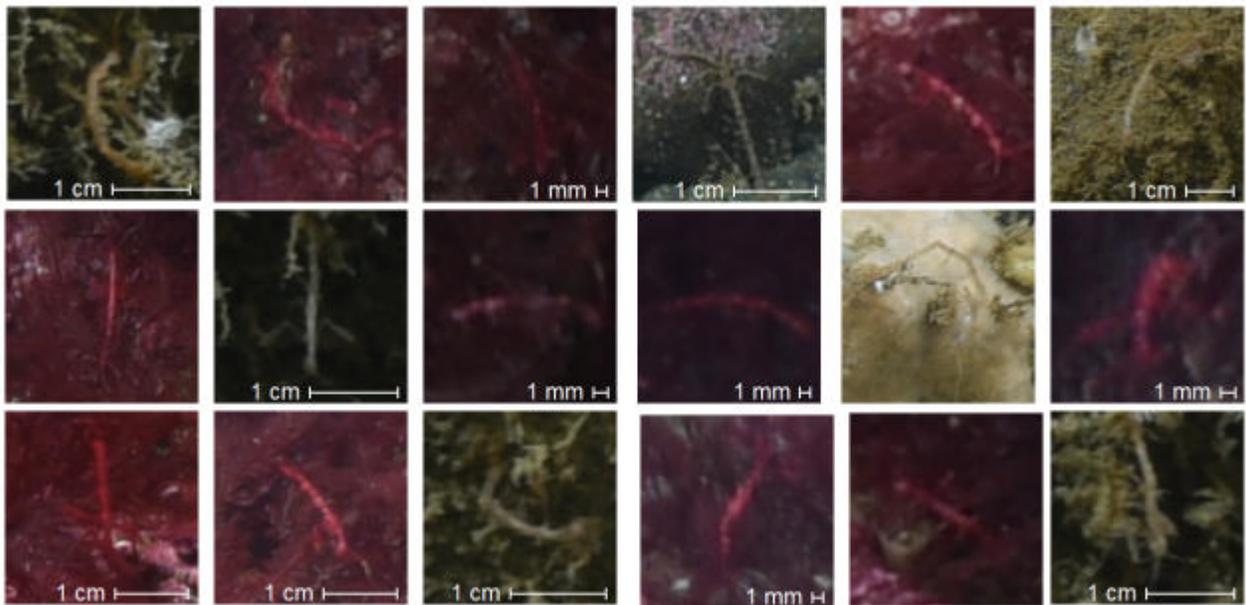
**Caprellidae** Leach, 1814

WoRMS Info | Name: Caprellidae | AphiaID: 101361 | [Link →](#)

**Description:** Skeleton shrimp. Stick-like. Has appendages visible off main body. Appear red when among rhodophytes.

**Potential taxa:** *Caprella mutica*, *Caprella linearis*, *Caprella septentrionalis*, *Aeginina*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Amphipoda

**Amphipoda var 1** Latreille, 1816

WoRMS Info | Name: Amphipoda | AphiaID: 1135 | [Link →](#)

---

**Description:** White curled up amphipod with little pale legs.

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Cancridae

***Cancer borealis*** Stimpson, 1859

WoRMS Info | Name: *Cancer borealis* | AphiaID: 158056 | [Link →](#)

---

**Description:** Red/orange/brown wide carapace with ridges around the front of the carapace. Stubby appendages. Jagged shell edge.

**Considered for use in analyses:** Yes



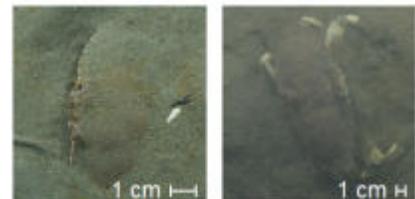
Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Cancridae

***Cancer irroratus*** Say, 1817

WoRMS Info | Name: *Cancer irroratus* | AphiaID: 158057 | [Link →](#)

**Description:** Red/orange/brown wide carapace with ridges around the front of the carapace. Stubby appendages. Smooth ridges along shell edge.

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Crangonidae

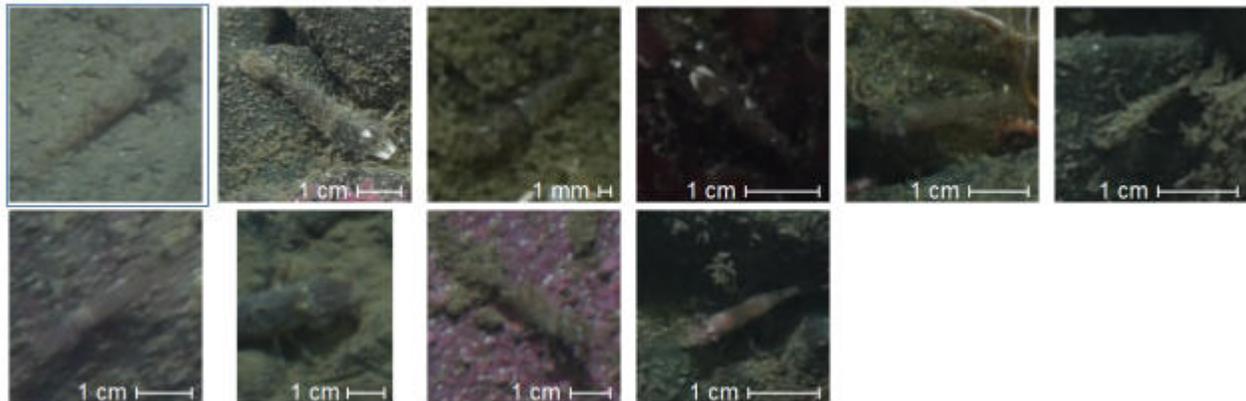
**Crangonidae** Haworth, 1825

WoRMS Info | Name: Crangonidae | AphiaID: 106782 | [Link →](#)

**Description:** Brown–black robust–looking shrimp.

**Potential taxa:** *Crangon septemspinosa*,  
*Sabinea*, *Argis dentata*, *Pontophilus norvegicus*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Oregoniidae

***Chionoecetes opilio*** (Fabricius, 1788)

WoRMS Info | Name: *Chionoecetes opilio* | AphiaID: 107315 | [Link →](#)

**Description:** Dark carapace. Long legs compared to carapace size.

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Oregoniidae

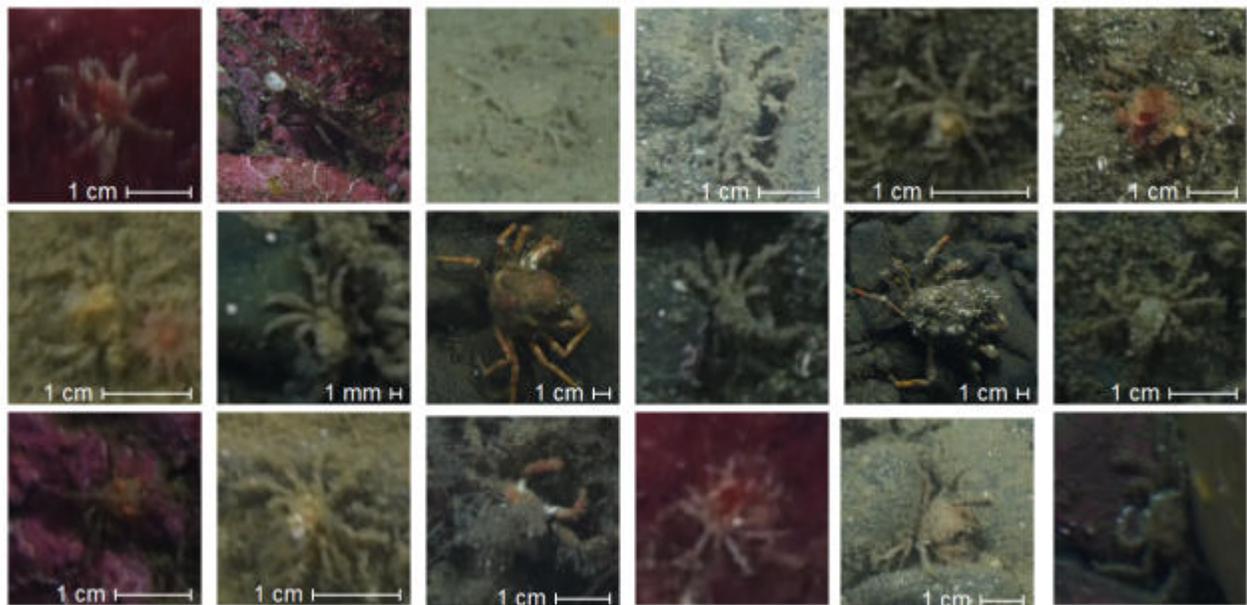
***Hyas*** Leach, 1814

WoRMS Info | Name: *Hyas* | AphiaID: 106903 | [Link →](#)

**Description:** Orange/brown carapace that is often seen as bumpy or encrusted. Narrow, triangular shell.

**Potential taxa:** *Hyas coarctatus*, *Hyas araneus*, *Hyas alutaceus*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Paguridae

**Pagurus** Fabricius, 1775

WoRMS Info | Name: *Pagurus* | AphiaID: 106854 | [Link →](#)

**Description:** Hermit crabs. Are noticeable as little striped legs (predominantly white and red in colour) sticking out of various-sized shells. Larger organisms will typically have a pair of much larger claws visible as well.

**Potential taxa:** *Pagurus acadianus*,  
*Pagurus arcuatus*, *Pagurus longicarpus*,  
*Pagurus pubescens*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Pandalidae

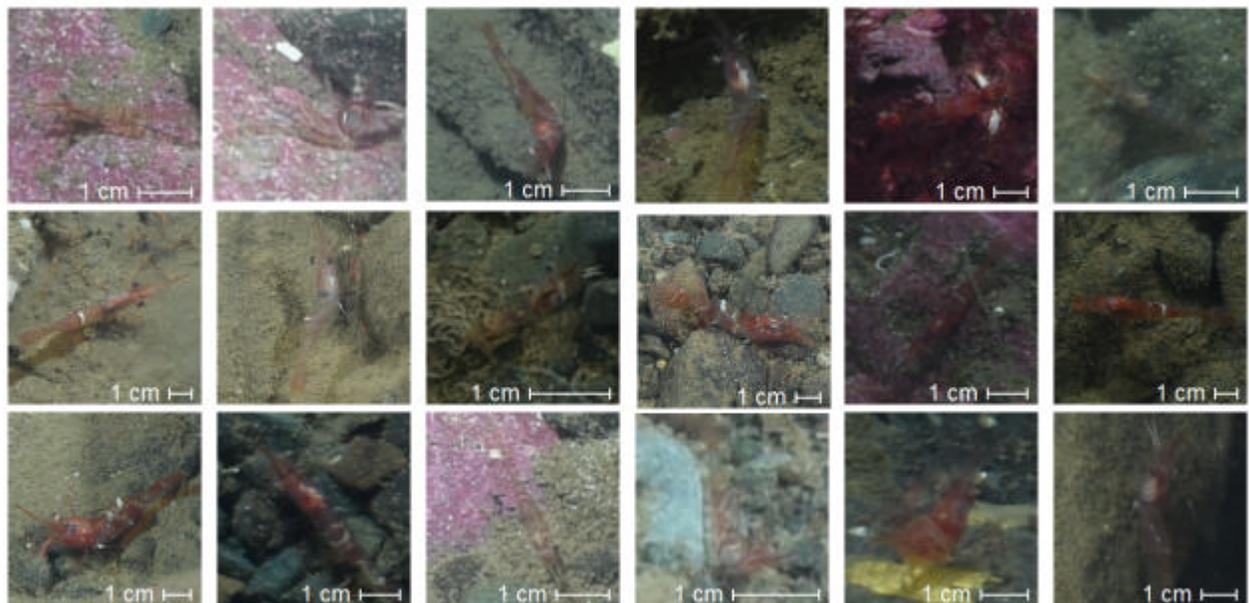
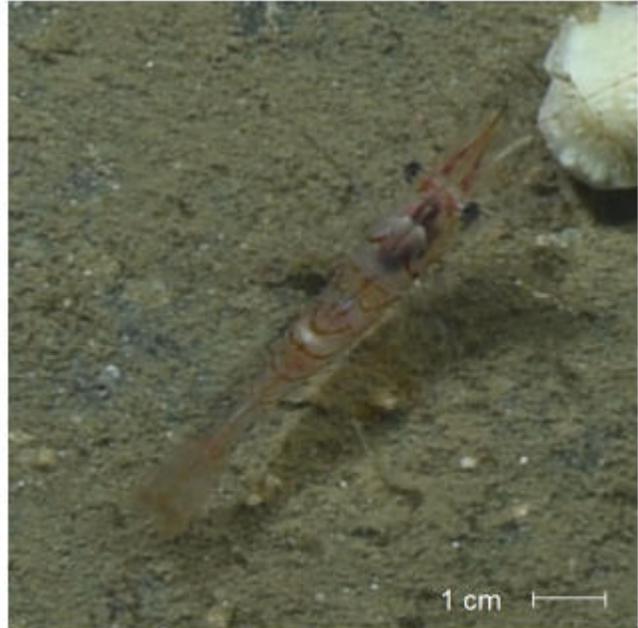
**Pandalidae var 1** Haworth, 1825

WoRMS Info | Name: Pandalidae | AphiaID: 106789 | [Link →](#)

**Description:** Translucent shrimp with red stripes and a distinct singular white stripe transverse along back surrounded on either side by a red stripe.

**Potential taxa:** *Pandalus montagui*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Pandalidae

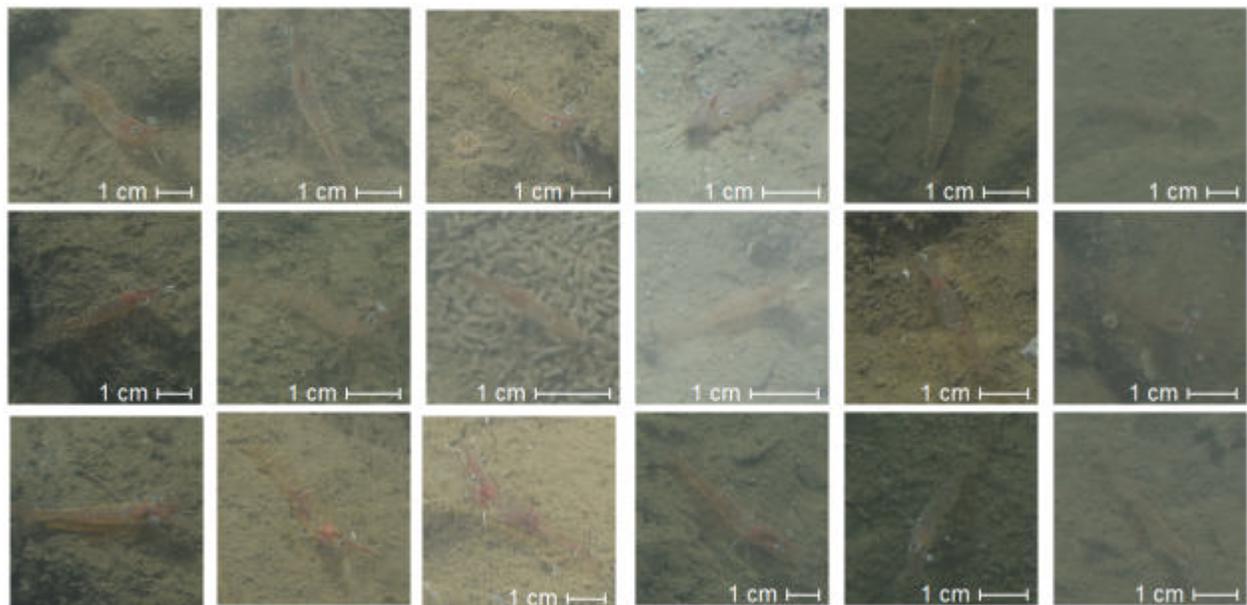
**Pandalidae var 2** Haworth, 1825

WoRMS Info | Name: Pandalidae | AphiaID: 106789 | [Link →](#)

**Description:** Translucent brownish shrimp with slight mottled texture and pale transverse strip across back.

**Potential taxa:** *Dichelopandalus leptocerus*, *Pandalus montagui*

**Considered for use in analyses:** Yes



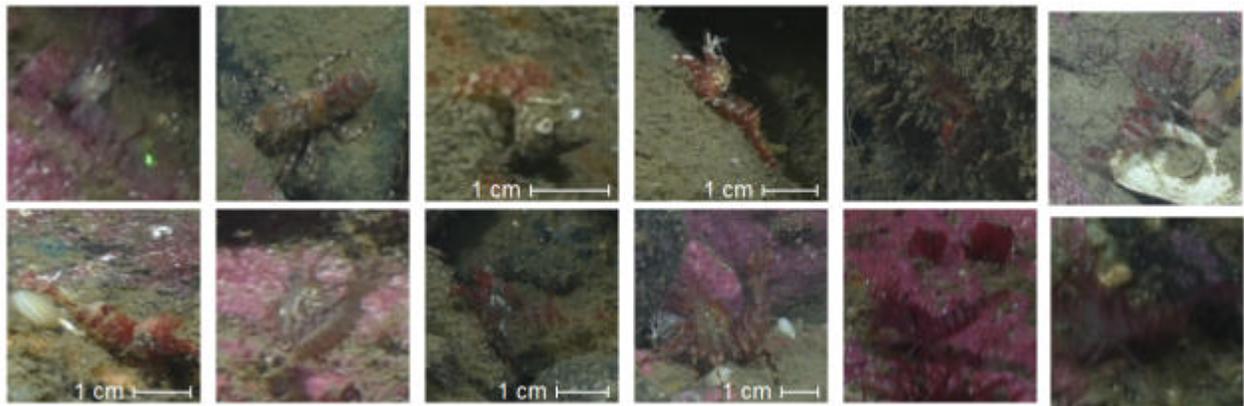
Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Thoridae

***Lebbeus groenlandicus*** (Fabricius, 1775)

WoRMS Info | Name: *Lebbeus groenlandicus* | AphiaID: 107520 | [Link →](#)

**Description:** Red/white striped shrimp with striped legs and spiky texture.

**Considered for use in analyses:** Yes



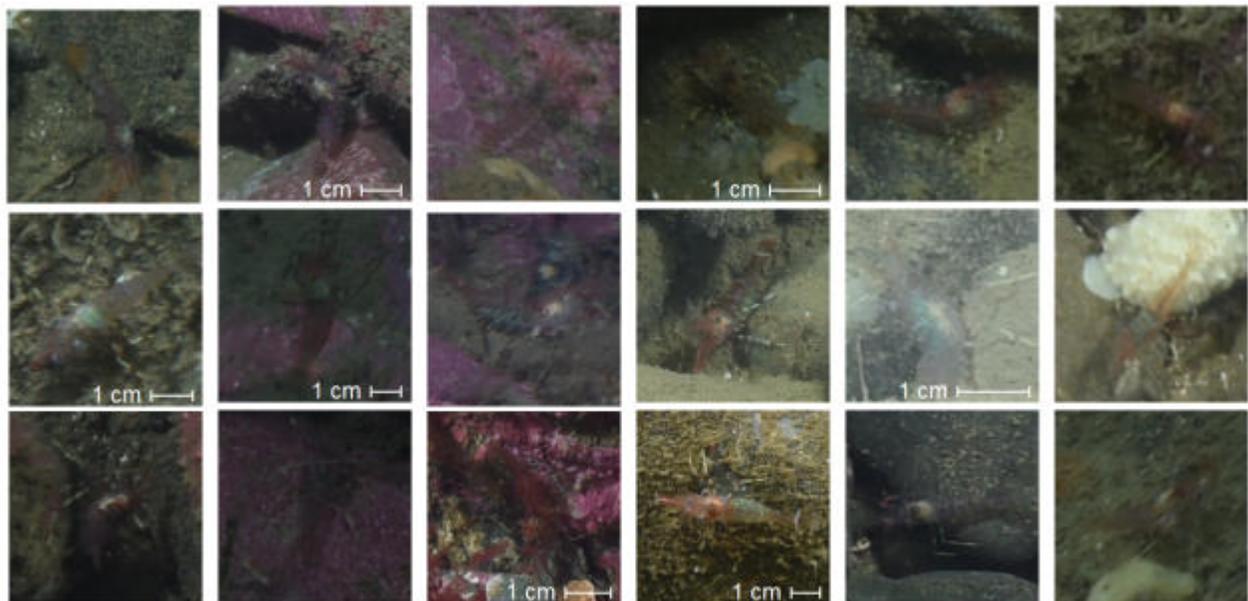
Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Thoridae

***Lebbeus polaris*** (Sabine, 1824)

WoRMS Info | Name: *Lebbeus polaris* | AphiaID: 107521 | [Link →](#)

**Description:** Characteristic striped yellow and black legs. Translucent red tinted shrimp with spiky appearance.

**Considered for use in analyses:** Yes



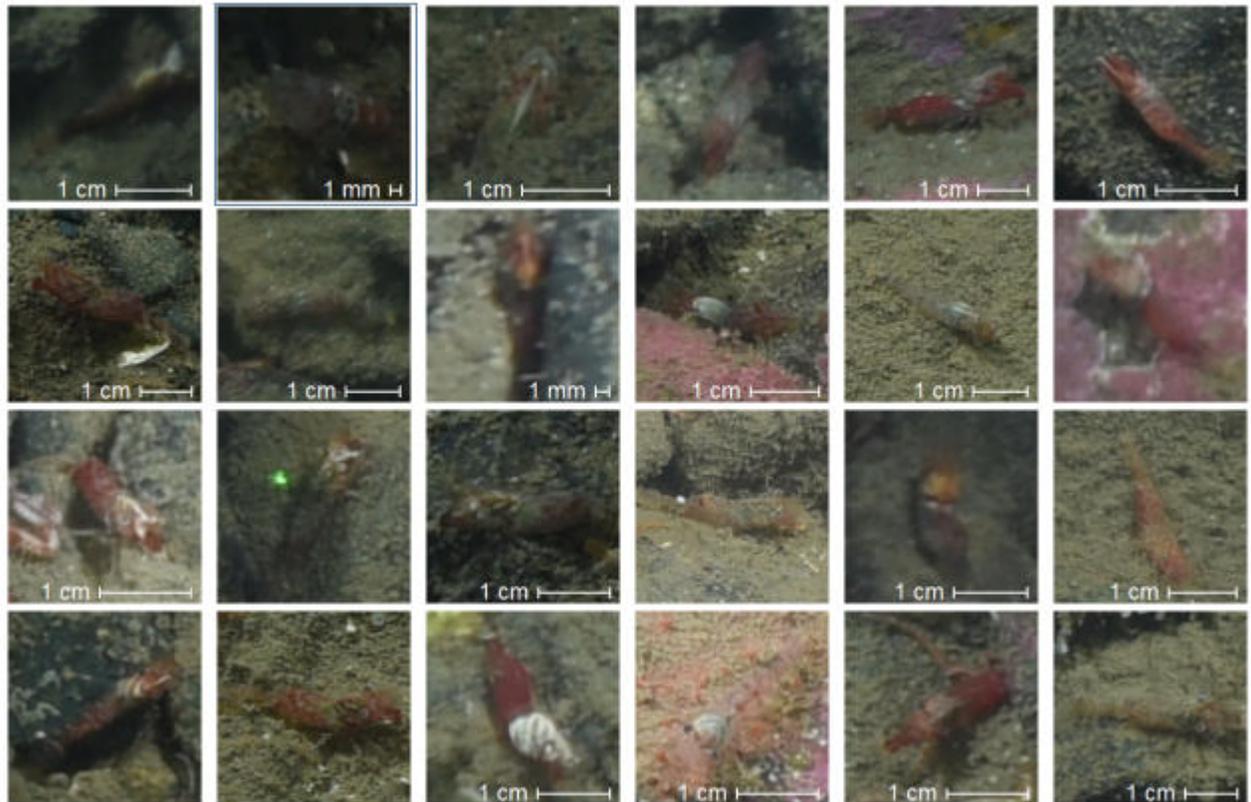
Phylum Arthropoda → Class Malacostraca → Order Decapoda → Family Thoridae

***Spirontocaris*** Spence Bate, 1888

WoRMS Info | Name: *Spirontocaris* | AphiaID: 106994 | [Link →](#)

**Description:** Brawny, rectangular shrimp with red/green/orange patterning. Eyes (when visible) seem black with white outline.

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Infraorder Caridea

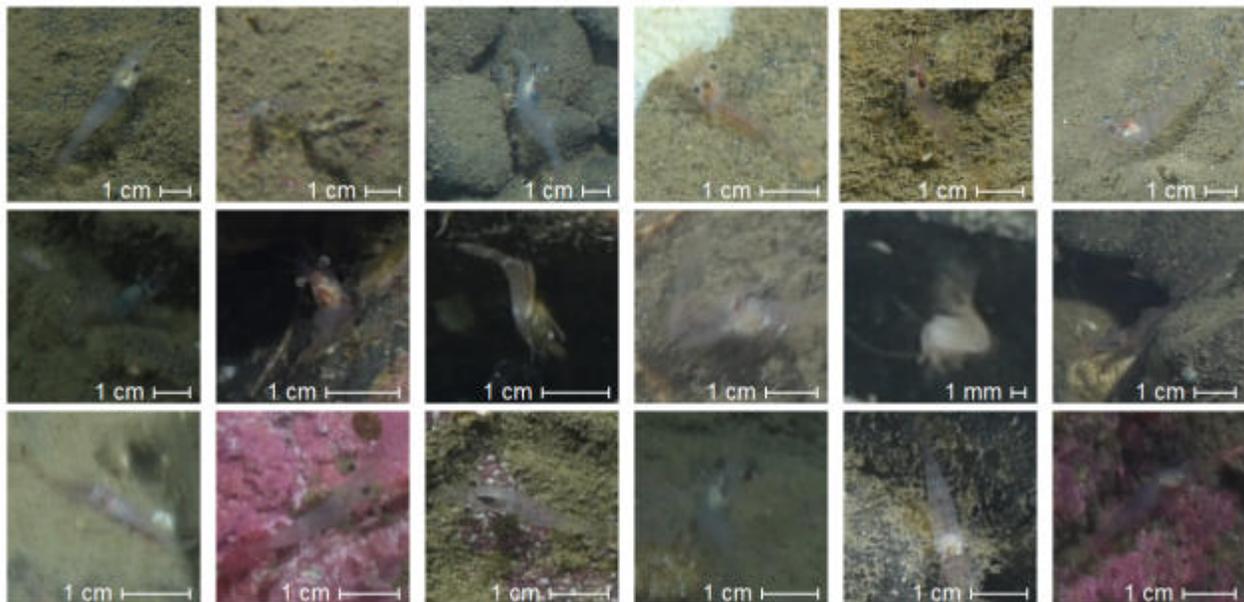
**Caridea var 1** Dana, 1852

WoRMS Info | Name: Caridea | AphiaID: 106674 | [Link →](#)

**Description:** Translucent ghostly white/grey shrimp with black eyes and not many other distinguishing characteristics.

**Potential taxa:** *Eualus macilentus*,  
*Pandalus*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Infraorder Caridea

**Caridea var 2** Dana, 1852

WoRMS Info | Name: Caridea | AphiaID: 106674 | [Link →](#)

**Description:** Smaller, scraggly-looking opaque white and/or pink-tinted shrimp.

**Potential taxa:** Thoridae, *Eualus pusiolus*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Decapoda → Infraorder Caridea

**Caridea var 3** Dana, 1852

WoRMS Info | Name: Caridea | AphiaID: 106674 | [Link →](#)

**Description:** Red/white candy cane-like striped shrimp with striped legs.

**Potential taxa:** *Lebbeus microceros*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Order Isopoda → Superfamily Anthuroidea

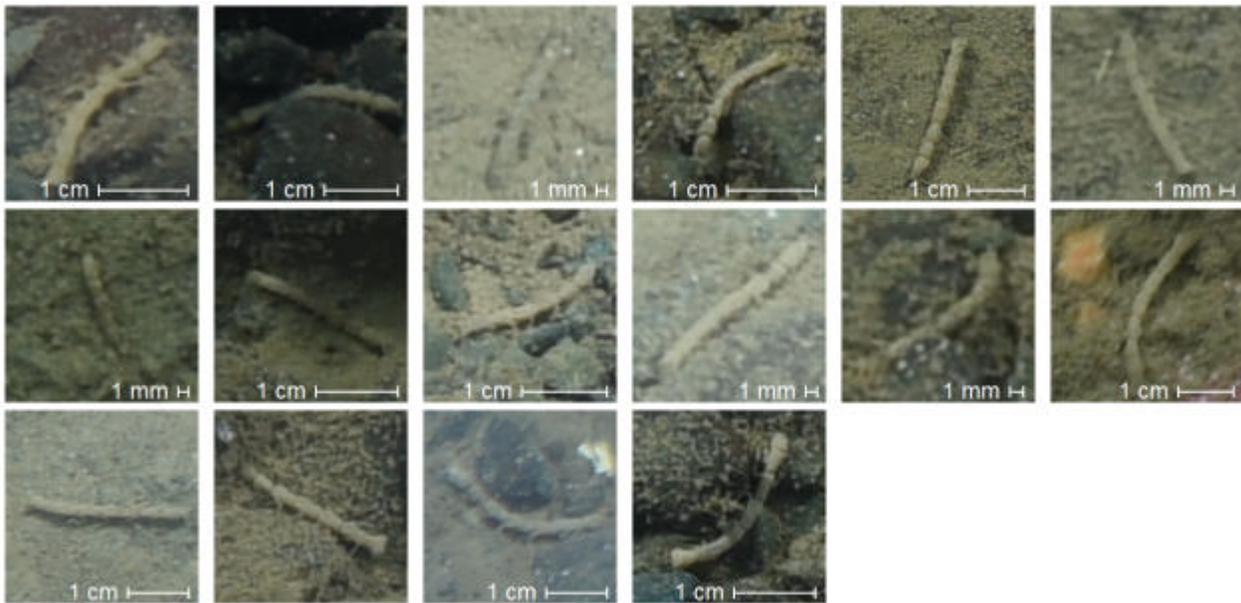
**Anthuroidea** Lilljeborg, 1864

WoRMS Info | Name: Anthuroidea | AphiaID: 292944 | [Link →](#)

**Description:** Segmented beige stick-like organism with little legs sticking out of the side.

**Potential taxa:** *Calathura brachiata*

**Considered for use in analyses:** Yes



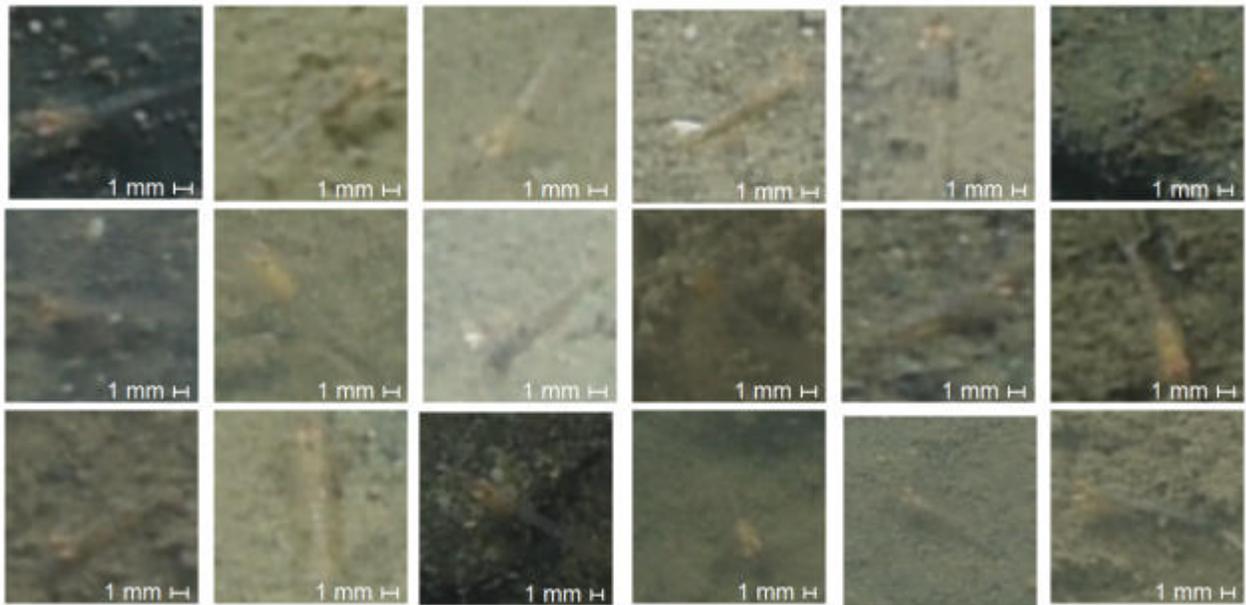
Phylum Arthropoda → Class Malacostraca → Order Mysida → Family Mysidae

**Mysidae** Haworth, 1825

WoRMS Info | Name: Mysidae | AphiaID: 119822 | [Link →](#)

**Description:** Very small, translucent organism. Long, triangular shape. Will typically see two pale eyes at the head (wider part of triangle). Head typically has orange tint.

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Superorder Peracarida

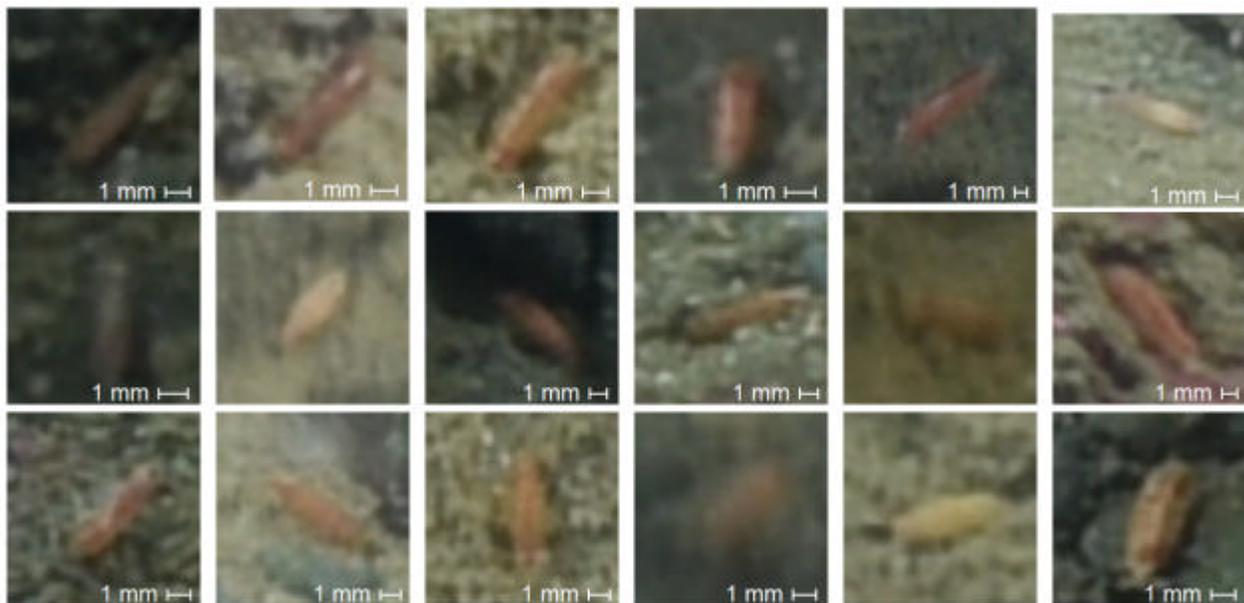
**Peracarida var 1** Calman, 1904

WoRMS Info | Name: Peracarida | AphiaID: 1090 | [Link →](#)

**Description:** Small red/orange organism which resembles a pine needle.

**Potential taxa:** Synidotea, Amphipoda, Isopoda

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Superorder Peracarida

**Peracarida var 2** Calman, 1904

WoRMS Info | Name: Peracarida | AphiaID: 1090 | [Link →](#)

**Description:** Similar size and shape to Peracarida var 1 but striped brown and white. Can see little filaments coming from the top and bottom.

**Potential taxa:** Synidotea, Amphipoda, Isopoda

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Superorder Peracarida

**Peracarida var 3** Calman, 1904

WoRMS Info | Name: Peracarida | AphiaID: 1090 | [Link →](#)

---

**Description:** Brown/beige striped domed scaly organism with little legs.

**Potential taxa:** Chiridotea, Jaera

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Malacostraca → Superorder Peracarida

**Peracarida var 4** Calman, 1904

WoRMS Info | Name: Peracarida | AphiaID: 1090 | [Link →](#)

---

**Description:** Red scaly organism with an oval-shaped body and a broad triangular tail.

**Potential taxa:** *Politolana*, *Rocinela americana*, *Synidotea*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Pycnogonida

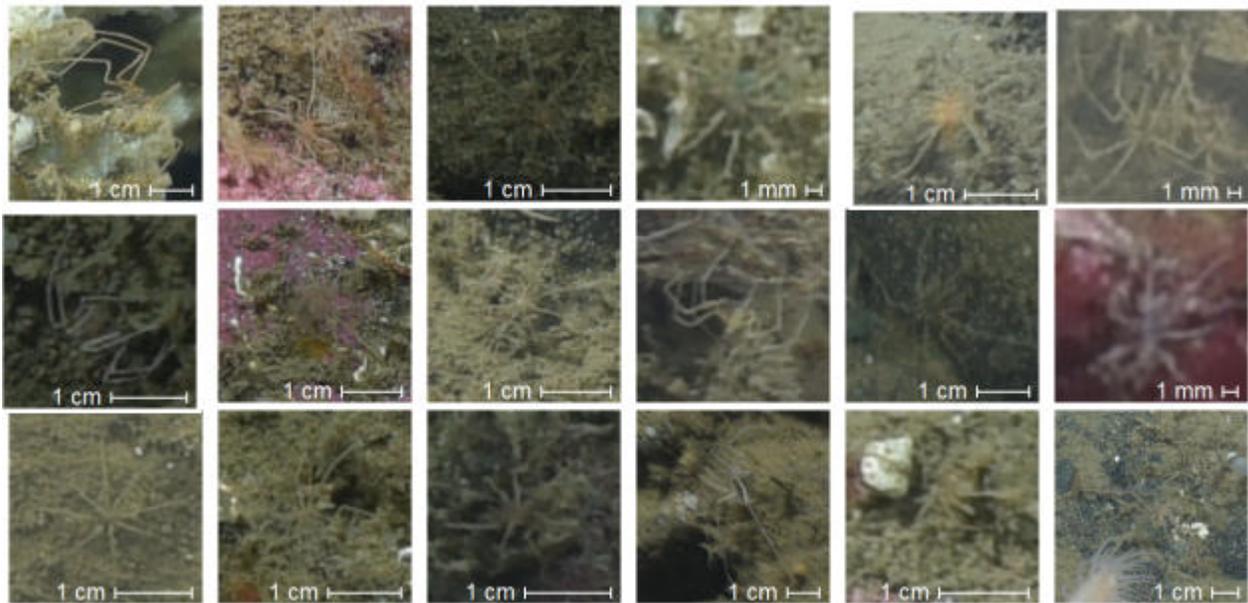
**Pycnogonida var 1** Latreille, 1810

WoRMS Info | Name: Pycnogonida | AphiaID: 1302 | [Link →](#)

**Description:** Pale beige/orange spider-like organisms. Very long legs and tiny central body.

**Potential taxa:** *Nymphon*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Pycnogonida

**Pycnogonida var 2** Latreille, 1810

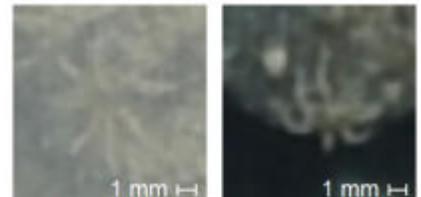
WoRMS Info | Name: Pycnogonida | AphiaID: 1302 | [Link →](#)

---

**Description:** Multi-legged round organism which resembles a spider. Legs seem regularly interspersed all around the core body.

**Potential taxa:** *Pycnogonum litorale*

**Considered for use in analyses:** Yes



Phylum Arthropoda → Class Thecostraca → Order Balanomorpha → Family Balanidae

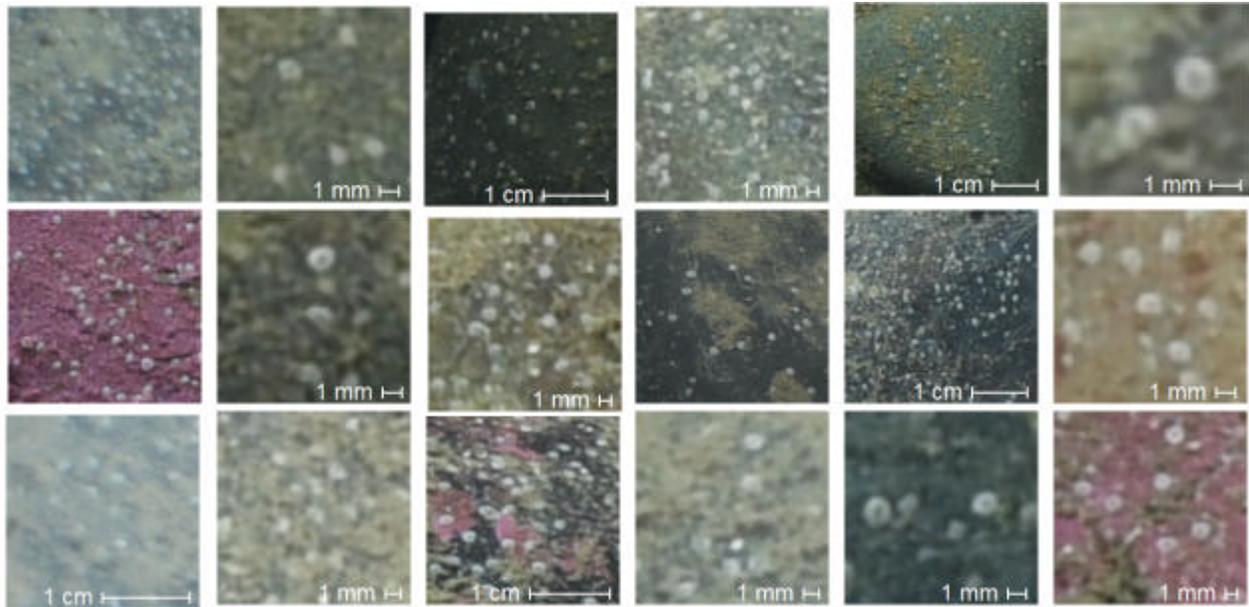
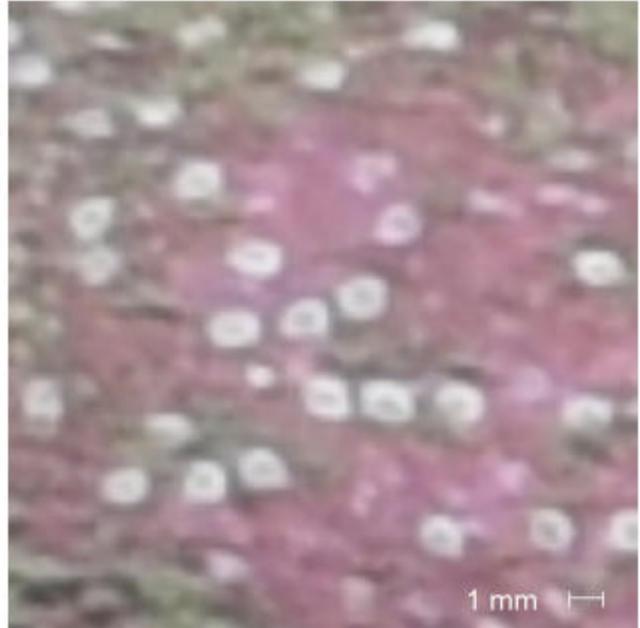
**Balanidae** Leach, 1817

WoRMS Info | Name: Balanidae | AphiaID: 106057 | [Link →](#)

**Description:** Barnacles (multiple species). Small white diamond-shaped shells attached to rocks. Has depressed feeding plates in centre.

**Potential taxa:** *Balanus*

**Considered for use in analyses:** Yes



### 3.9 MOLLUSCA

Number of OTU in phylum: 43

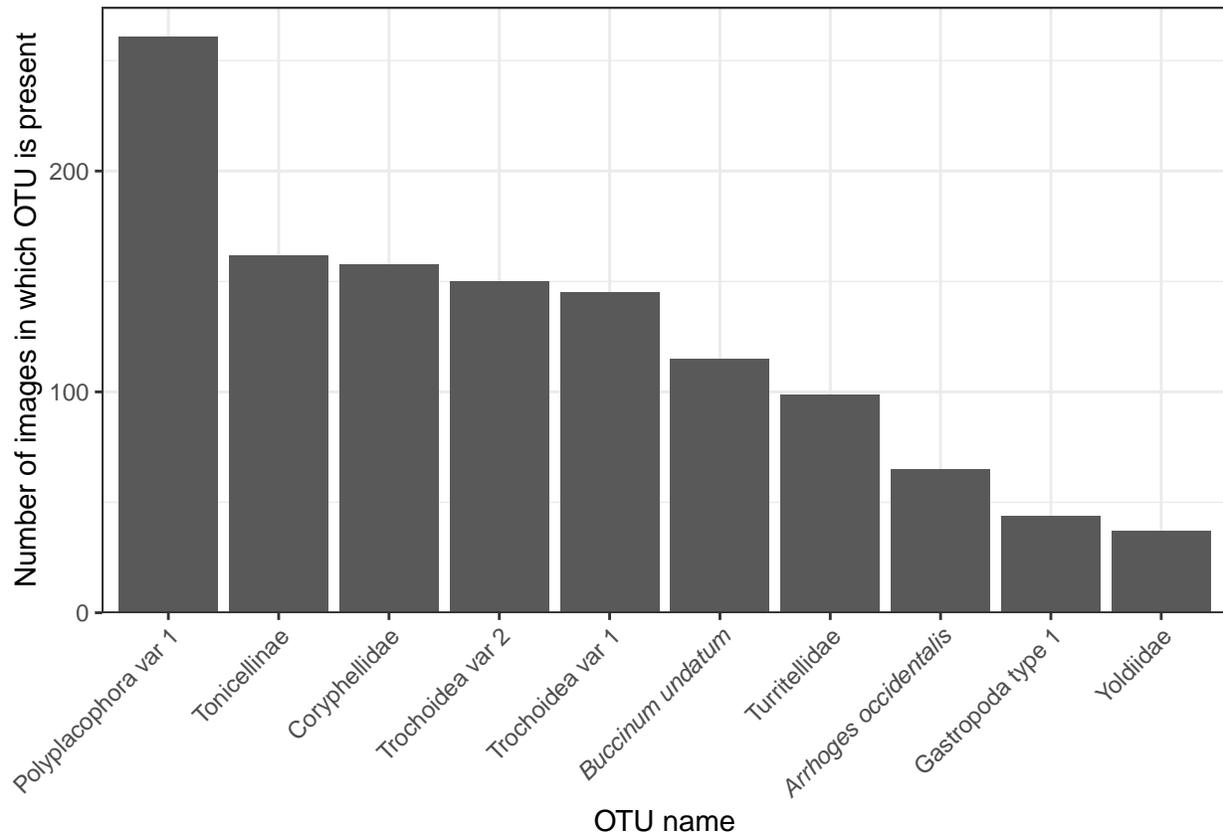


Figure 12: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Mollusca out of a total of 672 images.

Phylum Mollusca → Class Bivalvia → Order Adapedonta → Family Hiatellidae

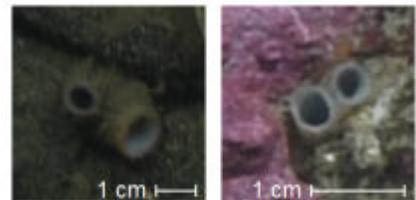
***Panomya norvegica*** (Spengler, 1793)

WoRMS Info | Name: *Panomya norvegica* | AphiaID: 140105 | [Link →](#)

---

**Description:** Pair of large siphons sticking out of substrate, one slightly larger than the other. Shell is burrowed below substrate and not visible in images.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia → Order Carditida → Family Astartidae

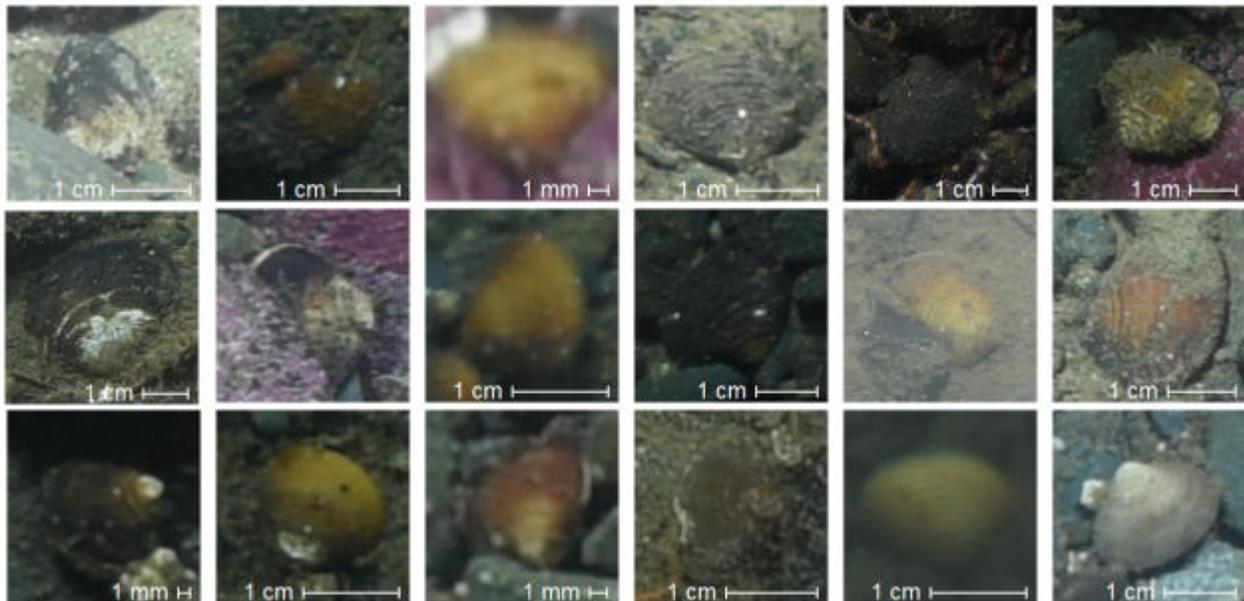
**Astartidae** A. d'Orbigny, 1844 (1840)

WoRMS Info | Name: Astartidae | AphiaID: 228 | [Link →](#)

**Description:** Smooth triangle-shaped shells with ridges going along width of shell.

**Potential taxa:** *Astarte*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia → Order Carditida → Family Carditidae

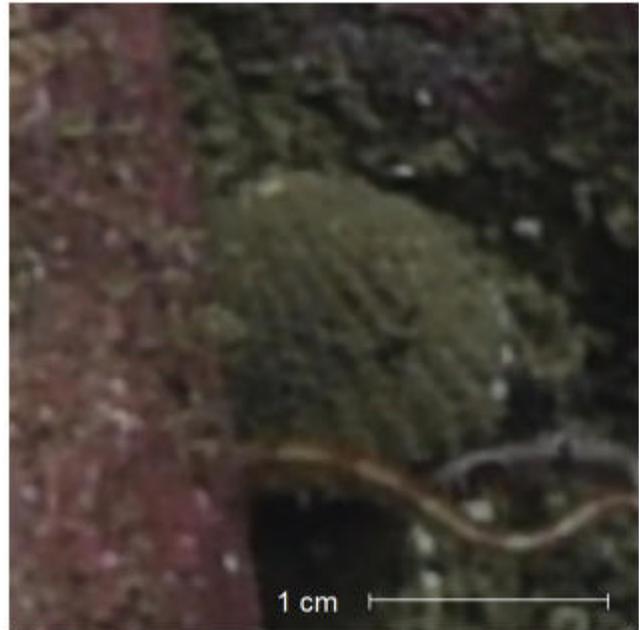
***Cyclocardia borealis*** (Conrad, 1832)

WoRMS Info | Name: *Cyclocardia borealis* | AphiaID: 156832 | [Link →](#)

---

**Description:** Circle/triangle-shaped shells with ridges going across length of shell.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia → Order Mytilida → Superfamily Mytiloidea

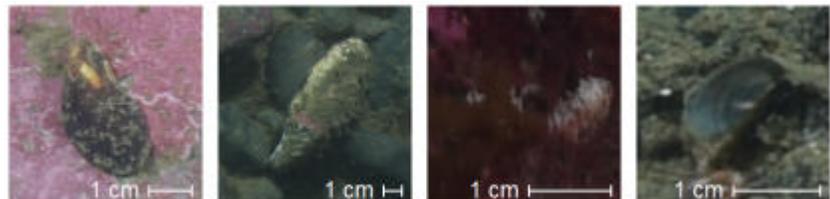
**Mytiloidea** Rafinesque, 1815

WoRMS Info | Name: Mytiloidea | AphiaID: 491766 | [Link →](#)

**Description:** Oval shaped black/white pair of shells that are ear-shaped. Elbow hinge at one end of shell instead of along the side.

**Potential taxa:** *Mitylus*, *Modiolus modiolus*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia → Order Nuculanida → Family Nuculanidae

***Nuculana*** Link, 1807

WoRMS Info | Name: *Nuculana* | AphiaID: 138259 | [Link →](#)

**Description:** Pale, slightly striped smooth shell with distinct asymmetric oval/triangle shape with one side stretched compared to the other.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia → Order Nuculanida → Family Yoldiidae

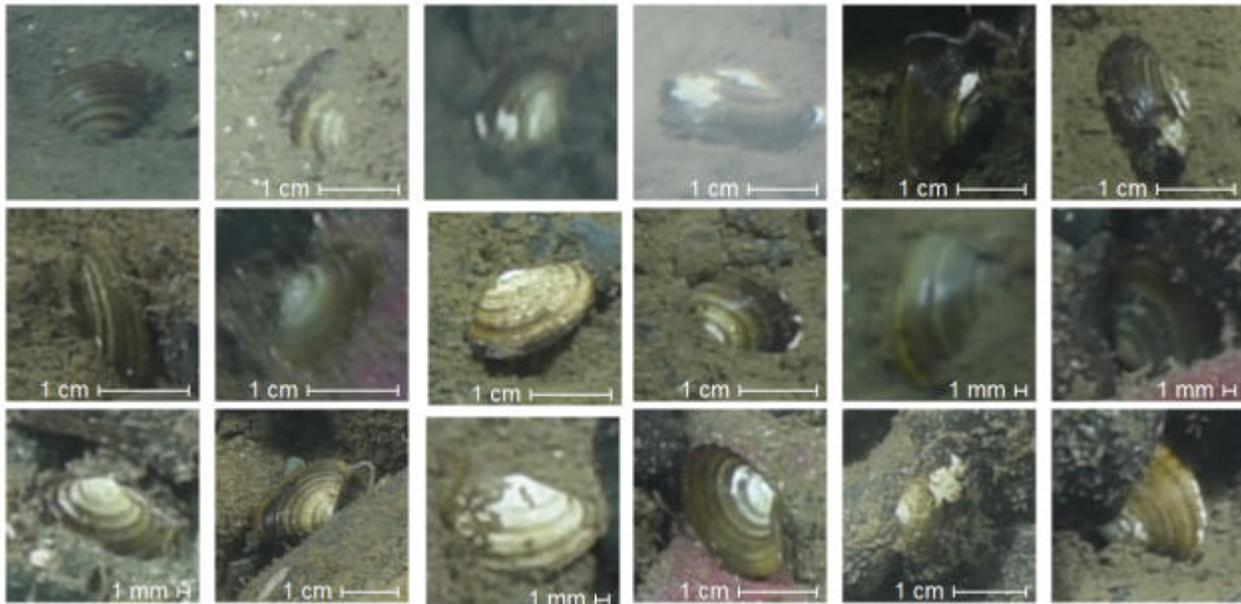
**Yoldiidae** Dall, 1908

WoRMS Info | Name: Yoldiidae | AphiaID: 2097 | [Link →](#)

**Description:** Oval/triangular shaped pair of shells with distinct ridges/striped patterning. Usually dark brown along outer edge and with a gradient fading to white towards the hinge. Dark stripes along the gradient along the length of shell.

**Potential taxa:** *Yoldia*, *Megayoldia thraciaeformis*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia → Order Pectinida → Family Anomiidae

**Anomiidae** Rafinesque, 1815

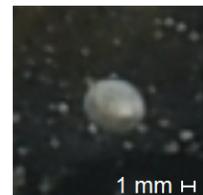
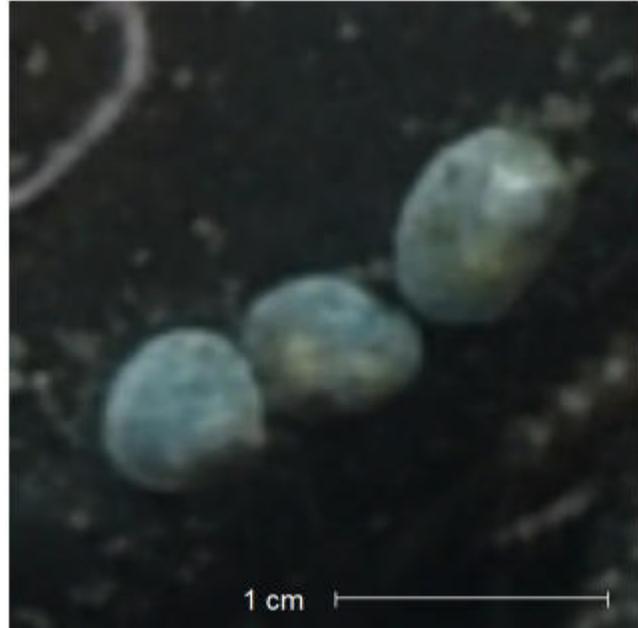
WoRMS Info | Name: Anomiidae | AphiaID: 214 | [Link →](#)

---

**Description:** Jingle shells. White, smooth, flat circular shells that typically are on hard substrate.

**Potential taxa:** *Heteranomia squamula*

**Considered for use in analyses:** Yes



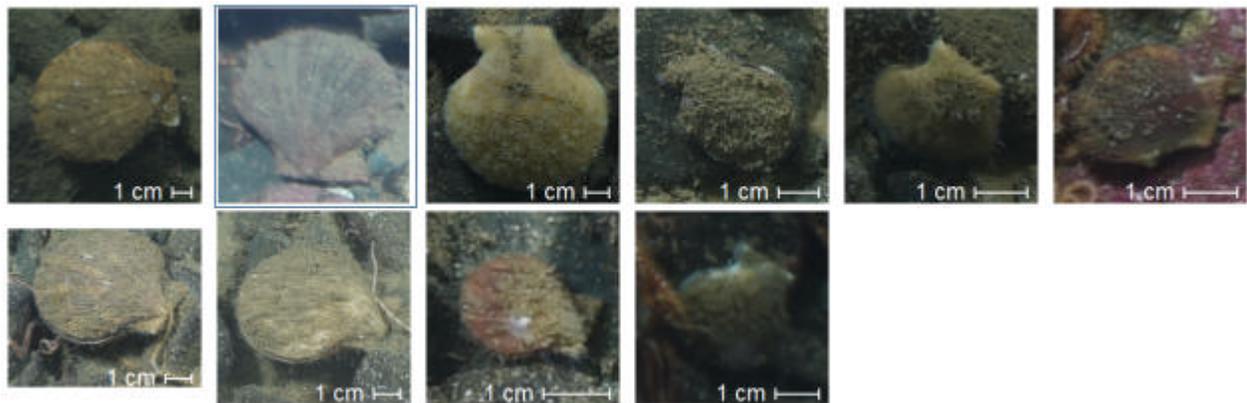
Phylum Mollusca → Class Bivalvia → Order Pectinida → Family Pectinidae

***Chlamys islandica*** (O. F. Müller, 1776)

WoRMS Info | Name: *Chlamys islandica* | AphiaID: 140692 | [Link →](#)

**Description:** Circular clam with ridges radiating out from hinge holding both shells together. Hinge is asymmetric. One side of hinge is a small triangle (small side) and other side is beak-shaped (larger side).

**Considered for use in analyses:** Yes



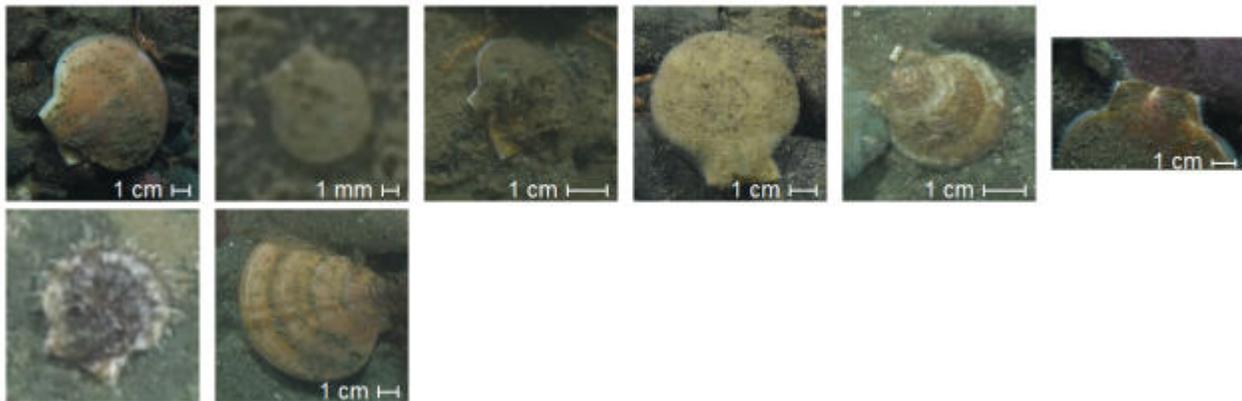
Phylum Mollusca → Class Bivalvia → Order Pectinida → Family Pectinidae

***Placopecten magellanicus*** (Gmelin, 1791)

WoRMS Info | Name: *Placopecten magellanicus* | AphiaID: 156972 | [Link →](#)

**Description:** Circular clam shells with small, symmetric hinge. Each side of hinge is triangular.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia

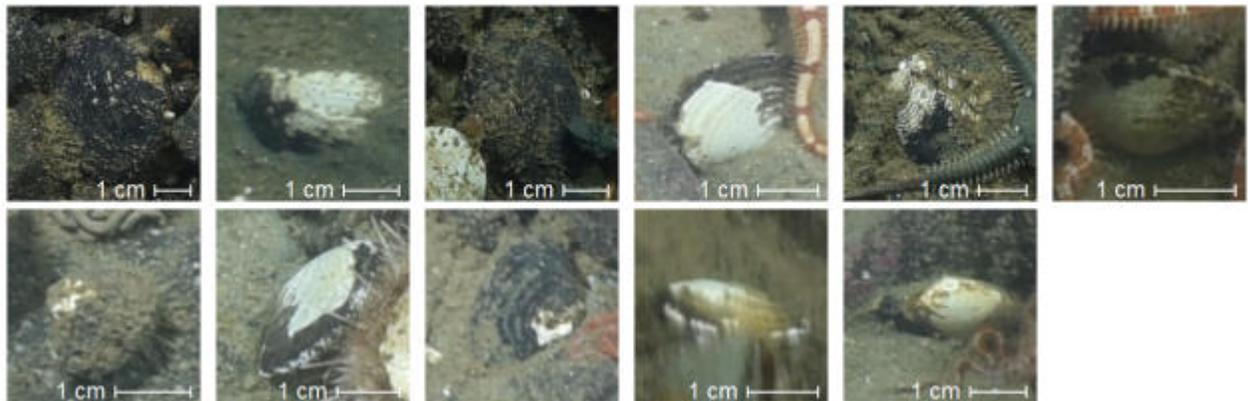
**Bivalvia var 1** Linnaeus, 1758

WoRMS Info | Name: Bivalvia | AphiaID: 105 | [Link →](#)

**Description:** Oval/triangle-shaped black/white shell with ridges going along length of shell with elbow hinge near centre of shell.

**Potential taxa:** Astartidae

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Bivalvia

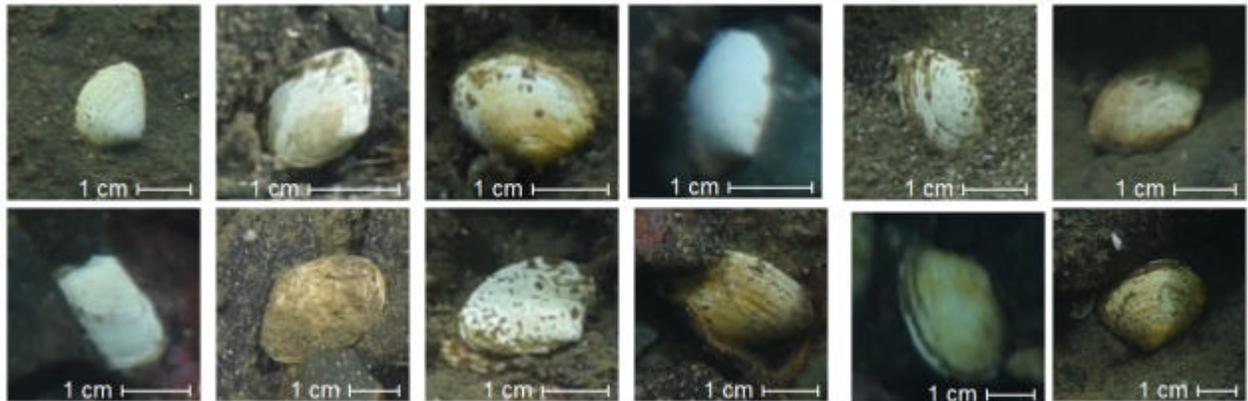
**Bivalvia var 2** Linnaeus, 1758

WoRMS Info | Name: Bivalvia | AphiaID: 105 | [Link →](#)

**Description:** Oval/triangle-shaped white/yellow shell with ridges going along length of shell with elbow hinge near centre of shell.

**Potential taxa:** *Macoma calcaria*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Cephalopoda → Order Sepiida → Family Sepiolidae → Subfamily Rossiinae

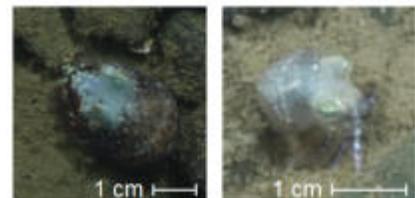
**Rossiinae** Appellöf, 1898

WoRMS Info | Name: Rossiinae | AphiaID: 877777 | [Link →](#)

**Description:** Bulbous glossy head and big eyes with stout, shorter tentacles below eyes.

**Potential taxa:** *Rossia*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Caenogastropoda incertae sedis → Family Turritellidae

**Turritellidae** Lovén, 1847

WoRMS Info | Name: Turritellidae | AphiaID: 127 | [Link →](#)

**Description:** Small, beige/white, long, triangular-shaped coiled shell.

**Considered for use in analyses:** Yes



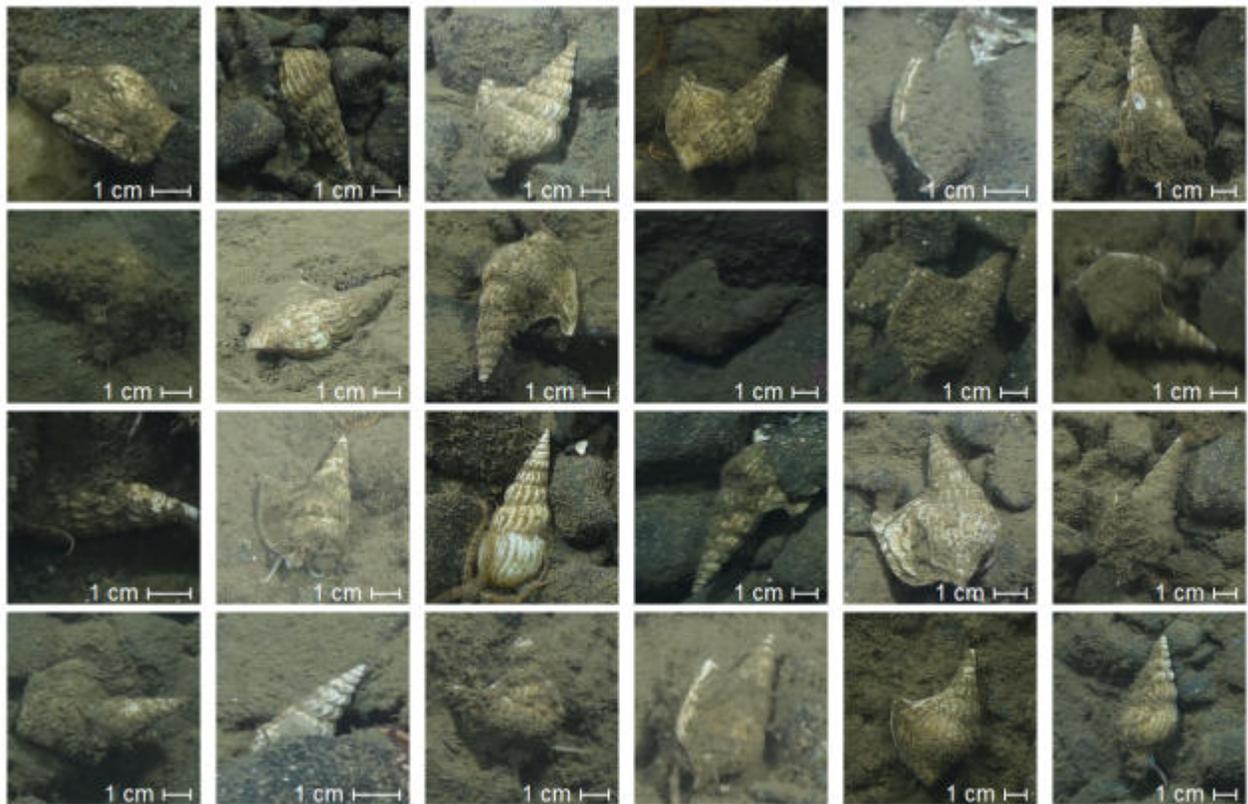
Phylum Mollusca → Class Gastropoda → Order Littorinimorpha → Family Aporrhaidae

***Arrhoges occidentalis*** (H. Beck, 1836)

WoRMS Info | Name: *Arrhoges occidentalis* | AphiaID: 531617 | [Link →](#)

**Description:** Large, white, coiled shell with pointed tip. Ridges that extend lengthwise from base to tip across the coils. Large rectangular extension of the shell at the base. Can often see two white tentacles extending from the base of the shell when organism is active.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Littorinimorpha → Family Naticidae

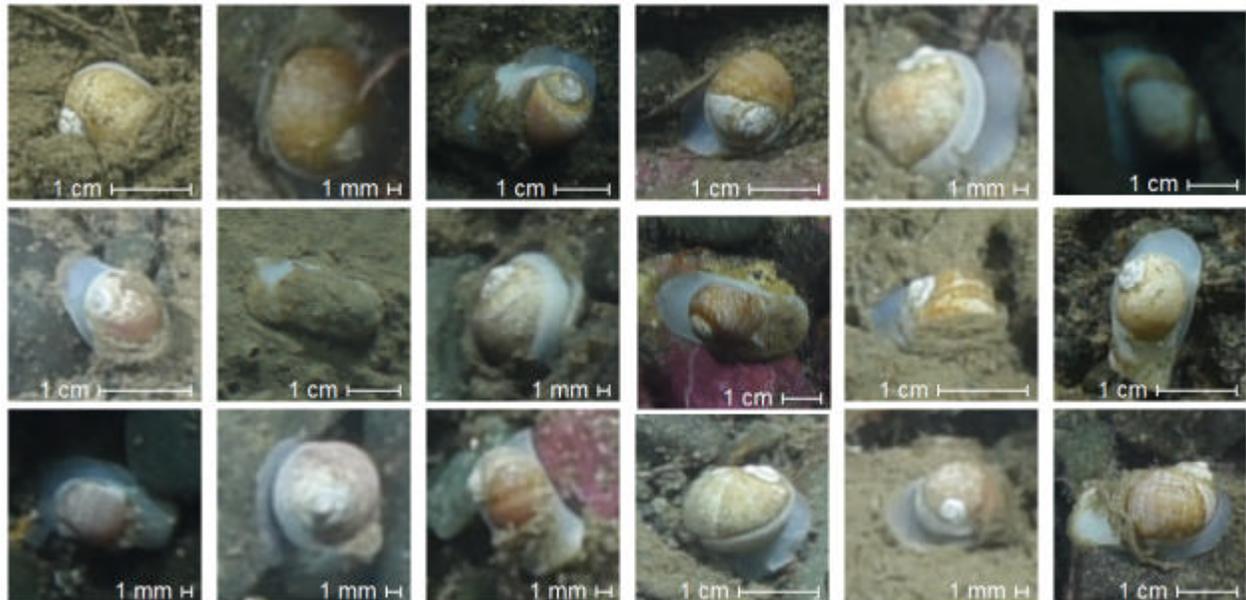
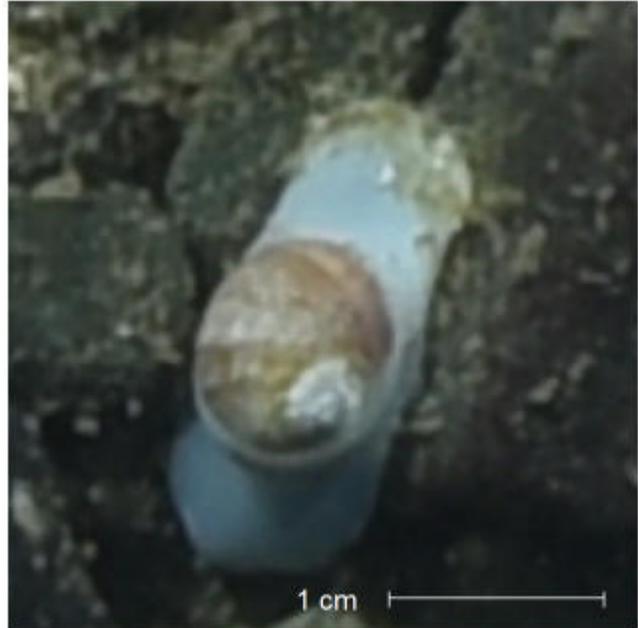
**Naticidae** Guilding, 1834

WoRMS Info | Name: Naticidae | AphiaID: 145 | [Link →](#)

**Description:** White/beige shell with a large white foot. Large, round shell. The coils on the side are fairly flat and do not protrude from shell very much. Coils are also very small compared to rest of main shell.

**Potential taxa:** *Cryptonatica affinis*,  
*Euspira pallida*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Littorinimorpha → Family Naticidae

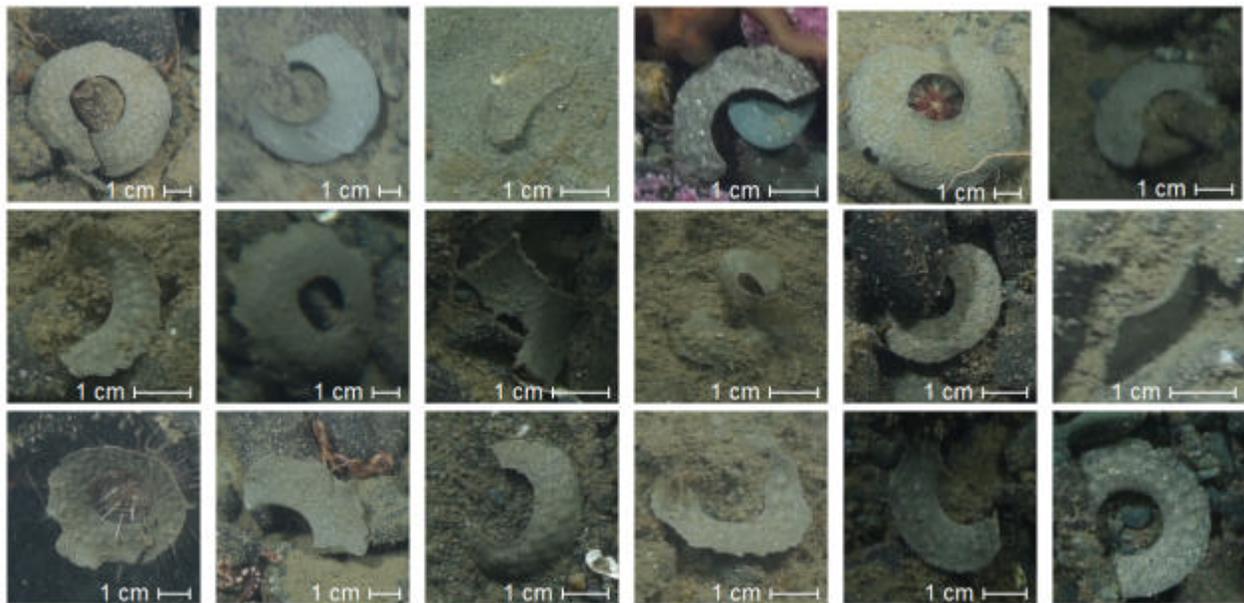
**Naticidae (eggs)** Guilding, 1834

WoRMS Info | Name: Naticidae | AphiaID: 145 | [Link →](#)

**Description:** Grey, flat coil which resembles a tire.

**Considered for use in analyses:** No

**Reasoning:** Not a relevant life stage.



Phylum Mollusca → Class Gastropoda → Order Littorinimorpha → Family Velutinidae

***Marsenina glabra*** (Couthouy, 1838)

WoRMS Info | Name: *Marsenina glabra* | AphiaID: 140175 | [Link →](#)

**Description:** Circular/oval blob with stripes emanating from centre and dark collar around centre. *M. glabra* is known to feed on didemnid ascidian crusts and the specimens observed were often found on these crusts.

**Considered for use in analyses:** Yes



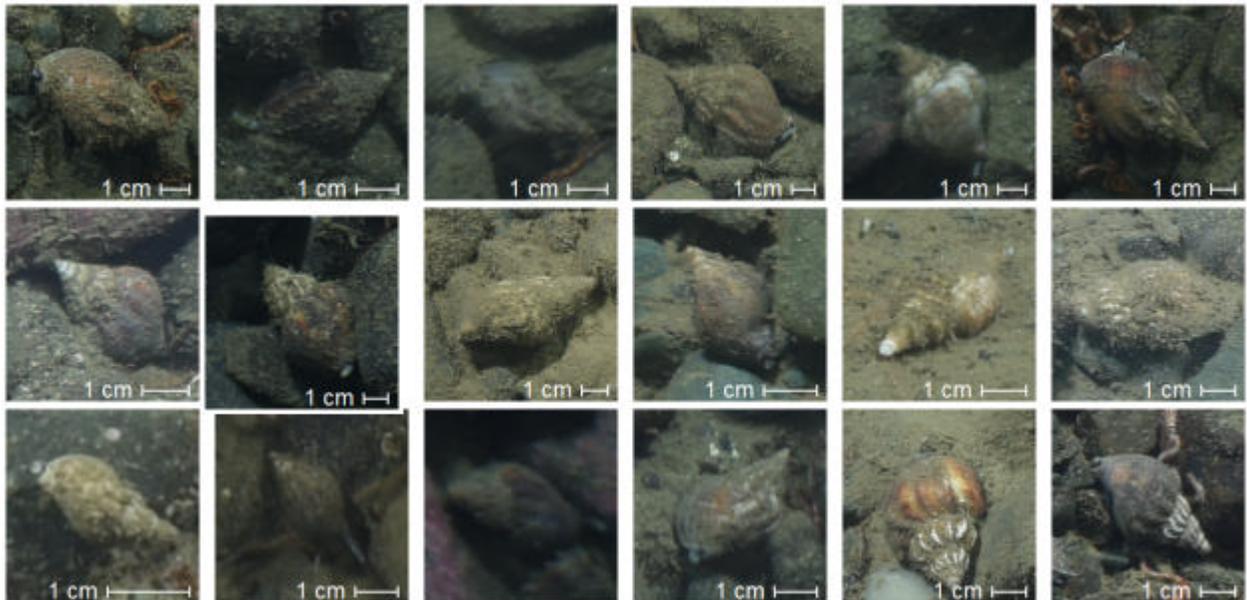
Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Buccinidae

***Buccinum undatum*** Linnaeus, 1758

WoRMS Info | Name: *Buccinum undatum* | AphiaID: 138878 | [Link →](#)

**Description:** White, orange, or wine-coloured shell. Rounder, stout shape. Very large round base with small coils ovetop with ridges extending lengthwise from base to tip across the coils.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Buccinidae

***Neptunea decemcostata*** (Say, 1826)

WoRMS Info | Name: *Neptunea decemcostata* | AphiaID: 491164 | [Link →](#)

**Description:** Beige shell with pointed tips on either end with a more bulbous centre. Many transverse coils creating a striped appearance.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Buccinidae

**Buccinidae (eggs)** Rafinesque, 1815

WoRMS Info | Name: Buccinidae | AphiaID: 149 | [Link →](#)

---

**Description:** Light beige gelatinous clump of smaller globules.

**Considered for use in analyses:** No

**Reasoning:** Not a relevant life stage.



Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Colidae

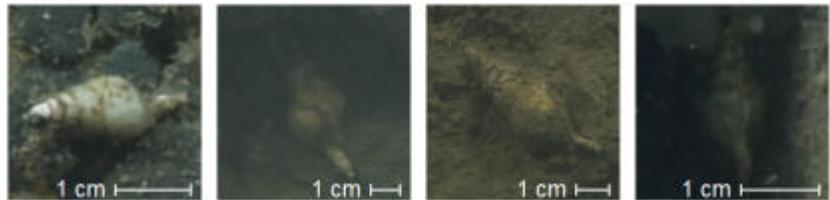
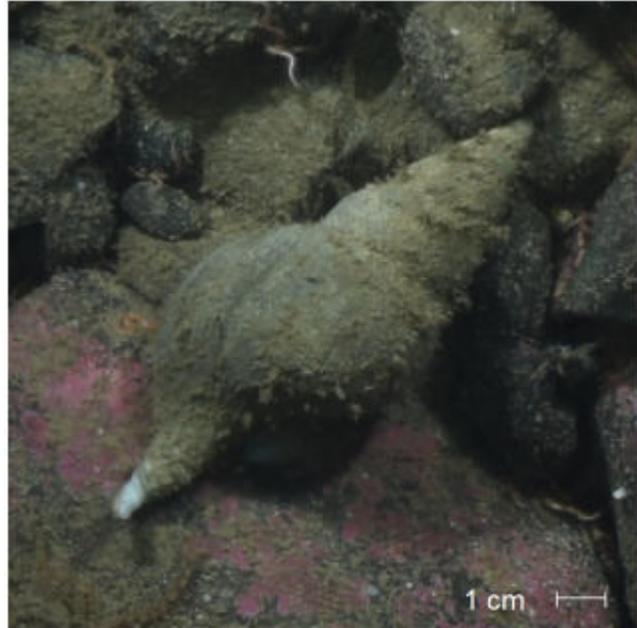
**Colus** Röding, 1798

WoRMS Info | Name: *Colus* | AphiaID: 137704 | [Link →](#)

**Description:** Large, white, coiled shell with pointed tip. Ridges that extend lengthwise from base to tip across the coils. Defining feature is a tube-like extension of the shell at the base.

**Potential taxa:** *Colus stimpsoni*

**Considered for use in analyses:** Yes



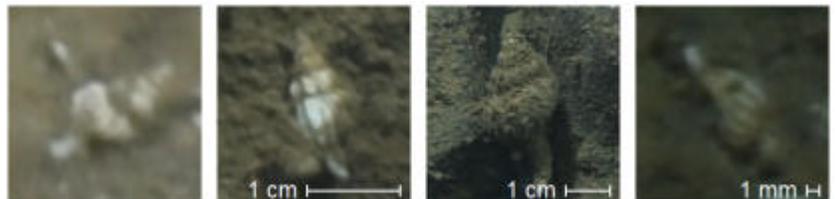
Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Muricidae

***Boreotrophon clathratus*** (Linnaeus, 1767)

WoRMS Info | Name: *Boreotrophon clathratus* | AphiaID: 146732 | [Link →](#)

**Description:** Small coiled and ridged shell with elongated tip. Ridges extend from tip to base of shell.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Muricidae

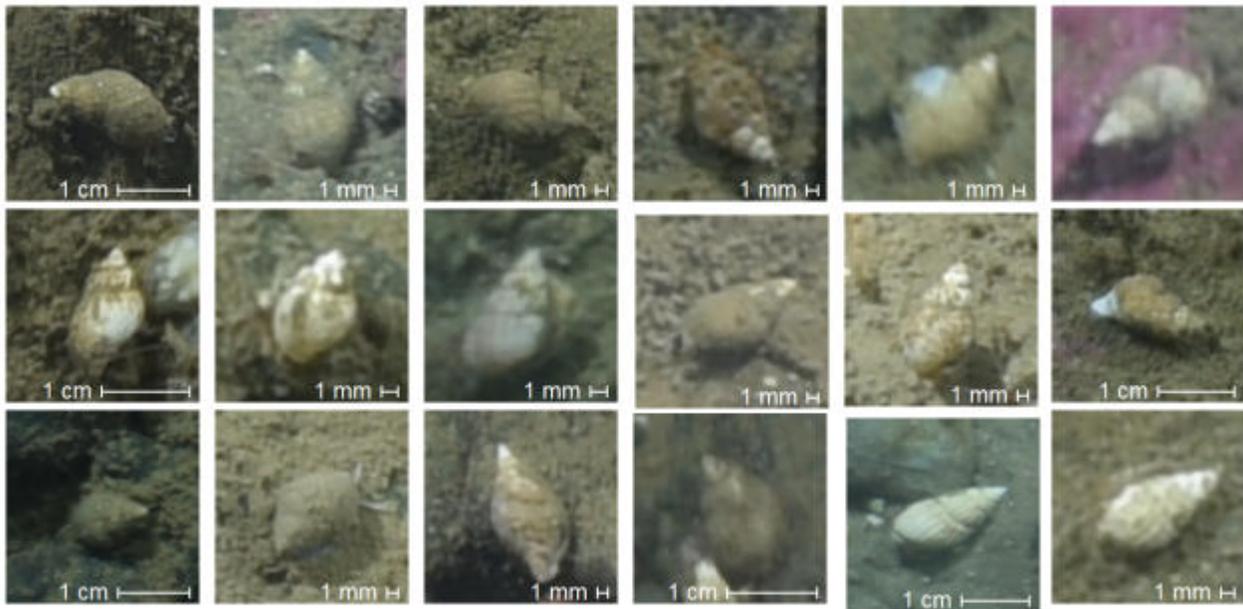
***Nucella*** Röding, 1798

WoRMS Info | Name: *Nucella* | AphiaID: 138199 | [Link →](#)

**Description:** Smooth, coiled, slightly elongated shell with two white thin tentacles visible from the base of the shell when the organism is active.

**Potential taxa:** *Nucella lapillus*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Neogastropoda → Family Muricidae

**Muricidae var 1** Rafinesque, 1815

WoRMS Info | Name: Muricidae | AphiaID: 148 | [Link →](#)

**Description:** Corkscrew-shaped shell with pronounced ridges and spikes.

**Potential taxa:** *Scabrotrophon fabricii*,  
*Boreotrophon clathratus*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia → Family Cadlinidae

***Cadlina laevis*** (Linnaeus, 1767)

WoRMS Info | Name: *Cadlina laevis* | AphiaID: 139134 | [Link →](#)

**Description:** Oval, flat, white sea slug with bright lemon-yellow spots of pigmentation around the edges of the mantle. Short rhinophores.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia → Family Coryphellidae

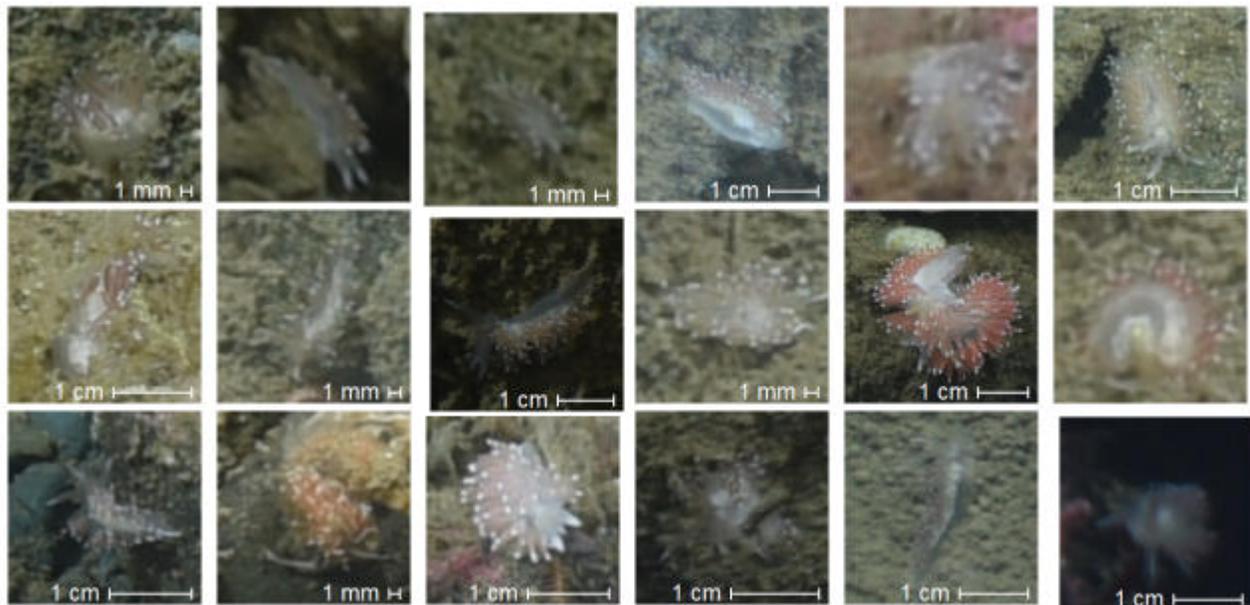
**Coryphellidae** Bergh, 1889

WoRMS Info | Name: Coryphellidae | AphiaID: 153374 | [Link →](#)

**Description:** Sea slug with pink or red cerata with white tips and long rhinophores.

**Potential taxa:** *Coryphella verrucosa*, *Coryphella lineata*, *Fjordia browni*

**Considered for use in analyses:** Yes



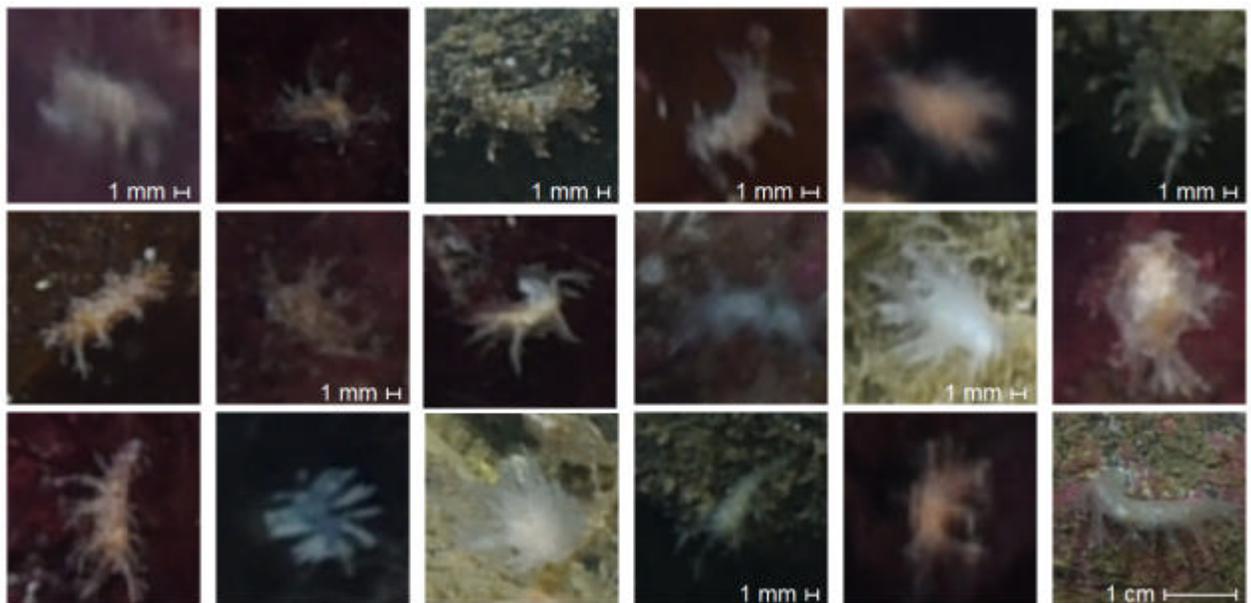
Phylum Mollusca → Class Gastropoda → Order Nudibranchia → Family Dendronotidae

***Dendronotus*** Alder & Hancock, 1845

WoRMS Info | Name: *Dendronotus* | AphiaID: 137885 | [Link →](#)

**Description:** White or brown sea slug with branched cerata and rhinophores.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia → Family Dotidae

**Dotidae** Gray, 1853

WoRMS Info | Name: Dotidae | AphiaID: 187 | [Link →](#)

---

**Description:** Pale sea slug with club-shaped cerata.

**Potential taxa:** *Doto formosa*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia → Family Goniodorididae

***Ancula gibbosa*** (Risso, 1818)

WoRMS Info | Name: *Ancula gibbosa* | AphiaID: 140029 | [Link →](#)

**Description:** White translucent sea slug. Cluster of white-tipped cerata around the centre of the body. Club-shaped rhinophores.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia

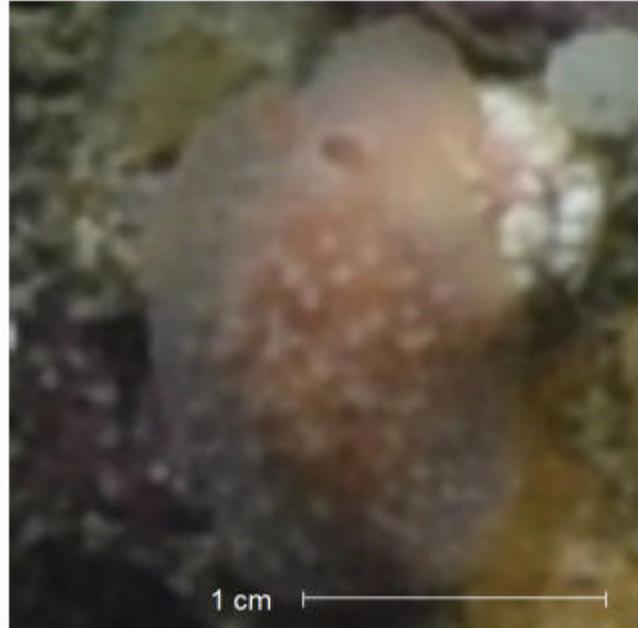
**Nudibranchia var 1** Cuvier, 1817

WoRMS Info | Name: Nudibranchia | AphiaID: 1762 | [Link →](#)

---

**Description:** Translucent light pink sea slug with many short cerata, giving it a bumpy appearance. Short stubby rhinophores.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia

**Nudibranchia var 2** Cuvier, 1817

WoRMS Info | Name: Nudibranchia | AphiaID: 1762 | [Link →](#)

---

**Description:** White sea slug with white cerata covering its body. Long off-white oral tentacles or rhinophores.

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Nudibranchia

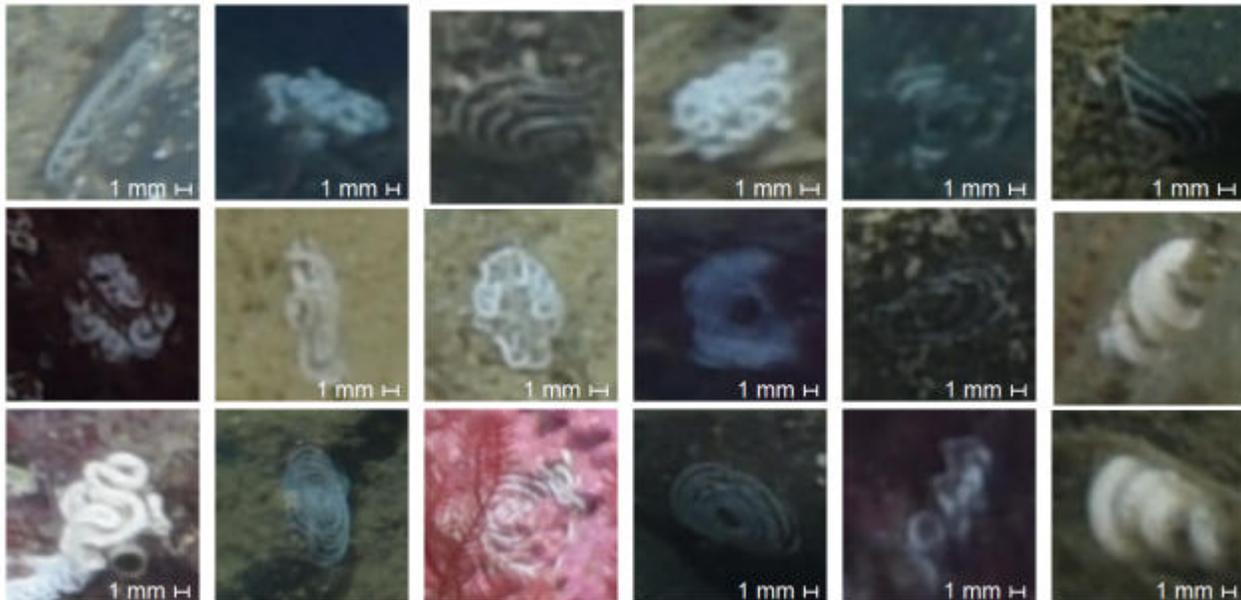
**Nudibranchia (eggs)** Cuvier, 1817

WoRMS Info | Name: Nudibranchia | AphiaID: 1762 | [Link →](#)

**Description:** White swirls forming concentric circles or more cloudy freeform swirls on substrate or in branches of hydroids or rhodophytes. Each unique form is probably attributed to a distinct species.

**Considered for use in analyses:** No

**Reasoning:** Not a relevant life stage and could have specimens from various other Nudibranchia OTUs.



Phylum Mollusca → Class Gastropoda → Order Trochida → Superfamily Trochoidea

**Trochoidea var 1** Rafinesque, 1815

WoRMS Info | Name: Trochoidea | AphiaID: 156489 | [Link →](#)

**Description:** Similar to Naticidae (white shell, looks like typical land snail) but smaller. Coils are larger compared to base of shell compared to Naticidae.

**Potential taxa:** *Margarites groenlandicus*, *Margarites helycinus*, *Solariella*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Trochida → Superfamily Trochoidea

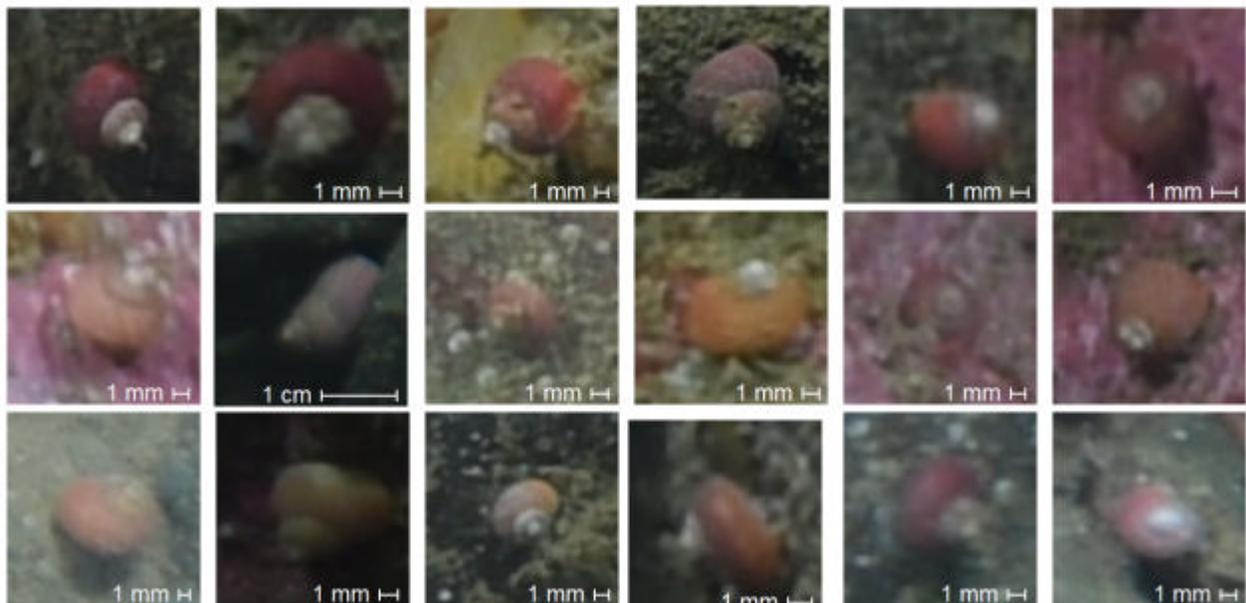
**Trochoidea var 2** Rafinesque, 1815

WoRMS Info | Name: Trochoidea | AphiaID: 156489 | [Link →](#)

**Description:** Red/orange variant of Trochoidea. Inner coils sometimes white.

**Potential taxa:** *Margarites groenlandicus*, *Margarites helycinus*, *Solariella*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Order Trochida → Superfamily Trochoidea

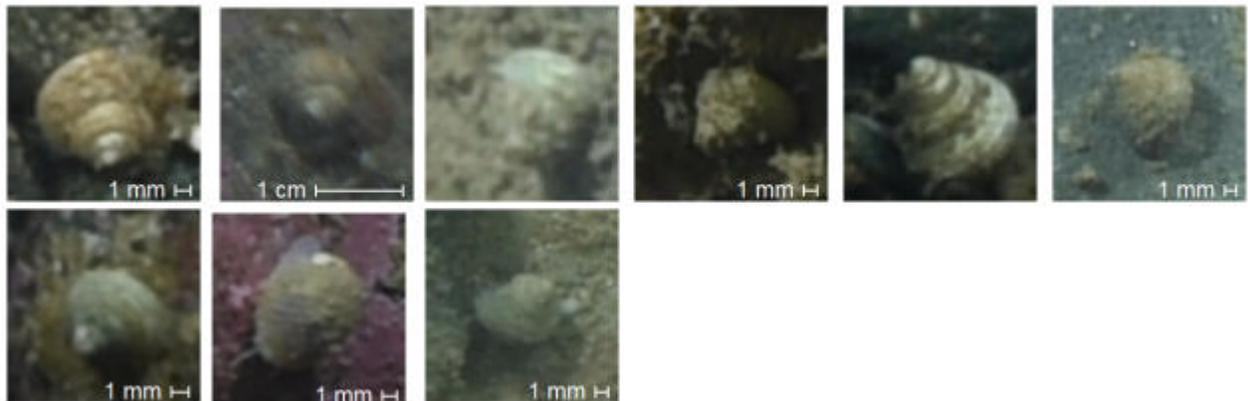
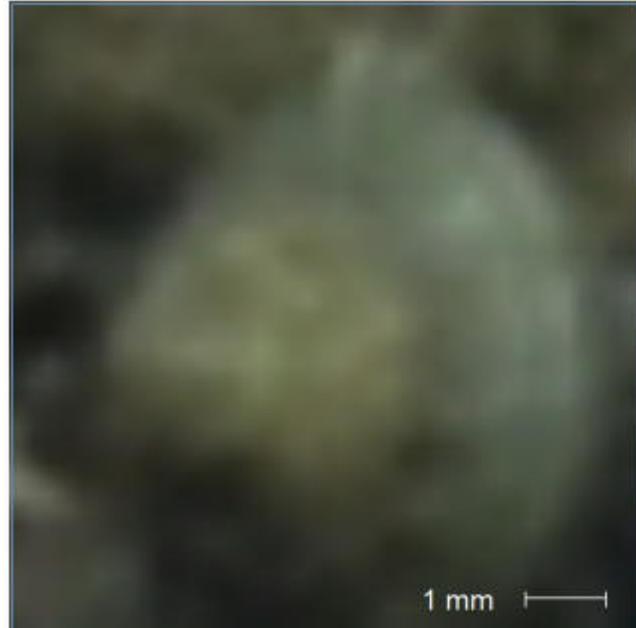
**Trochoidea var 3** Rafinesque, 1815

WoRMS Info | Name: Trochoidea | AphiaID: 156489 | [Link →](#)

**Description:** Beige/brown variant of Trochoidea.

**Potential taxa:** *Margarites costalis*,  
*Solariella*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda

**Gastropoda type 1** Cuvier, 1795

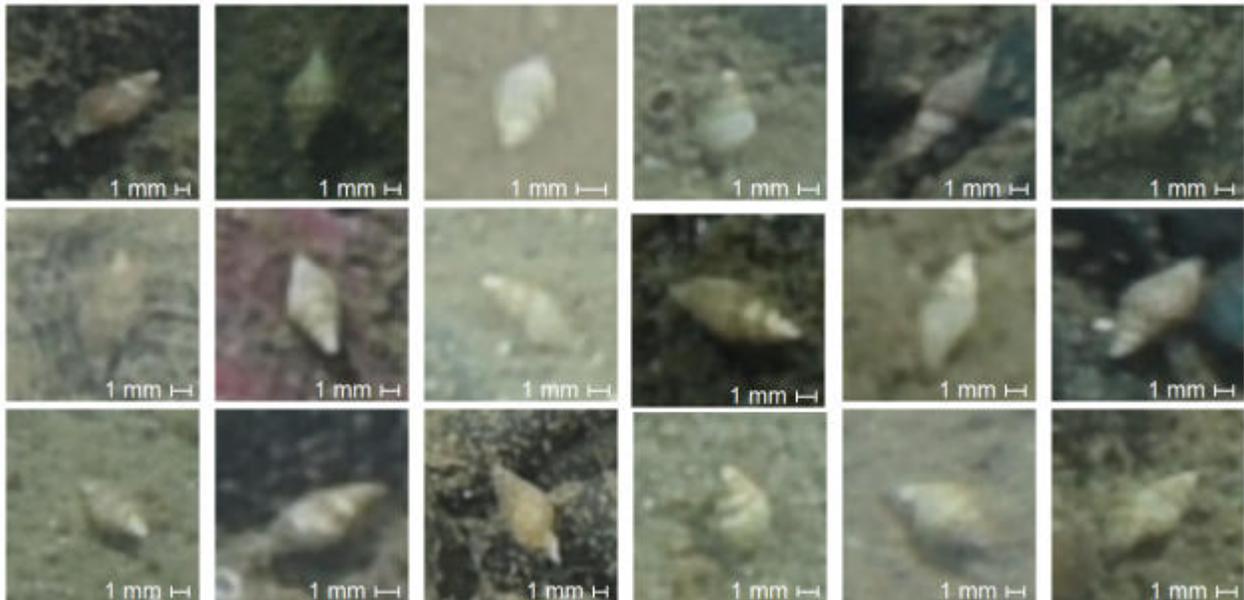
WoRMS Info | Name: Gastropoda | AphiaID: 101 | [Link →](#)

**Description:** Small (potentially juvenile) grouping of gastropods with beige, stretched coiled shells.

**Potential taxa:** Mangeliidae

**Considered for use in analyses:** No

**Reasoning:** OTU type that could overlap with other var. OTUs.



Phylum Mollusca → Class Gastropoda

**Gastropoda var 1** Cuvier, 1795

WoRMS Info | Name: Gastropoda | AphiaID: 101 | [Link →](#)

**Description:** Long thin coiled and ridged shell with a purple/red hue.

**Potential taxa:** Mangeliidae

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda

**Gastropoda var 2** Cuvier, 1795

WoRMS Info | Name: Gastropoda | AphiaID: 101 | [Link →](#)

---

**Description:** Purple and white striped  
croissant-shaped shell.

**Potential taxa:** *Lacuna vincta*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda

**Gastropoda var 3** Cuvier, 1795

WoRMS Info | Name: Gastropoda | AphiaID: 101 | [Link →](#)

---

**Description:** White, partially yellow, smooth, domed shell with two white protruding eye stalks.

**Potential taxa:** *Limneria undata*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda

**Gastropoda var 4** Cuvier, 1795

WoRMS Info | Name: Gastropoda | AphiaID: 101 | [Link →](#)

---

**Description:** Gastropod with ridged, beige domed shell with protruding white eye stalks.

**Potential taxa:** *Velutina velutina*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Gastropoda → Superfamily Lottioidea

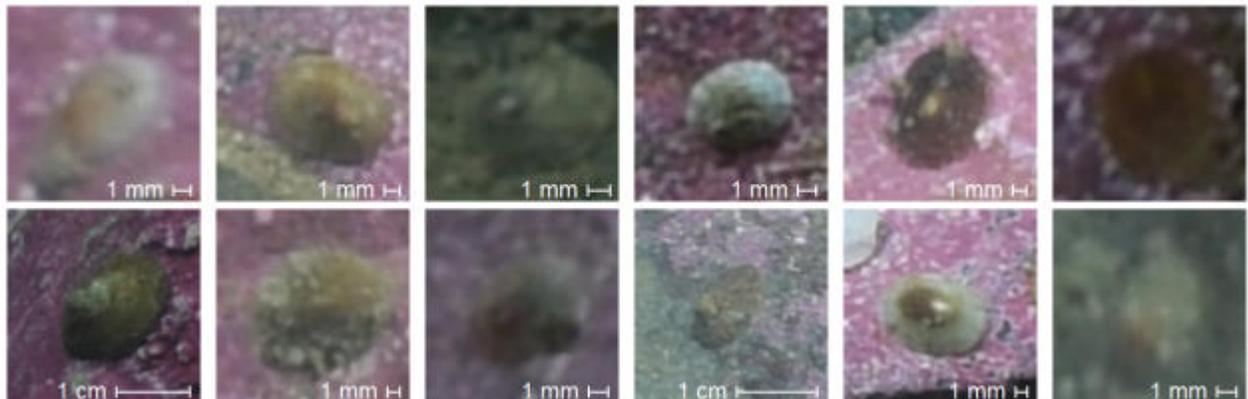
**Lottioidea** Gray, 1840

WoRMS Info | Name: Lottioidea | AphiaID: 391063 | [Link →](#)

**Description:** Oval shell with a raised, rounded top attached to hard substrate.

**Potential taxa:** *Lepeta caeca*, *Testudinalia testudinalis*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Polyplacophora → Order Chitonida → Family Tonicellidae → Subfamily Tonicellinae

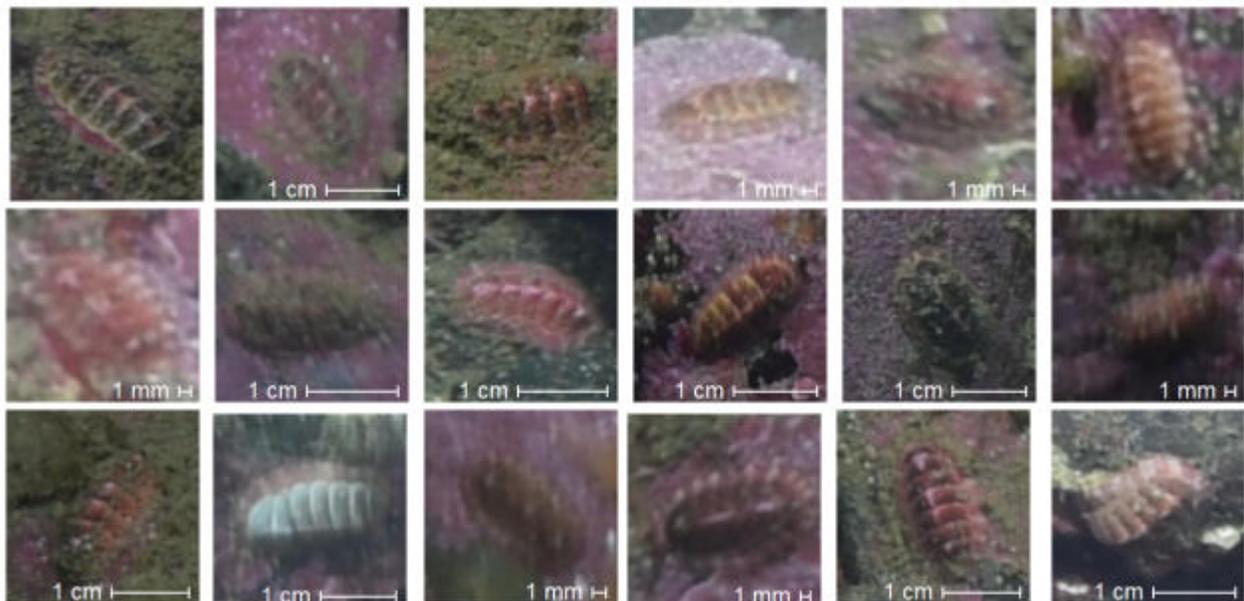
**Tonicellinae** Simroth, 1894

WoRMS Info | Name: Tonicellinae | AphiaID: 385537 | [Link →](#)

**Description:** Red/brown oval-shaped chiton with distinct dorsal ridge and many transverse ridges. Has a rim around the edge.

**Potential taxa:** *Boreochiton ruber*,  
*Tonicella marmorea*

**Considered for use in analyses:** Yes



Phylum Mollusca → Class Polyplacophora

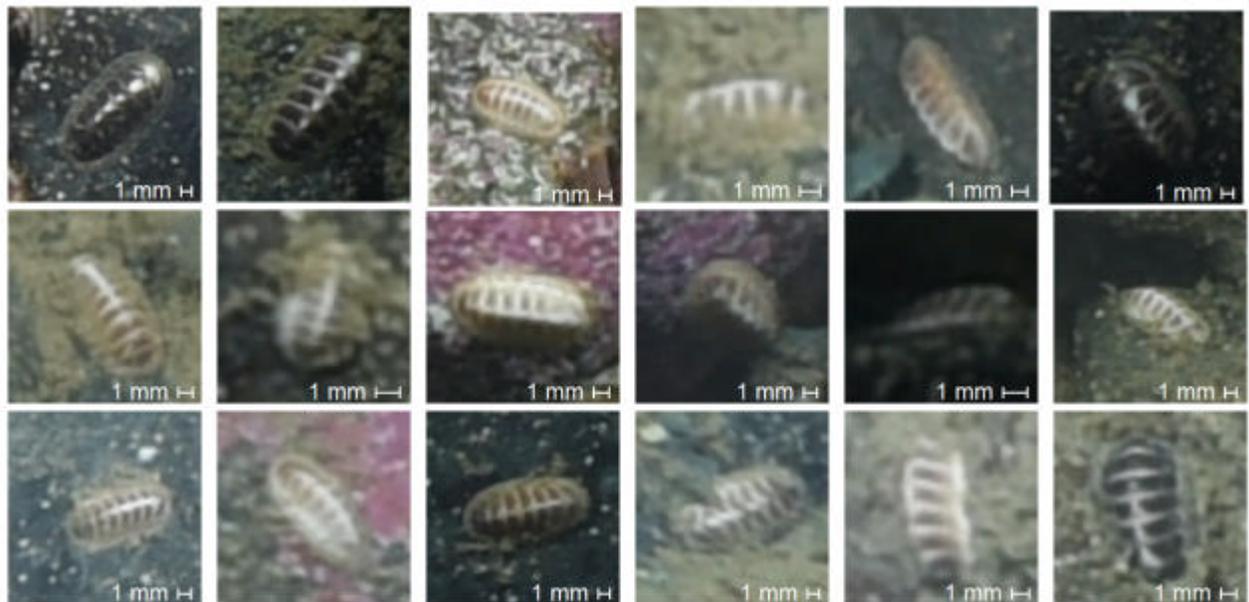
**Polyplacophora var 1** Gray, 1821

WoRMS Info | Name: Polyplacophora | AphiaID: 55 | [Link →](#)

**Description:** Brown oval-shaped chiton with white dorsal ridge and white transverse ridges.

**Potential taxa:** *Stenosemus albus*,  
*Hanleya hanleyi*

**Considered for use in analyses:** Yes



### 3.10 BRYOZOA

Number of OTU in phylum: 17

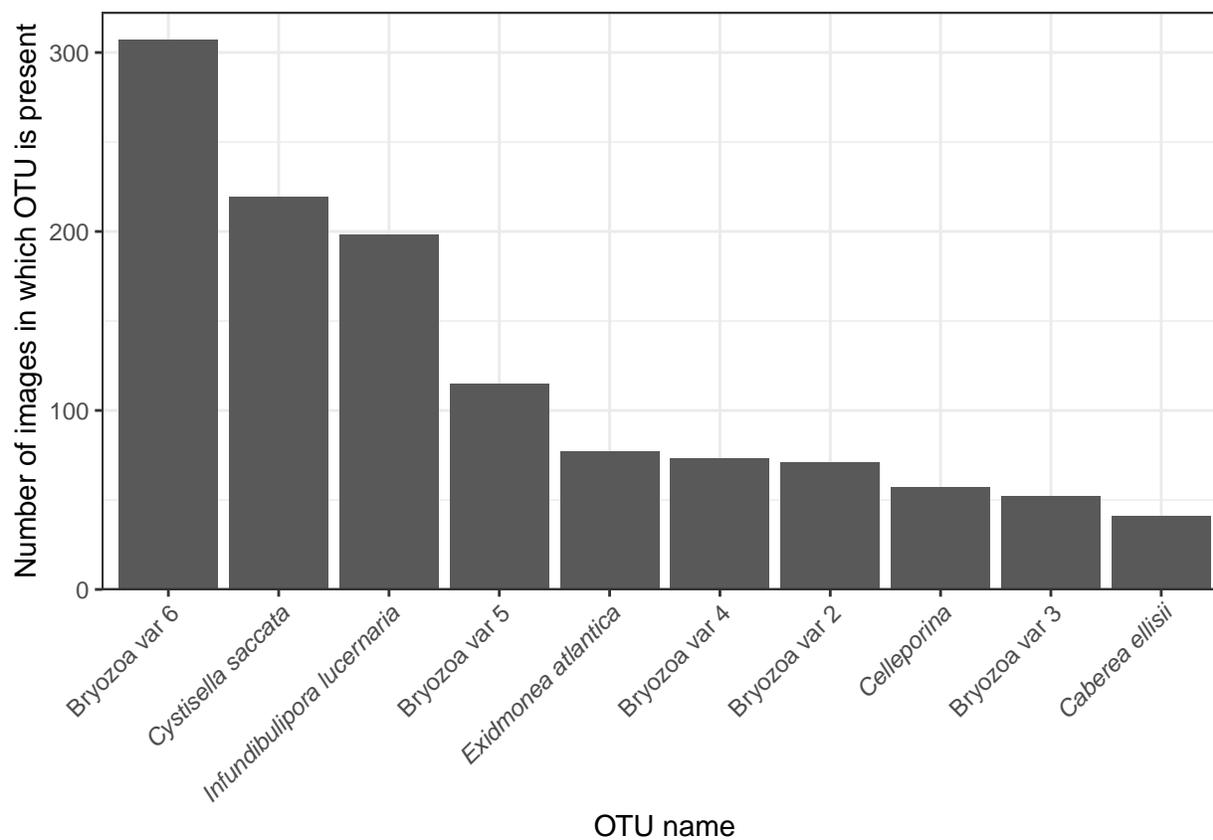


Figure 13: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Bryozoa out of a total of 672 images.

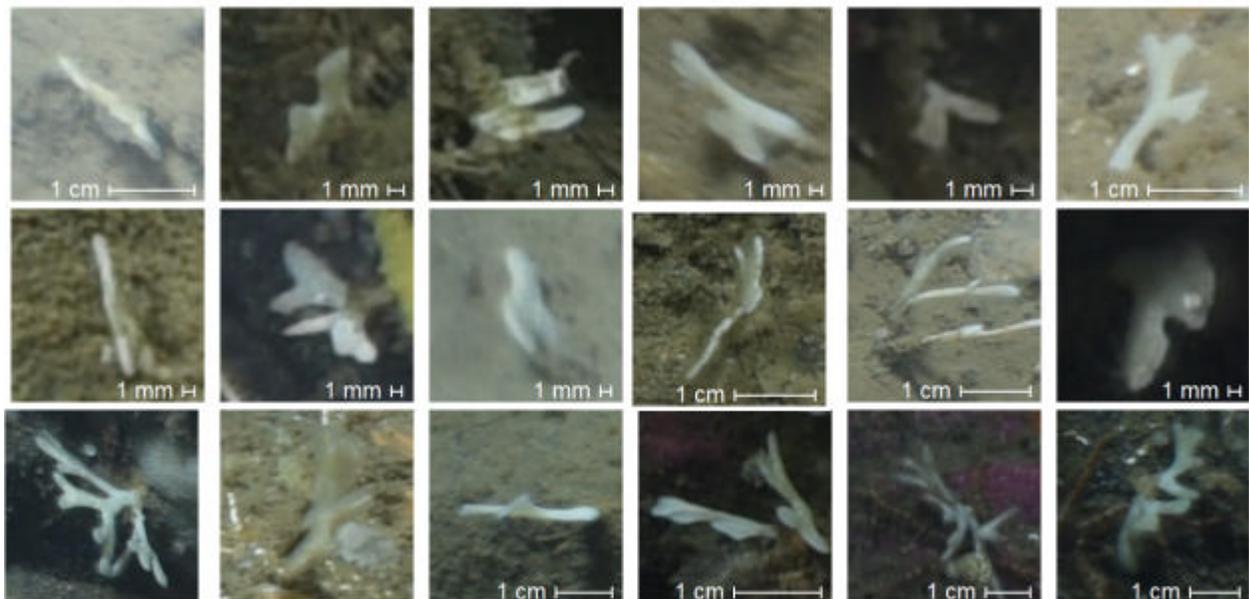
Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Family Bryocryptellidae

***Cystisella saccata*** (Busk, 1856)

WoRMS Info | Name: *Cystisella saccata* | AphiaID: 111112 | [Link →](#)

**Description:** Sturdy white bryozoan with stag horn-type branching pattern.

**Considered for use in analyses:** Yes



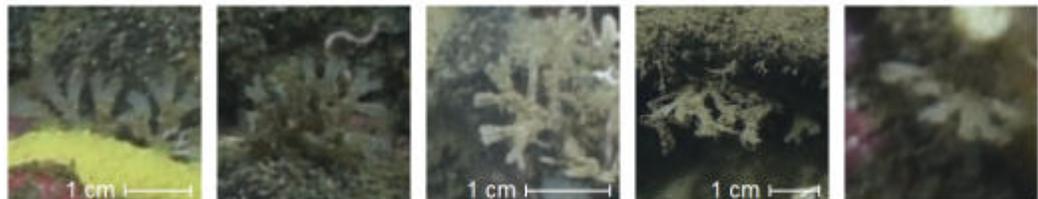
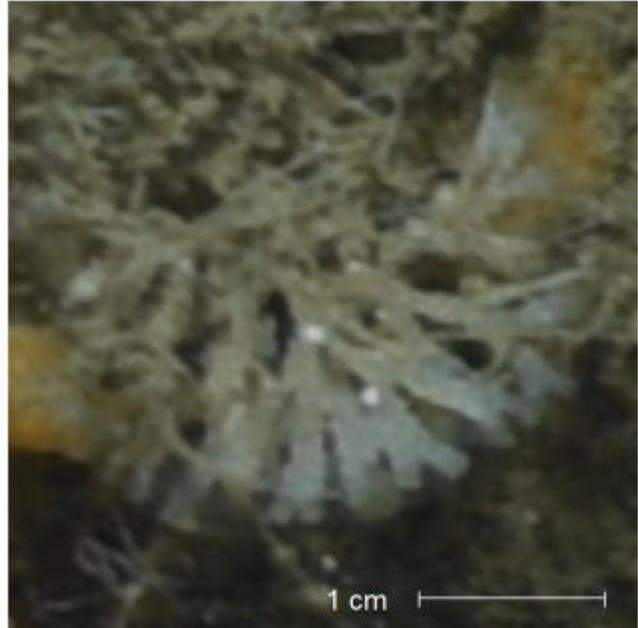
Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Family Bugulidae

***Dendrobeatia murrayana*** (Bean in Johnston, 1847)

WoRMS Info | Name: *Dendrobeatia murrayana* | AphiaID: 111174 | [Link →](#)

**Description:** Branched, fan-shaped, tan or brown bryozoan. More lightly calcified than *Cystisella saccata*.

**Considered for use in analyses:** Yes



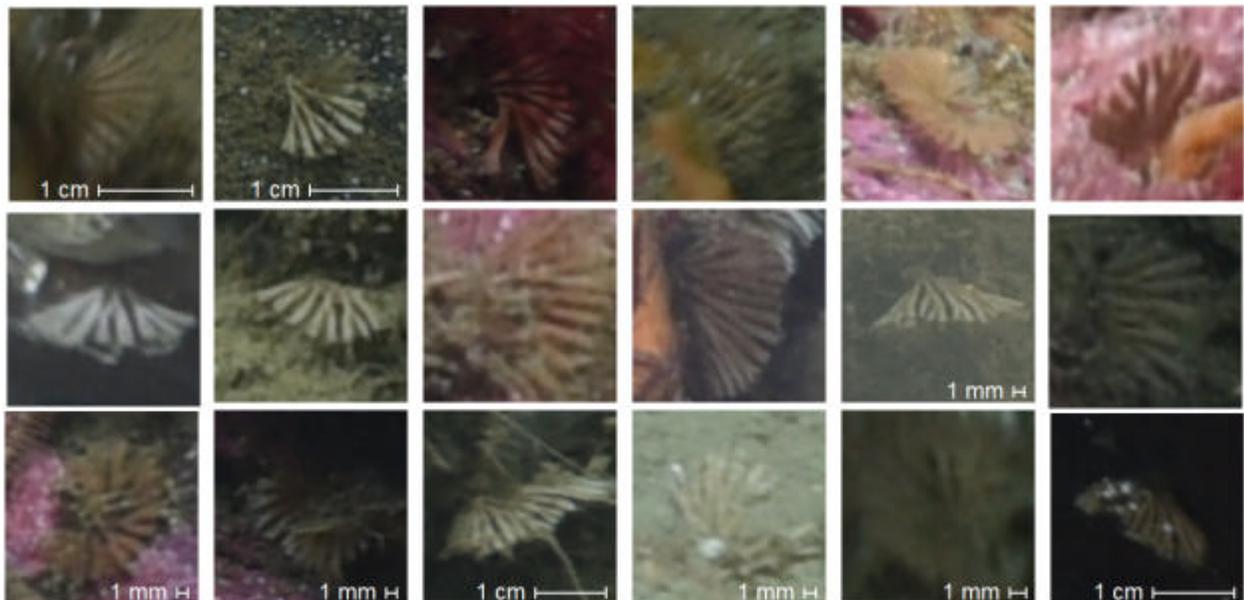
Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Family Candidae

***Caberea ellisii*** (Fleming, 1814)

WoRMS Info | Name: *Caberea ellisii* | AphiaID: 111230 | [Link →](#)

**Description:** Small fan-shaped bryozoan with very thin branches. Brown or tan in colour.

**Considered for use in analyses:** Yes



Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Family Celleporidae

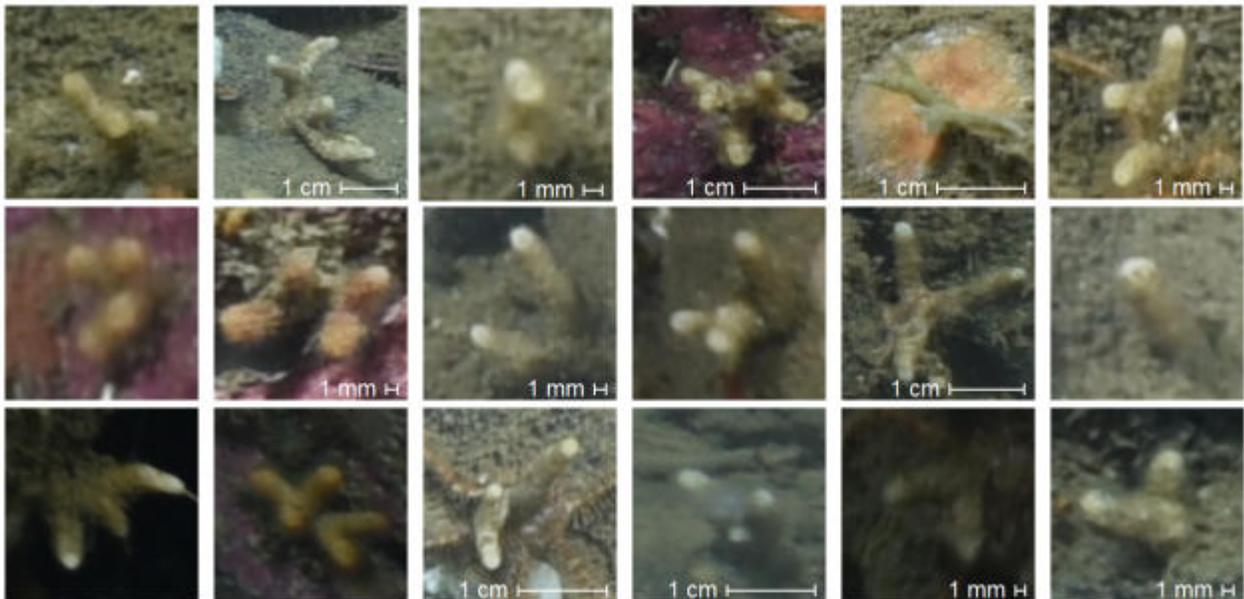
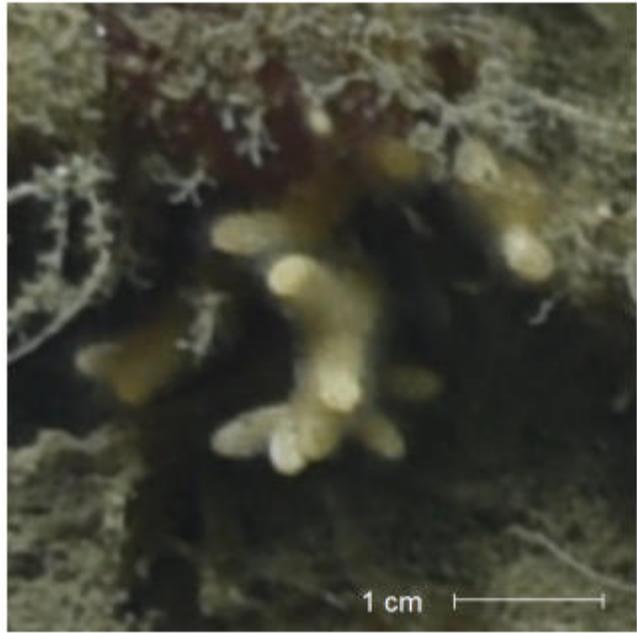
***Celleporina*** Gray, 1848

WoRMS Info | Name: *Celleporina* | AphiaID: 110875 | [Link →](#)

**Description:** Strongly calcified pale yellow or white bryozoan. Colonies consist of cluster of cylindrical branchlets.

**Potential taxa:** *Celleporina surcularis*

**Considered for use in analyses:** Yes



Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Family Flustridae

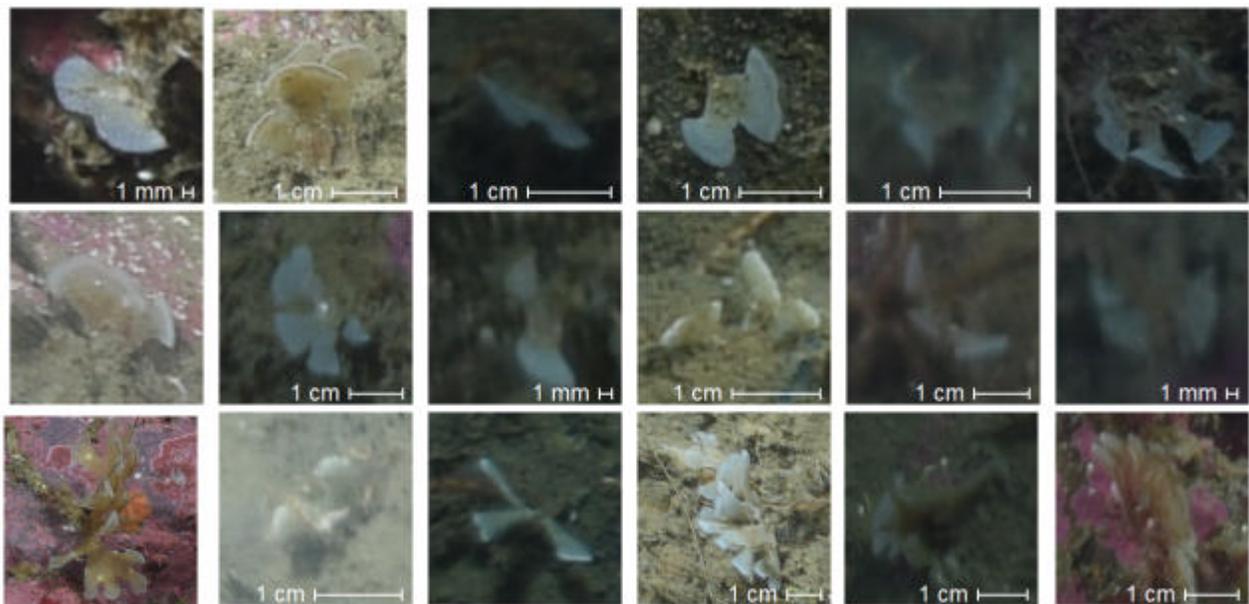
**Flustridae** Fleming, 1828

WoRMS Info | Name: Flustridae | AphiaID: 110749 | [Link →](#)

**Description:** White–grey branching bryozoan. Colonies are not heavily branched. Branches are wide and often have white tips.

**Potential taxa:** *Flustra foliacea*

**Considered for use in analyses:** Yes



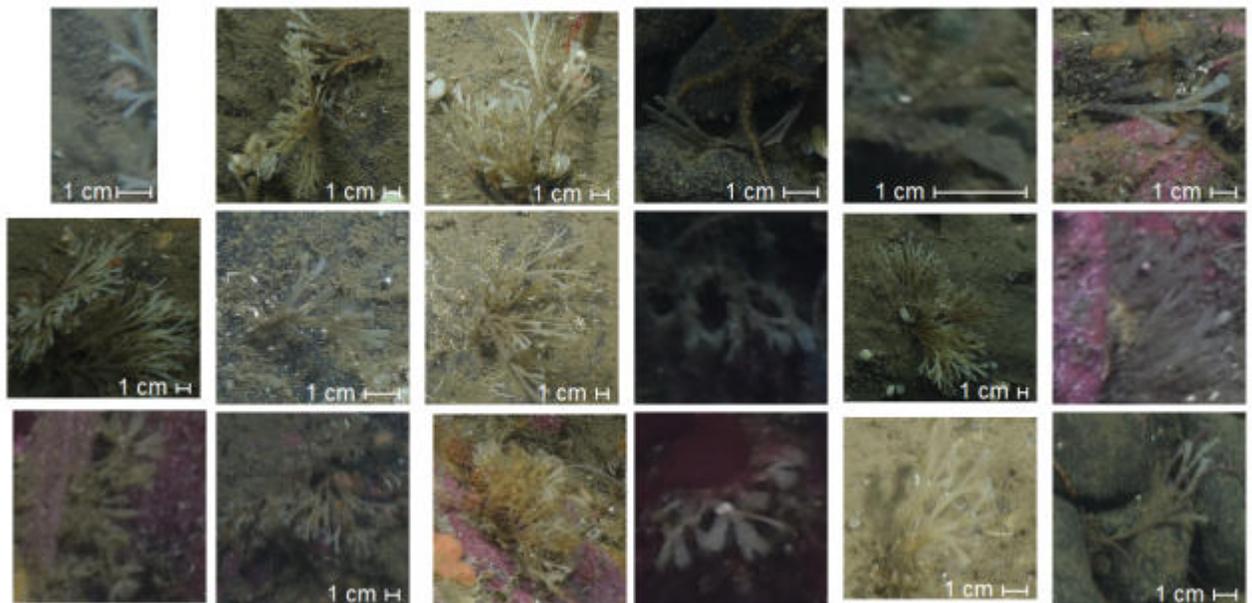
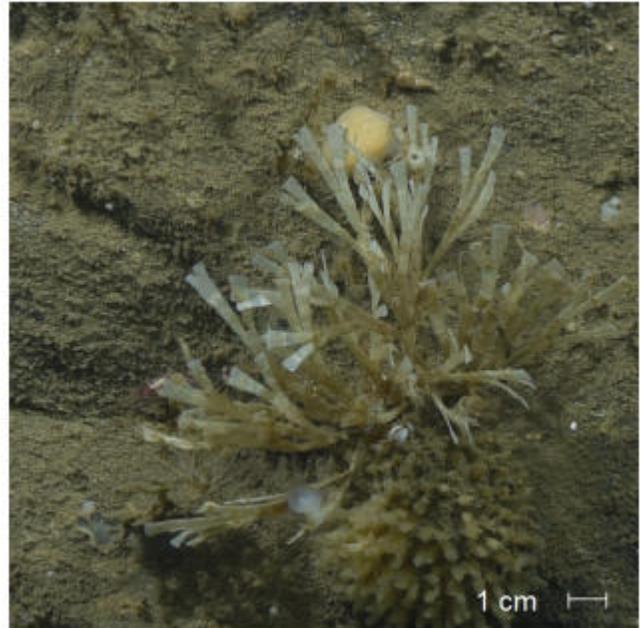
Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Family Flustridae

***Securiflustra securifrons*** (Pallas, 1766)

WoRMS Info | Name: *Securiflustra securifrons* | AphiaID: 111374 | [Link →](#)

**Description:** Beige bryozoan with relatively thin branches. Branches have square ends (in comparison to rounded ends of other similar species).

**Considered for use in analyses:** Yes



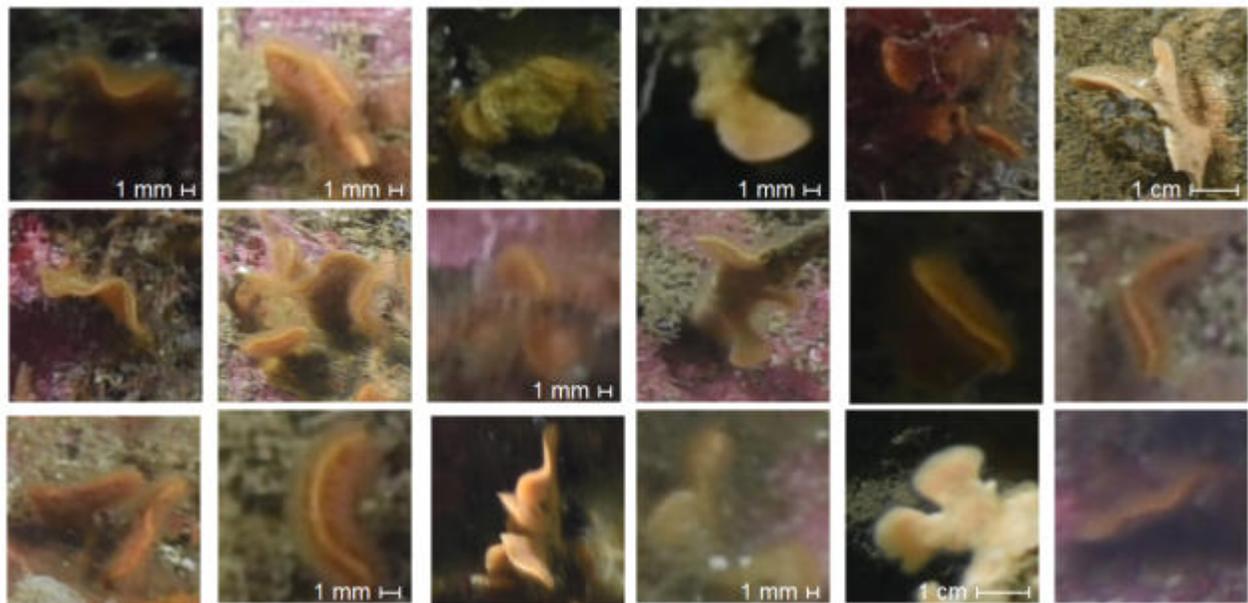
Phylum Bryozoa → Class Gymnolaemata → Order Cheilostomatida → Superfamily Smittinoidea

**Smittinoidea** Levinsen, 1909

WoRMS Info | Name: Smittinoidea | AphiaID: 153664 | [Link →](#)

**Description:** Orange, wavy, calcareous plates attached to substrate. Slight branching pattern.

**Considered for use in analyses:** Yes



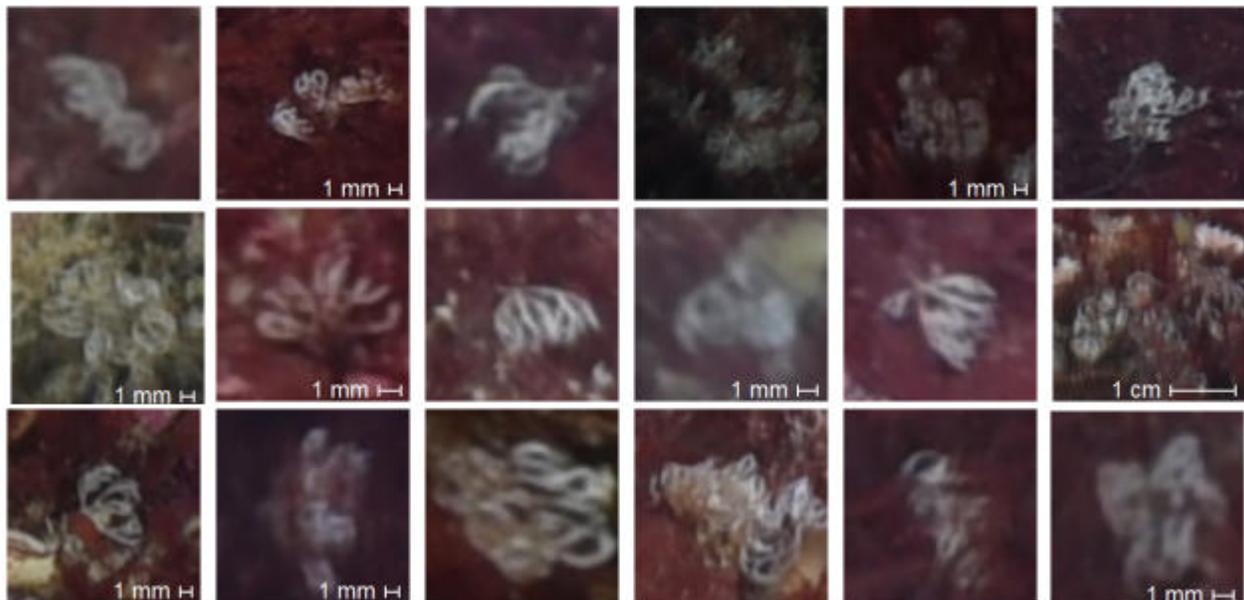
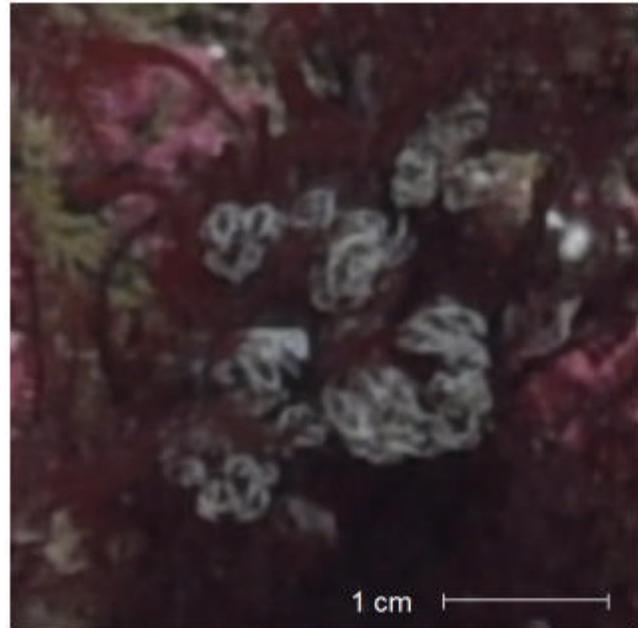
Phylum Bryozoa → Class Stenolaemata → Order Cyclostomatida → Family Crisiidae

***Crisia*** Lamouroux, 1812

WoRMS Info | Name: *Crisia* | AphiaID: 111032 | [Link →](#)

**Description:** Small, thin white bushels.  
Typically found among rhodophytes.

**Considered for use in analyses:** Yes



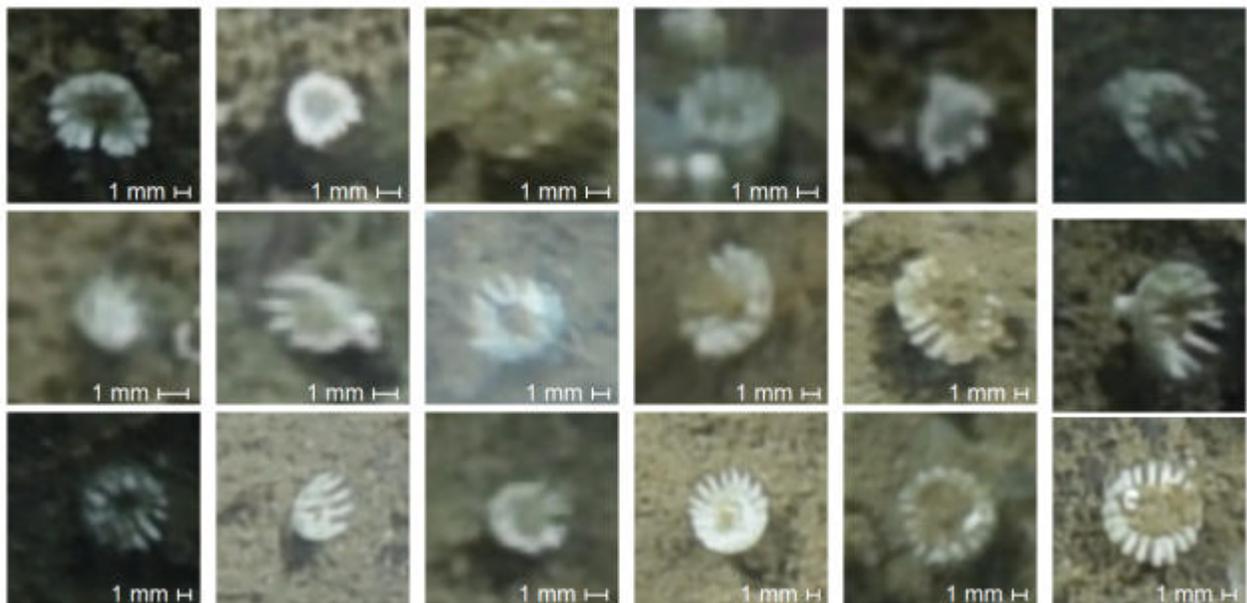
Phylum Bryozoa → Class Stenolaemata → Order Cyclostomatida → Family Cytididae

***Infundibulipora lucernaria*** (Sars, 1851)

WoRMS Info | Name: *Infundibulipora lucernaria* | AphiaID: 146824 | [Link →](#)

**Description:** Small white toothed calcified bryozoan in the form of a circle with a pore in the centre.

**Considered for use in analyses:** Yes



Phylum Bryozoa → Class Stenolaemata → Order Cyclostomatida → Family Horneridae

***Hornera*** Lamouroux, 1821

WoRMS Info | Name: *Hornera* | AphiaID: 111041 | [Link →](#)

---

**Description:** Skinny white hard curvy branches. Looks like a sparser, more squiggly version of *Exidmonea atlantica*.

**Potential taxa:** *Hornera lichenoides*

**Considered for use in analyses:** Yes



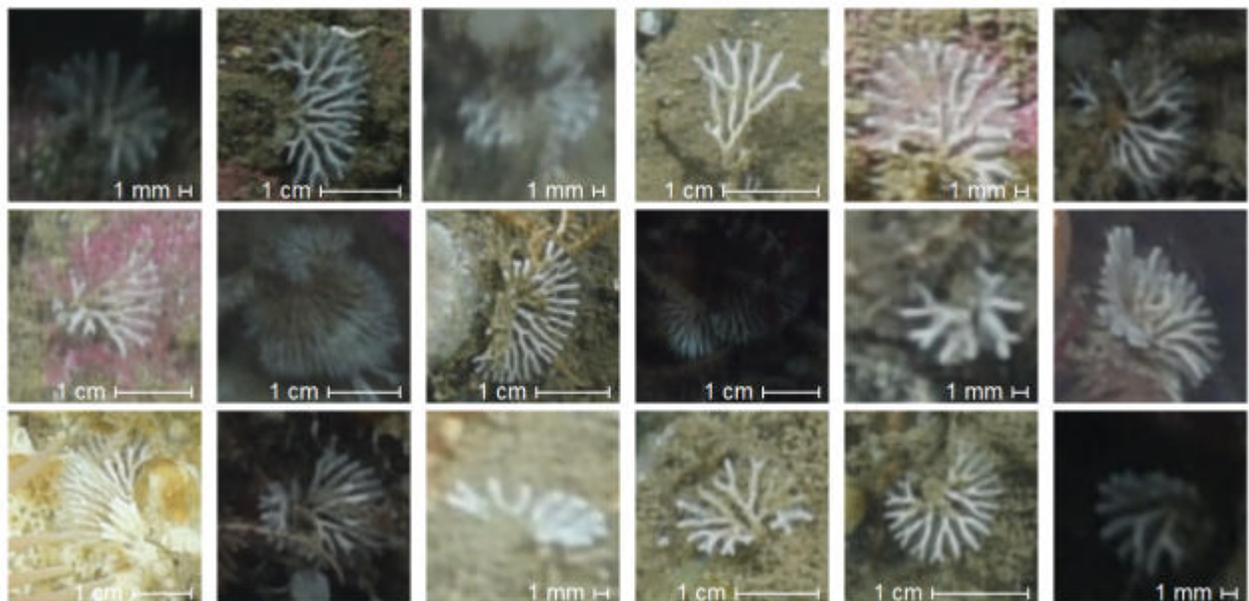
Phylum Bryozoa → Class Stenolaemata → Order Cyclostomatida → Family Tubuliporidae

***Exidmonea atlantica*** (Forbes in Johnston, 1847)

WoRMS Info | Name: *Exidmonea atlantica* | AphiaID: 471226 | [Link →](#)

**Description:** Skinny, white, flat branches clustered together typically in a circular or semi-circular clump.

**Considered for use in analyses:** Yes



Phylum Bryozoa

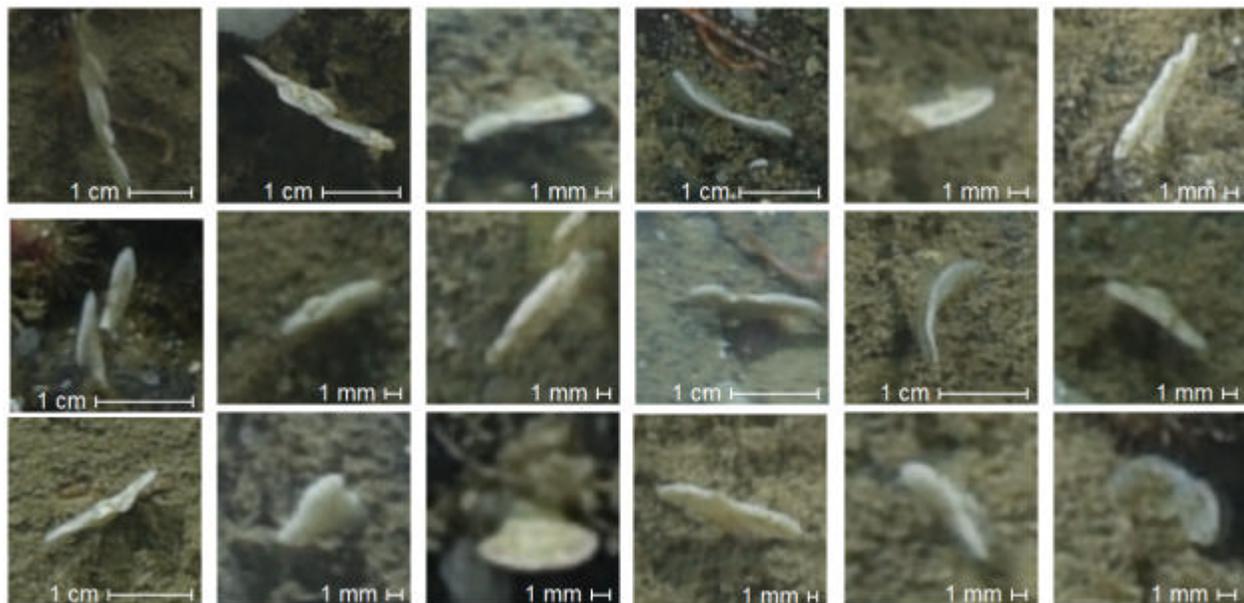
## Bryozoa var 1

WoRMS Info | Name: Bryozoa | AphiaID: 146142 | [Link →](#)

**Description:** White flat calcareous plates growing perpendicular to substrate. Look similar to *Cystisella saccata* without its distinctive branching structure.

**Potential taxa:** *Cystisella*

**Considered for use in analyses:** Yes



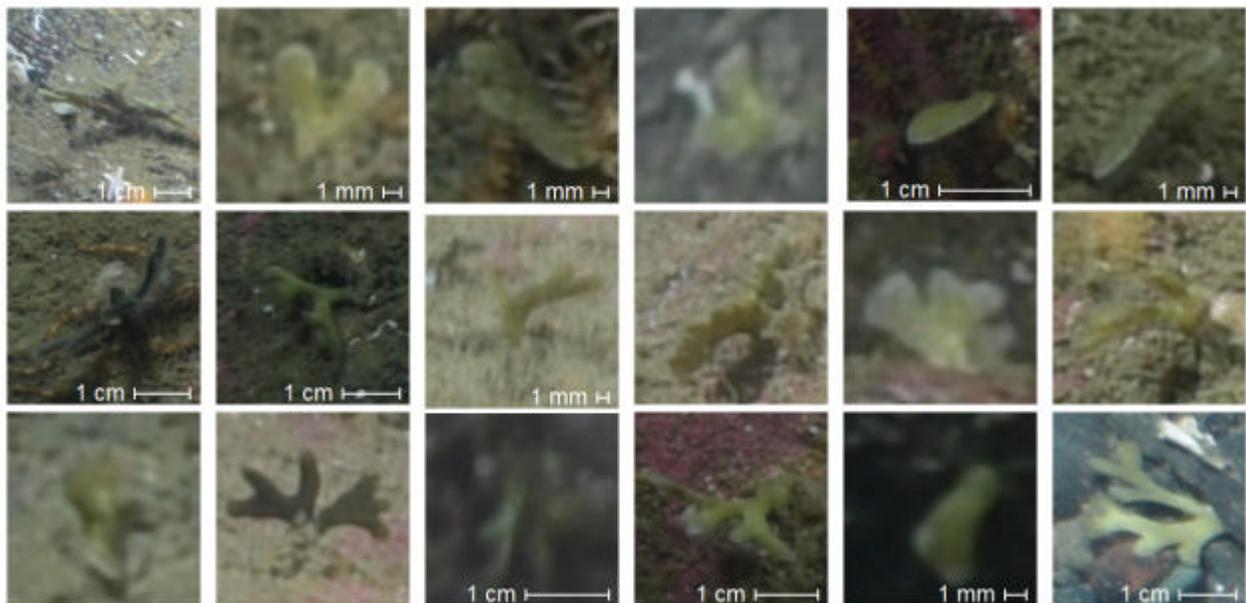
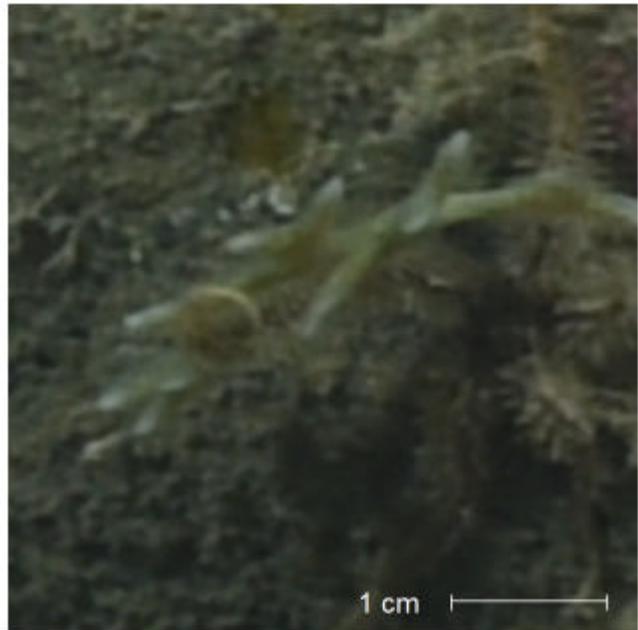
Phylum Bryozoa

## Bryozoa var 2

WoRMS Info | Name: Bryozoa | AphiaID: 146142 | [Link →](#)

**Description:** Resembles a green version of *Cystisella saccata*.

**Considered for use in analyses:** Yes



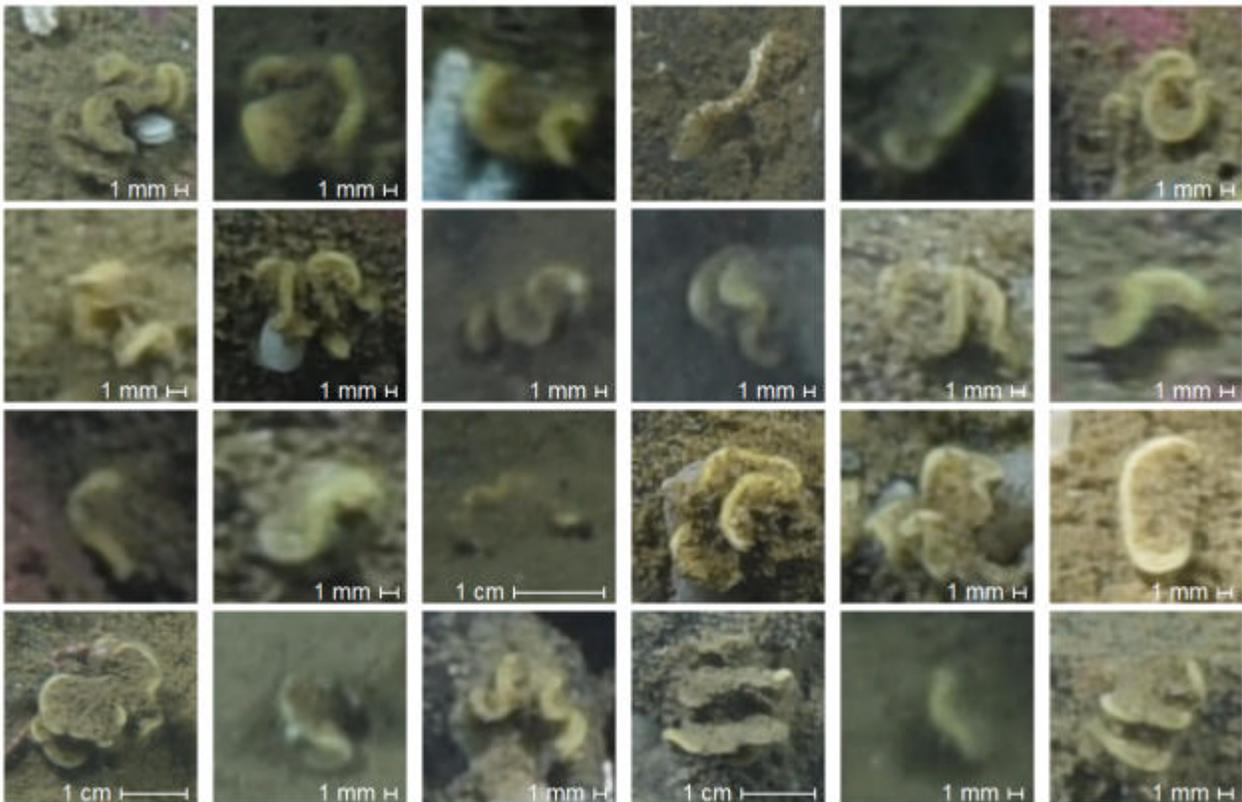
Phylum Bryozoa

### Bryozoa var 3

WoRMS Info | Name: Bryozoa | AphiaID: 146142 | [Link →](#)

**Description:** Beige, curled, calcareous plates attached to substrate.

**Considered for use in analyses:** Yes



Phylum Bryozoa

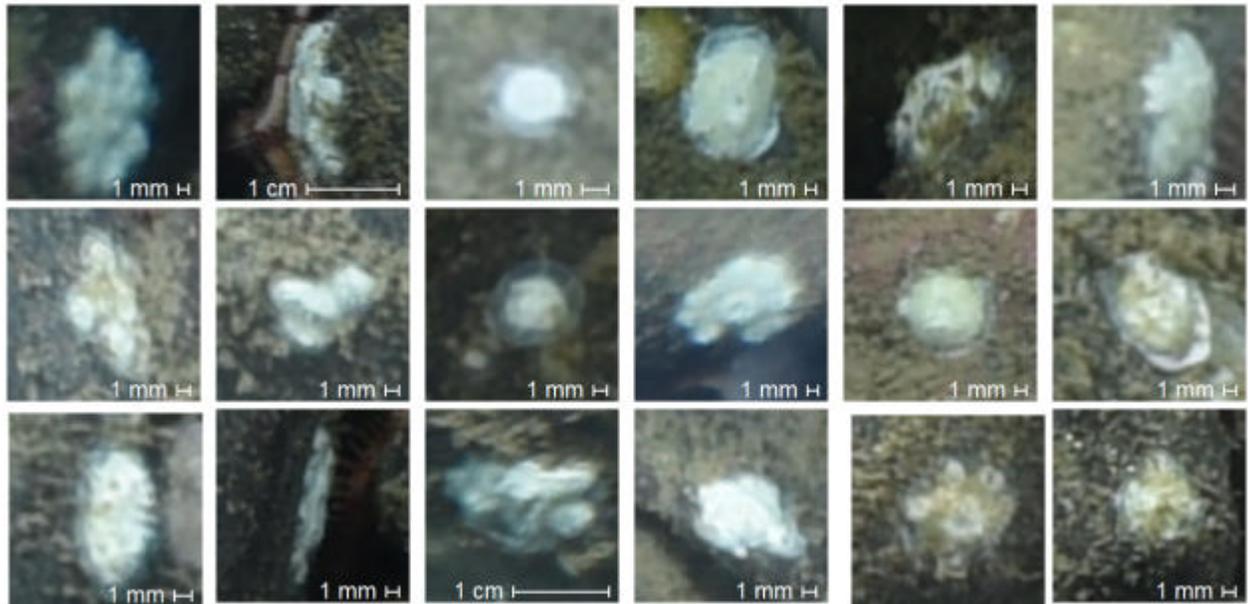
## Bryozoa var 4

WoRMS Info | Name: Bryozoa | AphiaID: 146142 | [Link →](#)

**Description:** White bumpy encrusting bryozoan attached to hard substrate. Either one central bump or cluster of bumps surrounded by a pale halo.

**Potential taxa:** *Disporella hispida*

**Considered for use in analyses:** Yes



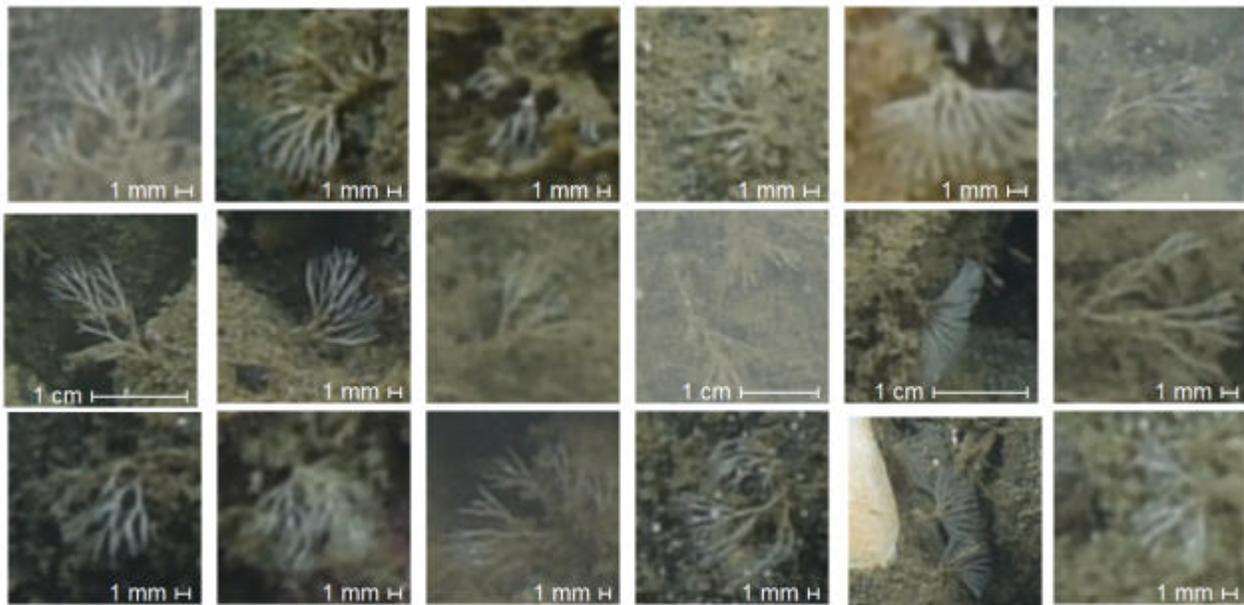
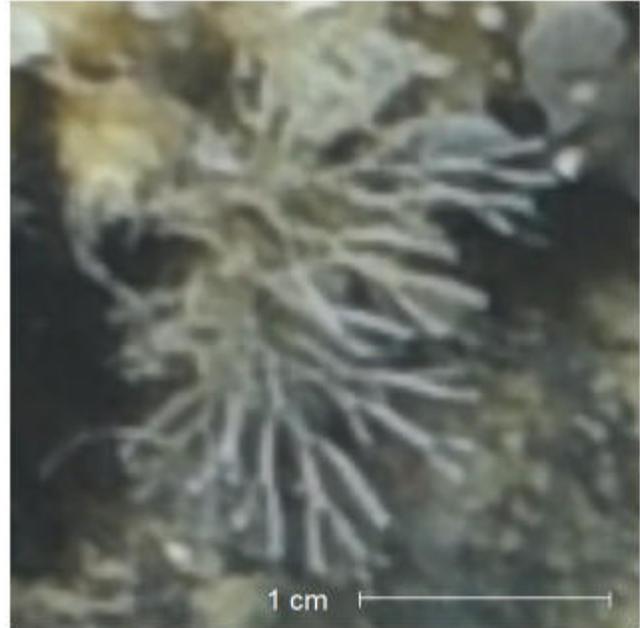
Phylum Bryozoa

## Bryozoa var 5

WoRMS Info | Name: Bryozoa | AphiaID: 146142 | [Link →](#)

**Description:** Bushels with thin white branches attached to substrate.

**Considered for use in analyses:** Yes



Phylum Bryozoa

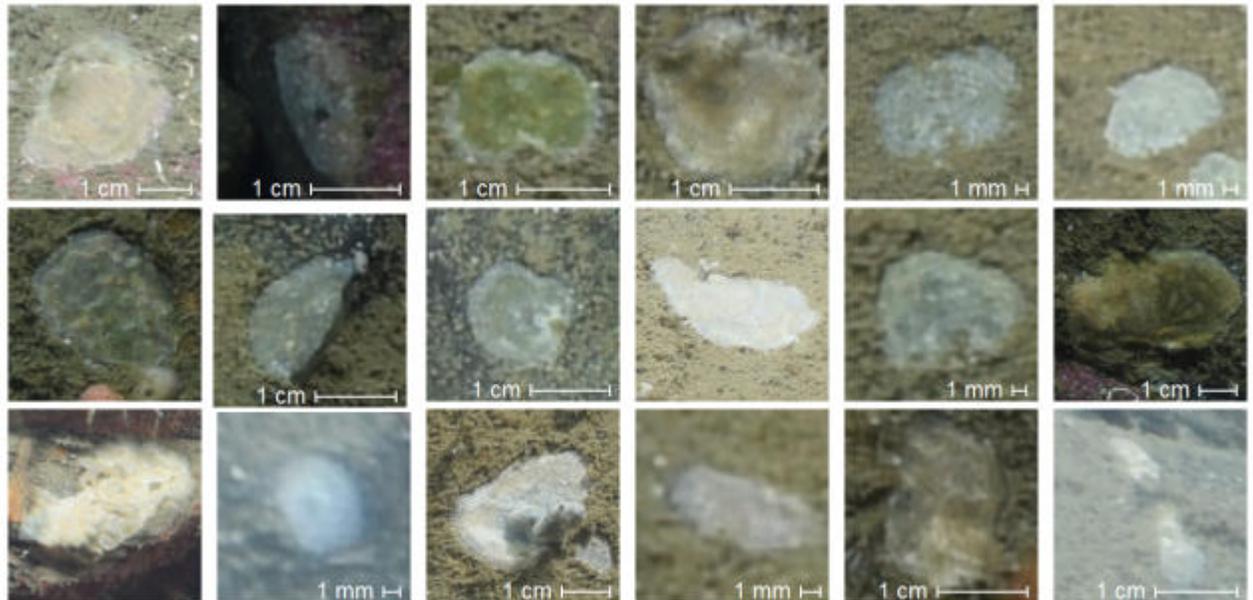
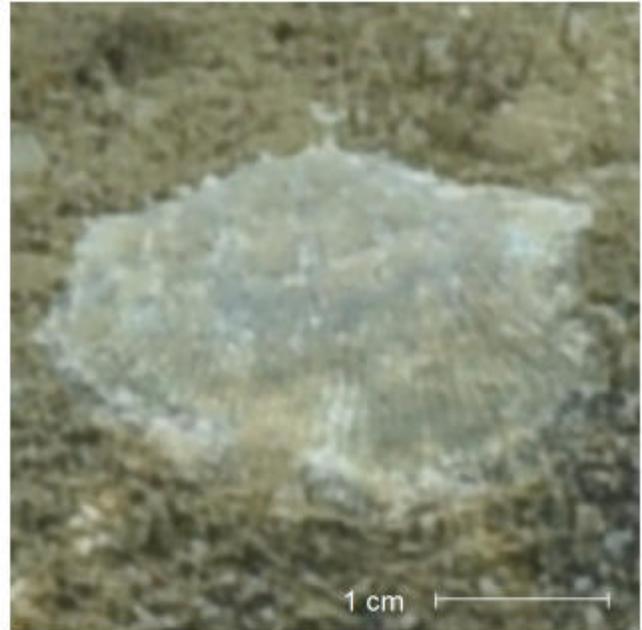
## Bryozoa var 6

WoRMS Info | Name: Bryozoa | AphiaID: 146142 | [Link →](#)

**Description:** Encrusting scaly-looking film with white/yellow/pink/green colouration. Can comprise many species.

**Potential taxa:** *Parasmittina jeffreysi*,  
*Cryptosula pallasiana*

**Considered for use in analyses:** Yes



### 3.11 BRACHIOPODA

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Number of OTU in phylum: 2

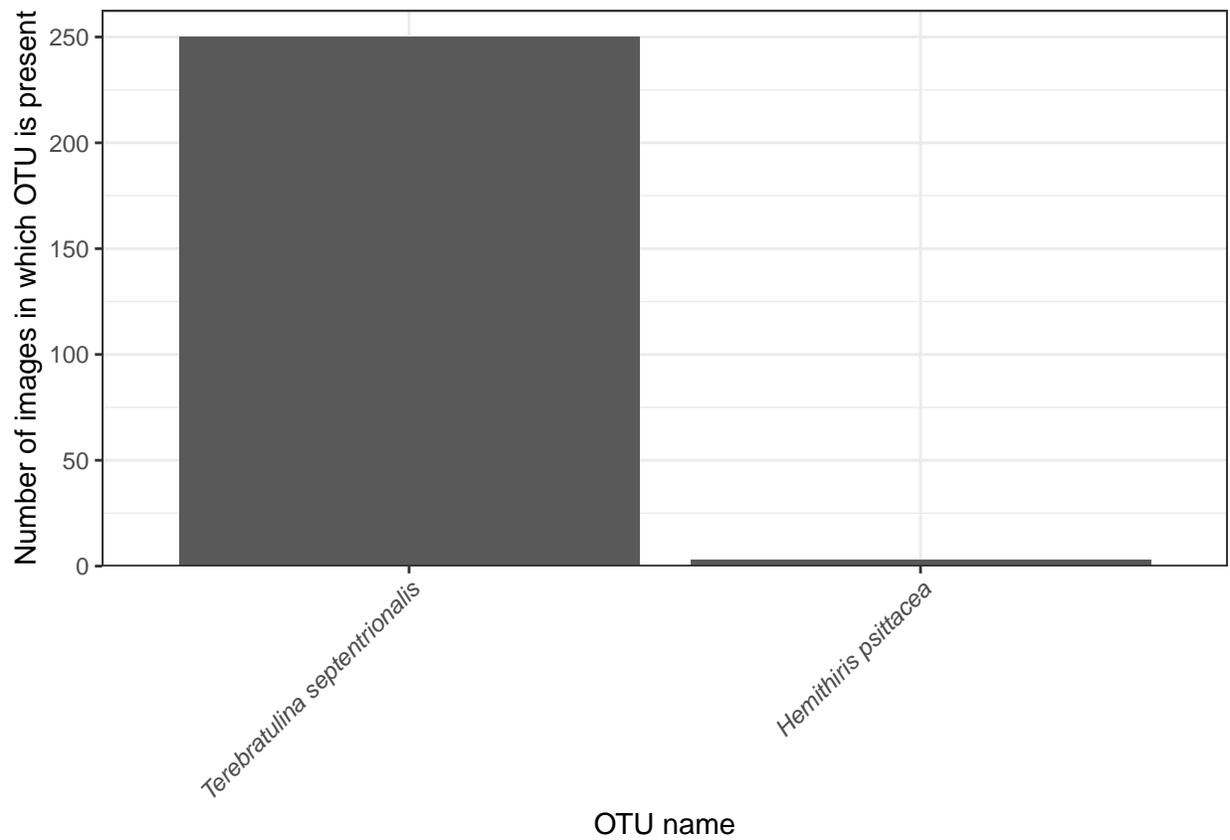


Figure 14: Number of images in which each Operational Taxonomic Unit (OTU) is present for the phylum Brachiopoda out of a total of 672 images.

Phylum Brachiopoda → Class Rhynchonellata → Order Rhynchonellida → Family Hemithirididae

***Hemithiris psittacea*** (Gmelin, 1791)

WoRMS Info | Name: *Hemithiris psittacea* | AphiaID: 104054 | [Link →](#)

---

**Description:** Black/navy blue pair of smooth shells that open up to what looks like a pair of blue fans.

**Considered for use in analyses:** Yes



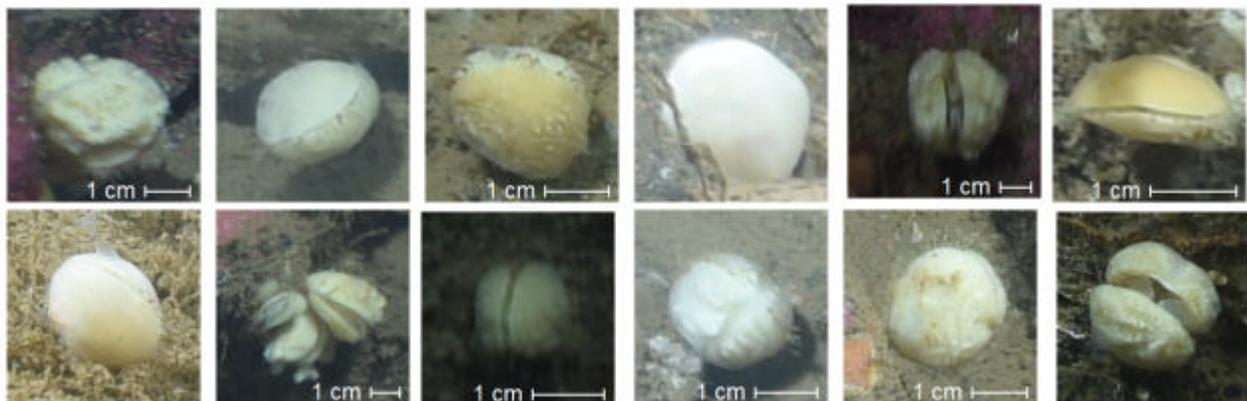
Phylum Brachiopoda → Class Rhynchonellata → Order Terebratulida → Family Cancellothyrididae

***Terebratulina septentrionalis*** (Couthouy, 1838)

WoRMS Info | Name: *Terebratulina septentrionalis* | AphiaID: 104056 | [Link →](#)

**Description:** White or orange pair of smooth shells that open up to what looks like a pair of white fans. Sometimes covered in *lophon* or other sponges.

**Considered for use in analyses:** Yes



### 3.12 ECHINODERMATA

Number of OTU in phylum: 20

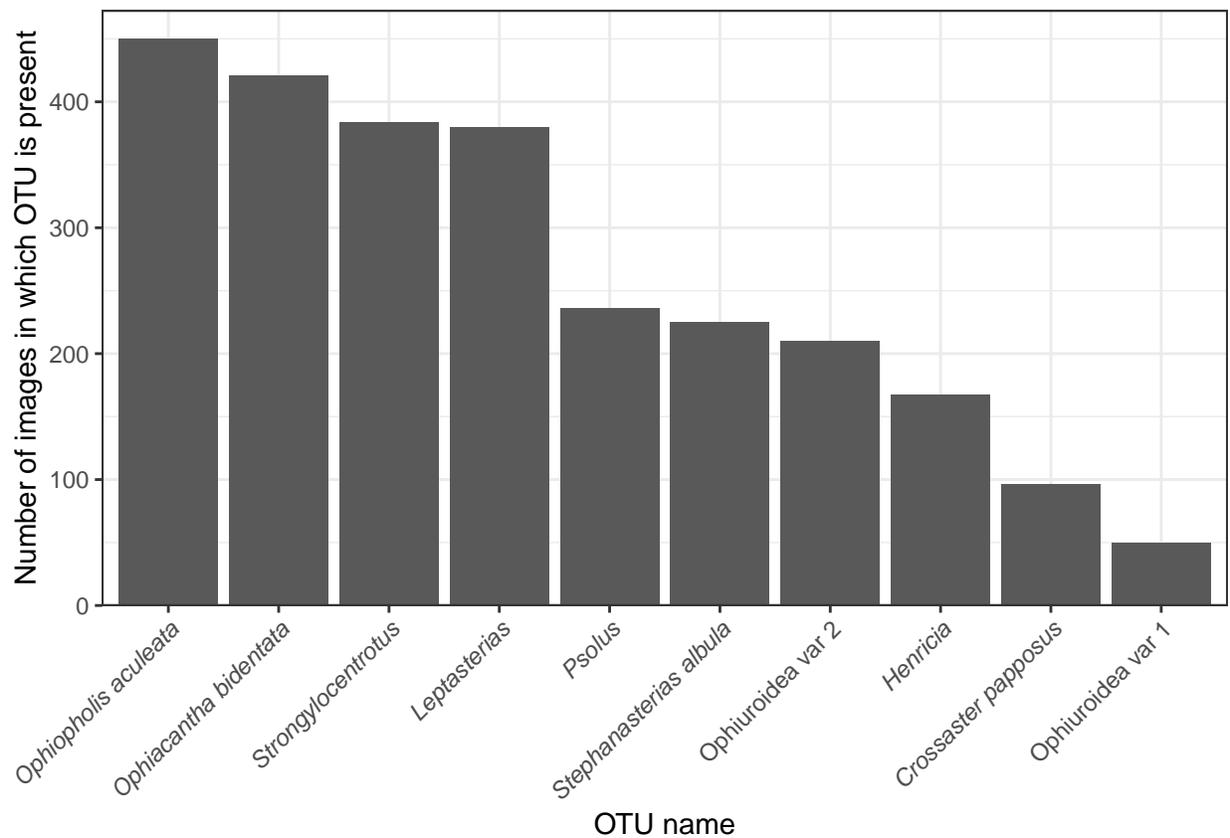


Figure 15: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Echinodermata out of a total of 672 images.

Phylum Echinodermata → Class Asteroidea → Order Forcipulatida → Family Asteriidae

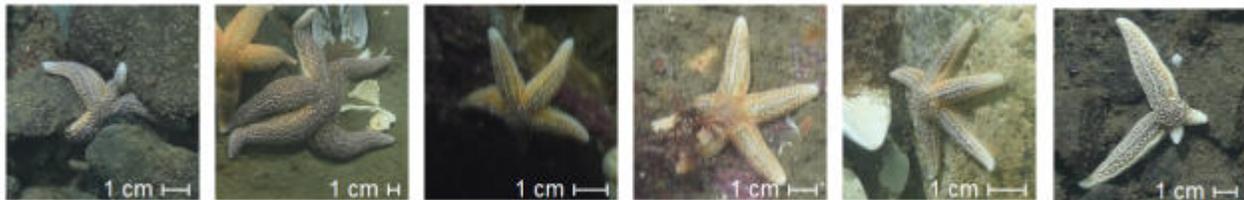
***Asterias*** Linnaeus, 1758

WoRMS Info | Name: *Asterias* | AphiaID: 123219 | [Link →](#)

**Description:** Sea star with 5 arms with paler tips and comes in various colours. Rough texture. Pale madreporite. Could include *Asterias rubens* (yellow/pale madreporite) or *Asterias forbesi* (pink/orange madreporite). Most appear to be *Asterias rubens*.

**Potential taxa:** *Asterias rubens*, *Asterias forbesi*

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Asteroidea → Order Forcipulatida → Family Asteriidae

***Leptasterias*** Verrill, 1866

WoRMS Info | Name: *Leptasterias* | AphiaID: 123222 | [Link →](#)

**Description:** Sea star with 5 arms and relatively small in size. Usually light blue/purple colour. Rough texture.

**Considered for use in analyses:** Yes



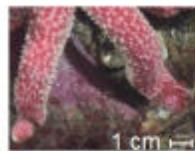
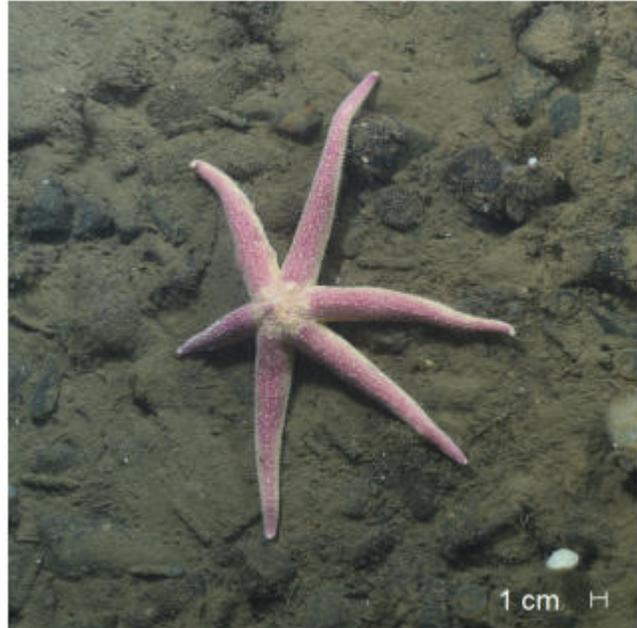
Phylum Echinodermata → Class Asteroidea → Order Forcipulatida → Family Asteriidae

***Leptasterias polaris*** (Müller & Troschel, 1842)

WoRMS Info | Name: *Leptasterias (Hexasterias) polaris* | AphiaID: 125154 | [Link →](#)

**Description:** Sea star with 6 arms. Usually pink/red colour. Long, skinny arms and small centre.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Asteroidea → Order Forcipulatida → Family Asteriidae

***Stephanasterias albula*** (Stimpson, 1853)

WoRMS Info | Name: *Stephanasterias albula* | AphiaID: 123808 | [Link →](#)

**Description:** Sea star that usually has 6 arms. White or very pale colouration. Common to see arms broken off or of different lengths and folded over itself.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Asteroidea → Order Spinulosida → Family Echinasteridae

***Henricia*** Gray, 1840

WoRMS Info | Name: *Henricia* | AphiaID: 123276 | [Link →](#)

**Description:** Sea star with 5 arms and smooth texture. Usually purple or orange colouration. Pale tips.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Asteroidea → Order Valvatida → Family Goniasteridae

***Ceramaster granularis*** (Retzius, 1783)

WoRMS Info | Name: *Ceramaster granularis* | AphiaID: 124020 | [Link →](#)

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**Description:** Red pentagon-shaped sea star with rounded corners.

**Considered for use in analyses:** Yes



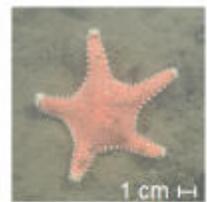
Phylum Echinodermata → Class Asteroidea → Order Valvatida → Family Goniasteridae

***Hippasteria phrygiana*** (Parelius, 1768)

WoRMS Info | Name: *Hippasteria phrygiana* | AphiaID: 124043 | [Link →](#)

**Description:** Bright red starfish with 5 arms. Prominent marginal plates and papulae make the arm edges appear to be toothed.

**Considered for use in analyses:** Yes



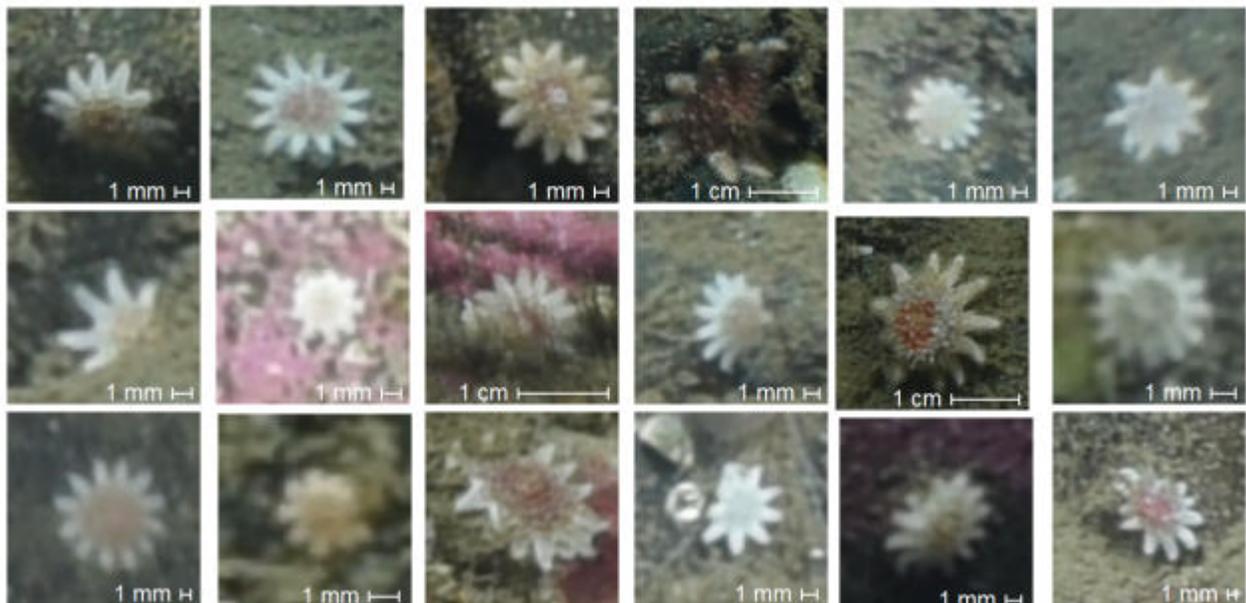
Phylum Echinodermata → Class Asteroidea → Order Valvatida → Family Solasteridae

***Crossaster papposus*** (Linnaeus, 1767)

WoRMS Info | Name: *Crossaster papposus* | AphiaID: 124154 | [Link →](#)

**Description:** Sun star with more than 10 arms. Colour variable with bands of red and white.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Asterozoa → Order Valvatida → Family Solasteridae

***Solaster endeca*** (Linnaeus, 1771)

WoRMS Info | Name: *Solaster endeca* | AphiaID: 124160 | [Link →](#)

**Description:** Sea star with around 10 arms. Smooth texture. Paler arms. Purple/orange colouration.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Asteroidea → Order Velatida → Family Pterasteridae

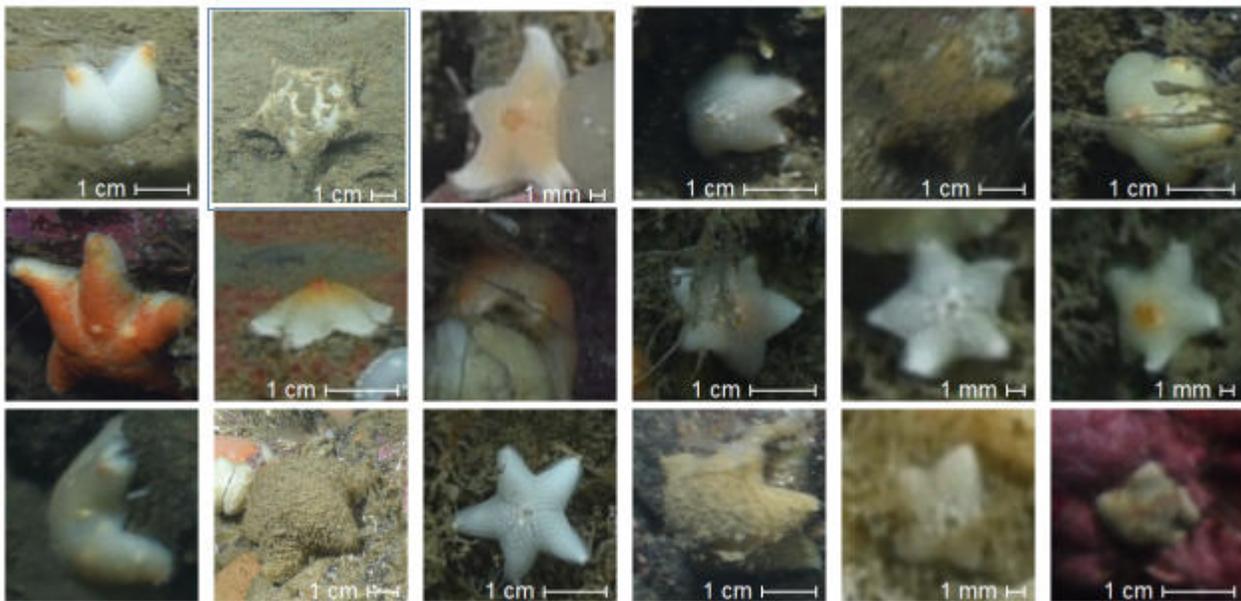
***Pteraster*** Müller & Troschel, 1842

WoRMS Info | Name: *Pteraster* | AphiaID: 123335 | [Link →](#)

**Description:** Sea star with a chunky star shape and 5 arms. Pale colouration with orange pore in centre and little points on ends of arms. Most appear to be *Pteraster militaris*.

**Potential taxa:** *Pteraster militaris*,  
*Pteraster pulvillus*, *Pteraster obscurus* (6 arms)

**Considered for use in analyses:** Yes



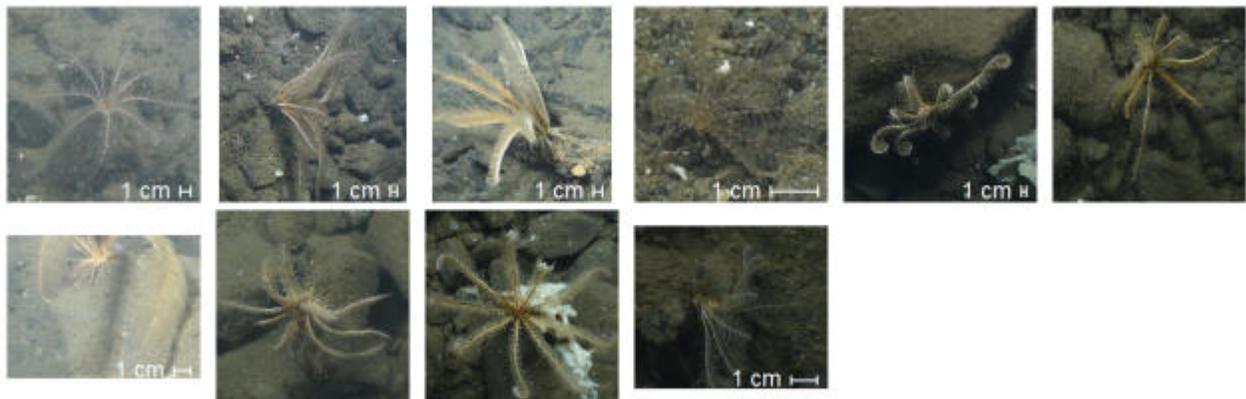
Phylum Echinodermata → Class Crinoidea → Order Comatulida → Family Antedonidae

***Heliometra glacialis*** (Owen, 1833 ex Leach MS)

WoRMS Info | Name: *Heliometra glacialis* | AphiaID: 124223 | [Link →](#)

**Description:** Yellow featherstar with 10 feather-like arms radiating from a central point. Attached to the substrate with root-like appendages called cirri.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Echinoidea → Order Camarodonta → Family Strongylocentrotidae

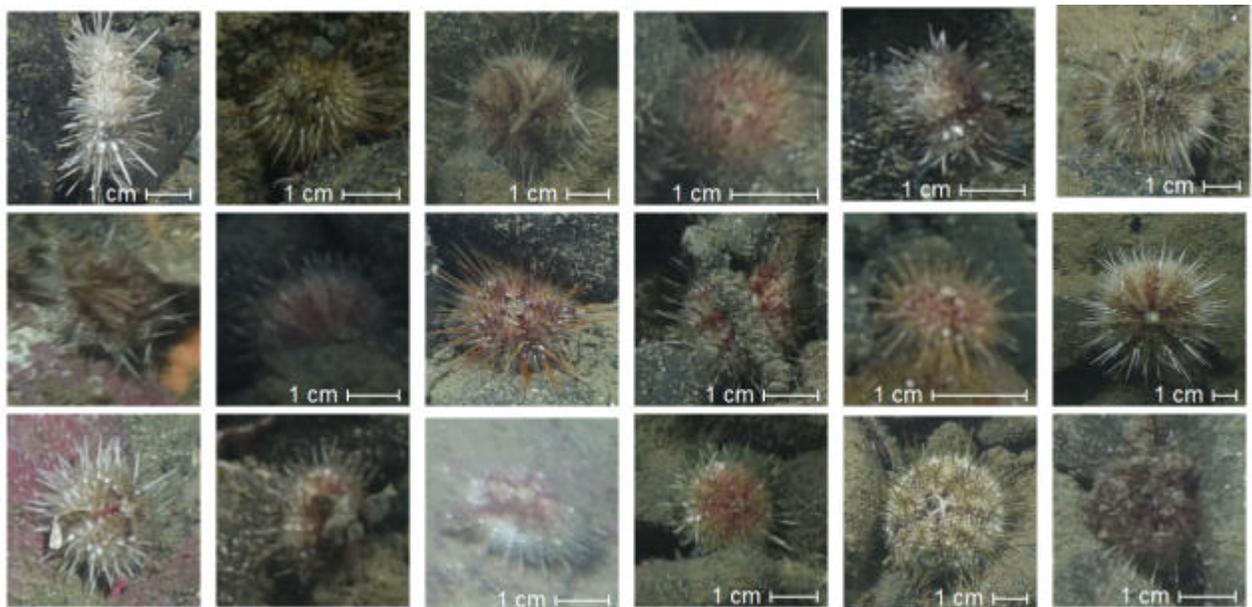
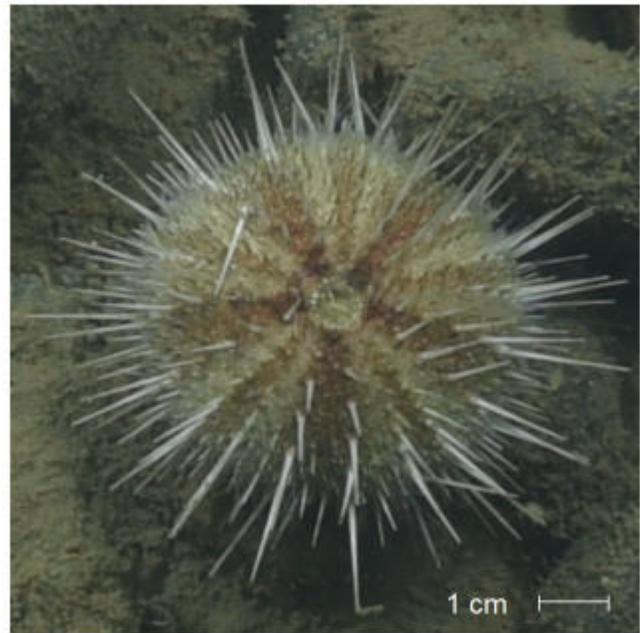
***Strongylocentrotus*** Brandt, 1835

WoRMS Info | Name: *Strongylocentrotus* | AphialID: 123390 | [Link →](#)

**Description:** Spiky spheres that are typically green/red.

**Potential taxa:** *Strongylocentrotus droebachiensis*, *Strongylocentrotus pallidus*

**Considered for use in analyses:** Yes



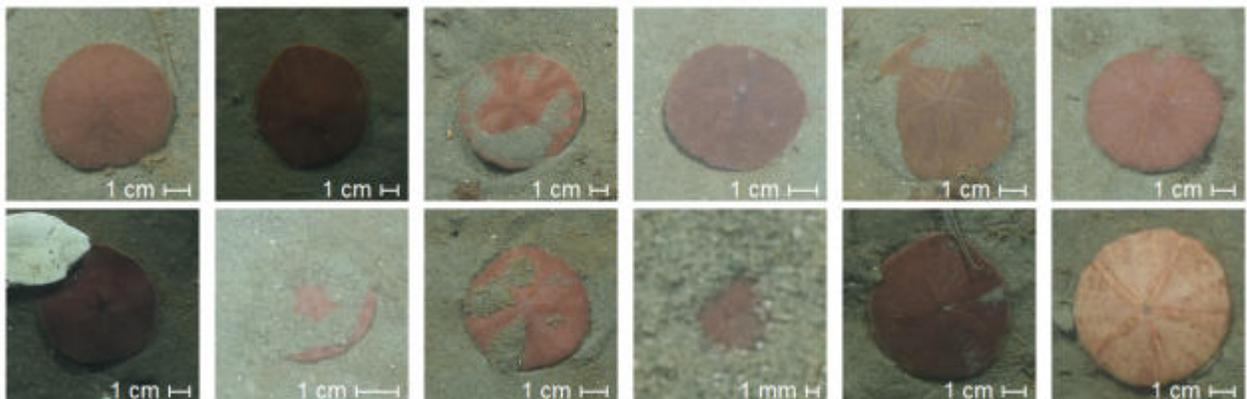
Phylum Echinodermata → Class Echinoidea → Order Echinolampadacea → Family Echinarachniidae

***Echinarachnius parma*** (Lamarck, 1816)

WoRMS Info | Name: *Echinarachnius parma* | AphiaID: 158062 | [Link →](#)

**Description:** Sand dollars. Flat pink/brown circular discs with a star pattern in the centre. Sometimes covered by sediment.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Holothuroidea → Order Dendrochirotida → Family Psolidae

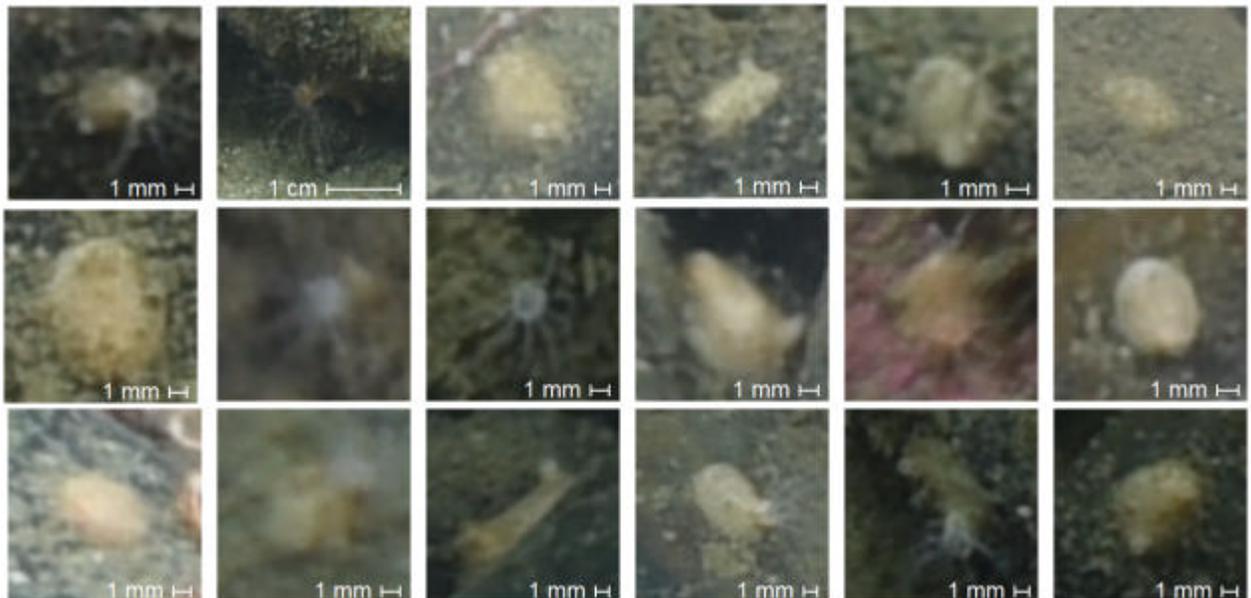
***Psolus*** Oken, 1815

WoRMS Info | Name: *Psolus* | AphiaID: 146121 | [Link →](#)

**Description:** Beige sea cucumber that attaches to hard substrate (cobble, boulder, bedrock). Branched tentacles extend from around the mouth at one end, but can be retracted in which case this looks like a white oval with a bump where the tail and retracted tentacles are.

**Potential taxa:** *Psolus phantapus*, *Psolus fabricii*

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Holothuroidea

**Holothuroidea** de Blainville, 1834

WoRMS Info | Name: Holothuroidea | AphiaID: 123083 | [Link →](#)

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**Description:** Cylindrical orange/brown bumpy organism.

**Potential taxa:** *Ekmania barthii*,  
*Cucumaria frondosa*

**Considered for use in analyses:** Yes



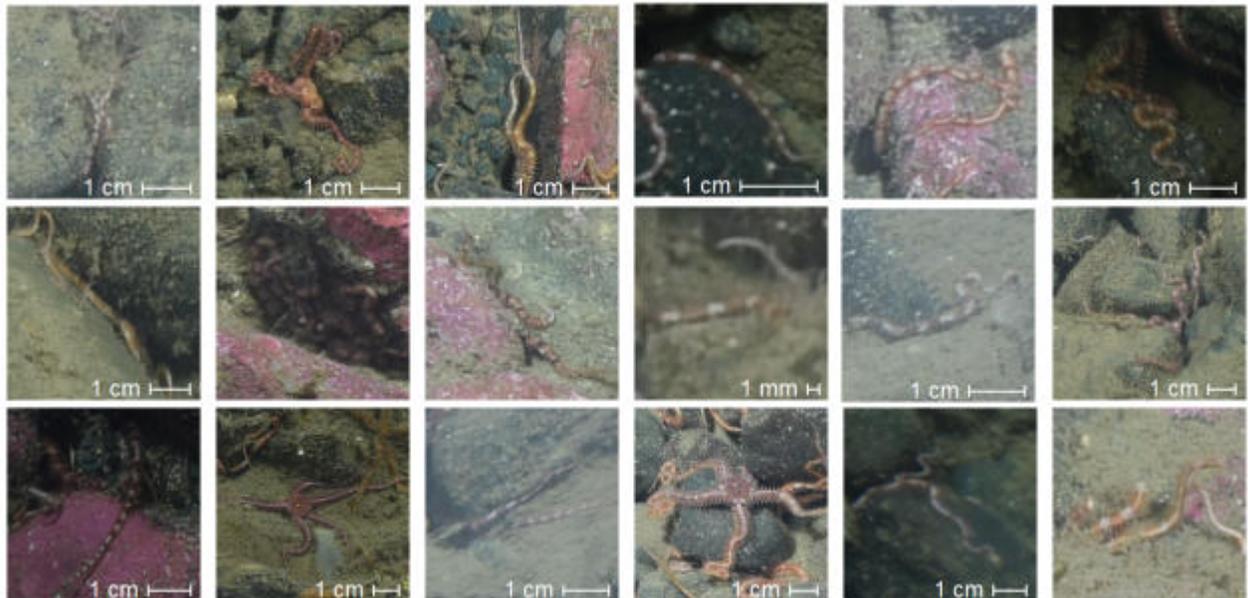
Phylum Echinodermata → Class Ophiuroidea → Order Amphilepidida → Family Ophiopholidae

***Ophiopholis aculeata*** (Linnaeus, 1767)

WoRMS Info | Name: *Ophiopholis aculeata* | AphialID: 125125 | [Link →](#)

**Description:** 5 arms. Striped. Vivid colours.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Ophiuroidea → Order Euryalida → Family Gorgonocephalidae

***Gorgonocephalus*** Leach, 1815

WoRMS Info | Name: *Gorgonocephalus* | AphiaID: 123586 | [Link →](#)

**Description:** White–pink curling arms around a central disk. All individuals observed were juveniles curled around *Gersemia rubiformis*.

**Considered for use in analyses:** Yes



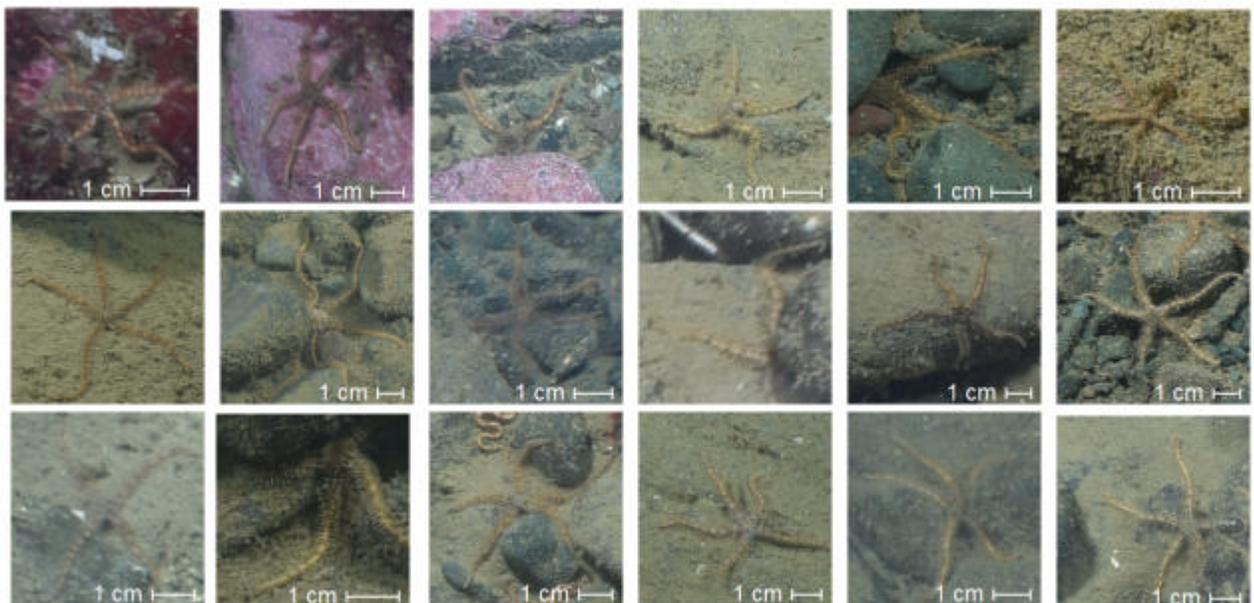
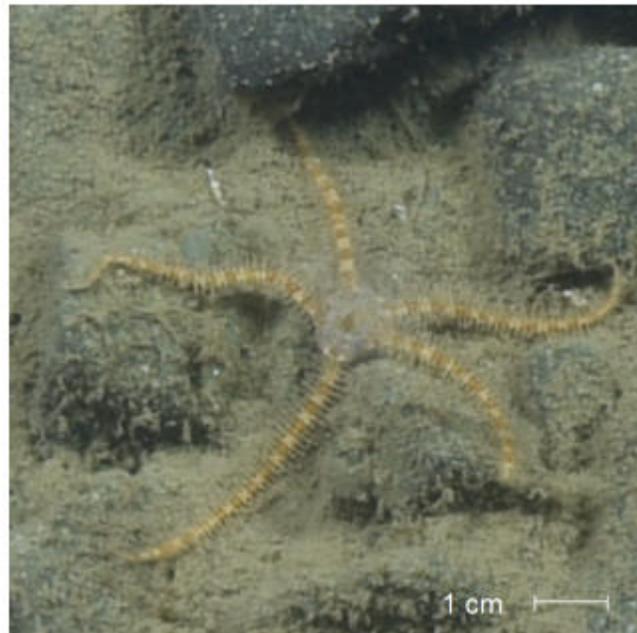
Phylum Echinodermata → Class Ophiuroidea → Order Ophiacanthida → Family Ophiacanthidae

***Ophiacantha bidentata*** (Bruzellius, 1805)

WoRMS Info | Name: *Ophiacantha bidentata* | AphiaID: 124978 | [Link →](#)

**Description:** 5 ridged arms with fuzzy appearance. Typically orange/brown colouration and striped.

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Ophiuroidea

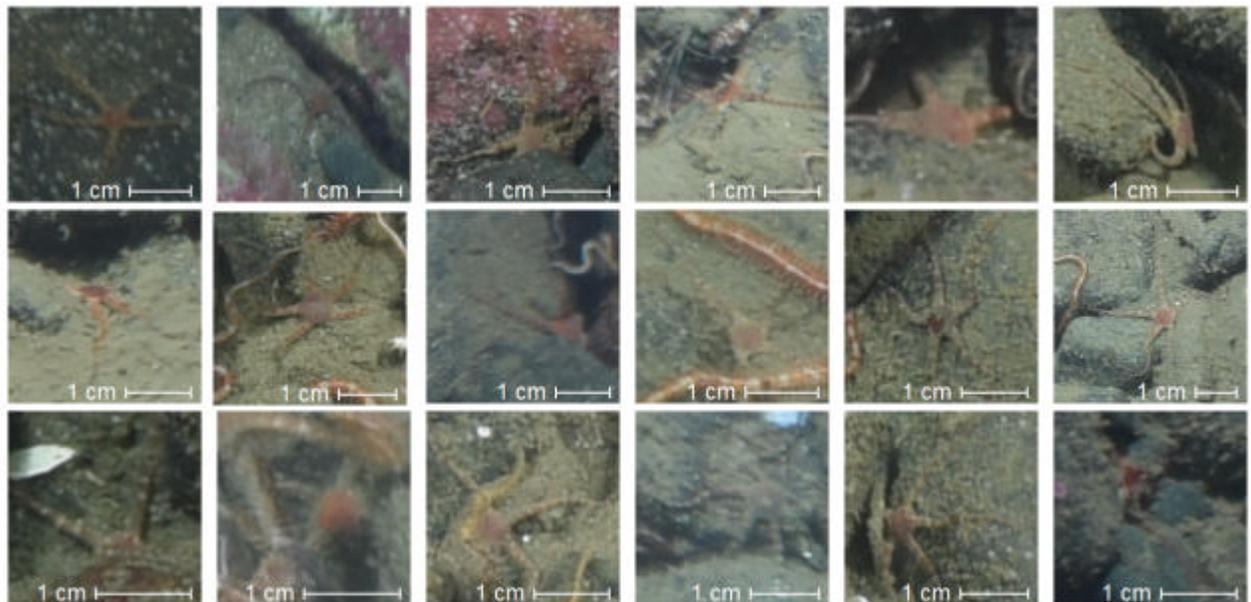
**Ophiuroidea var 1** Gray, 1840

WoRMS Info | Name: Ophiuroidea | AphiaID: 123084 | [Link →](#)

**Description:** 5 arms. Very flat, striped, and has characteristic red colouration.

**Potential taxa:** *Ophiocten*

**Considered for use in analyses:** Yes



Phylum Echinodermata → Class Ophiuroidea

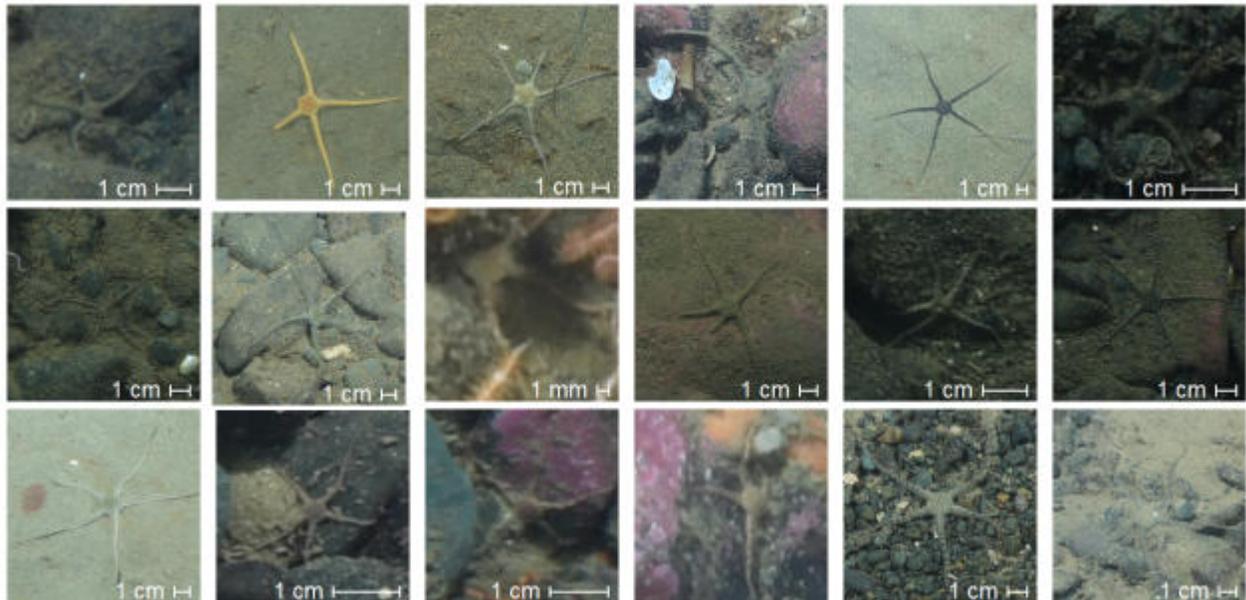
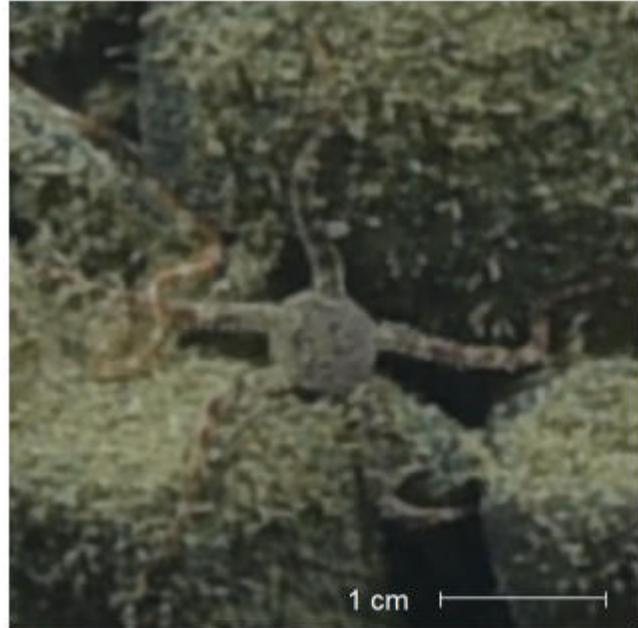
## Ophiuroidea var 2 Gray, 1840

WoRMS Info | Name: Ophiuroidea | AphiaID: 123084 | [Link →](#)

**Description:** 5 arms. Very flat, grey/black in colour. Some are striped.

**Potential taxa:** *Ophiura sarsii*, *Ophiura robusta*

**Considered for use in analyses:** Yes



### 3.13 CHORDATA

Number of OTU in phylum: 29

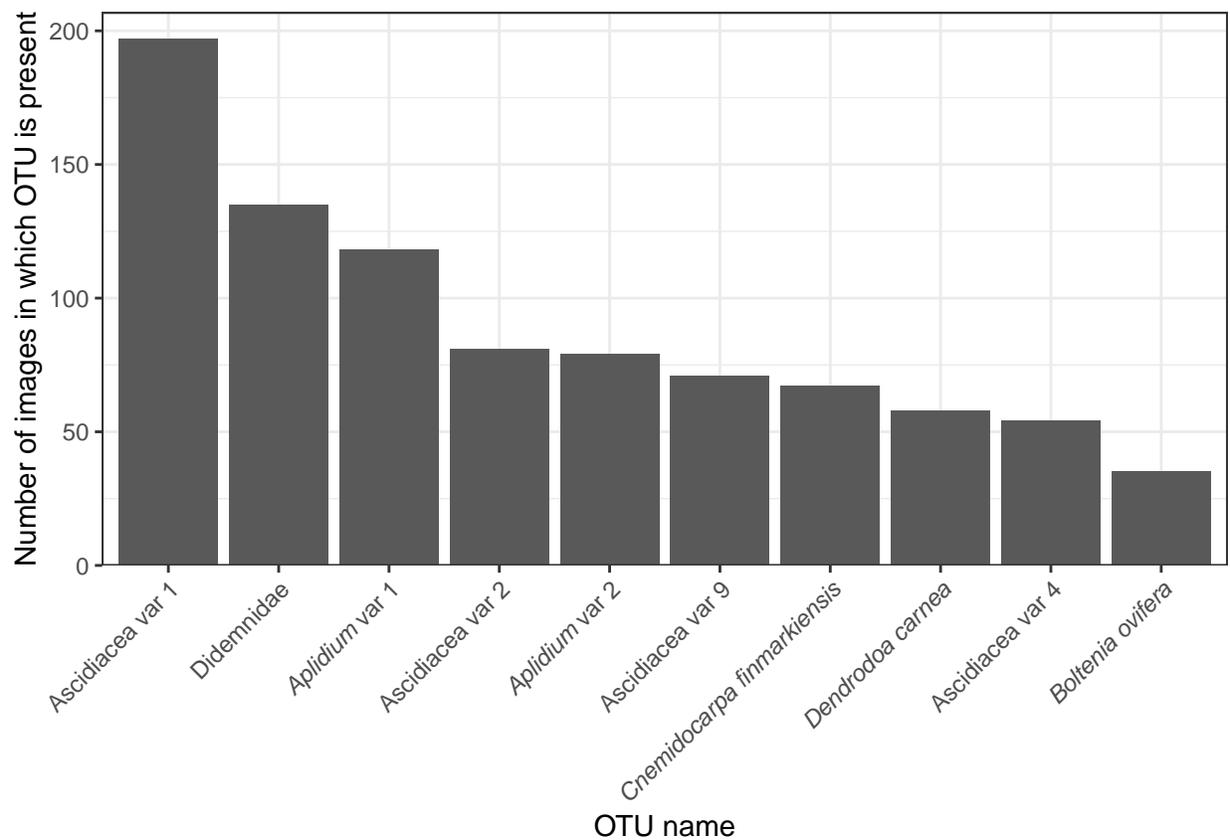


Figure 16: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Chordata out of a total of 672 images.

Phylum Chordata → Class Ascidiacea → Order Aplousobranchia → Family Didemnidae

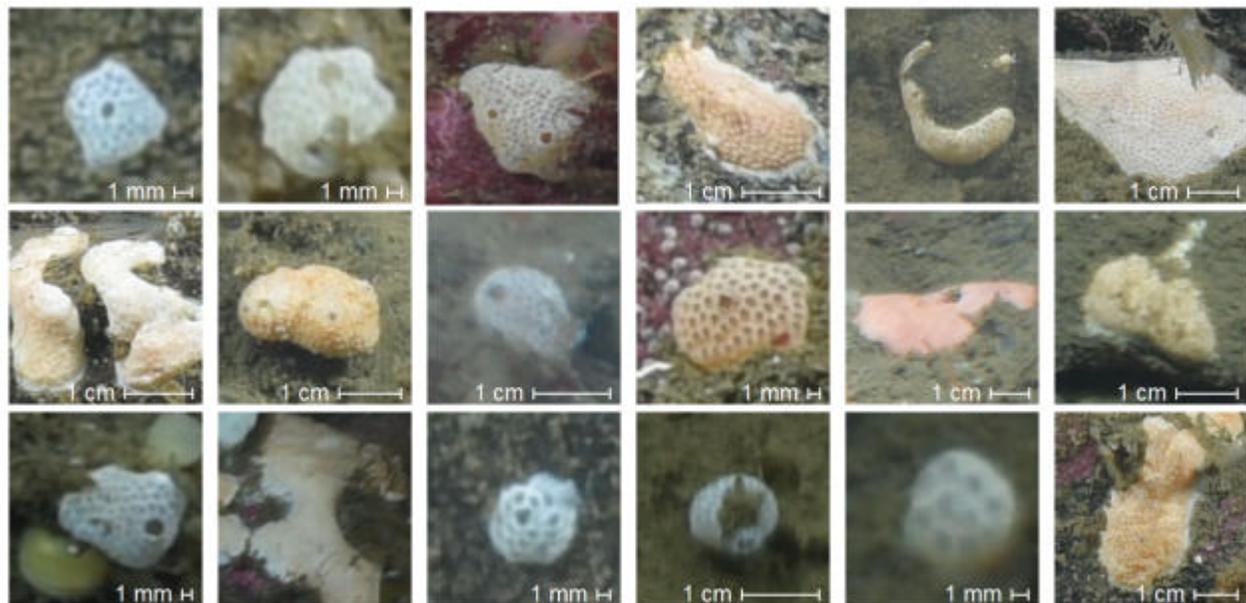
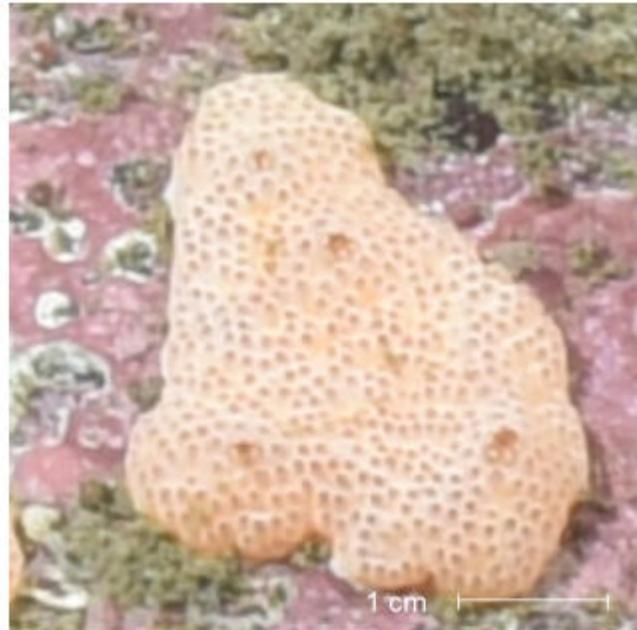
**Didemnidae** Giard, 1872

WoRMS Info | Name: Didemnidae | AphiaID: 103439 | [Link →](#)

**Description:** White/pink/orange/yellow colonial tunicate that is very porous. Sometimes has white film around periphery.

**Potential taxa:** *Didemnum albidum*

**Considered for use in analyses:** Yes



Phylum Chordata → Class Ascidiacea → Order Aplousobranchia → Family Polyclinidae

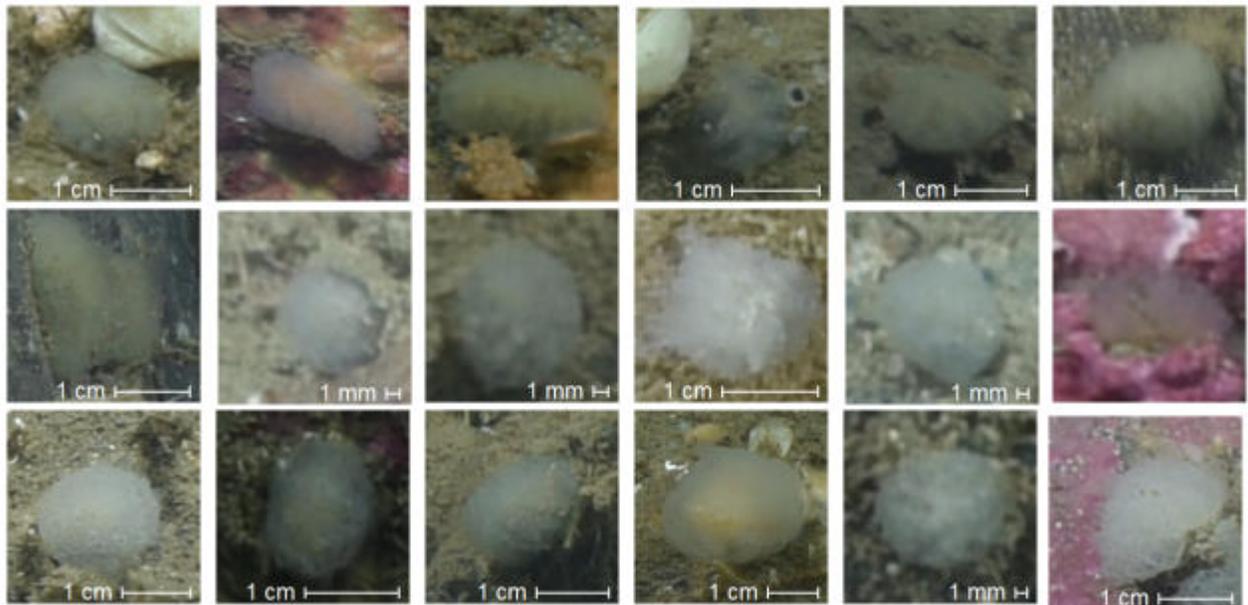
***Aplidium* var 1** Savigny, 1816

WoRMS Info | Name: *Aplidium* | AphiaID: 103471 | [Link →](#)

**Description:** White/yellow/green translucent gelatinous ascidian with rows of zooids giving it a hazy appearance around the periphery.

**Potential taxa:** *Aplidium glabrum*, *Aplidium pallidum*

**Considered for use in analyses:** Yes



Phylum Chordata → Class Ascidiacea → Order Aplousobranchia → Family Polyclinidae

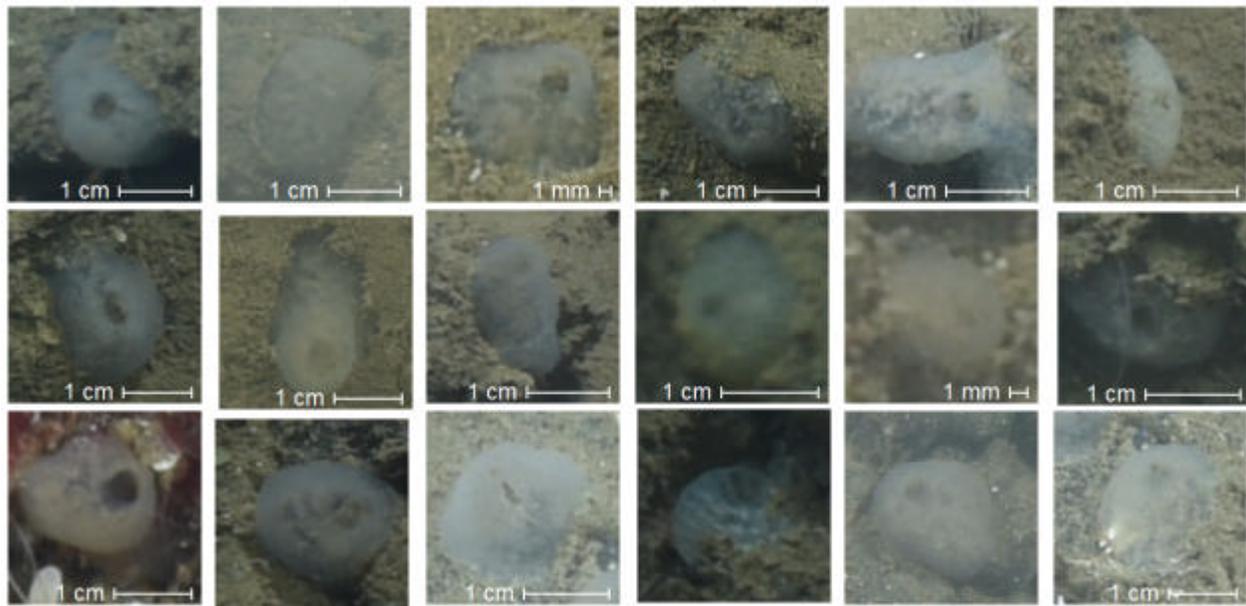
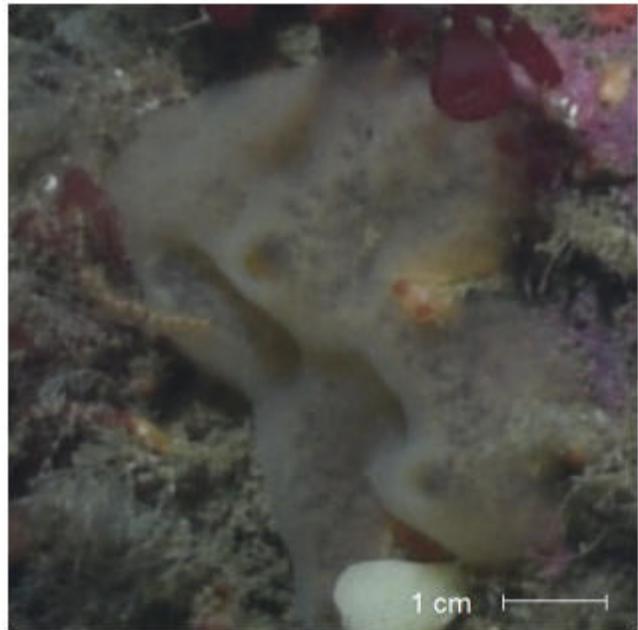
***Aplidium* var 2** Savigny, 1816

WoRMS Info | Name: *Aplidium* | AphiaID: 103471 | [Link →](#)

**Description:** Gelatinous textured globules typically with visible pore(s). Light grey/beige/orange–brown with mottled appearance.

**Potential taxa:** *Aplidium glabrum*,  
*Aplidium pallidum*

**Considered for use in analyses:** Yes



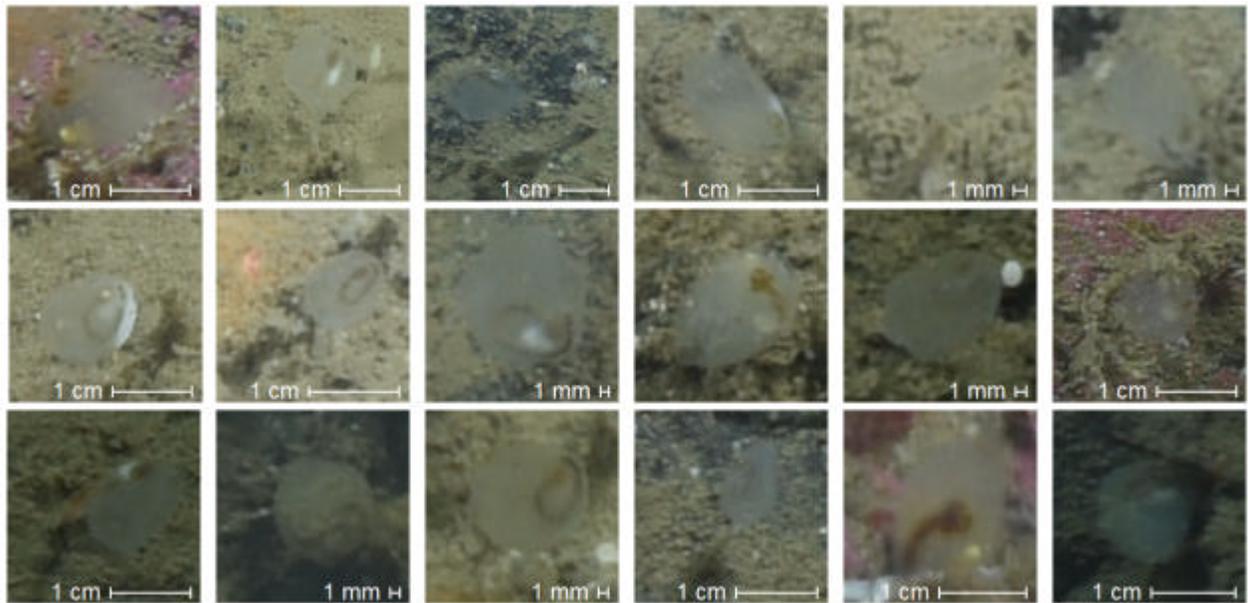
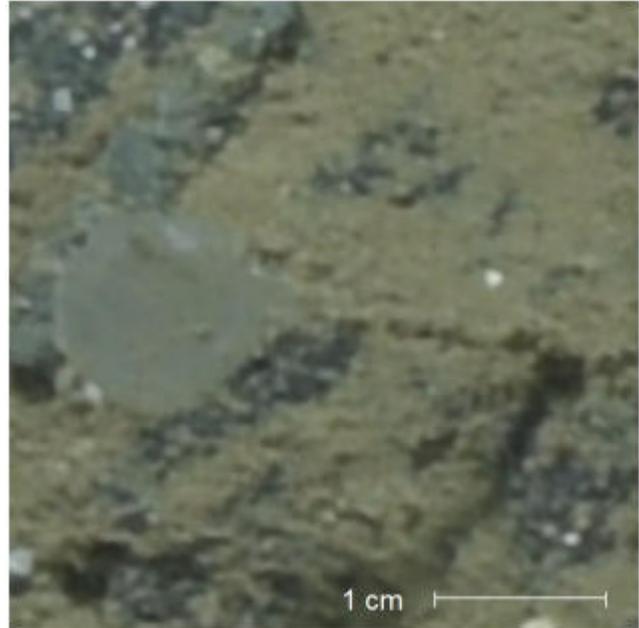
Phylum Chordata → Class Ascidiacea → Order Stolidobranchia → Family Molgulidae

***Molgula griffithsii*** (MacLeay, 1825)

WoRMS Info | Name: *Molgula griffithsii* | AphiaID: 250885 | [Link →](#)

**Description:** Appears like a smaller, more translucent version of *Boltenia ovifera*. Siphons not visible, but digestive system inside is visible.

**Considered for use in analyses:** Yes



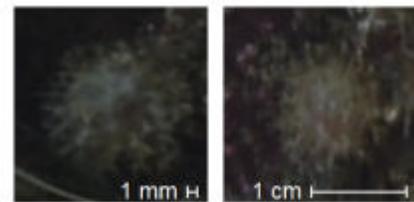
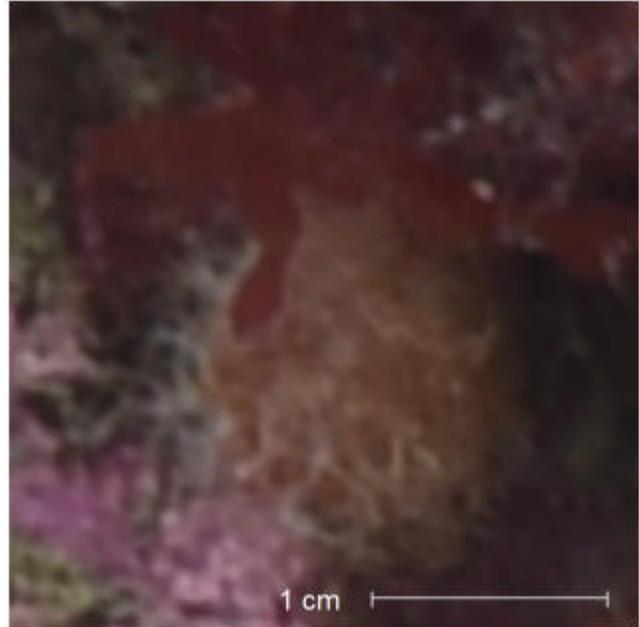
Phylum Chordata → Class Ascidiacea → Order Stolidobranchia → Family Pyuridae

***Boltenia echinata*** (Linnaeus, 1767)

WoRMS Info | Name: *Boltenia echinata* | AphiaID: 103814 | [Link →](#)

**Description:** Light-coloured spheres that are covered in cactus-like spikes.

**Considered for use in analyses:** Yes



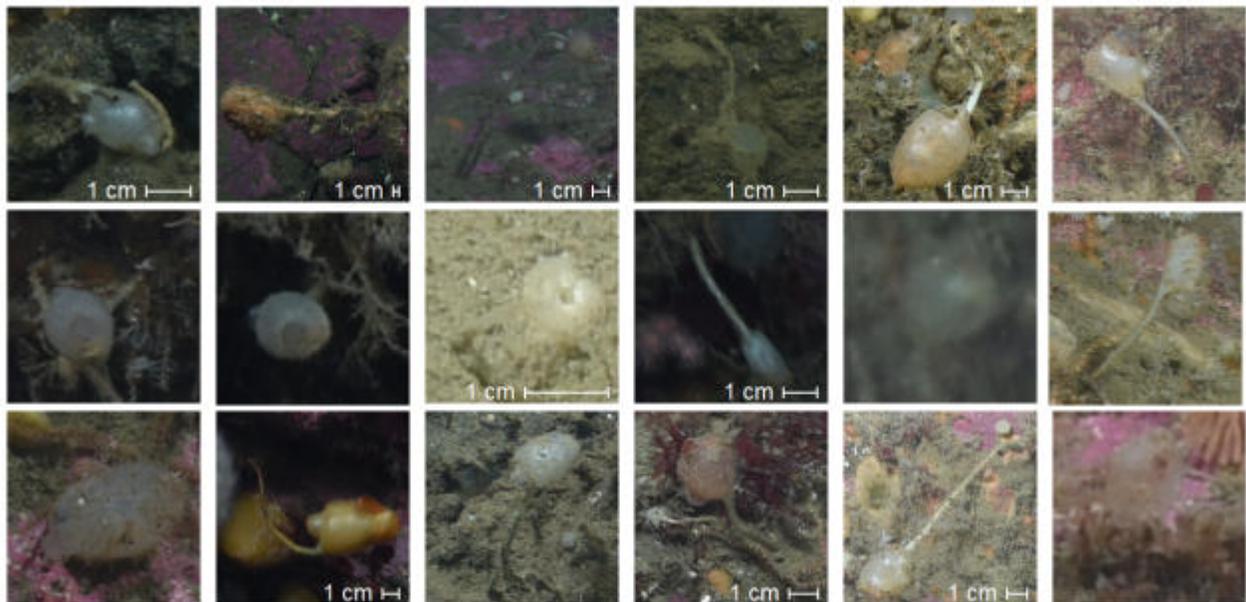
Phylum Chordata → Class Ascidiacea → Order Stolidobranchia → Family Pyuridae

***Boltenia ovifera*** (Linnaeus, 1767)

WoRMS Info | Name: *Boltenia ovifera* | AphiaID: 103815 | [Link →](#)

**Description:** Shiny peach or orange body attached to the substrate by a long stalk.

**Considered for use in analyses:** Yes



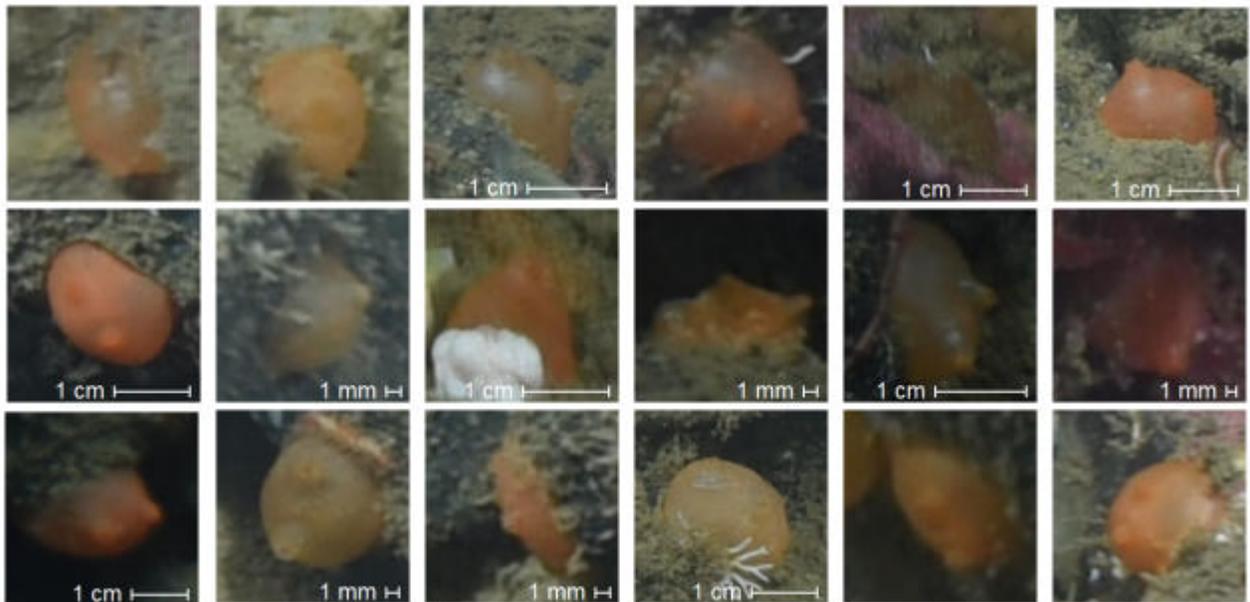
Phylum Chordata → Class Ascidiacea → Order Stolidobranchia → Family Styelidae

***Cnemidocarpa finmarkiensis*** (Kiaer, 1893)

WoRMS Info | Name: *Cnemidocarpa finmarkiensis* | AphiaID: 103870 | [Link →](#)

**Description:** Round, orange/red smooth and sometimes glossy-looking solitary tunicate with two siphons usually attached to hard substrate.

**Considered for use in analyses:** Yes



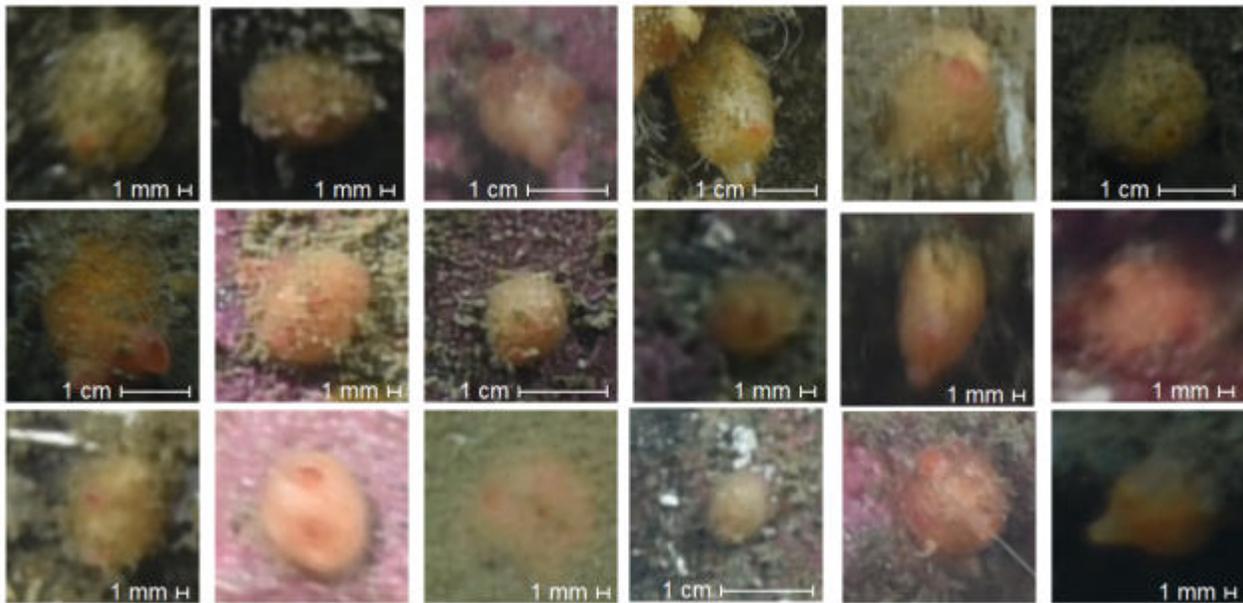
Phylum Chordata → Class Ascidiacea → Order Stolidobranchia → Family Styelidae

***Dendrodoa carnea*** (Agassiz, 1850)

WoRMS Info | Name: *Dendrodoa carnea* | AphiaID: 103881 | [Link →](#)

**Description:** Small yellow/orange/red solitary tunicate that may occur in groups. Much smaller than *Cnemidocarpa finmarkiensis*.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Ascidiacea

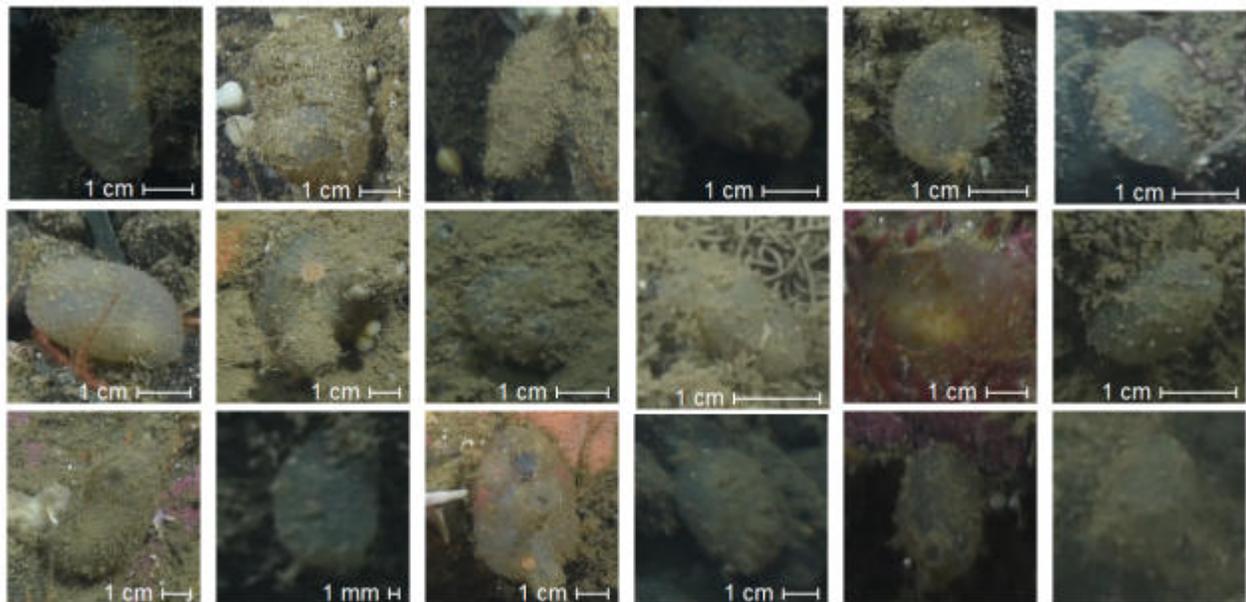
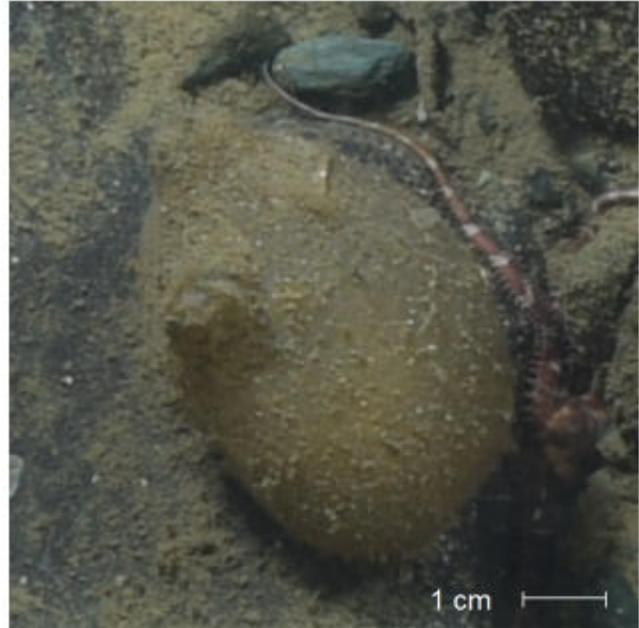
**Ascidiacea var 1** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Gelatinous blob often covered by detritus giving it a fuzzy appearance. Two siphons often visible. Can be pale/yellow/orange.

**Potential taxa:** *Ascidia callosa*

**Considered for use in analyses:** Yes



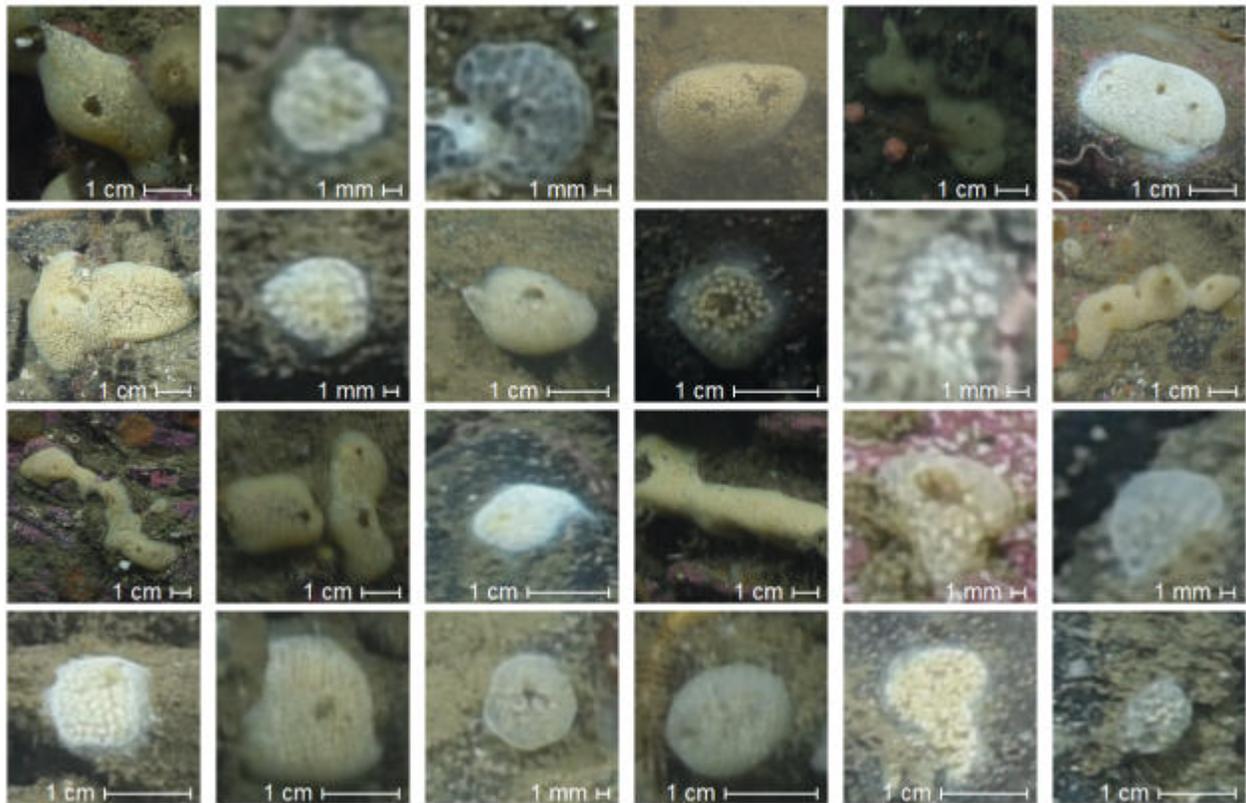
Phylum Chordata → Class Ascidiacea

**Ascidiacea var 2** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Lumpy white/beige colonial ascidian with mottled pattern and rough/rugged-edged pores.

**Considered for use in analyses:** Yes



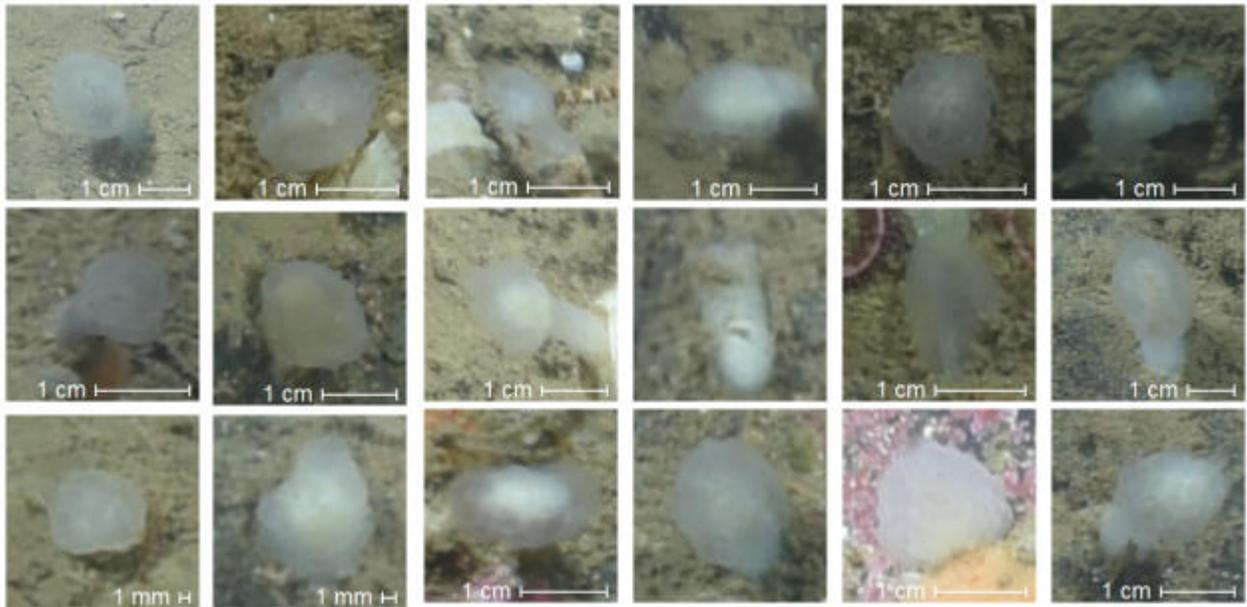
Phylum Chordata → Class Ascidiacea

**Ascidiacea var 4** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Translucent pale grey/white slightly mushroom-shaped organism.

**Considered for use in analyses:** Yes



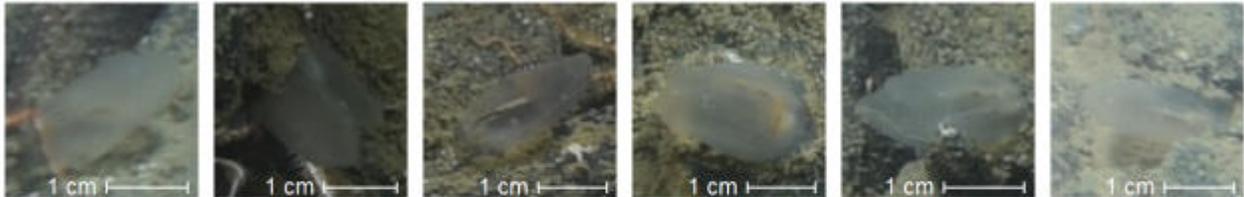
Phylum Chordata → Class Ascidiacea

**Ascidiacea var 5** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Translucent long vase-like with digestive system visible.

**Considered for use in analyses:** Yes



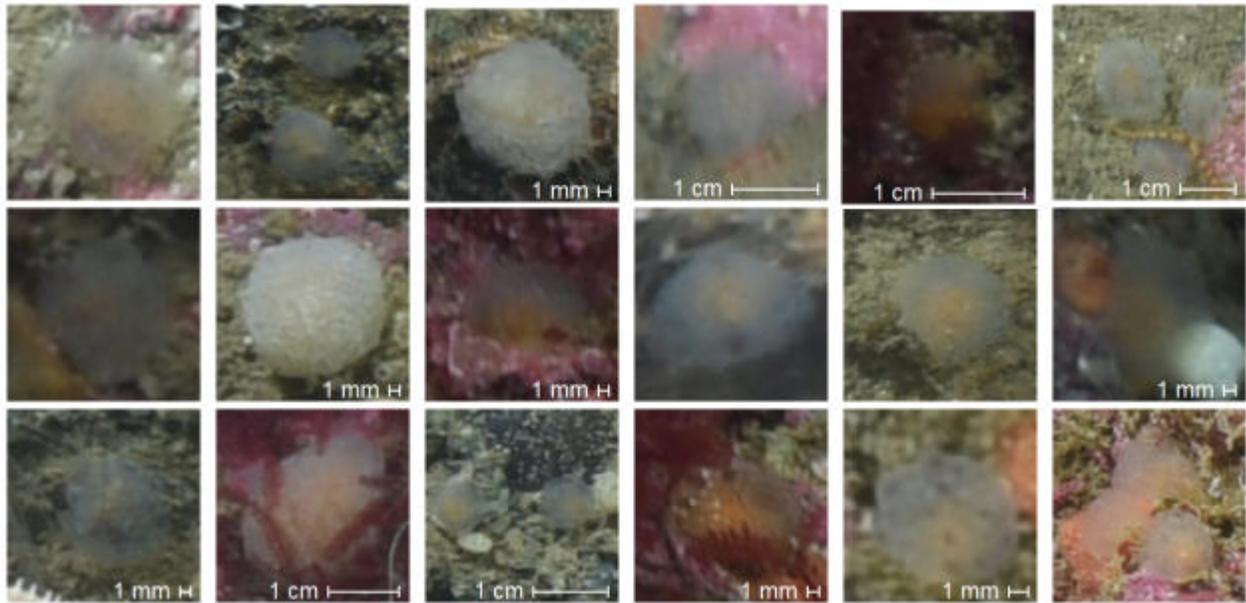
Phylum Chordata → Class Ascidiacea

**Ascidiacea var 6** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Translucent blobs with an orange centre.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Ascidiacea

**Ascidiacea var 7** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Rounded orange ascidian with a hazy appearance.

**Considered for use in analyses:** Yes



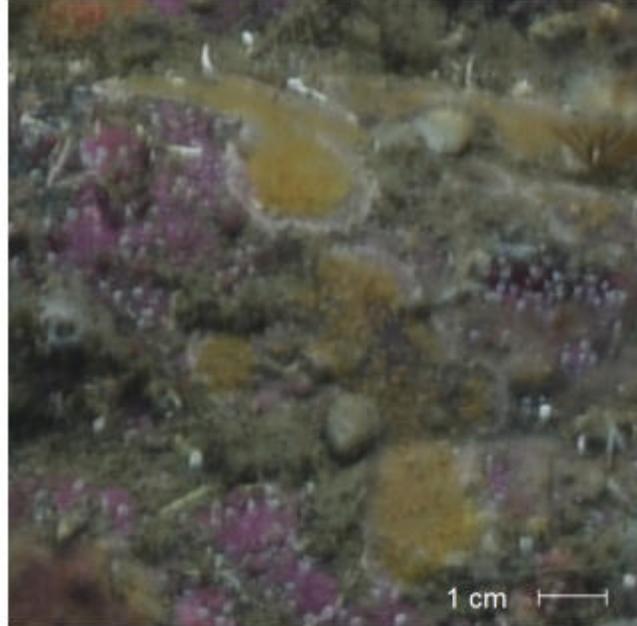
Phylum Chordata → Class Ascidiacea

**Ascidiacea var 8** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Orange–yellow thin encrusting mating with a pale rim.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Ascidiacea

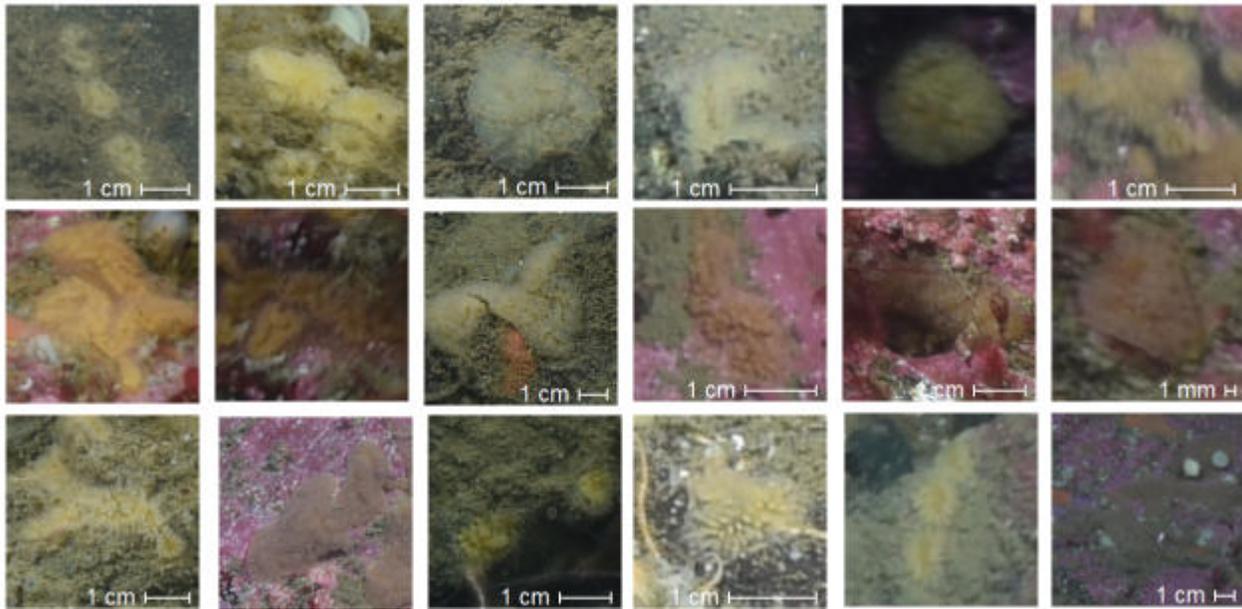
**Ascidiacea var 9** Blainville, 1824

WoRMS Info | Name: Ascidiacea | AphiaID: 1839 | [Link →](#)

**Description:** Yellow/orange encrusting colonial ascidian with rows of zooids.

**Potential taxa:** *Botrylloides*

**Considered for use in analyses:** Yes



Phylum Chordata → Class Elasmobranchii → Order Rajiformes → Family Rajidae

***Malacoraja senta*** (Garman, 1885)

WoRMS Info | Name: *Malacoraja senta* | AphiaID: 158554 | [Link →](#)

---

**Description:** Smooth skate; one seen only has tail visible. Beige tail with darker spots and little fin at the tip of the tail.

**Considered for use in analyses:** Yes



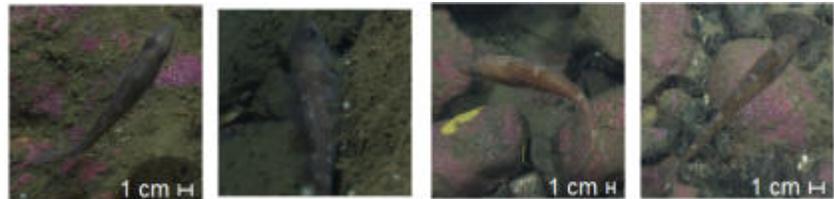
Phylum Chordata → Class Teleostei → Order Gadiformes → Family Gadidae

***Gadus morhua*** Linnaeus, 1758

WoRMS Info | Name: *Gadus morhua* | AphiaID: 126436 | [Link →](#)

**Description:** Smooth-looking, has three dorsal fins. Has spots and light striping/mottling pattern.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Gadiformes → Family Phycidae

***Urophycis*** Gill, 1863

WoRMS Info | Name: *Urophycis* | AphiaID: 125774 | [Link →](#)

---

**Description:** Mottled brown–beige–white smooth fish with characteristic white, long, narrow, feeler–like ventral fins.

**Potential taxa:** *Urophycis chuss*,  
*Urophycis tenuis*

**Considered for use in analyses:** Yes



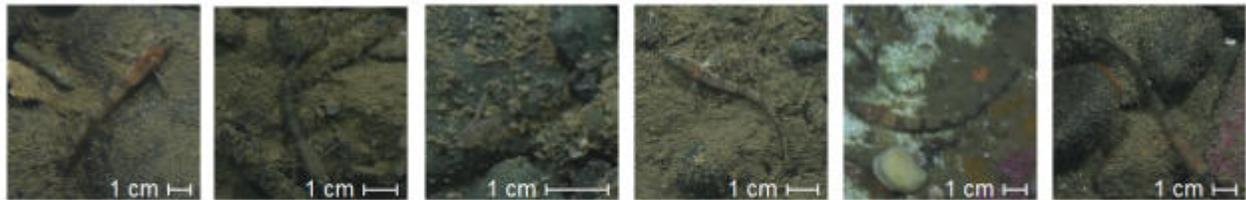
Phylum Chordata → Class Teleostei → Order Perciformes → Family Agonidae

***Aspidophoroides monopterygius*** (Bloch, 1786)

WoRMS Info | Name: *Aspidophoroides monopterygius* | AphiaID: 159459 | [Link →](#)

**Description:** Sculpin with brown/beige stripes.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Perciformes → Family Cottidae

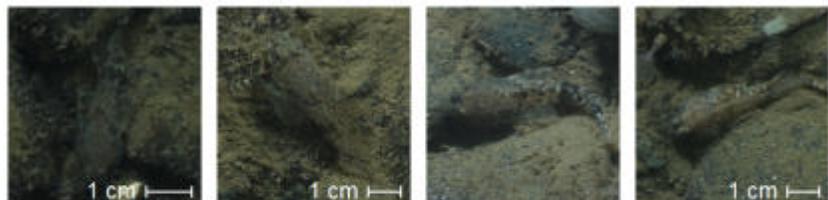
***Artediellus*** Jordan, 1885

WoRMS Info | Name: *Artediellus* | AphiaID: 126147 | [Link →](#)

**Description:** Long, thin fish with two fins below head. Pale head. Light brown and dark brown transverse stripes along body.

**Potential taxa:** *Artediellus atlanticus*,  
*Artediellus uncinatus*

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Perciformes → Family Cottidae

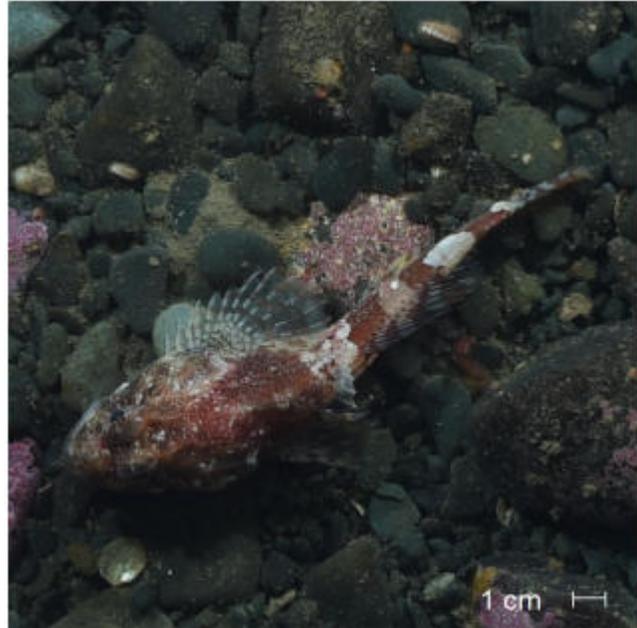
**Cottidae** Bonaparte, 1831

WoRMS Info | Name: Cottidae | AphiaID: 125589 | [Link →](#)

**Description:** Striped sculpin with pink and brown colouration. Majority seem to be *Myoxocephalus*.

**Potential taxa:** *Myoxocephalus*, *Icelus*

**Considered for use in analyses:** Yes



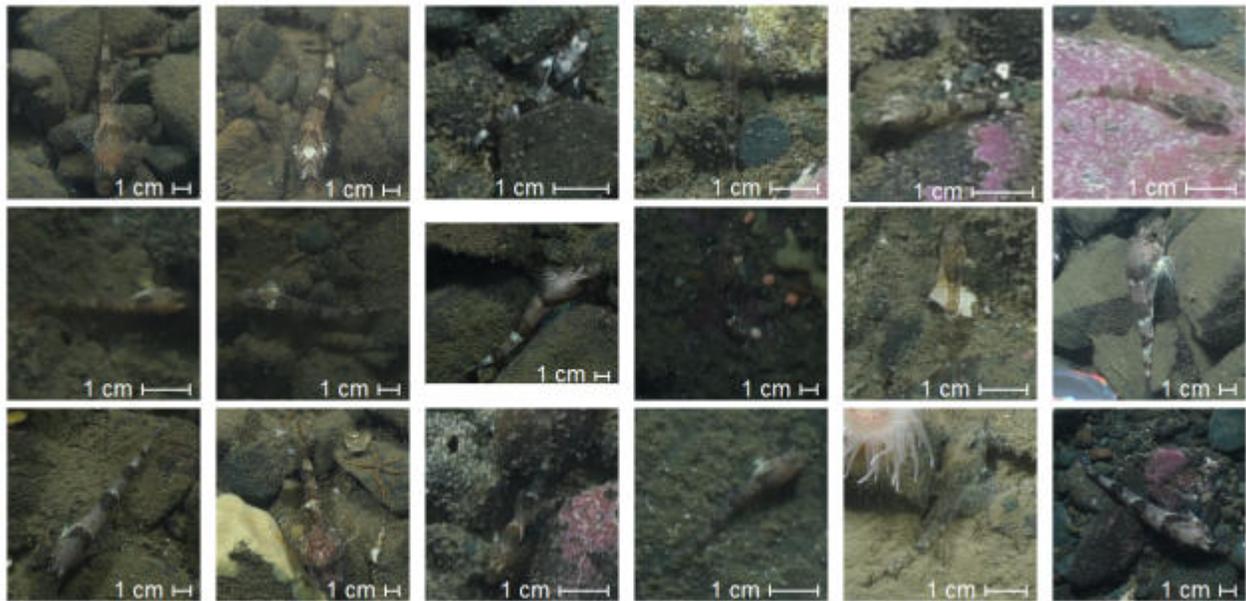
Phylum Chordata → Class Teleostei → Order Perciformes → Family Cottidae

***Triglops murrayi*** Günther, 1888

WoRMS Info | Name: *Triglops murrayi* | AphiaID: 127205 | [Link →](#)

**Description:** Similar to *Aspidophoroides monopterygius* but less long and thin. Light brown and dark brown transverse stripes along body. Two striped fins below head. Pale head.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Perciformes → Family Hemitripterae

***Hemitripterus americanus*** (Gmelin, 1789)

WoRMS Info | Name: *Hemitripterus americanus* | AphiaID: 159518 | [Link →](#)

---

**Description:** Mottled with many spines and ornament-like protrusions all over the body.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Perciformes → Family Liparidae

***Careproctus reinhardti*** (Krøyer, 1862)

WoRMS Info | Name: *Careproctus reinhardti* | AphiaID: 127212 | [Link →](#)

---

**Description:** Small, grey, tadpole-shaped, smooth-looking fish with two light-grey round eyes.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Perciformes → Family Liparidae

***Liparis*** Scopoli, 1777

WoRMS Info | Name: *Liparis* | AphiaID: 126160 | [Link →](#)

---

**Description:** Small light brown fish with white stripes.

**Potential taxa:** *Liparis bathyarcticus*

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Perciformes → Family Zoarcidae

***Gymnelus viridis*** (Fabricius, 1780)

WoRMS Info | Name: *Gymnelus viridis* | AphiaID: 127096 | [Link →](#)

**Description:** Very thin and long snake-like dark brown fish with fins below head. One light white stripe like a collar around head above fins.

**Considered for use in analyses:** Yes



Phylum Chordata → Class Teleostei → Order Pleuronectiformes → Family Pleuronectidae → Subfamily Pleuronectinae

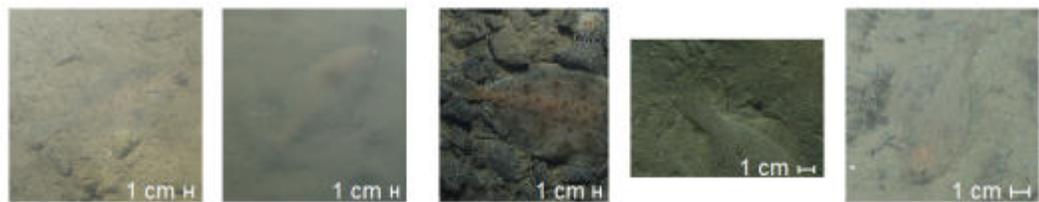
**Pleuronectinae** Rafinesque, 1815

WoRMS Info | Name: Pleuronectinae | AphiaID: 154687 | [Link →](#)

**Description:** Flat fishes. Found on top or burrowed in sediment. Both eyes are found on one side of their head facing up.

**Potential taxa:** *Pseudopleuronectes americanus*, *Glyptocephalus cynoglossus*

**Considered for use in analyses:** Yes



Phylum Chordata → Gigaclass Actinopterygii

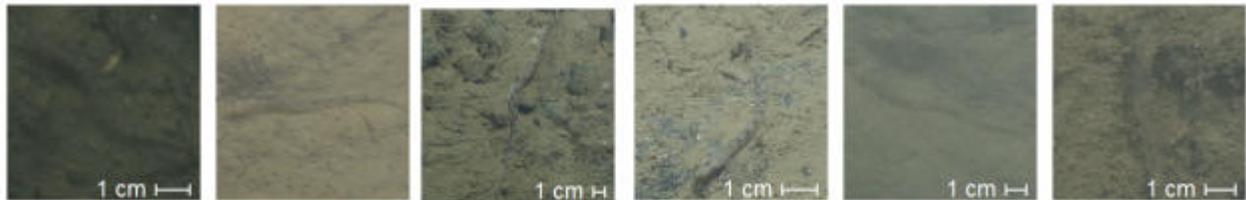
## Actinopterygii var 1

WoRMS Info | Name: Actinopterygii | AphiaID: 10194 | [Link →](#)

**Description:** Very thin and long snake-like striped brown/beige fish with paddle-like fins below head. More smooth than scaly look.

**Potential taxa:** *Lumpenus lampretaeformis*, *Leptoclinus masculatus*, *Lyenchelys verrillii*

**Considered for use in analyses:** Yes



### 3.14 UNIDENTIFIED AND OTHERS

Number of OTU in phylum: 15

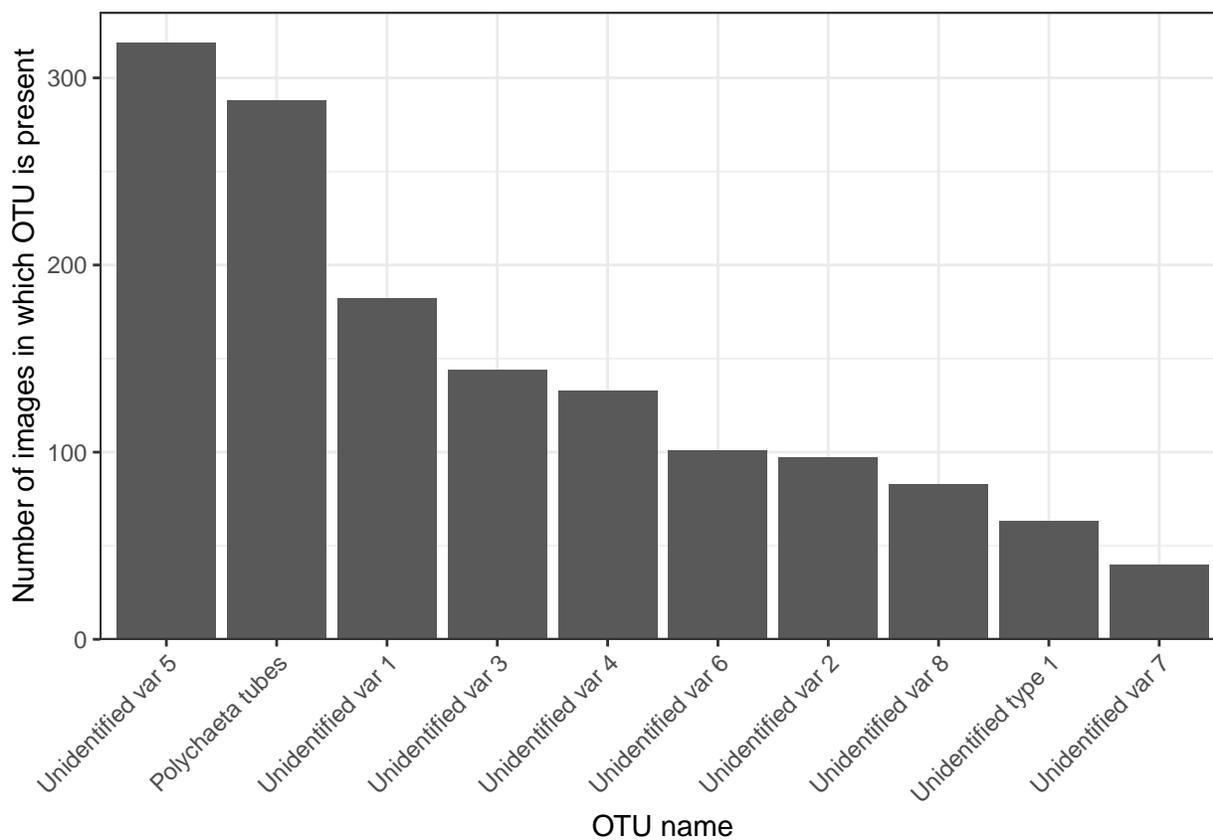


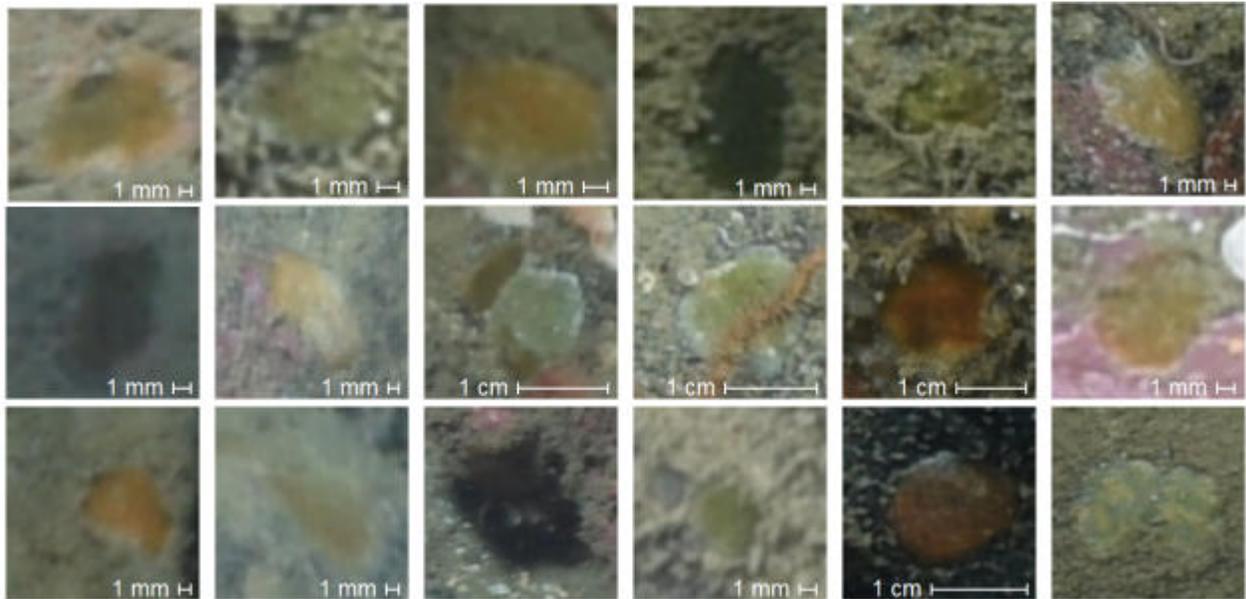
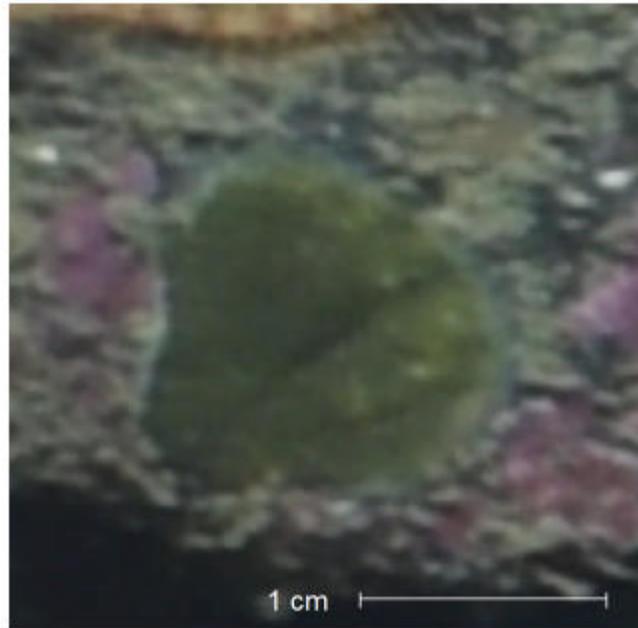
Figure 17: Number of images in which each of the top ten most frequently observed Operational Taxonomic Units (OTUs) are present for the phylum Unidentified and others out of a total of 672 images.

## Unidentified var 1

**Description:** Green/orange/yellow smooth small crust.

**Considered for use in analyses:** No

**Reasoning:** Unclear if biotic.

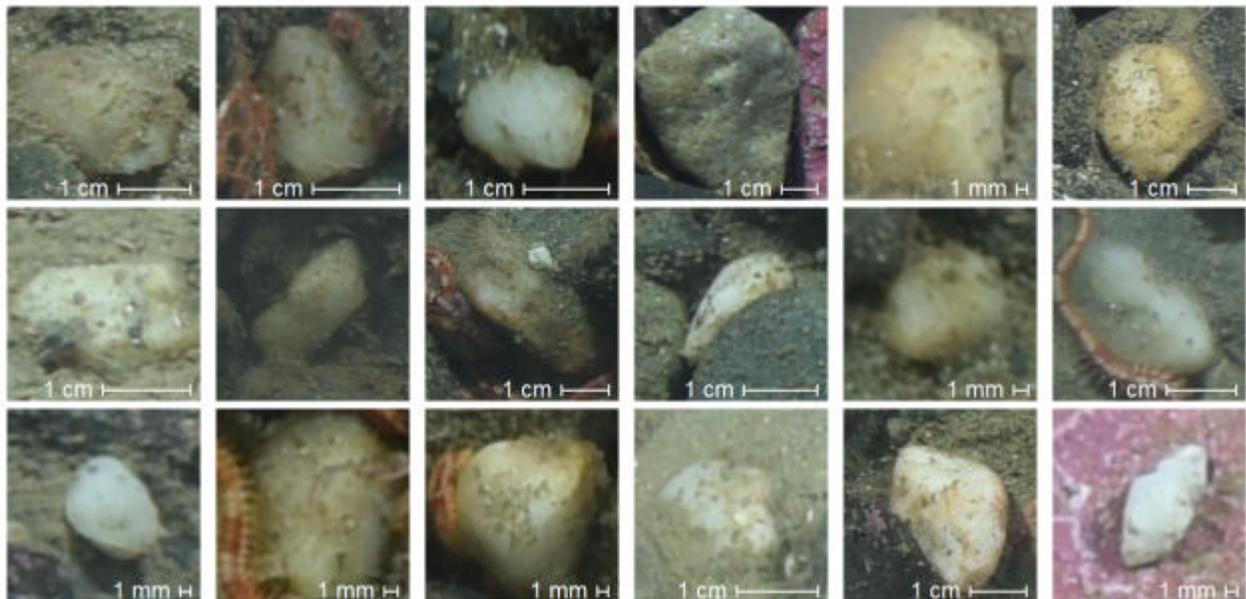


## Unidentified var 2

**Description:** Smooth white rock crust.

**Considered for use in analyses:** No

**Reasoning:** Unclear if biotic.

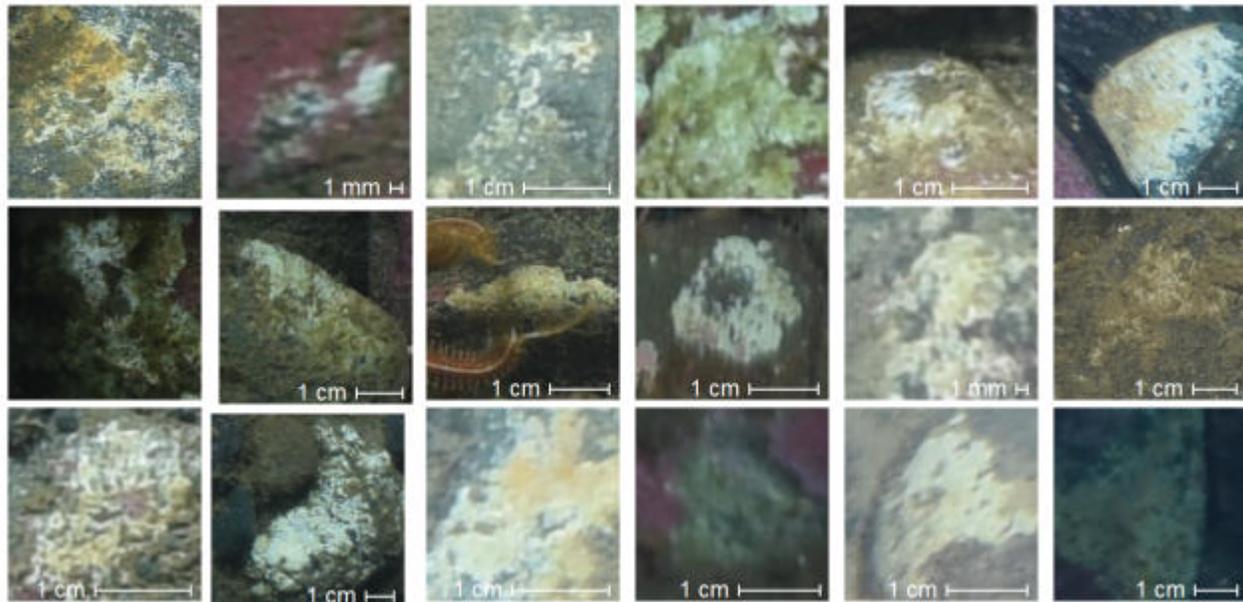


### Unidentified var 3

**Description:** White/yellow porous crust.  
Probably dead coralline algae.

**Considered for use in analyses:** No

**Reasoning:** Unclear if biotic.

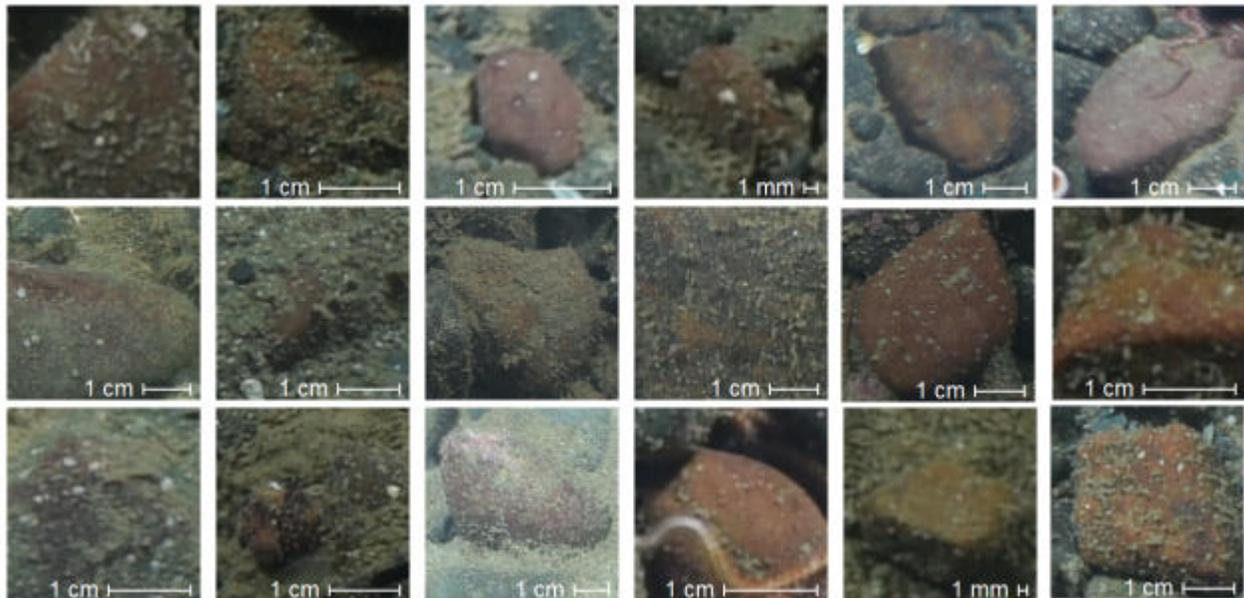


## Unidentified var 4

**Description:** Red/wine rock crust.

**Considered for use in analyses:** No

**Reasoning:** Unclear if biotic.

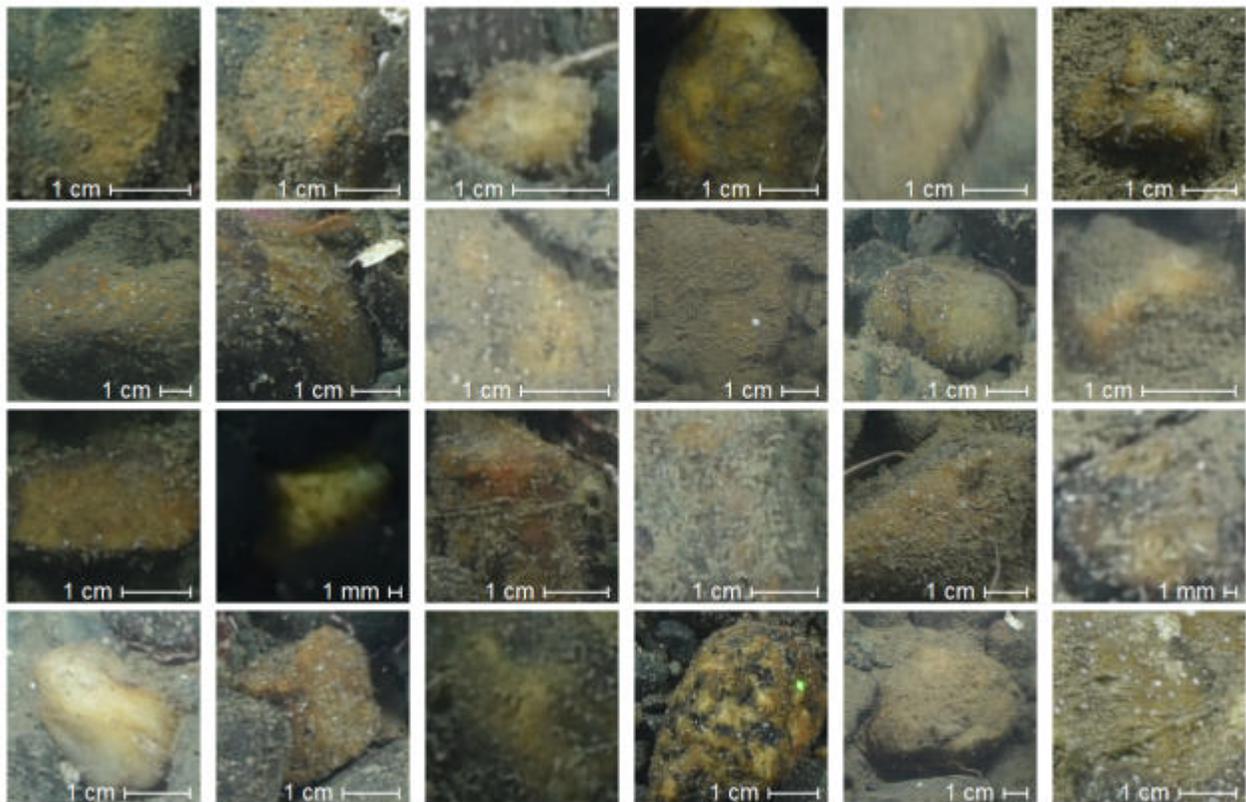


## Unidentified var 5

**Description:** Yellow/orange rock crust.

**Considered for use in analyses:** No

**Reasoning:** Unclear if biotic.

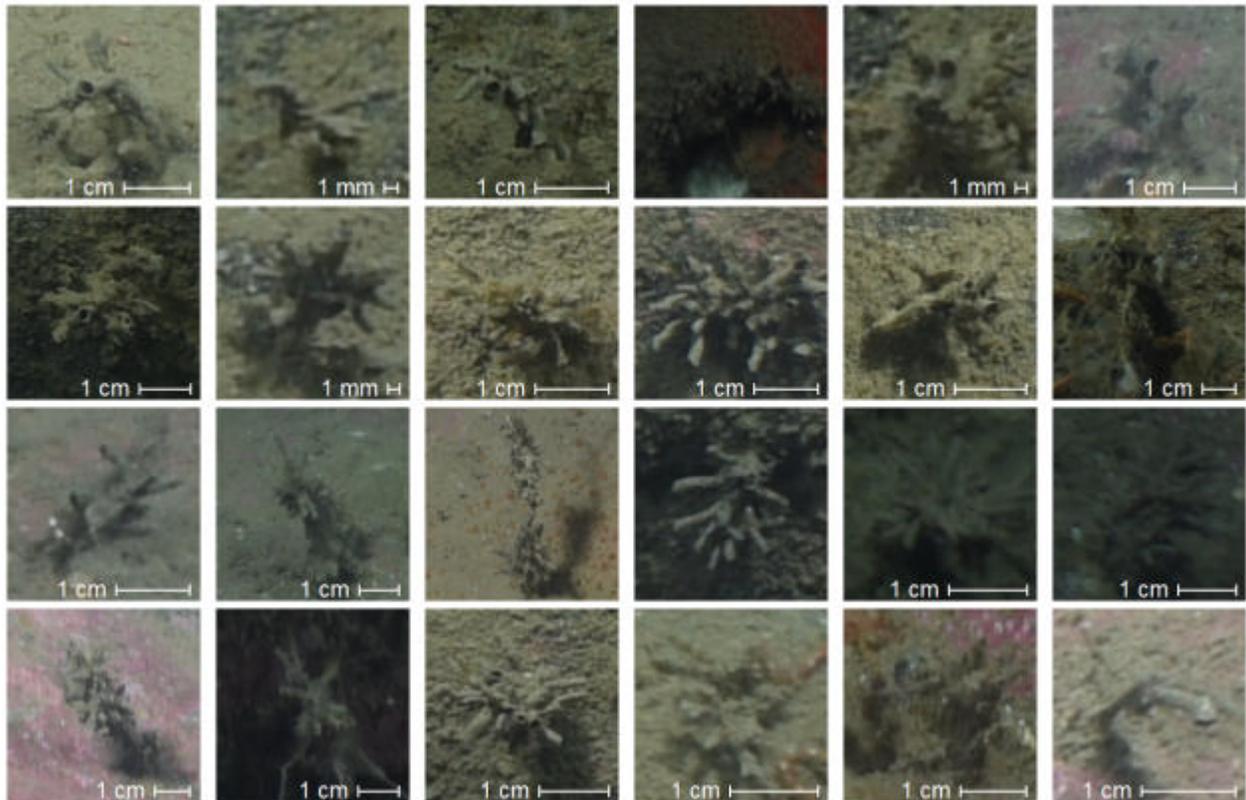


## Unidentified var 6

**Description:** Clusters of brown branching tubes.

**Considered for use in analyses:** No

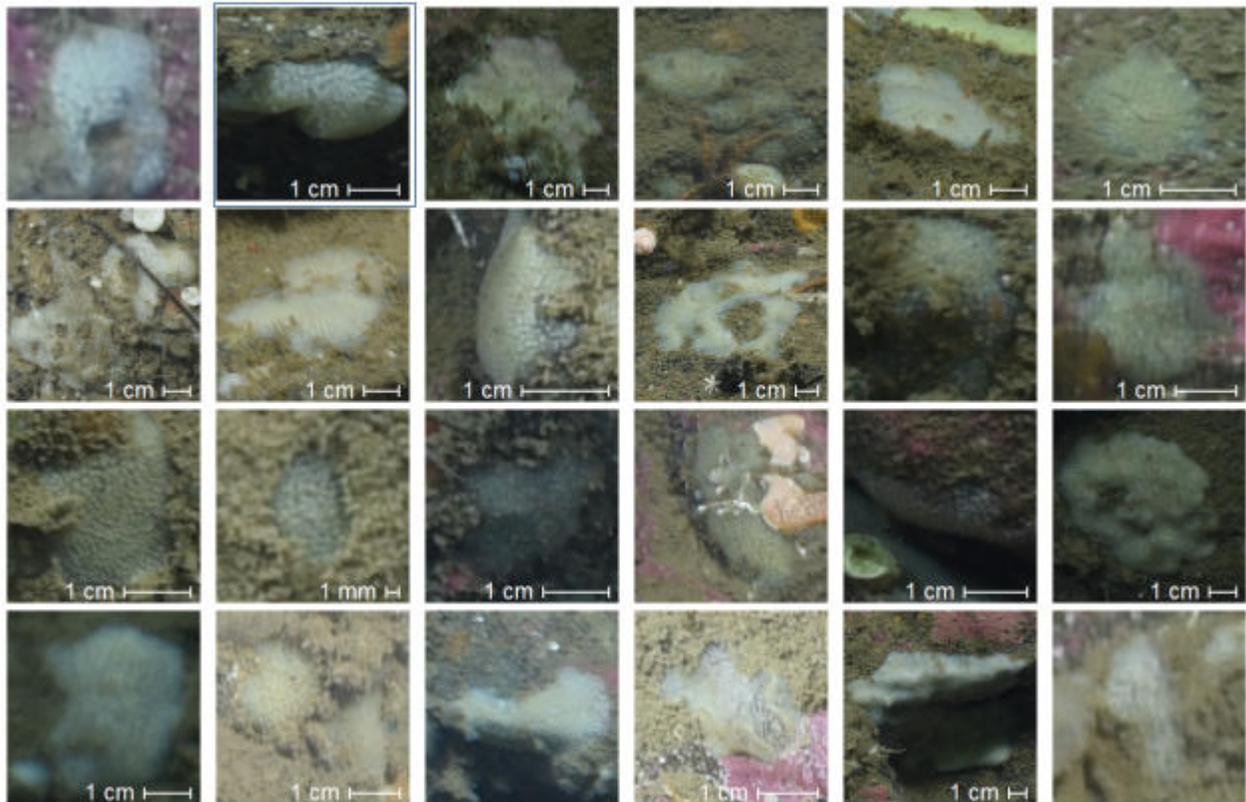
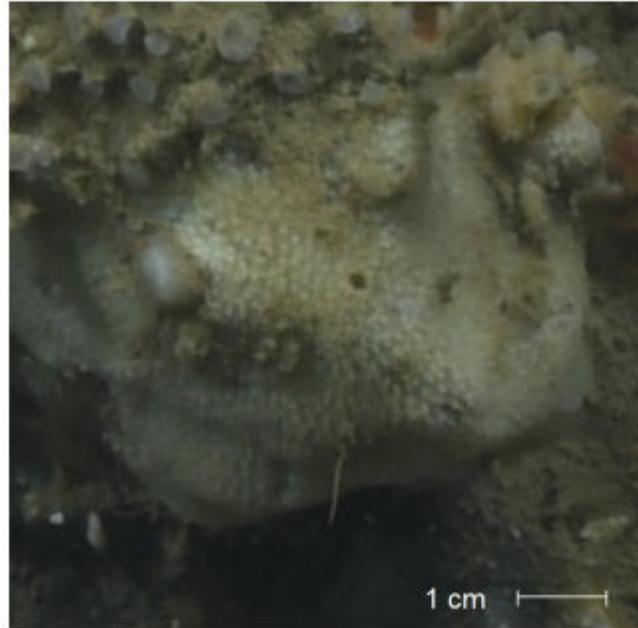
**Reasoning:** Remnants of another organism.



## Unidentified var 7

**Description:** Encrusting white spotted sponge or colonial ascidian.

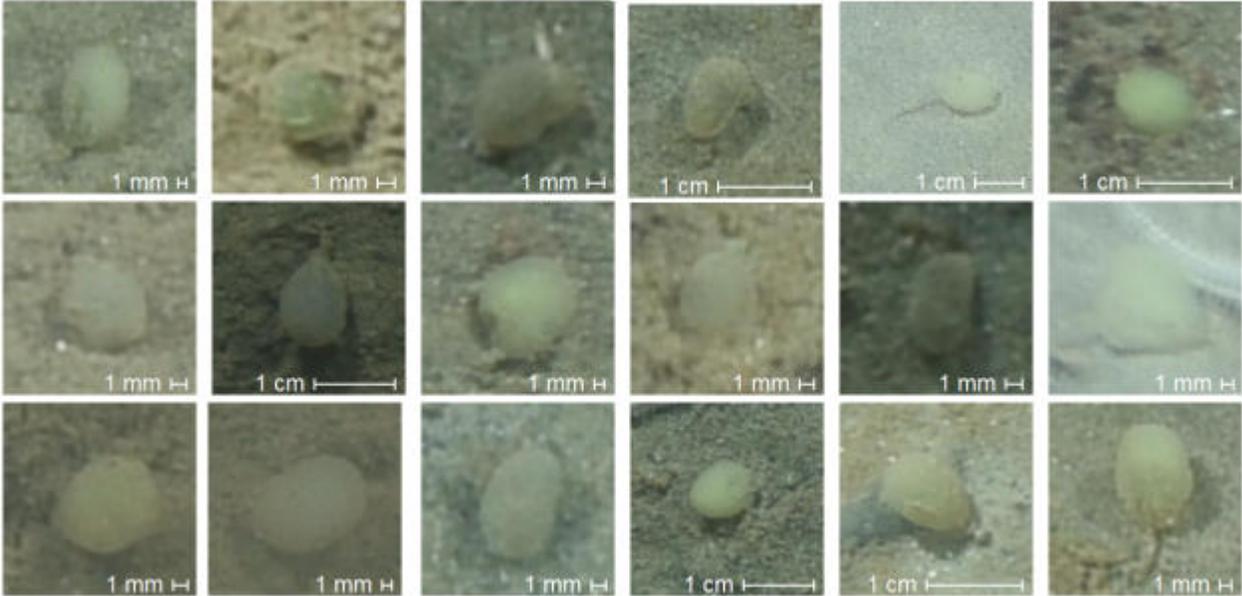
**Considered for use in analyses:** Yes



# Unidentified var 8

**Description:** Pale green gelatinous spherical blobs with a short stalk that appears to burrow in sediment.

**Considered for use in analyses:** Yes

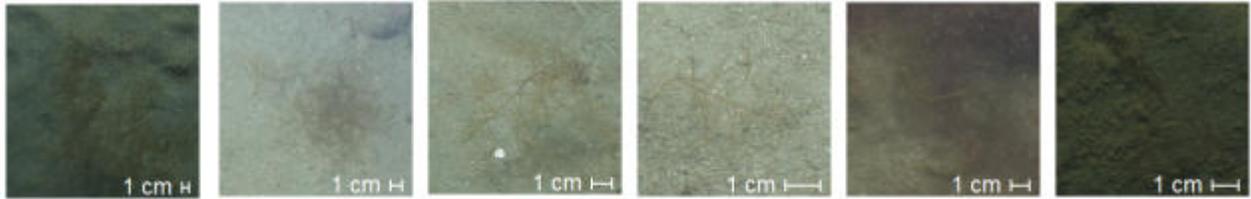
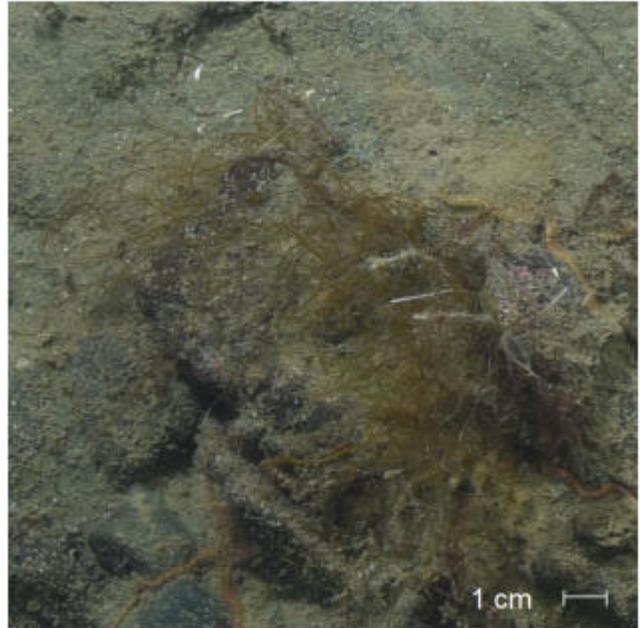


## Unidentified var 9

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**Description:** Green strands. Potentially red algae or Chromista.

**Considered for use in analyses:** Yes



## Unidentified var 10

---

**Description:** Thick brown branched organism. Possibly hydroid.

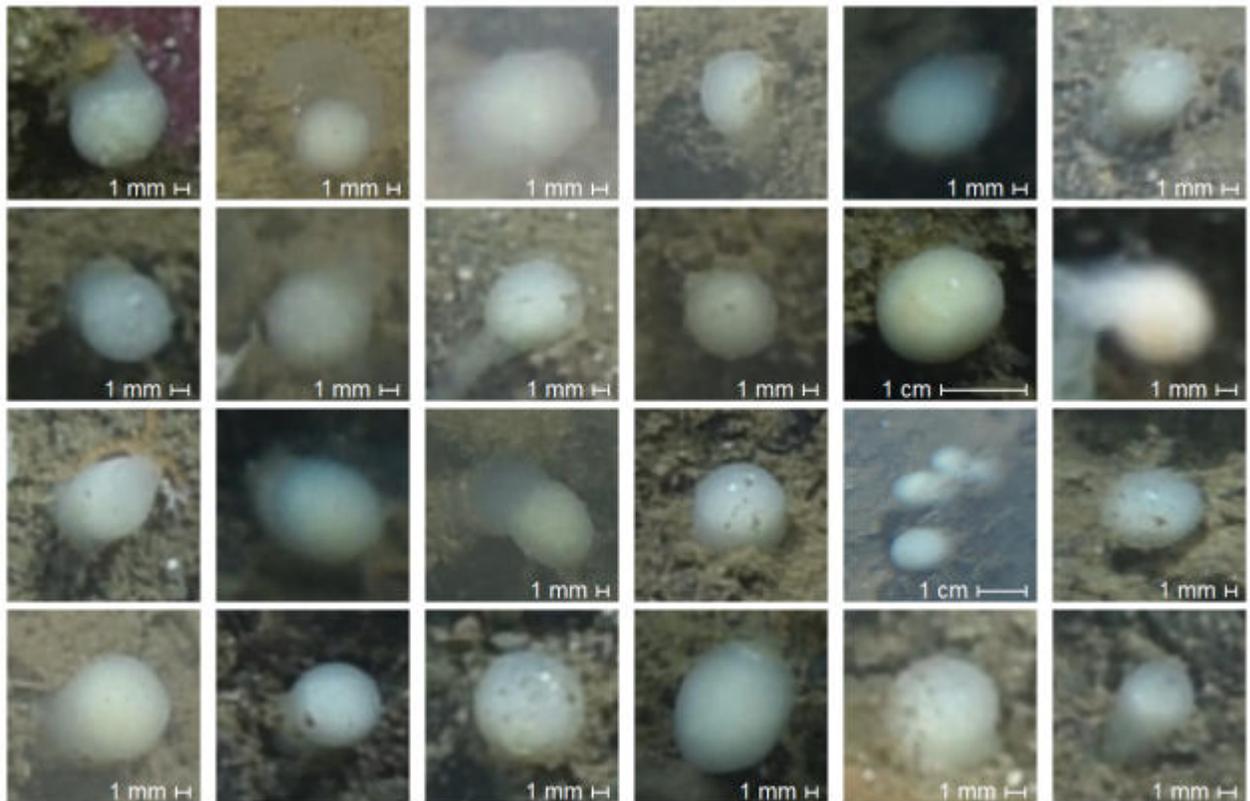
**Considered for use in analyses:** Yes



## Unidentified var 11

**Description:** White gelatinous spherical organisms.

**Considered for use in analyses:** Yes



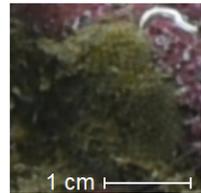
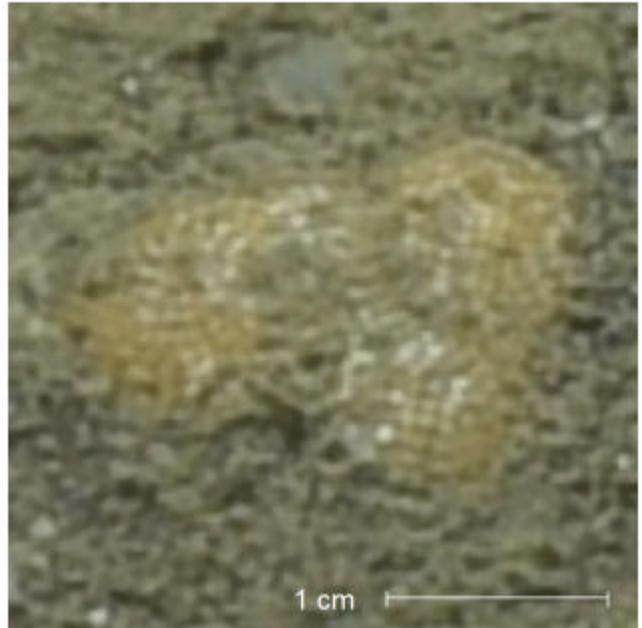
## Unidentified var 12

---

**Description:** Yellow/orange porous crust.

**Considered for use in analyses:** No

**Reasoning:** Unclear if biotic.

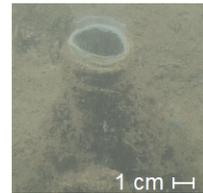
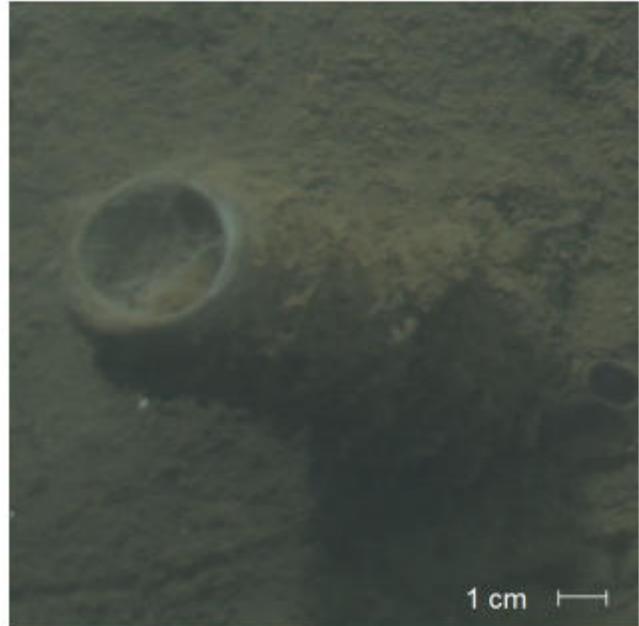


## Unidentified var 13

---

**Description:** Large brown tubes covered with detritus emerging from soft sediment with hole at tip of tube.

**Considered for use in analyses:** Yes

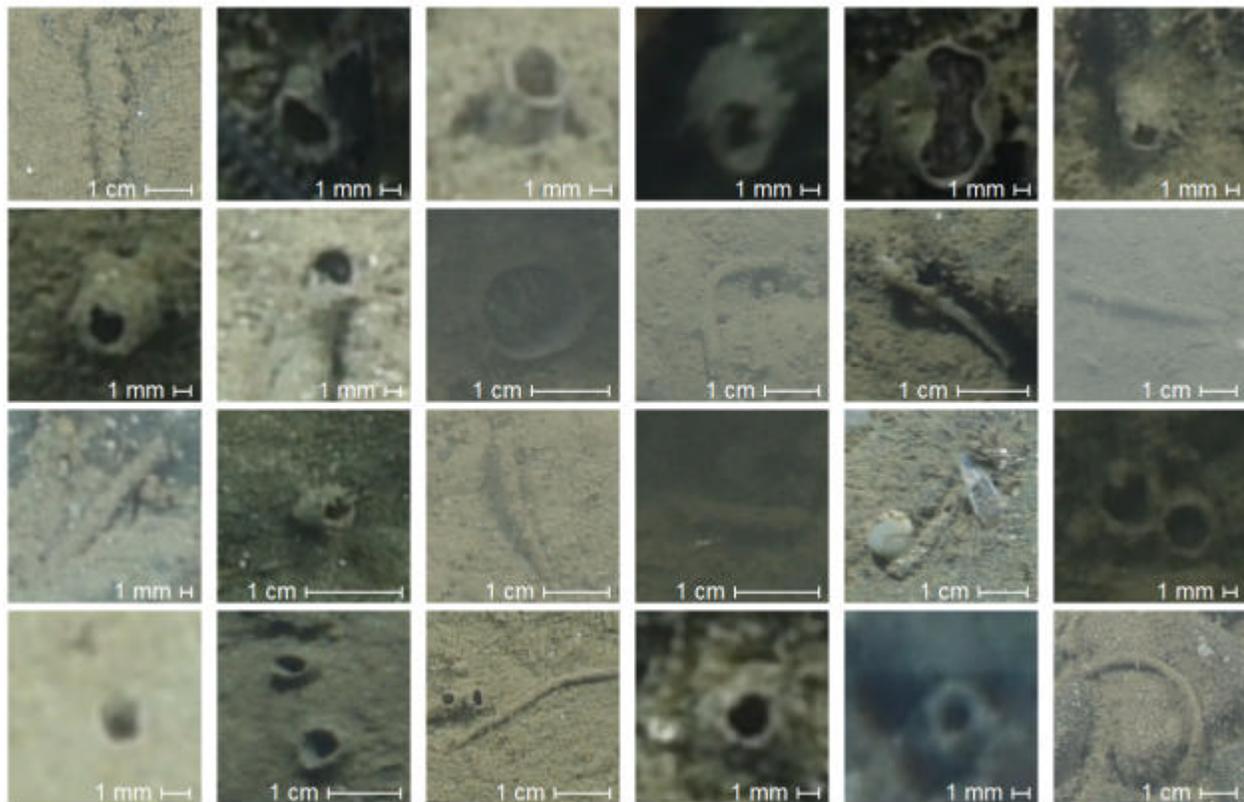
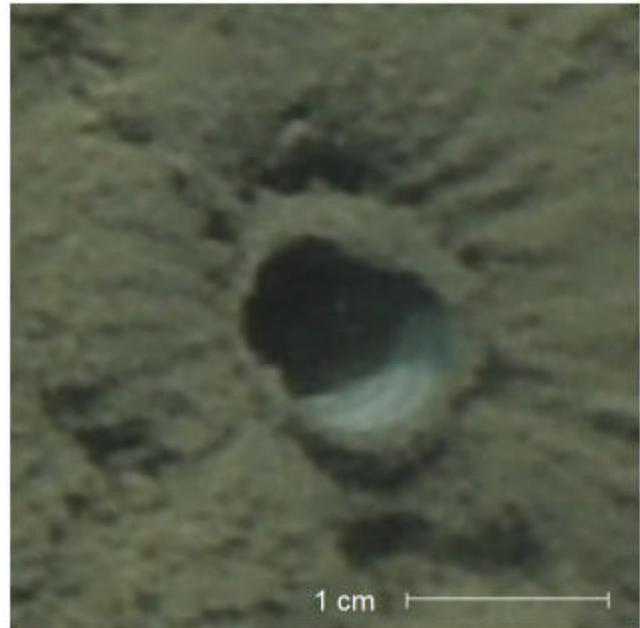


## Polychaeta tubes

**Description:** Brown hollow tubes either burrowed in substrate or laying on top of substrate.

**Considered for use in analyses:** No

**Reasoning:** Most likely all empty tubes without any organism inside.

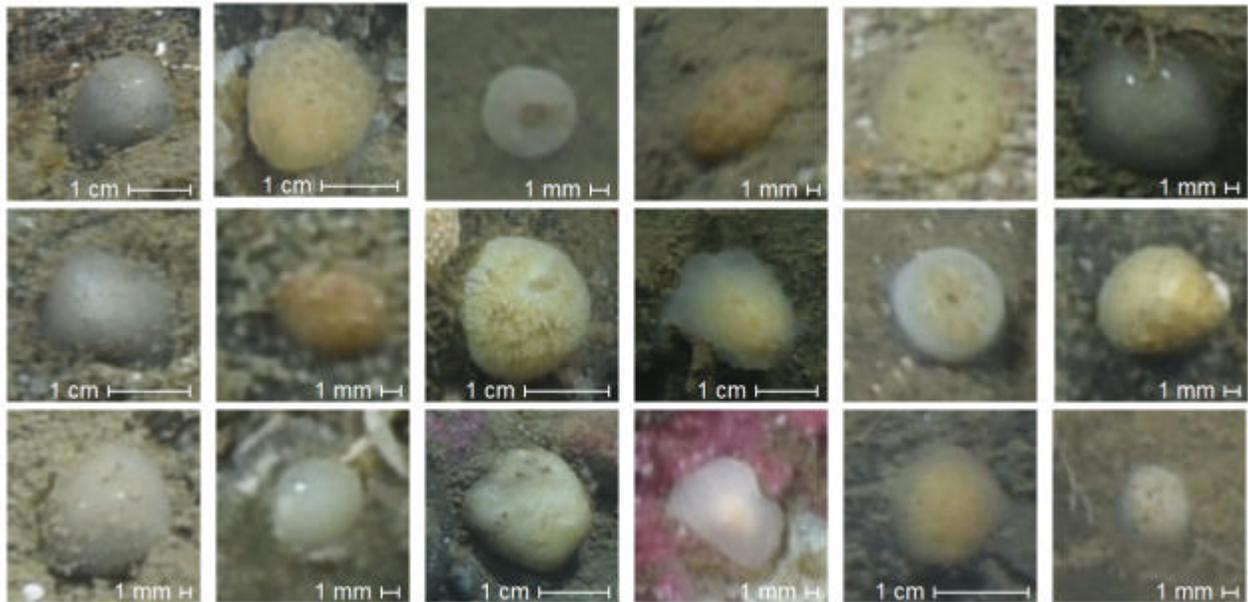


## Unidentified type 1

**Description:** Collection of white/pink/yellow spherical organisms.

**Considered for use in analyses:** No

**Reasoning:** OTU type that could overlap with other var. OTUs.



### 3.15 SUMMARY

Organisms were identified from 13 distinct phyla, though one of those phyla (Tracheophyta) only had drift specimens that would not be considered useful in biodiversity analyses. The most commonly represented phylum was Echinodermata which was observed in 92% of images closely followed by Arthropoda at 89% (Figure 18). Unidentified organisms are also highly represented, but the majority of images only contain unidentified organisms that would not be considered relevant for analysis (Figure 18). The least represented phylum was Ochrophyta which only had one OTU, *Agarum clathratum*, that would be considered for analysis and was present in less than 3% of images (Figure 18).

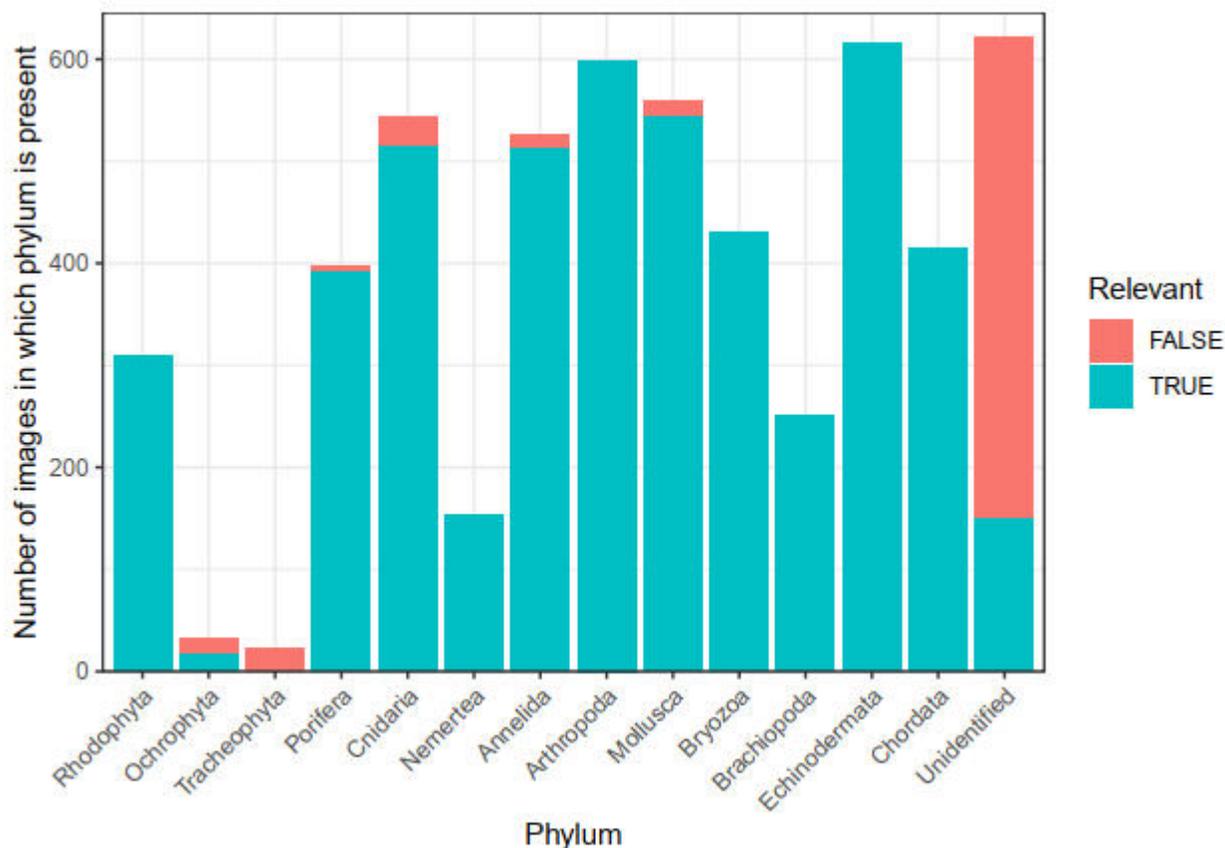


Figure 18: Number of images in which each phylum is present out of a total of 672 images. The 'Relevant' grouping indicates images which contain (TRUE) or do not contain (FALSE) OTUs considered relevant for analysis under each phylum.

The phylum with the highest diversity was Cnidaria with 47 OTU (and 2 OTU not considered relevant for analysis) followed by Porifera (40 relevant and 1 non-relevant OTU) and Mollusca (39 relevant and 4 non-relevant OTU) (Figure 19). Discounting non-relevant OTU, the least diverse phylum was Ochrophyta with only one relevant OTU (the remaining OTU being comprised only of drift specimens) followed by Brachiopoda with only two OTU (Figure 19). Aside from the Unidentified grouping, the Mollusca

phylum had the most non-relevant OTU (Figure 19) due to the presence of several egg and juvenile life-stage OTUs in this phylum.

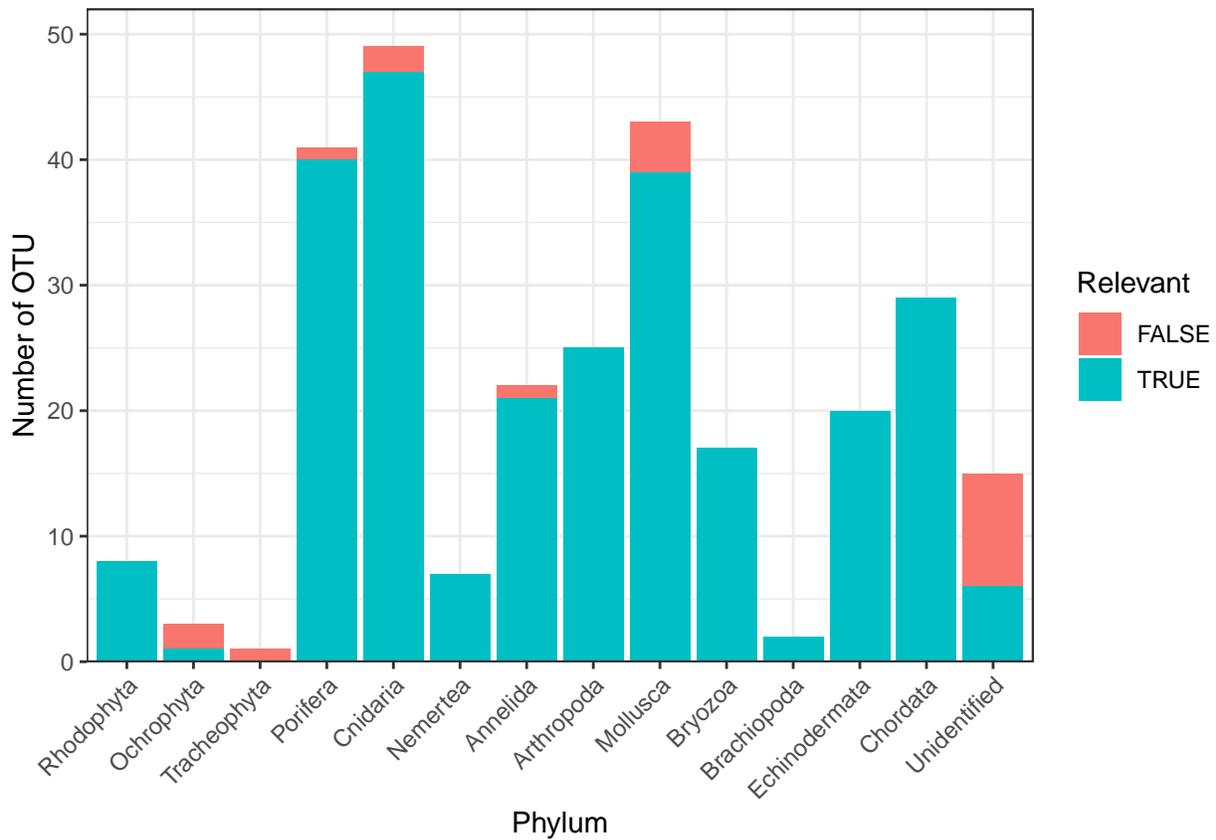


Figure 19: Number of unique OTU identified in the 672 analysed images by phylum. The ‘Relevant’ grouping indicates OTUs that are (TRUE) or are not (FALSE) considered relevant for analysis within each phylum.

## 4 DISCUSSION

Analysing benthic imagery is a very intensive process requiring many rounds of review and revisions. To minimise the amount of time required, only one annotation per OTU was required per image. The trade-off of only having one annotation per OTU in an image is that only OTU presence-absence rather than abundance data would be collected. This restriction would limit the breadth of biodiversity analyses that would be able to be performed with these data.

BIIGLE was a tool that greatly helped with annotation efficiency. The interface was clean and responsive and label trees could be easily built and modified. The “largo” tool also easily allowed specific annotations to be moved to other labels during review sessions. Due to the several rounds of revisions required in this line of work, a good script protocol

was essential to build and maintain a dynamic photo catalogue without having to manually edit it every time a change was made. Potential changes included: label and annotation renaming, addition, deletion, merging (labels), or reclassification (annotations), and changes to the label tree hierarchy structure.

## 4.1 OTU IDENTIFICATION CHALLENGES

Certain taxa were more difficult than others to assign to OTUs. Some of the most difficult taxa included sea anemones (Actinaria), sponges (Demospongiae), molluscs (Mollusca), and shrimp (Caridea). Regardless of taxonomic group, the general rule was the most distinctive OTUs were easiest to identify. If OTUs shared traits or had traits that are part of a spectrum, this drastically increased the classification complexity.

Sea anemones have very high intra- and inter-specific variability which made them very difficult to differentiate. Many species have particular key traits that were also difficult to visualise in this kind of imagery if, for example, they rely on traits only seen on the column which was only occasionally visible. They could also be retracted and the oral disc and tentacles were invisible which eliminated many key identifiable traits for these individuals. The angle at which they were photographed could also hide these traits. Some OTUs were very distinctive and easiest to identify, such as *Metridium senile* with its distinctive tentacle formation and colour, as well as the strictly burrowing sea anemone OTUs *Halcampoides* and *Actinaria* var 13.

Sponges brought similar challenges to the sea anemones due to their equally high intra- and inter-specific variability. Additionally, sponge identification from benthic imagery presents challenges because taxonomic classification traditionally relies on internal structural features, particularly spicule morphology, which can only be observed microscopically. Identifying sponges to the species-level was therefore very limited using a strictly macroscopic visual approach. That aside, the key traits used to differentiate distinctive sponge OTUs such as colour, pattern, shape, size, and perceived texture were not always visibly apparent in the images. Colours for some sponges might appear very muted or belong to a colour spectrum. A key veination pattern used to identify some OTUs (such as for *Demospongiae* vars 5-7) might be blurred out due to poor image quality for some specimens. The most distinctive sponges include *Iophon* which had a very distinctive veination pattern, porous texture, and was (barring rare exceptions) bright white, as well as *Stylocordyla borealis* with its characteristic stalk.

Molluscs had unique challenges in that the live organism was typically hidden within a shell. It was sometimes hard to see if a shell was inhabited by a living organism or if that organism could be a hermit crab. Obviously broken shells or empty valves for bivalves were discounted. Shell identification from this imagery was also difficult as the distinctive shape of certain species was not very clear due to low-quality imagery or bad viewing angles. Within Bivalvia, the most distinctive OTUs were *Chlamys islandica* and *Placopecten magellanicus* due to their distinctive shell shapes, though for some specimens, it remained unclear whether the visible shell was paired underneath and retained a live organism. Within Gastropoda, the most distinctive OTUs were Naticidae with its large shell and large visible foot and *Marsenina glabra* which had a distinctive

shape and colour pattern and was always observed on top of didemnid ascidian crusts. The chitons were also fairly distinctive with their unique shell colour patterns, as well as Rossinae being the only observed cephalopod with its characteristic bulbous head.

Shrimp were difficult to classify mainly due to their small size. Image resolution was sometimes poor when zoomed in and distinguishing characteristics in the body shape and colour patterns could be blurred out. An additional complication for some organisms were indications of potential parasitism which changed the standard colour patterns of those individuals (for example, some cases in Pandalidae var 1 where the white saddle and red colouring were much more pronounced).

## **5 ACKNOWLEDGEMENTS**

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