



# Sponge Identification Guide NAFO Area



*On the cover (reverse):* Various underwater photographs taken from within the NAFO Convention Area. Top: 'Sponge Grounds,' largely dominated by *Geodia* spp. Bottom (left to right): *Hymedesmia* sp.; Astrophorida (Order containing *Geodia* spp. and *Stryhnus ponderosus*); *Phakelia* sp.; Rock wall with several sponge taxa; *Asconema foliata*; *Mycale lingua*.

ISBN: 978-0-9698167-8-2

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NAFO Scientific Council Studies, 2010, Number 43.  
doi: 10.2960/S.v43.m1

## **Acknowledgements**

The authors would like to acknowledge the contributions and insights of taxonomists Ole S. Tendal and Henry M. Reiswig. Javier Murillo provided assistance with the collection and identification of material contributing towards this publication.

## **Photo credits**

Page 1, Page 7 (bottom), Page 9 (bottom), Page 10 (bottom), Page 11, Page 12 (top), Page 14 (top), Page 18, Page 19 (top), Page 20 (top), Page 21 (bottom), Page 23 (bottom), Page 24, Page 28, and Page 29 (bottom) courtesy of V. E. Wareham, Department of Fisheries and Oceans, St. John's, Newfoundland and Labrador, Canada; Page 15 (top) courtesy of S. D. Fuller, Dalhousie University, Halifax, Nova Scotia, Canada; Page 2 (top), Page 3 (bottom), Page 4 (bottom), Page 7 (top), Page 12 (bottom), Page 13 (bottom), Page 17 (bottom), Page 22, Page 23 (top), Page 25, Page 26 (top), Page 27, and Page 33 (top) courtesy of the NEREIDA project, Canadian Department of Fisheries and Oceans and Instituto Español de Oceanografía. All other photos courtesy of the Department of Fisheries and Oceans, Ecosystem Research Division, Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada.

Reprinted in January 2011 (with corrections)  
Printed and Distributed in December 2010  
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# NAFO CONVENTION AREA

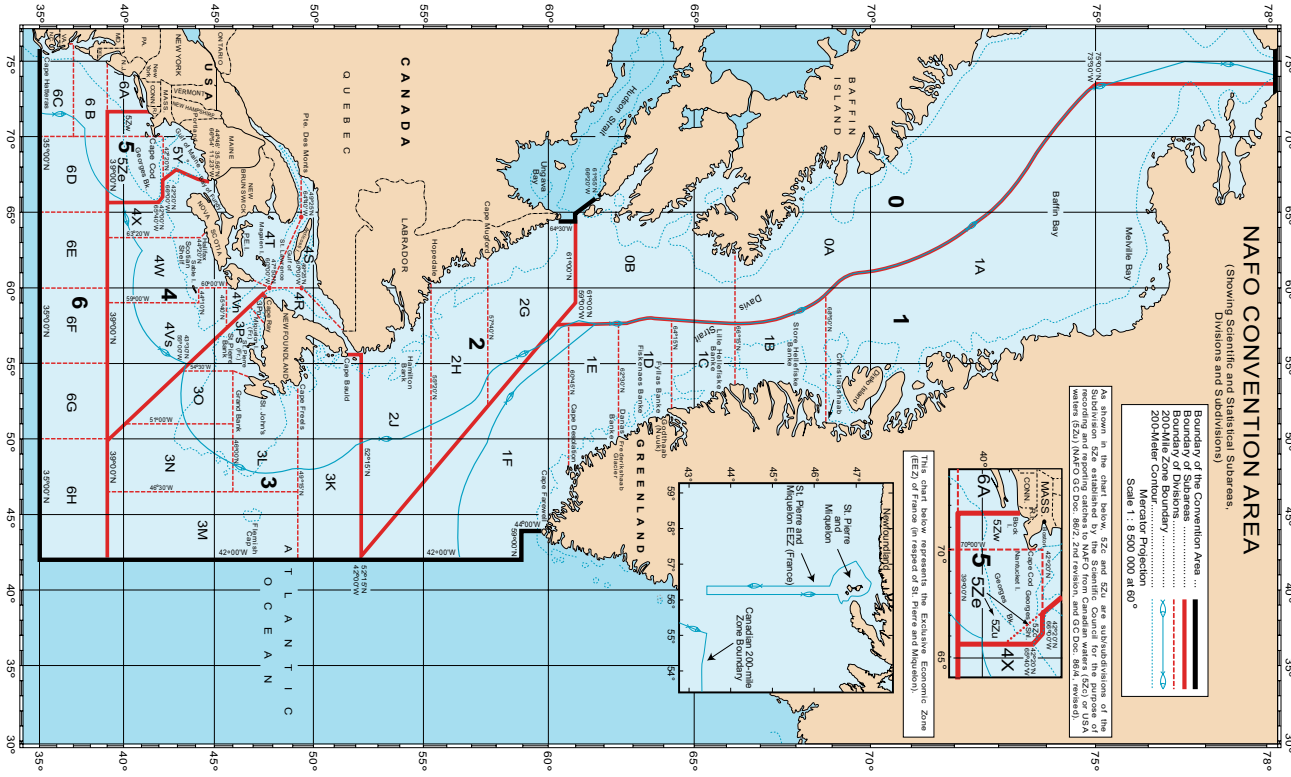
(Showing Scientific and Statistical Subareas, Divisions and Subdivisions)

- Boundary of the Convention Area
  - Boundary of Subareas
  - 200-Mile Zone Boundary
  - 200-Mile Contour
  - 200-Mile Contour
- Scale 1 : 8 500 000 at 60°

As shown in the chart below, 5Z2 and 5Z4 are subdivisions of the 5Z5 subarea, and 5Z6 is a subdivision of the 5Z4 subarea. The recording and reporting details to NAFO from Canadian waters (CCO) or USA waters (CZO) are: CCO: 802; ZO: revision, and CCO: 804, revised.



This chart below represents the Exclusive Economic Zone (EEZ) of France (in respect of St. Pierre and Miquelon)

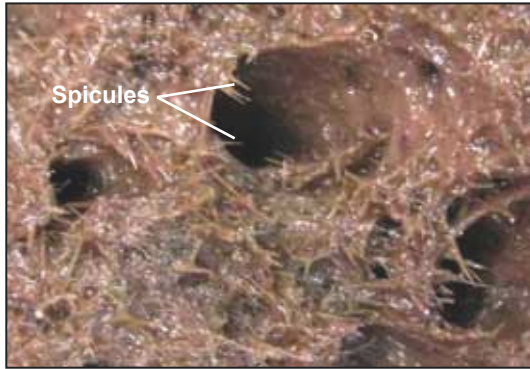


# Preface

This book is intended as a pictorial identification guide for some species of sponge found on the Grand Banks of Newfoundland and on Flemish Cap. Some species also occur more broadly in NAFO Divisions 1, 2, 3, 4 and 5, however Divisions 5 and 6 will contain many more species not yet included in this guide. Our intent is that the guide should be useful for at-sea identifications by non-specialists. It is written for fishers, fishery observers, scientific technicians, and others who may not be familiar with sponge identification. It is hoped that it will result in improved data collection for expanding our knowledge of the distribution of these vulnerable marine species. Should users find sponges that do not fit the guide, or need assistance in identification, please contact:

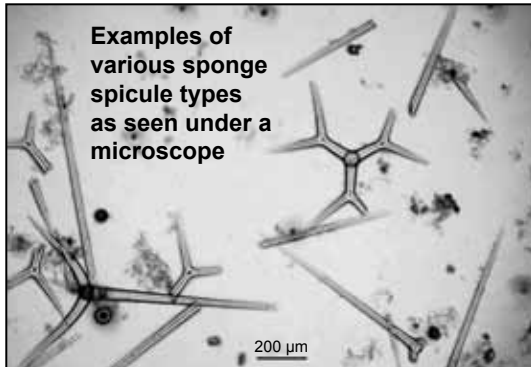
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# Terminology



## Spicules:

- Skeletal elements that give most sponges their structure
- Generally spicules are microscopic, though large spicules can be seen by the naked eye
- The characteristic shapes of these spicules are used to identify sponge species



## Encrusting:

- A thin, sheet-like coating, generally on a rock or shell

# Morphology Categories

This guide arranges sponges according to morphology or body type:



## Solid/Massive

- Substantial, fairly compact structure; can be round but more often irregular in shape



## Leaf/Vase-Shaped

- Fleshy leaf or vase, with or without a short 'stem' anchored to hard substrate



## Round with Projections

- Distinct projections are present, called 'papillae;' sometimes with visible openings at the ends



## Thin-Walled, Complex

- Spicules are often arranged in intricate, mesh-like patterns visible to the naked eye; also known as 'Glass Sponges'



## Stalked

- Bulk of sponge tissue is centred around a thinner 'stalk' or 'stem'

## Other

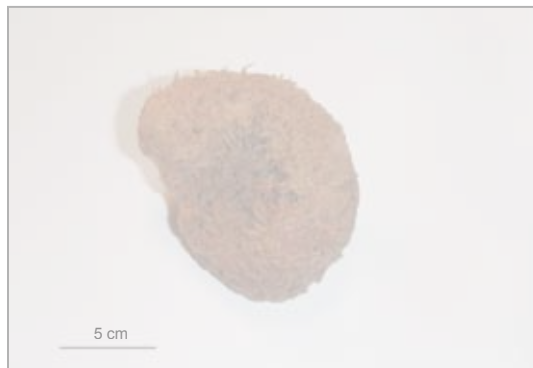
- A variety of miscellaneous body types: finger-shaped, encrusting, bladder-like, excavating, etc.

## Morphology Categories

Deck photo of specimen



Standard 5cm scale bar



Use when recording

**Scientific Name**

**Common Name (If any)**

ITIS TSN: XXXXX • ERMS AphiaID: XXXXX

[www.itis.gov](http://www.itis.gov) • [www.marbef.org/data/erms.php](http://www.marbef.org/data/erms.php)



Relative size  
of sponge to  
human  
or human  
hand

**Physical Description**

- 

**Size Information**

- 

**Colour**

- 

**Habitat Information**

-



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---



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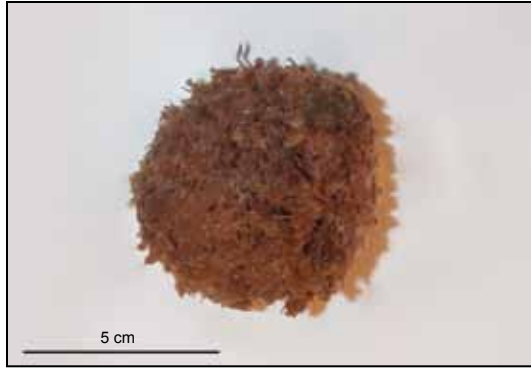
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## Data Collection

This identification guide can be used with the NAFO Exploratory Fishery Data Collection Form. At present there are no simple species codes for sponges; the scientific name at the top right corner of the identification page can be used. Sponges can be difficult to weigh. Small samples should be cleared of any larger organisms (e.g. sea stars). All samples must be weighed and all sponges of the same type should be weighed together. Record the weight to the nearest kilogram and use <1 kg for smaller samples. The weight of very large samples (over 100 kg) can be estimated by filling a fish box with the same species and weighing that. The remaining weight can be estimated by multiplying the weight of the sponge in the fish box by the estimated unweighed volume. It is also useful to note the number of specimens, and the presence of any associated fauna or egg casings.



# Biemna variantia

ITIS TSN: 48284 • ERMS AphiaID: 133205



## Physical Description

- Round or cushion-shaped, encrusting
- Uneven surface with small projections (“shaggy”); soft, friable or easily-broken

## Size Information

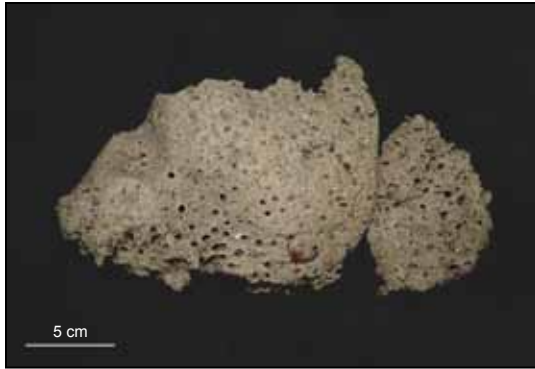
- Up to 15cm

## Colour

- Brown with a pinkish hue when out of water

## Habitat Information

- Mud, gravel, rock outcrops



# Forcepia (Forcepia) thielei

ITIS TSN: 48049 (Genus) • ERMS AphiaID: 168877



## Physical Description

- Forms a thick, irregular leaf when intact; thick base
- Most often found in pieces; somewhat elastic but easily-broken
- Surface “shaggy,” with holes, often more apparent on one side

## Size Information

- Up to 18cm

## Colour

- Brown, grey, possibly yellowish-white

## Habitat Information

- Sand, small gravel



## Geodia spp.

ITIS TSN: 48612 • ERMS AphiaID: 132005



### Physical Description

- Massive round/lobed sponges with few or no holes in the surface
- Surface smooth, or rough with encrusting species; hard, sometimes wrinkled in appearance
- Can form “Sponge Grounds” and be found in large quantities

### Size Information

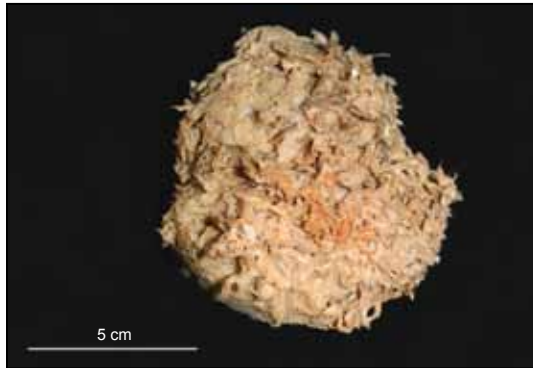
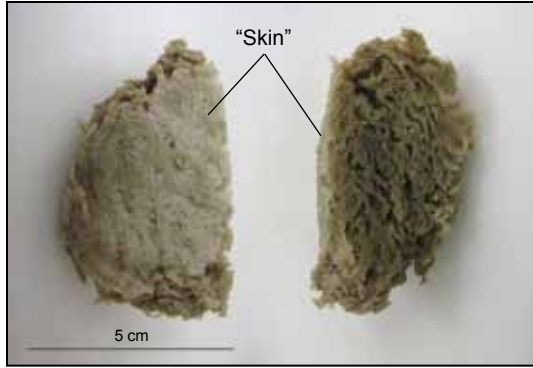
- Largest specimens recorded at 55cm

### Colour

- Cream-yellow, white; pinkish or beige on the inside

### Habitat Information

- Gravel, rock outcrops



# Hamacantha (*Hamacantha*) *carteri*

ITIS TSN: 65715 (Genus) • ERMS AphiaID: 168420



## Physical Description

- Thick, soft, with an irregular but smooth surface and a thin "skin"
- "Skin" is closely-attached, usually intact
- Thickly encrusts on small rocks
- Often confused with *Mycale lingua*, but much less common; presence of "skin" is a diagnostic feature

## Size Information

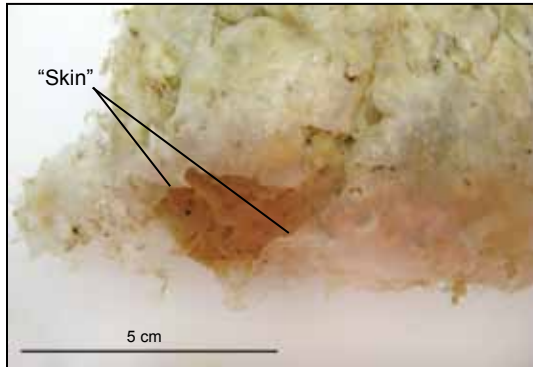
- Up to 12cm

## Colour

- Light brown, brownish-yellow, possibly grey

## Habitat Information

- Gravel, rock outcrops



# Melonanchora elliptica

ITIS TSN: 203975 • ERMS AphiaID: 133868



## Physical Description

- Round/bladder-like, with short, flattened projections
- Has a characteristic papery "skin," whitish in colour, with a crumbly interior

## Size Information

- Up to 10cm in diameter, possibly more

## Colour

- Yellowish-white or whitish-grey

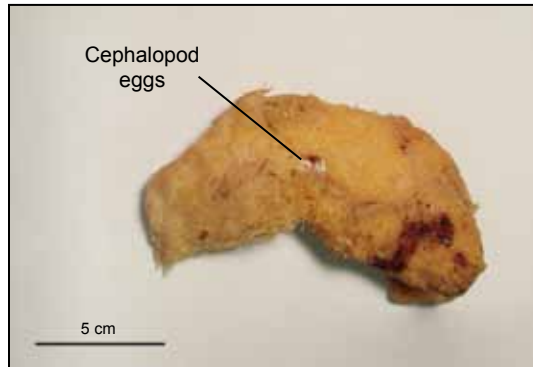
## Habitat Information

- Gravel, rock outcrops



# Mycale (Mycale) lingua

ITIS TSN: 48202 • ERMS AphiaID: 168640



## Physical Description

- Lobed, tongue-shaped, or sometimes erect with a narrow base
- Soft, fleshy; furrowed surface, with long stringy tracts
- Sometimes found with Cephalopod (i.e. octopus, squid, cuttlefish) eggs embedded

## Size Information

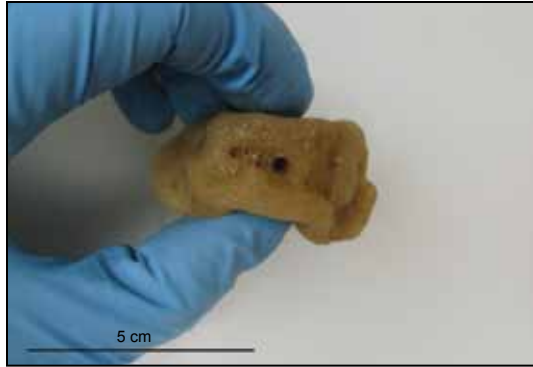
- Up to 30cm

## Colour

- Grey, cream, yellow, white

## Habitat Information

- Sand, gravel



# Spongionella pulchella

ITIS TSN: 47557 • ERMS AphiaID: 132335



## Physical Description

- Plate-shaped, thickly encrusting, or upright with a short stalk
- Very elastic/"spongy," hard to tear; surface smooth and soft; velvety appearance
- Openings set in small depressions, closely-spaced on the outer edge

## Size Information

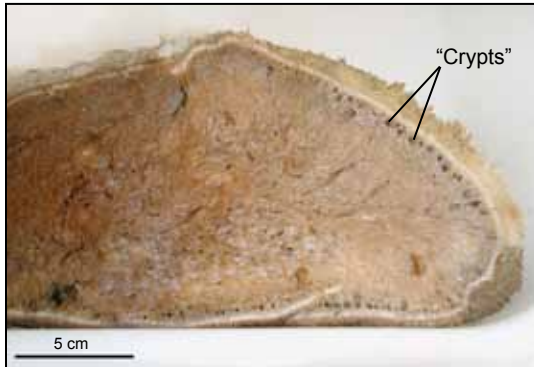
- 5–10cm

## Colour

- Brown to brownish-yellow, possibly greenish-grey or cream

## Habitat Information

- Gravel, rock outcrops



# Stelletta spp.

ITIS TSN: 48679 • ERMS AphiaID: 131994



## Physical Description

- More or less spherical, sometimes depressed
- Surface rough due to encrusting sponges; often surface is completely covered
- Similar to *Geodia* spp., but is more rough and much less common. When cut in cross-section, outer skin appears darker than the inner sponge
- “Crypts” (empty spaces) below surface often very pronounced, much more so than *Geodia* spp.

## Size Information

- Up to 20cm in diameter

## Colour

- Brown, reddish and purplish on the exterior; white, pinkish and light yellow on the inside

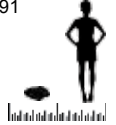
## Habitat Information

- Gravel, rock outcrops



# Stryphnus ponderosus

ITIS TSN: 659254 (Genus) • ERMS AphiaID: 133991



## Physical Description

- Fairly hard, thick, rounded and irregularly-lobed. Sometimes bowl-shaped.
- Surface rough, with many encrusting species attached. Spicules often come off when handling (wear gloves!)

## Size Information

- Up to 40cm in diameter

## Colour

- Pinkish or brown, with encrusting species generally turning a dark purple when out of water

## Habitat Information

- Gravel, rock outcrops



# Suberites ficus

ITIS TSN: 48488 • ERMS AphiaID: 134285



## Physical Description

- Thick, lobed, sometimes cylindrical
- Firm, velvety appearance
- Often smells like garlic!

## Size Information

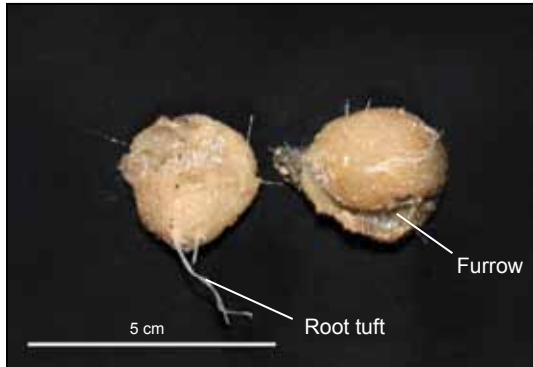
- Variable; up to 40cm in length

## Colour

- Yellow to brown, usually yellow on the inside

## Habitat Information

- Gravel, rock outcrops; often found encrusting on shells



# Thenea muricata

ITIS TSN: 204087 • ERMS AphiaID: 134106



## Physical Description

- Ball- to mushroom-shaped, with one or few large openings at the top and a furrow running along the side
- Stringy tuft to anchor into sediment
- Surface rough; consistency soft or firm

## Size Information

- 1 to 20cm

## Colour

- Brown or grey

## Habitat Information

- Mud, sand



# Thenea spp.

ITIS TSN: 48716 • ERMS AphiaID: 48716



## Physical Description

- Irregular plate-shaped, oval, or finger-shaped
- One surface smooth with holes, sometimes located in a furrow; other surface rough with no holes, sometimes with long thin tufts
- Sometimes very abundant

## Size Information

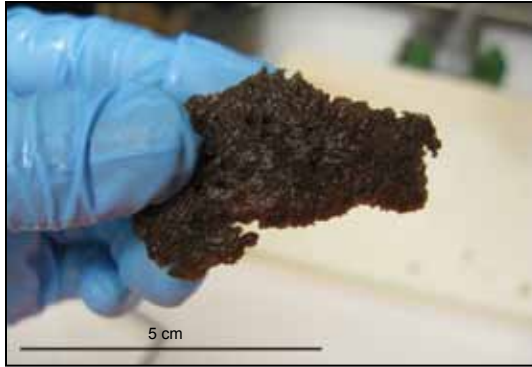
- 1 to 10cm in diameter

## Colour

- Brown or grey

## Habitat Information

- Mud, sand



## lophon piceum

ITIS TSN: 203967 (*l. piceus*) • ERMS AphiaID: 132972



### Physical Description

- Cup/leaf-shaped when intact, but most often found in pieces 0.5 to 1.5cm thick; easily broken
- Surface smooth or somewhat grooved
- Many small openings, generally more apparent on one side than the other

### Size Information

- Up to 16.5cm in height

### Colour

- Generally dark brown/black, also light brown

### Habitat Information

- Gravel, rock outcrops





# Phakellia spp.

ITIS TSN: 48376 • ERMS AphiaID: 131779



## Physical Description

- Cup/fan-shaped, attached by a stalk. Can sometimes see a pattern of ribbed veins fanning out from the stem
- Surface smooth, velvety, or slightly rough
- Fairly elastic but tears easily

## Size Information

- Up to 20cm

## Colour

- Ochre yellow, light brown, grey-beige, sometimes with a green tint

## Habitat Information

- Gravel, rock outcrops



# Vazella pourtalesi

## Russian Hat

ITIS TSN: 659662 (Genus) • ERMS AphiaID: 172120 (Genus)



### Physical Description

- Thick (1–2cm), vase-shaped, with spicules projecting out from the outer surface, giving it a spikey appearance
- Many small holes; extend through entire wall

### Size Information

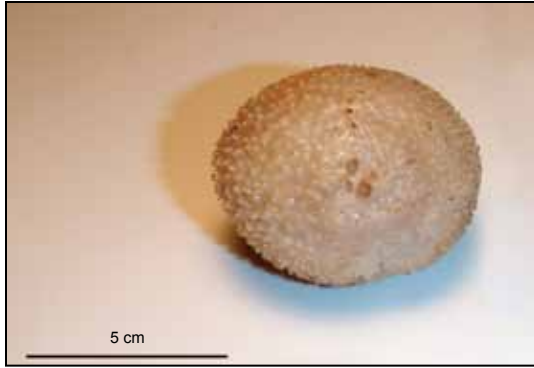
- Up to 30cm in height

### Colour

- White, grey, brown

### Habitat Information

- Mud



# Craniella cranium

ITIS TSN: 204076 • ERMS AphiaID: 171330



## Physical Description

- Ball-shaped, covered in small projections (“spikey”)
- Can sometimes see opening at the top, usually this is closed
- Has a tuft at the base, often not attached
- Cross-sections show the skeleton is spirally radiate

## Size Information

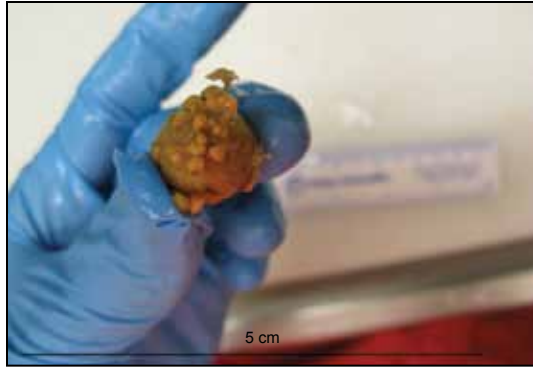
- Often ~5cm in diameter; up to 10cm

## Colour

- White, yellow, with reddish or greenish hue

## Habitat Information

- Gravel, sometimes found attached to other sponges



## Histodermella sp.

ITIS TSN: 659400 • ERMS AphiaID: 131925



### Physical Description

- Small, round, with several thin projections
- Surface smooth or slightly rough
- Fairly robust; often found intact

### Size Information

- 1–2cm in diameter

### Colour

- Dark yellow or brown, with bright yellow projections

### Habitat Information

- Gravel, rock outcrops, dead *Lophelia* (stony coral)



# Polymastia spp.

ITIS TSN: 48506 • ERMS AphiaID: 132046



## Physical Description

- Generally thick, roundish, with many characteristic projections (“nipple sponge”) of various length
- Attached to rock or other hard substrate; sometimes encrusting

## Size Information

- Usually small, with some up to 15cm, possibly larger

## Colour

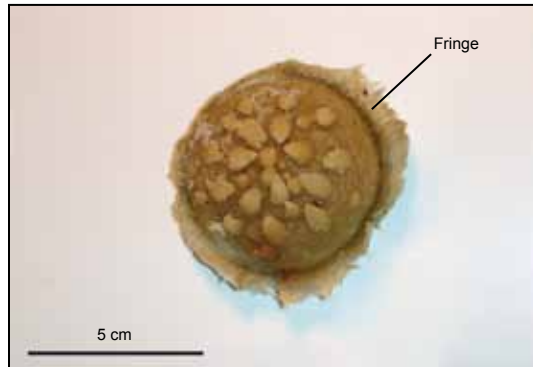
- Brown, reddish, yellow, white

## Habitat Information

- Gravel, rock outcrops

# Radiella hemisphaerica

ITIS TSN: 659290 (Genus) • ERMS AphiaID: 170674



## Physical Description

- Half-sphere, with a distinct fringe of long spicules at the outer edge
- Several projections from upper surface; number varies from very few up to 20
- Firm in consistency

## Size Information

- Up to 8cm in diameter

## Colour

- Light brown, white-grey

## Habitat Information

- Mud, gravel



# Asconema foliata

ITIS TSN: 659654 (Genus) • ERMS AphiaID: 132122 (Genus)



## Physical Description

- Found in thin (1–2mm) fibreglass-like sheets with long linear fibres; fused tubes when intact
- Surface smooth, no holes, pulls apart very easily
- Sometimes associated brittle stars or crinoids attached

## Size Information

- Entire sponge up to 40cm across

## Colour

- White or grey, sometimes brown from sediment

## Habitat Information

- Gravel, rock outcrops



## Chonelasma sp.

ITIS TSN: 47355 • ERMS AphiaID: 32102



### Physical Description

- Thin (2–3mm), hard, and very brittle
- Distinct mesh-like pattern throughout
- Vase-shaped with flared edges when intact, but almost always found in small fragments

### Size Information

- Large intact specimens can approach 1m in width; typically less than 50cm

### Colour

- White, greyish, or brown from sediment (usually dead); often dead specimens have encrusting sponges which gives a hue of yellow, blue, or purple

### Habitat Information

- Gravel, rock outcrops





## Euplectella spp.

ITIS TSN: 47464 • ERMS AphiaID: 132114



### Physical Description

- Thin, tube-shaped sponge with complex, mesh-like surface; tube covered with larger mesh at one end, often torn at basal end
- Comes up flattened in trawls but relatively intact
- Sometimes two associated shrimp are found inside

### Size Information

- Up to 30cm in height, 15cm in diameter

### Colour

- White, greyish, or brown from sediment

### Habitat Information

- Mud, gravel, rock outcrops



## Asbestopluma sp.

ITIS TSN: 48263 • ERMS AphiaID: 131893



### Physical Description

- Thin, pen/feather-shaped, one end with small branches and the other smooth and slightly widened

### Size Information

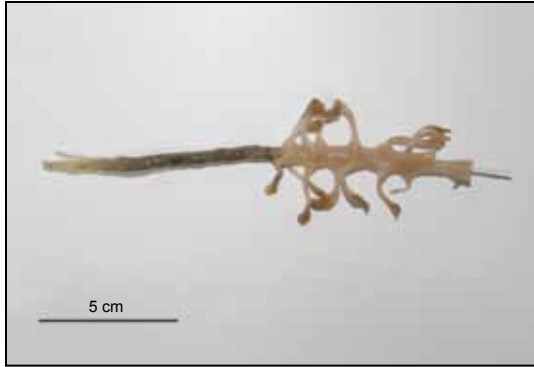
- Up to 10cm long

### Colour

- White to yellow

### Habitat Information

- Gravel, rock outcrops



# Chondrocladia spp.

ITIS TSN: 48278 • ERMS AphiaID: 131894



## Physical Description

- Long, thin arms with bulbous ends attached to a tough, straight stalk/stem made of spiral (or slightly twisted) fibres
- Some referred to as “pine cones of the sea”

## Size Information

- Up to 30cm long, 10cm wide

## Colour

- Yellow, brown, greyish, pink

## Habitat Information

- Mud, coral rubble



## Cladorhiza spp.

ITIS TSN: 204009 • ERMS AphiaID: 133188



### Physical Description

- Tree-like shape, often confused with coral
- Thin (generally less than 1cm), smooth, and straight, with alternating branches and root-like structures
- Branches bulbed at ends or pointed

### Size Information

- Can approach 1m in length, typically less than 20cm

### Colour

- Yellow, cream, pinkish, brown

### Habitat Information

- Mud



# Rhizaxinella sp.

ITIS TSN: 659300 • ERMS AphiaID: 132071



## Physical Description

- Long, thin, branching stalk, with a root-like support system
- Sponge body somewhat oval, firm, “hairy” appearance

## Size Information

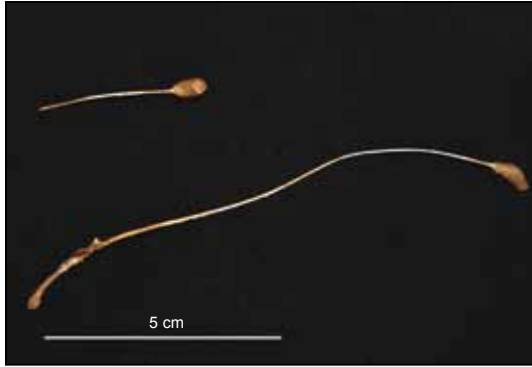
- Body up to 6cm long, 1cm wide; stalk up to 30cm long, 0.5cm wide

## Colour

- Yellow, yellowish-grey

## Habitat Information

- Mud, gravel



# Stylocordyla borealis

ITIS TSN: 204074 • ERMS AphiaID: 134240



## Physical Description

- Club-shaped on a long, thin, unbranched stalk, with a root-like support system
- Sponge body is oval, somewhat flattened at the top, and smooth in appearance

## Size Information

- Up to 10cm long

## Colour

- White, greyish, brown

## Habitat Information

- Mud, sparse gravel



# Cliona (and related) spp.

ITIS TSN: 48523 • ERMS AphiaID: 132026



## Physical Description

- Excavating/boring sponge, found encrusting on the surface and inside of rocks and shells
- Generally have to break the rock open to confirm its presence
- Consistency inside rocks is slimy and soft

## Size Information

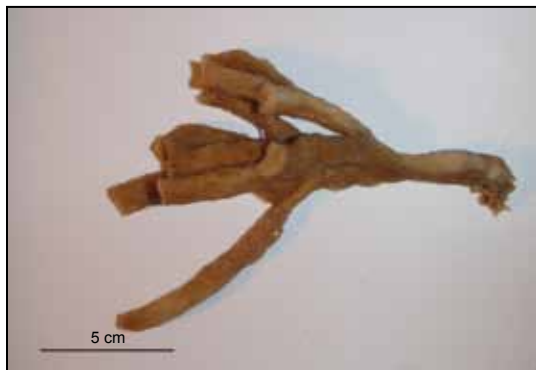
- Limited to rock substrate; has been observed in cobbles 20cm in diameter

## Colour

- Pale pink, cream-coloured, or white

## Habitat Information

- Gravel, shells, rock outcrops



# Haliclona spp. Dead Man's Fingers

ITIS TSN: 47771 • ERMS AphiaID: 131834



## Physical Description

- Finger-like projections, arising from a short stalk or base
- Velvety surface, with holes arranged in rows along branches

## Size Information

- Commonly between 10 and 30cm

## Colour

- Yellow, light brown, sometimes with a greenish or reddish tinge

## Habitat Information

- Gravel, rock outcrops, corals, other sponges





# Homaxinella sp.

ITIS TSN: 48340 • ERMS AphiaID: 131777



## Physical Description

- Small, tough, finger-like projections, sometimes branching

## Size Information

- Clumps can be 10–15cm, projections rarely more than 0.5cm wide

## Colour

- Bright yellow, light brown

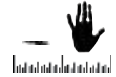
## Habitat Information

- Gravel, rock outcrops



# Hymedesmia sp.

ITIS TSN: 48056 • ERMS AphiaID: 131950



## Physical Description

- Extremely thin (1-2mm) encrusting sponge, sometimes with projections or depressions/holes
- Sometimes a vein-like pattern can be seen
- Soft, sometimes slimy

## Size Information

- Patches up to 30cm wide

## Colour

- Typically very bright colouration; blue, yellow, orange, green

## Habitat Information

- Gravel, rock outcrops



# Quasillina brevis

ITIS TSN: 659289 (Genus) • ERMS AphiaID: 134215



## Physical Description:

- Small, bladder-like, very thin, and often stalked; attached to pebbles and small stones
- Hollow; often found broken open

## Size Information

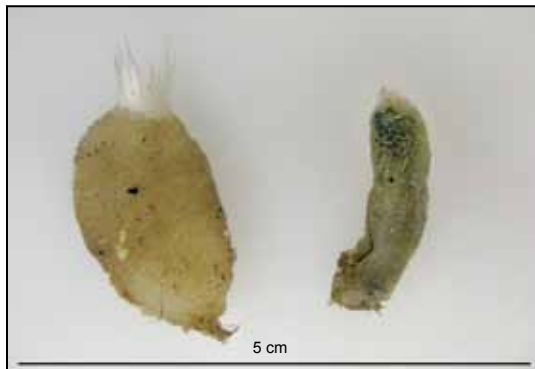
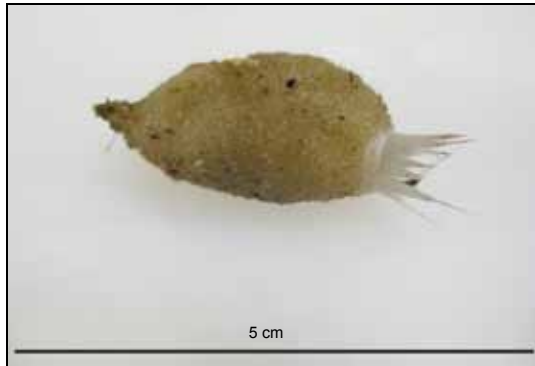
- 2–4cm

## Colour

- Bright yellow; also dark yellow to brown

## Habitat Information

- Gravel, rock outcrops



## Sycon sp.

ITIS TSN: 47050 • ERMS AphiaID: 131723



### Physical Description

- Tube-shaped, with a tuft of stiff spicules at opening
- “Hairy” surface, sometimes smooth
- Most often found as individuals, sometimes clustered

### Size Information

- Up to 9cm long, though usually 1–3cm

### Colour

- Off-white, grey, brown

### Habitat Information

- Gravel, rock outcrops

# Tentorium semisuberites

ITIS TSN: 48497 • ERMS AphiaID: 134224



## Physical Description

- Toadstool-like, with a cylindrical body, and a rounded top; one or more small projections arise from the top
- Surface smooth or slippery
- Often smells like garlic when pinched

## Size Information

- Up to 4cm high, 3cm in diameter; often find several small individuals (<1cm) together

## Colour

- Light pink, pinkish-brown, yellowish-grey

## Habitat Information

- Mud, gravel, rock outcrops



## Spicule clumps

ITIS TSN: 46861 (Porifera) • ERMS AphiaID: 558 (Porifera)



### Physical Description

- Mass of sponge spicules with no discernable structure, often embedded with sediment
- Can occur in large mats on the sea floor

### Size Information

- Small 1cm balls to 20cm clumps

### Colour

- Whitish, grey, and brown

### Habitat Information

- Mud

# Errata

(the following changes have been made to the guide)

## Page vii

Correct thumbnail photos of *Hamacantha* (*Hamacantha*) *carteri*, *Melonanchora elliptica* and *Mycale* (*Mycale*) *lingua*, replaced incorrect thumbnail photos in Table of Contents.

## Page viii

*Stylocordyla borealis* moved from “other” and placed with “stalked”.  
“*Cliona* sp.” changed to “*Cliona* (and related) spp.”

## Page 4

Following text added to physical description “Often confused with *Mycale lingua*, but much less common; presence of “skin” is a diagnostic feature”.

## Page 8

Following text added to physical description ““Crypts” (empty spaces) below surface often very pronounced, much more so than *Geodia* spp.” Crypts identified on photograph.

## Page 28

“*Cliona* sp.” changed to “*Cliona* (and related) spp.”

# Notes