

# Unusual\* trawl caught invertebrates

This is not an exhaustive listing but rather those animals not seen commonly in the POTWs' standard monitoring programs a more comprehensive and complete presentation is in the works.

Disclaimers:

No guarantees as to identifications

Some photos have "old" names on the field labels. I've tried to make comments where needed

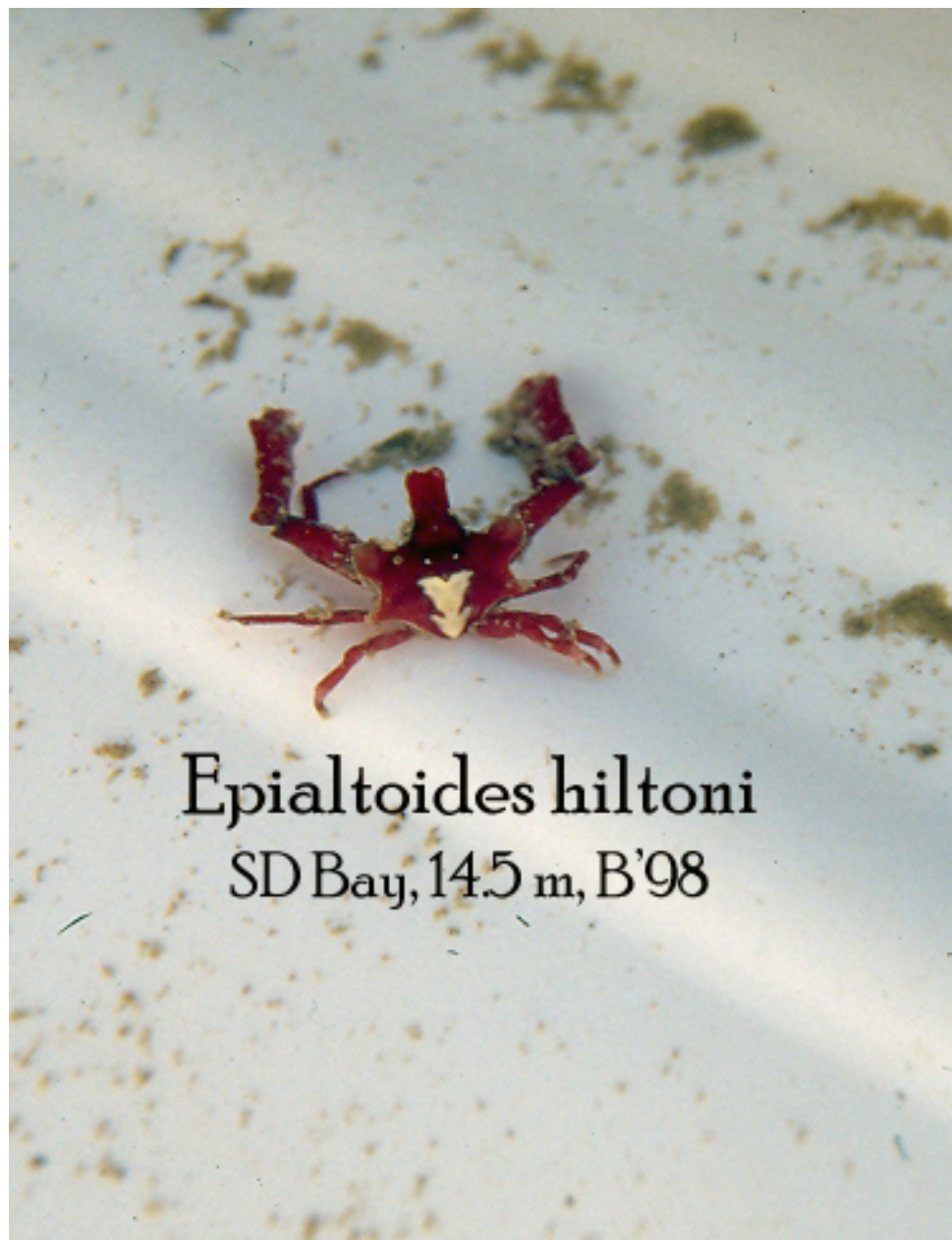
Photo credits – N. Haring (CSD) and others

Much help was given by D. Cadien with regards to depth ranges, recommended literature, etc.

# CRUSTACEA







*Epialtoides hiltoni*  
SD Bay, 14.5 m, B'98



*Epialtoides hiltoni*





*Portunus xantusii*  
(Stimpson 1860)

Station: 9006  
Depth: 14 m  
16 Jul 2013



Could be confused with *Callinectes* – use Garth and Stephensen 1966. Brachyura of the Pacific Coast of North America, Brachyrhyncha. Portunidae. Has keys, illustrations, etc., and covers all west coast species

*Callinectes bellicosus* is not in SCAMIT Species List, but should still keep an eye out for it.



6 cm



The white  
tipped dactyls  
are distinctive



*Metacarcinus gracilis*  
(Dana 1852)

Station: 9005  
Depth: 18 m  
16 Jul 2013



*Pagurus armatus*

Another shallow water species of hermit crab is *Pagurus pilocarpus*. Can't currently find a good picture, but will have one in the larger presentation to be posted later. See Jensen 1995.





*Hemisquilla californiensis* (Crustacea: Stomatopoda)  
Stephenson 1967



5 cm

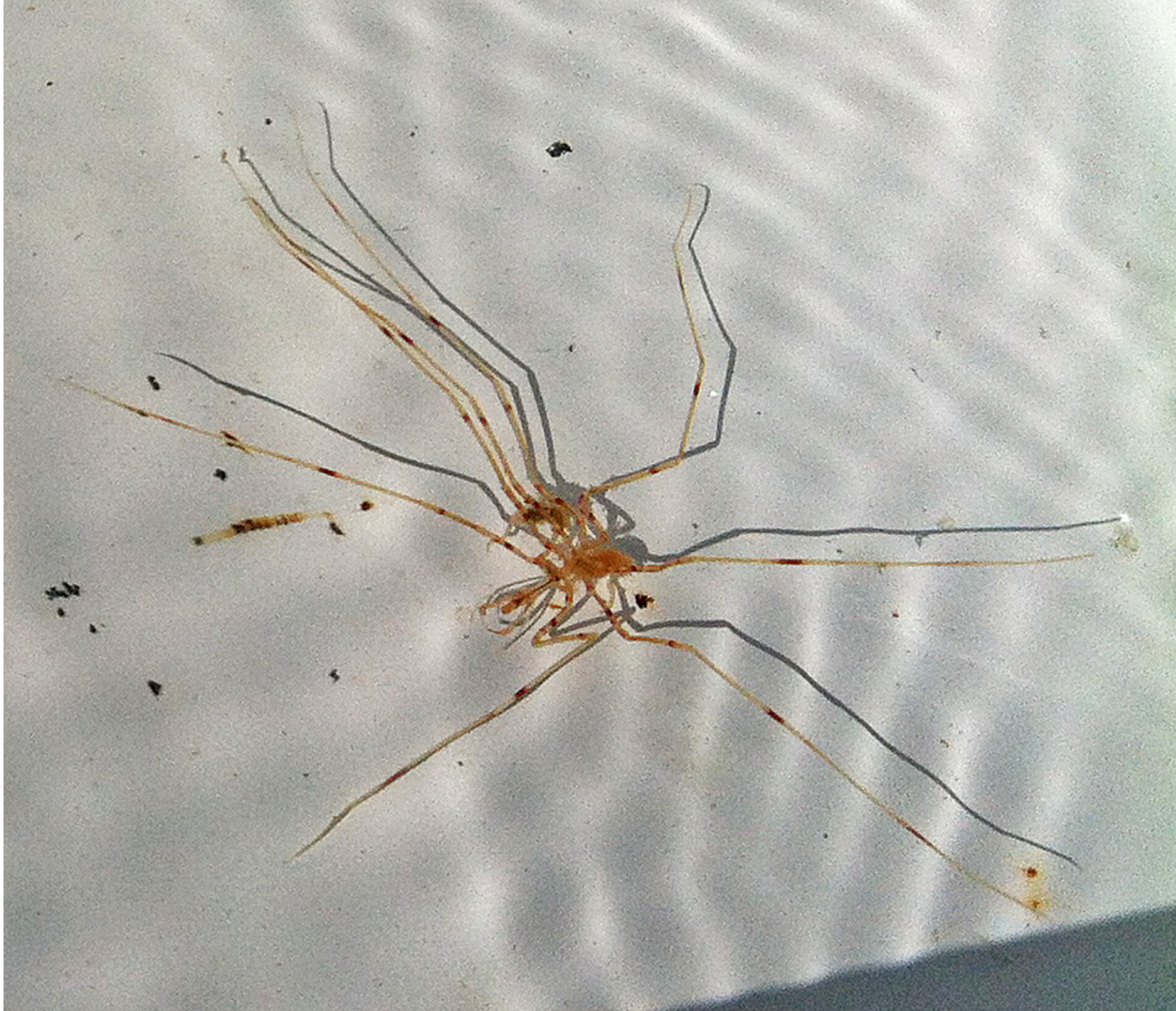
CSDB08T20  
7068, 31 July 08, 75m



*Schmittius politus*  
SD-13, July 2014, 100m  
(scale bar colors are 1cm)







*Nymphon pixellae*

Can also get *Nymphon heterodenticulatum*

If you get an non “pixellae-looking” *Nymphon*, bring back for FID

Depth: 60-100m

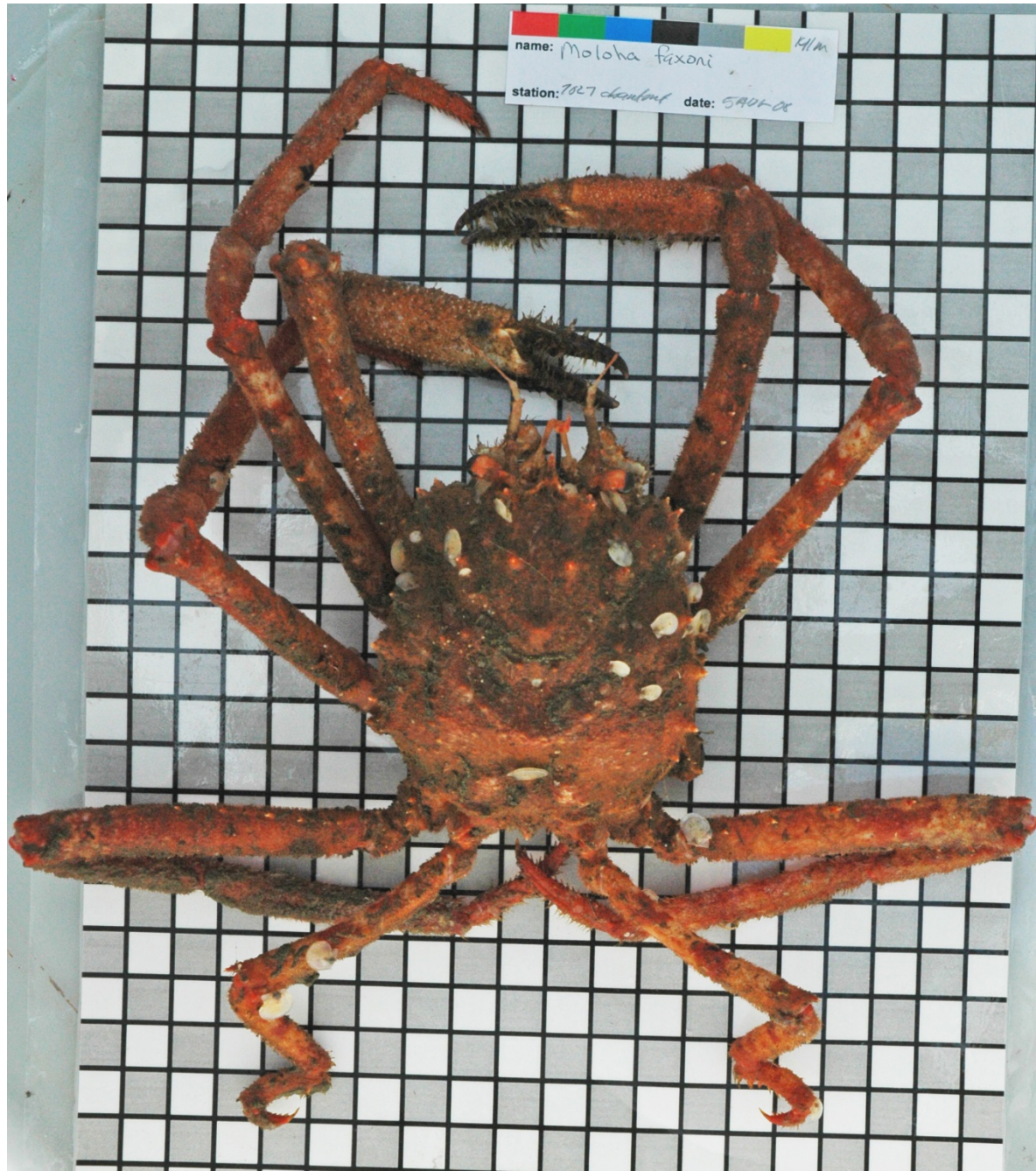




*Metacrangon spinosissima*  
(Rathbun 1902)

Station: 9073  
Depth: 182 m  
7 Aug 2013





*Moloha faxoni*

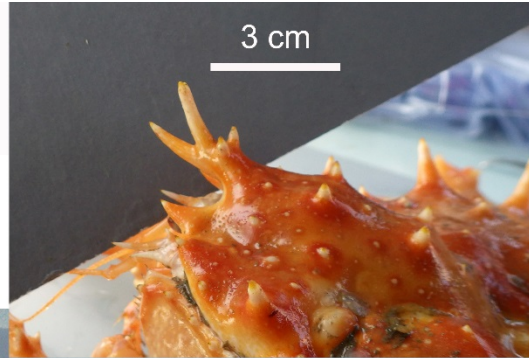
Depth range – 18-460m

Note the modified last pair of appendages



*Paralithodes californiensis*  
(Benedict 1894)

Station: 9011, 9013  
Depth: 184 m  
22 Jul 2013



Can also see *Paralithodes rathbuni*

Know how separate? Use Montagne 1998.

Depth range usually 200m+, but juv *P. rathbuni* have been found near 100m by CSD.

Look for parasitic barnacle under the “abdominal somites”



**Munida hispida**



Depth range: 165-500m. Also look out for *Munida quadrispina* (12-1463m) as well as the species of *Munidopsis*.

*Munidopsis* can be distinguished easily from the *Munida* by having white, rather than pigmented, eyes. There are three in our area:

*Munidopsis aspera* (104-2748m)

*M. depressa* (185-1255m)

*M. quadrata* (86-1572m)

“As for the galatheids in general, I’d use the field key that is under “other useful tools” in the SCAMIT toolbox. It has everything except *M. tenella*, which was taken after it was constructed.”

- DBC





*Munida tenella*  
Benedict 1902  
Station: 9073  
Depth: 182 m  
7 Aug 2013

tail spines are one of the separating characters



*Pleuroncodes planipes*

World domination plans... in 2016 a **1 minute trawl** produced a **108 kg** haul, comprised of approx. **19,000** individuals





Depth range: Intertidal (northern range) -547m;  
we usually see it around 200m+

*Lopholithodes foraminatus*  
(Stimpson 1859)

Station: 9051  
Depth: 196 m  
7-Aug-2013



7 cm





*Chorilia longipes*



Depth range – 33-1200m;  
use caution not to confuse  
with *Loxorhynchus*



***Glyptolithodes cristatipes***  
(Faxon 1893)

5 cm



**CSDB08T19**

7064, 5 Aug 08, 378m

Depth range: 183-800m



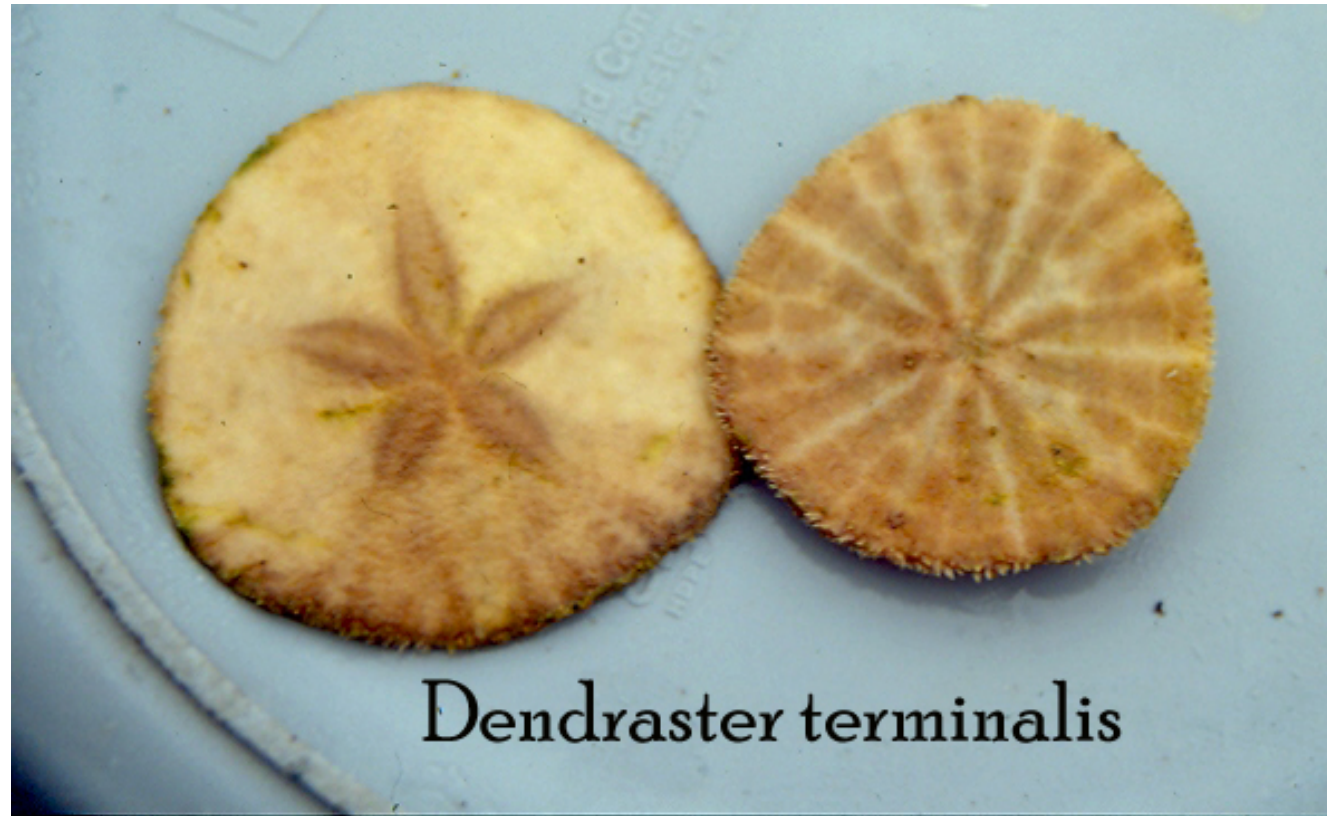
# Echinodermata

Dangerous predators....

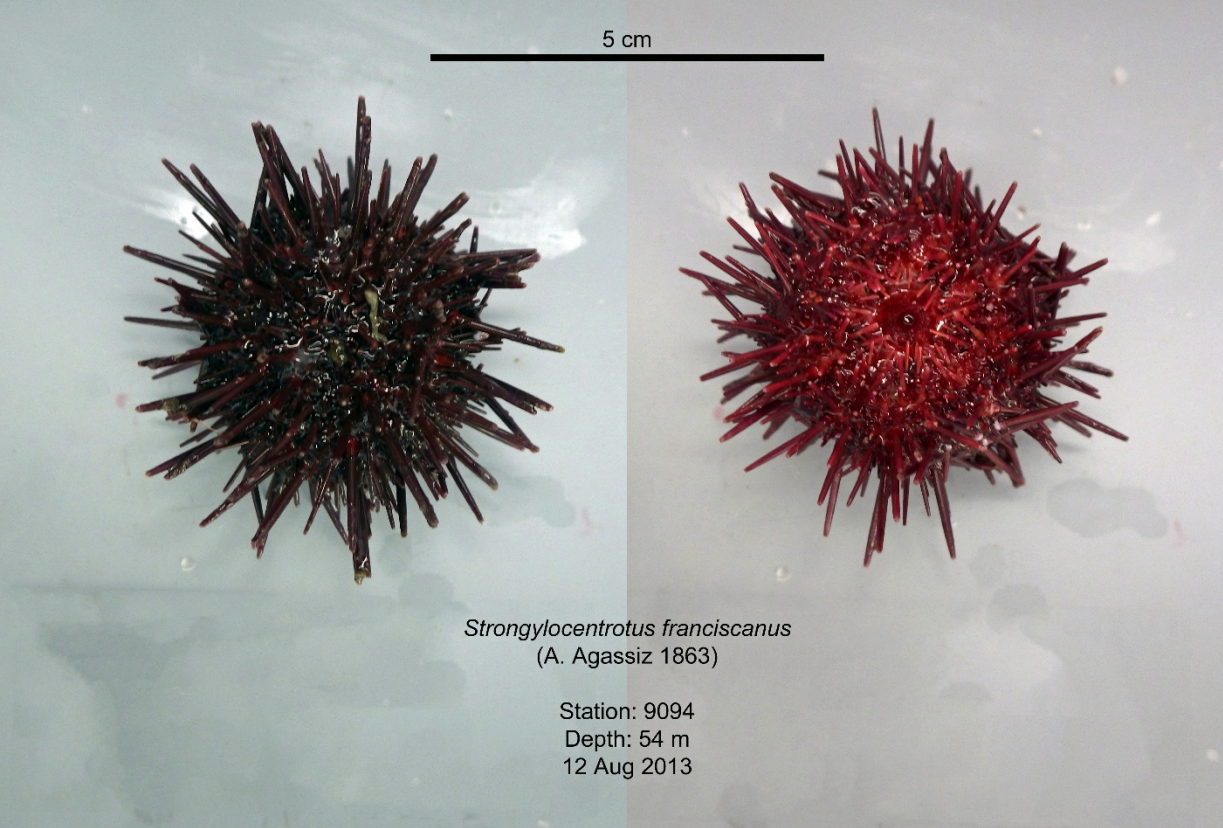




Occurs in shallow sandy habitat but further offshore than *Dendraster excentricus*; *D. terminalis* is usually found around 30m by CSD





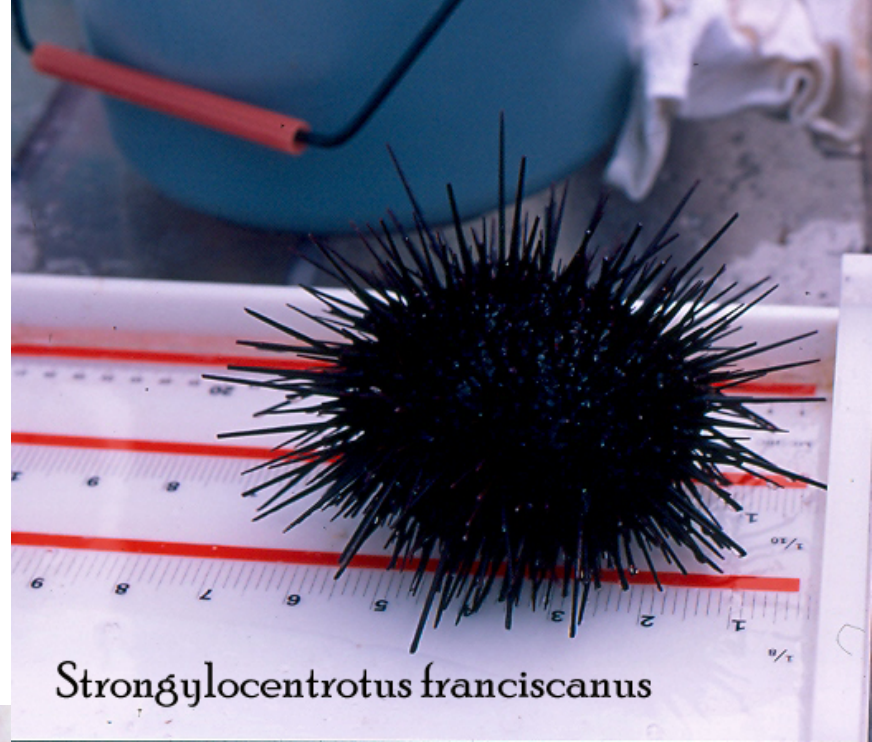


5 cm

*Strongylocentrotus franciscanus*  
(A. Agassiz 1863)

Station: 9094  
Depth: 54 m  
12 Aug 2013

Is now *Mesocentrotus franciscanus*  
Maluf: 0-125m



*Strongylocentrotus franciscanus*

Also watch for  
*Centrostephanus coronatus*  
(very long spines)  
Maluf: 0-125m



*Arbacia incisa*  
0-91m  
photo from Baja Sur



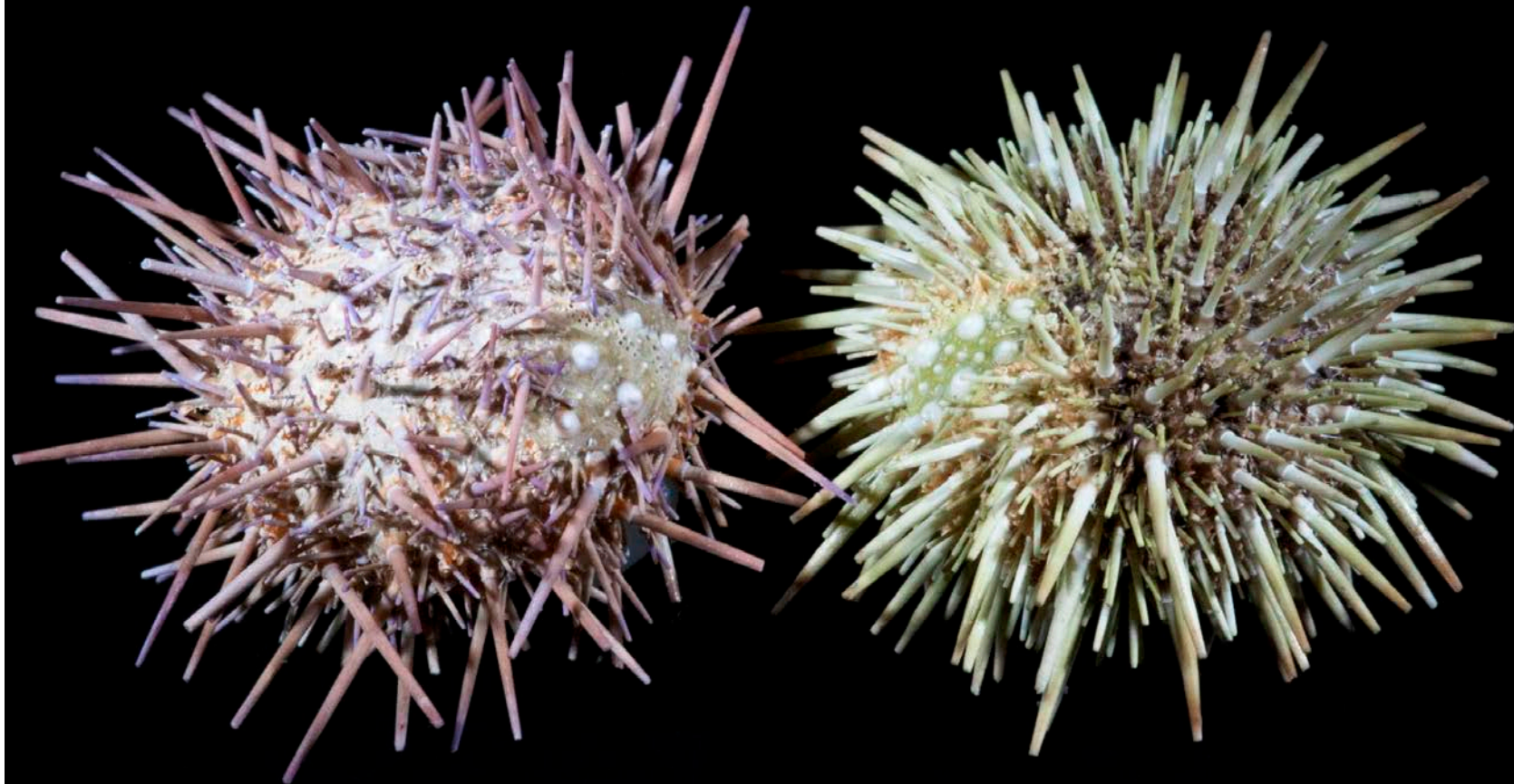
*Strongylocentrotus purpuratus* -2 color morphs

ID verified by R. Mooi

Maluf: 0-161m

5 cm

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*Apostichopus parvimensis*

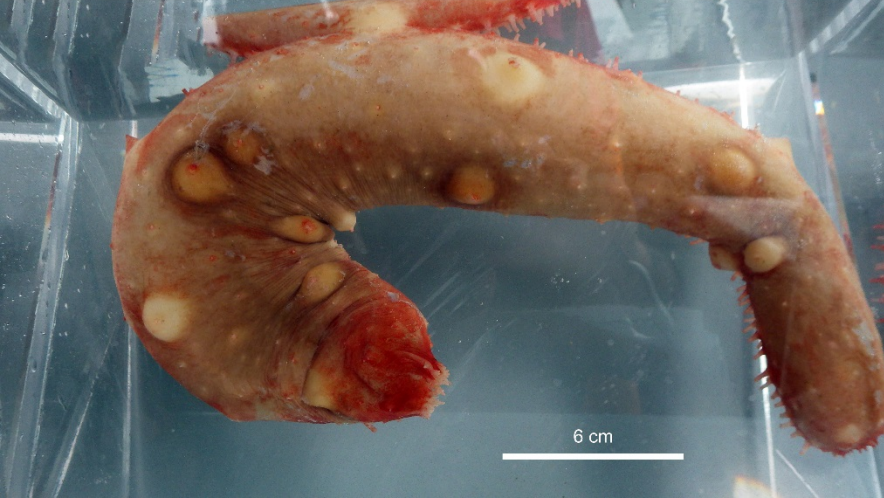


Shallow water, the animal in this picture was from a CSD B'98 station in 18.5m; Depth range – low intertidal to 30m



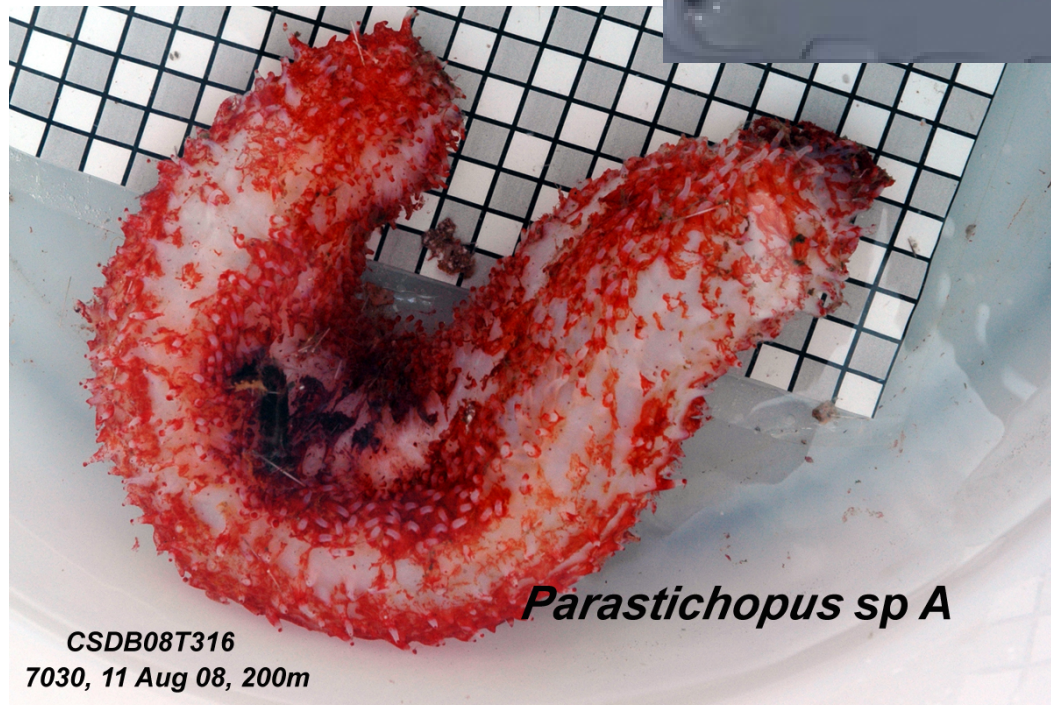
# The *Apostichopus* spp conundrum

Variations on *A. californicus*  
To 100 m





Variations of *Apostichopus* sp A?  
Usually around 200m+



CSDB08T316

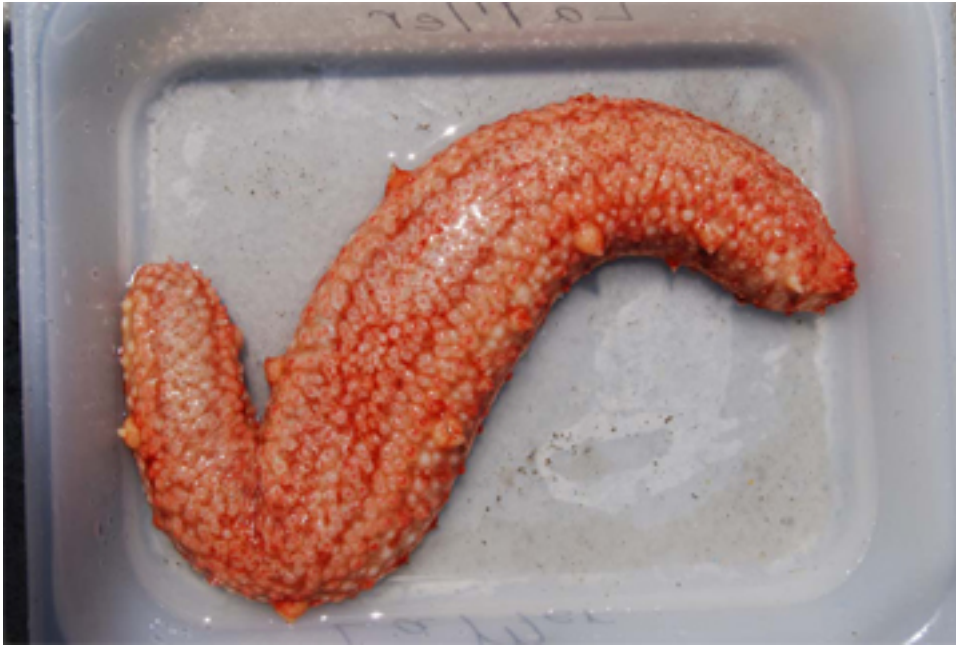
7030, 11 Aug 08, 200m

*Parastichopus* sp A



# *Apostichopus* sp??

If you get an unusual looking *Apostichopus*, photograph and take a tissue snip that includes tube feet





Also worrisome are the possibilities of *Apostichopus leukothele* and *A. johnsoni*.....

*Apostichopus leukothele*

(photo from:

<http://ibis.geog.ubc.ca/biodiversity/efauna/>)

this animal was photographed at diving depths in BC.



OCS D *Apostichopus* sp A?



*Apostichopus johnsoni* (photo from: <http://bizarrecreature.blogspot.com/2014/11/creature-35-parastichopus-johnsoni.html>)





Maluf: 212-2599m







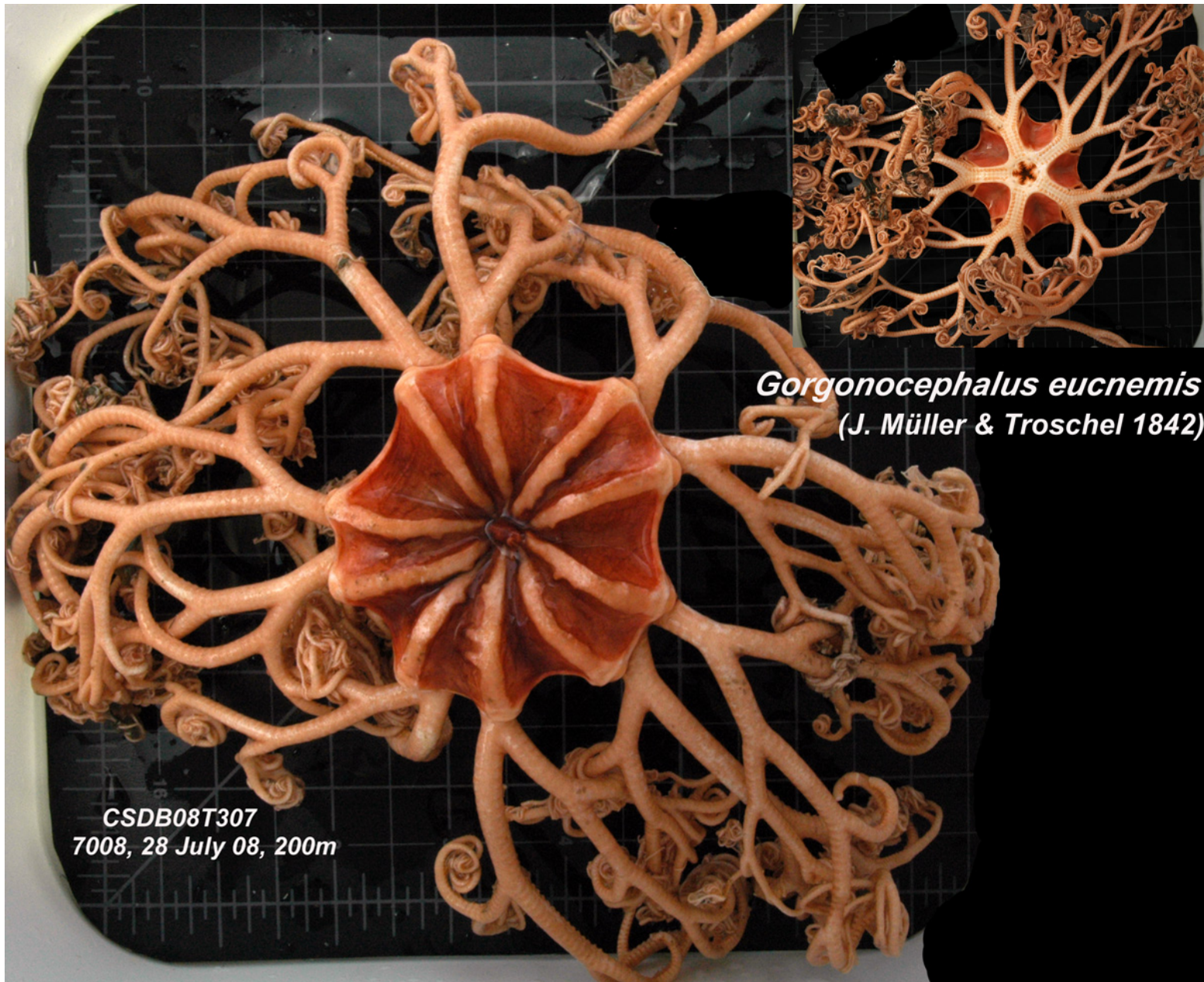
*Synallactes virgulasolida*

B'13 intercal trawls, LACSD  
March 2013, 450m



*Synallactes virgulasolida*  
LACSD B'13 intercal trawls  
28 March 2013, 450m





Usually found  $\geq 200\text{m}$





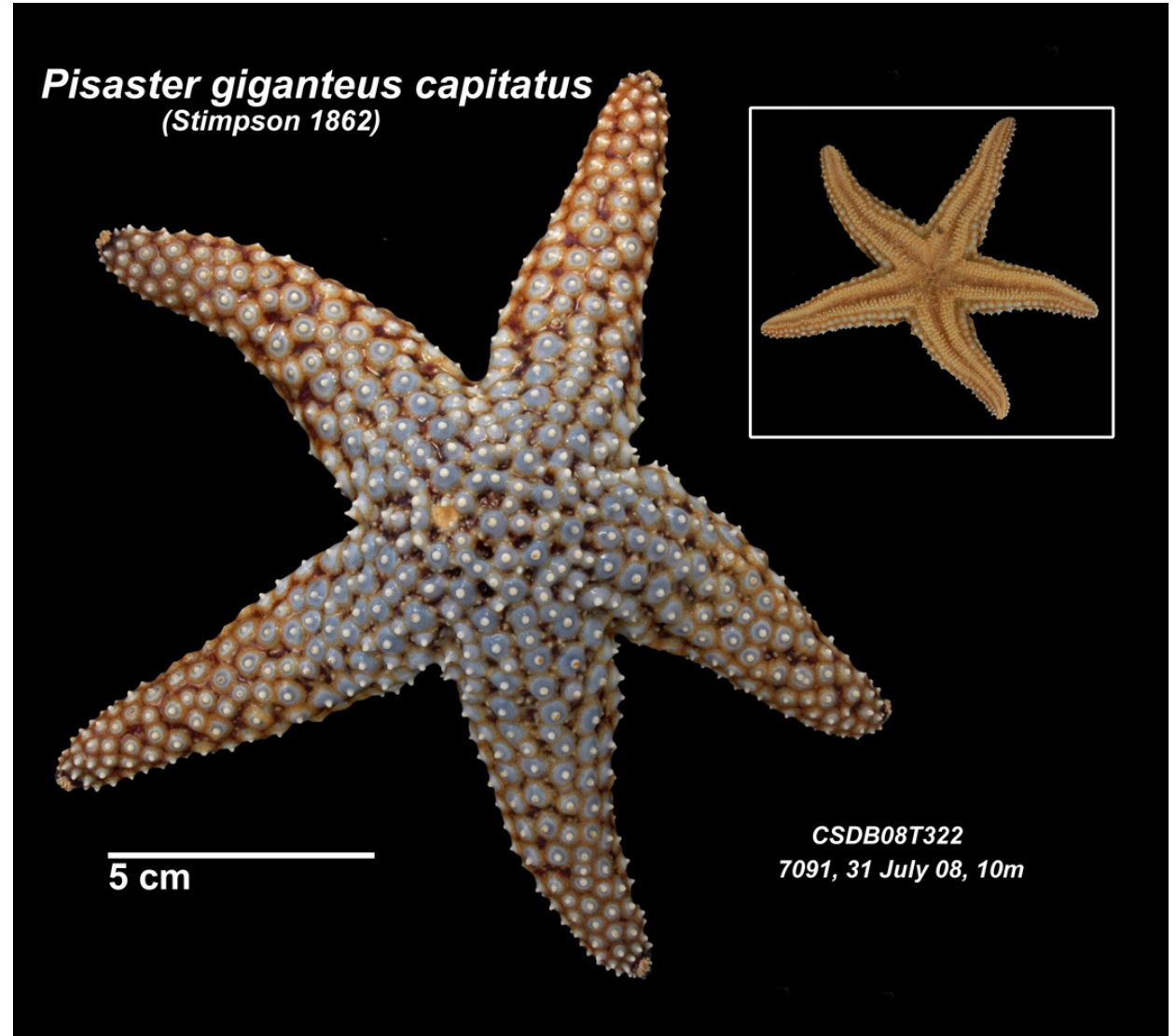
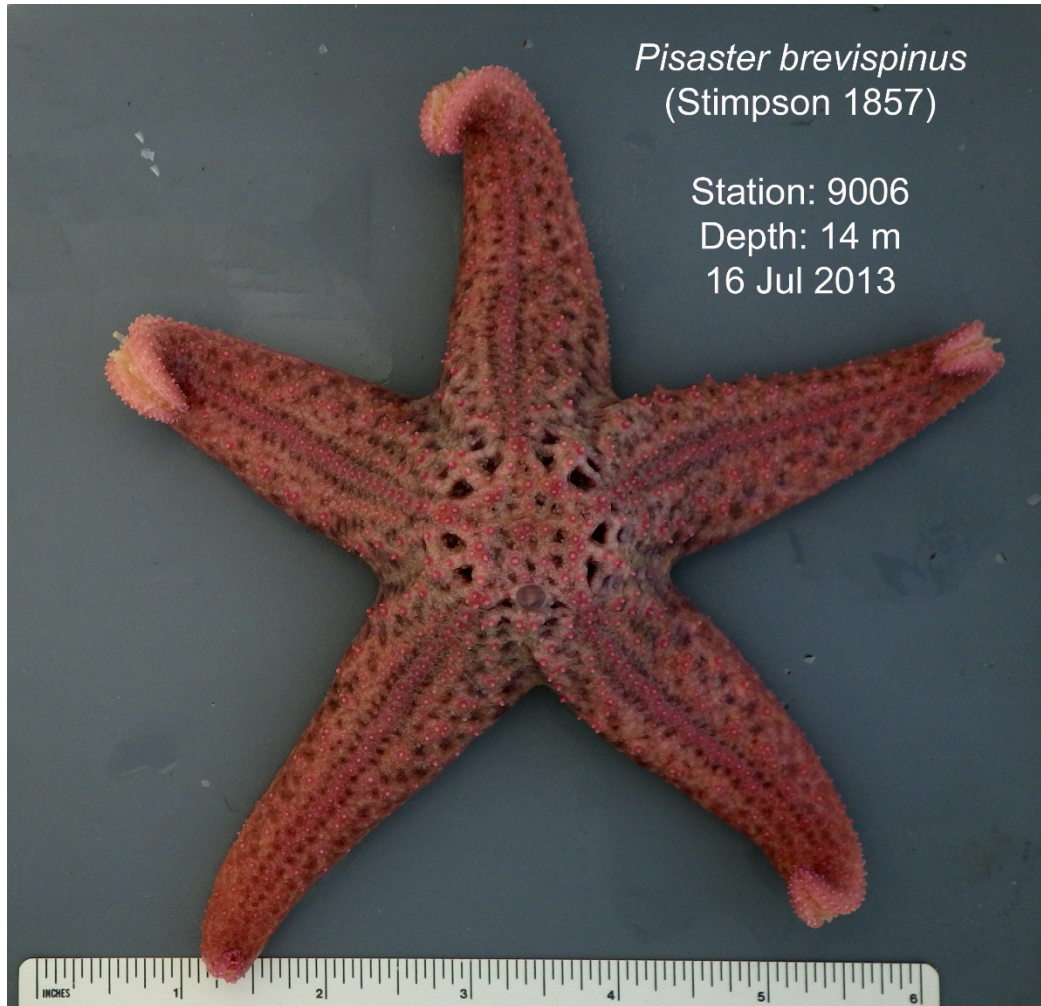
**Asteronyx longifissus**

Found in deeper waters,  
Maluf: 265-1800m;  
often associated with  
*Halipterus californica*



Shallow water

And... *Pisaster ochraceus*; still looking for picture.



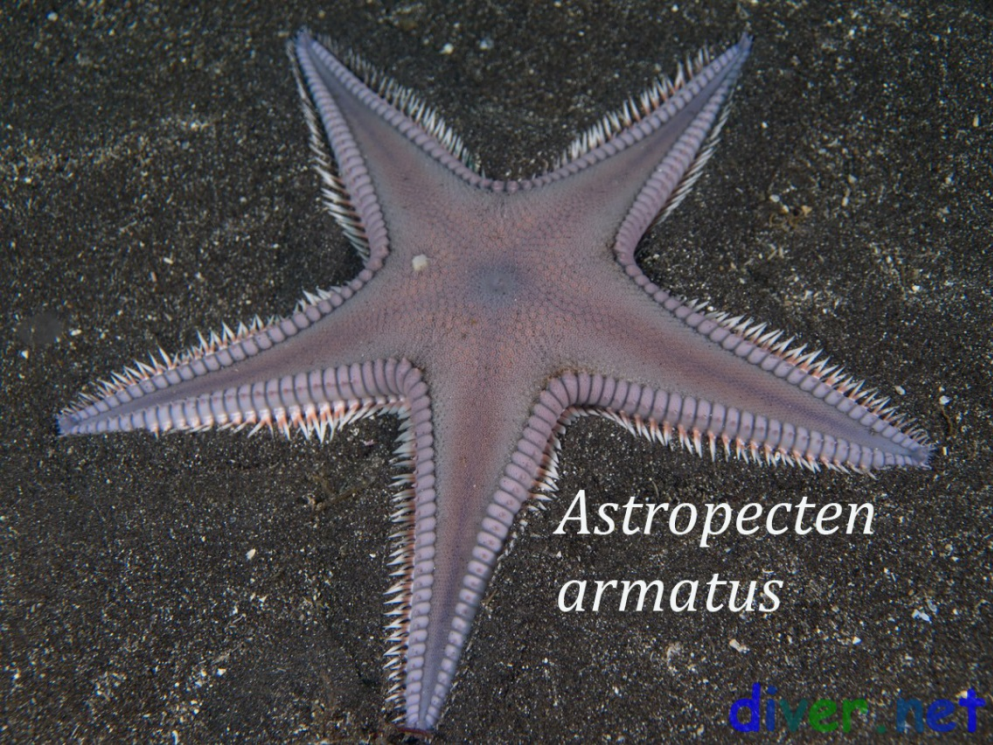


Low intertidal to 200m



*Patiria miniata*





*Astropecten ornatissimus*  
Fisher 1906  
Station: 9013  
Depth 184 m  
22 Jul 2013

- A. armatus* – 10-20m (maybe shallower?)
  - A. californicus* – 30-200m (has been seen deeper)
  - A. ornatissimus* – usually  $\geq 200$ m (seen shallower during upwelling events)
- Juvs (less than 5 cm from arm tip to arm tip) found in 20-30m water should be left at *Astropecten* sp



*Luidia armata*  
Ludwig 1905

5 cm



CSDB08T311  
7009, 25 July 08, 58m

*L. armata* – Maluf: 15-284m

*Luidia* spp

When in doubt use pedicellaria  
to ID to species

*L. armata* – trivalve pedicellaria

*L. asthenosoma* – bivalve ped

*L. foliolata* – no pedicellaria

*Luidia foliolata*  
Grube 1866

5 cm



CSDB08T317  
7032, 29 July 08, 135m

*L. foliolata* Maluf: 0-476m

*Luidia asthenosoma*



Notes:  
Fragile arms break off easily  
long arms spines  
solid, reddish coloration

*L. asthenosoma* Maluf: 20-620m



Maluf: 18-435m

*Sclerasterias heteropaes*

5 cm



*Stylasterias forreri*

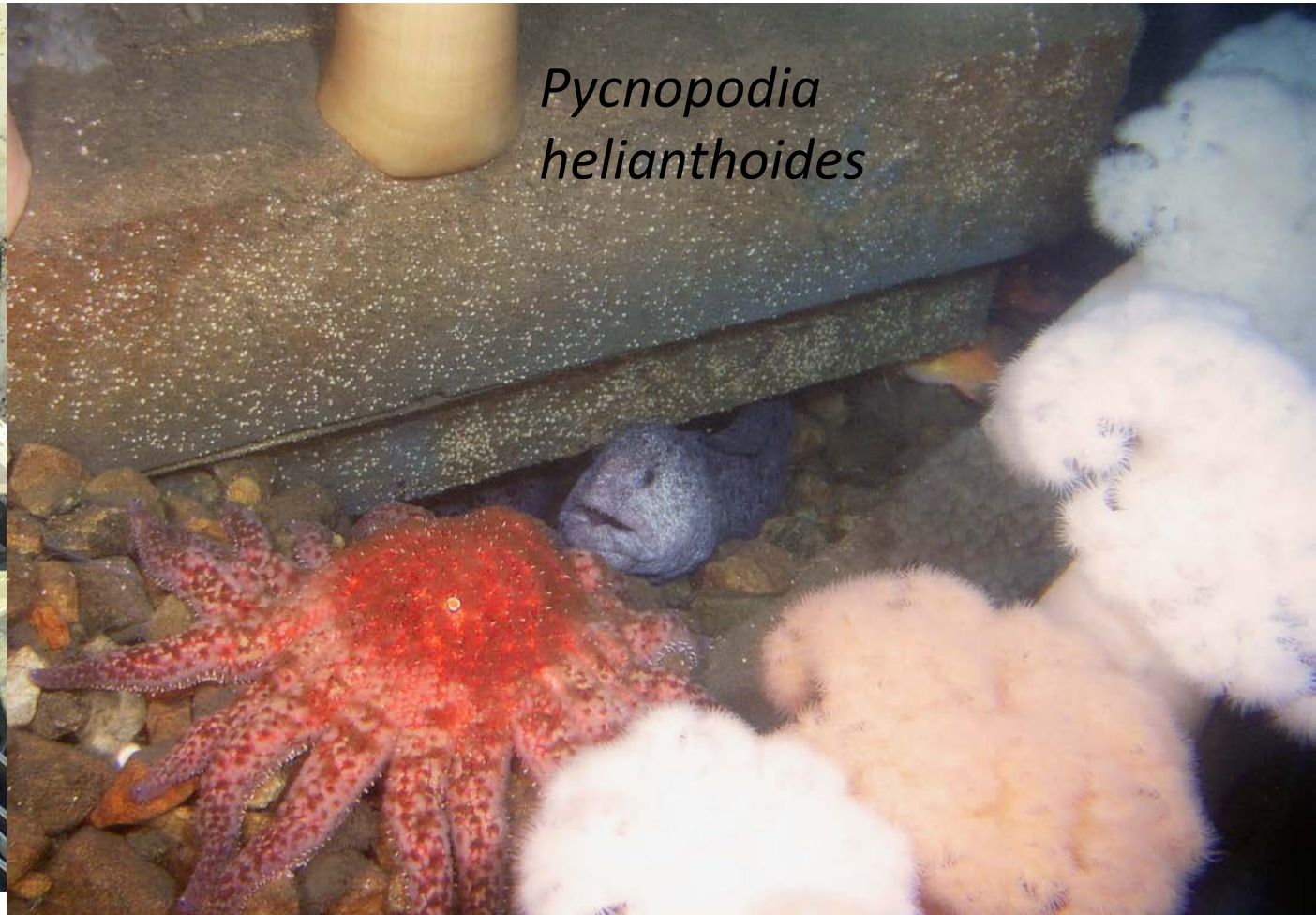
Maluf: 29-532m

*Stylasterias forreri*





Both sampled at approx 100m;  
See SCAMIT NL Vol 13 no. 4 for a discussion of differences







*Hippasteria phrygiana*  
(=*H. spinosa*); Maluf 49-1170m  
See D. Cadien's hand-out on  
separating from *H. californica*.

Another "puffy/spiny" sea star  
encountered in a past Bight project  
is *Poraniopsis inflata*. (See Gotschall  
1994)





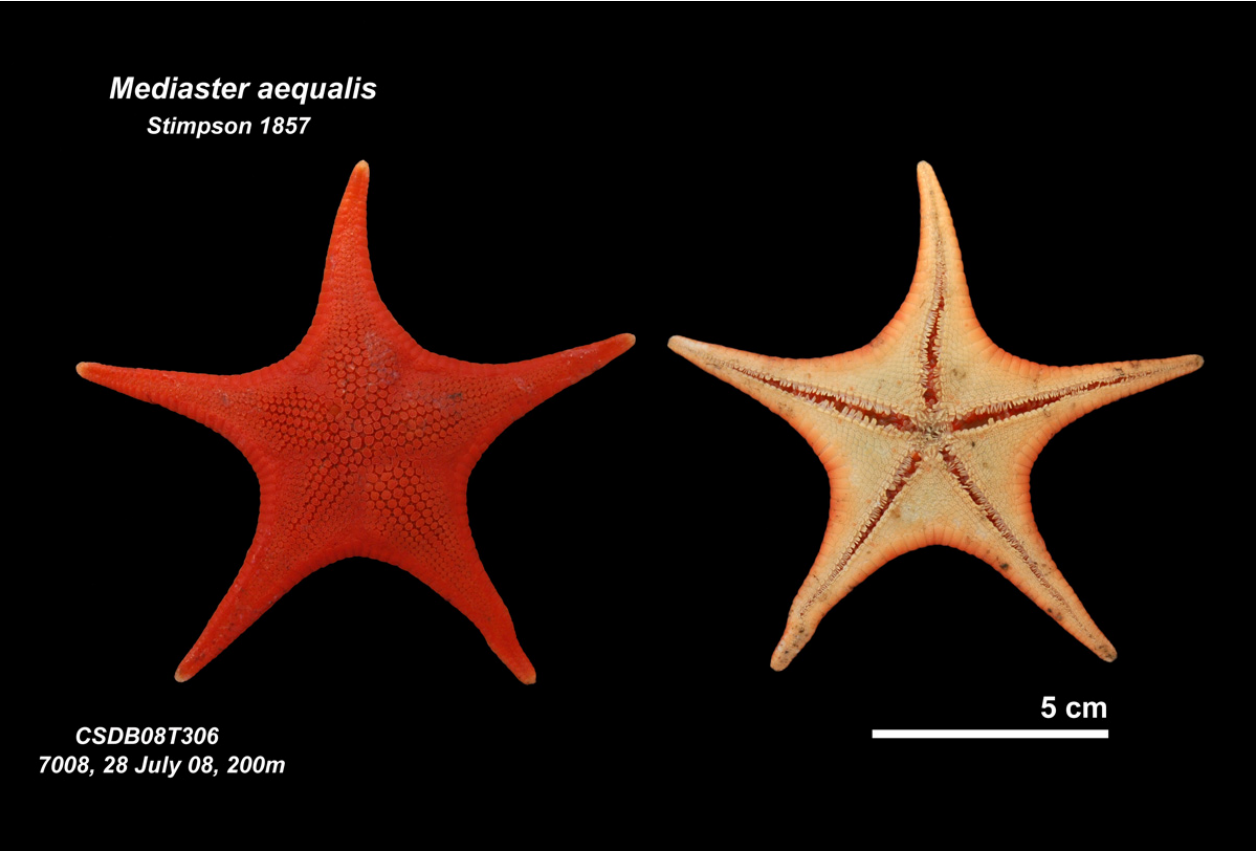
***Odontaster crassus***  
**Fisher 1905**

Distinguished by  
large, apical “tooth”  
on each jaw  
Maluf: 27-595m

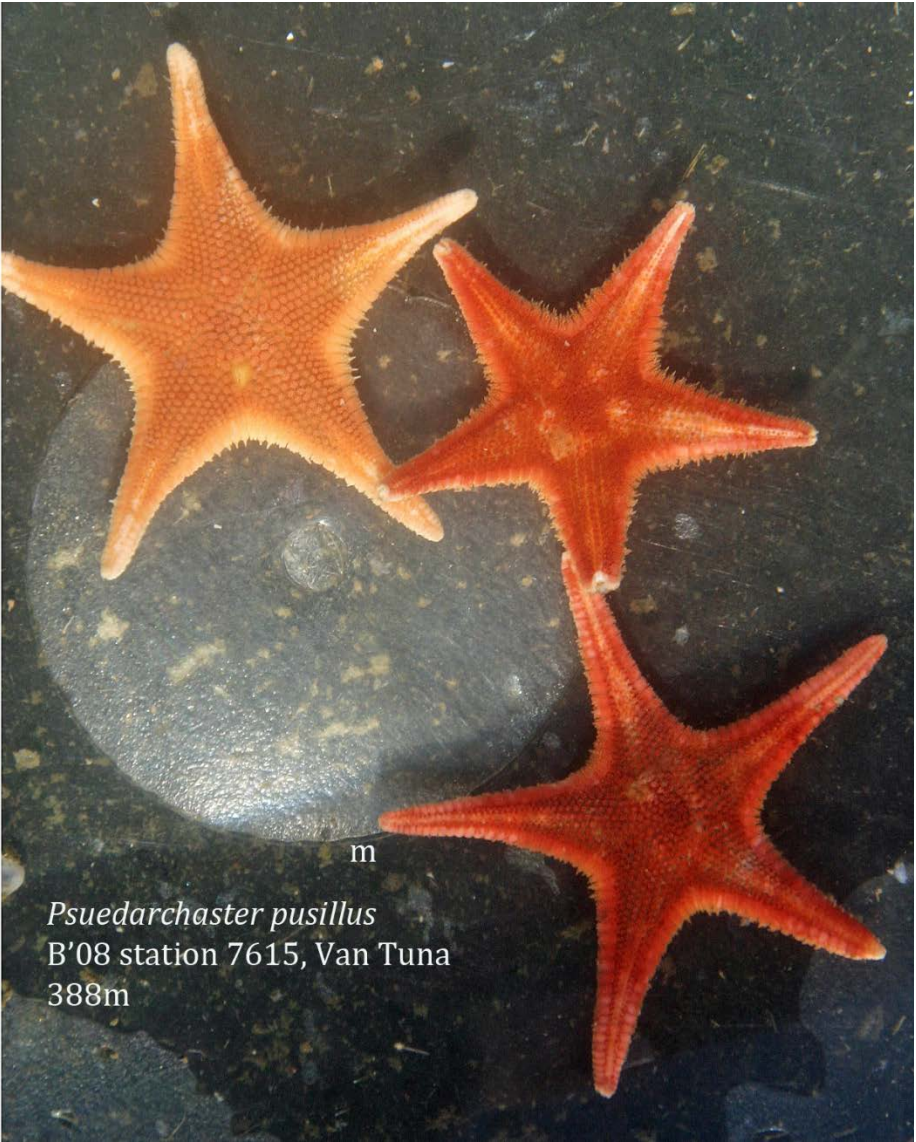
***CSDB08T320***  
**7081, 6 Aug 08, 200m**



If not careful, easy to confuse *Mediaster aequalis* and *Pseudarchaster pusillus* (found in large abundances in approx. 400m off Pt. Conception)



Maluf: 0-481m



Maluf: 99-1326m





**Ceramaster leptoceramus**

Deeper water – Maluf: 366-1811m  
Need to look at furrow spines to  
separate from *Ceramaster patagonicus*

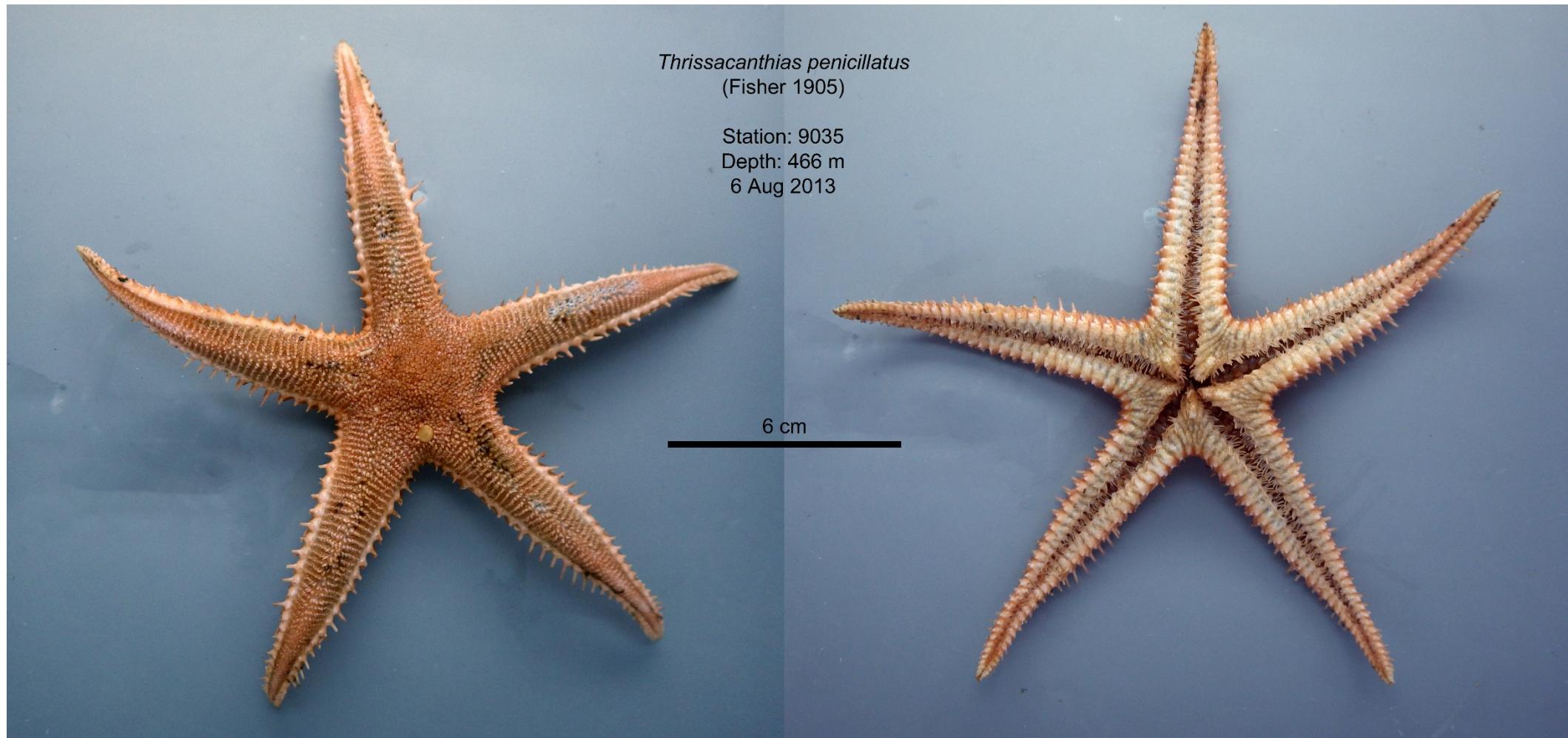


*Myxoderma platyacanthum*



Deep water animal  
Maluf: 256-768m  
Rows of pedicellaria on  
dorsal surface of the  
arms





Maluf: 55-1503m, we usually see it  $\geq 200$ m



Mollusca



# Dendronotus venustus (color variant)





Marine Biology Laboratory  
Los Angeles County Sanitation Districts  
Trawl Voucher

Date : 12 Aug 13

Station : 9245

Species : *Triopha maculata*

Formaldehy





BIGHT 9B  
SAN DIEGO BAY  
STA. 2242  
5 meters depth  
13 Aug. 98



*Musculista senhousia*

Bay species. Considered  
“infauna” and therefore not  
recordable for trawl data



2436

8/14/98



*Arcularia tiarula*

Bay species; Now *Nassarius tiarula*

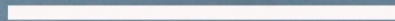


*Philine alba*  
Mattox 1958

Station: 9011  
Depth: 184 m  
22 Jul 2013



2 cm



*Philine auriformis*  
SD-17, 32m



Note the vertical line in the cephalic shield; additionally this species is more elongate than *P. alba*





*Octopus bimaculatus*  
SBOO 2 Oct 2012  
30m



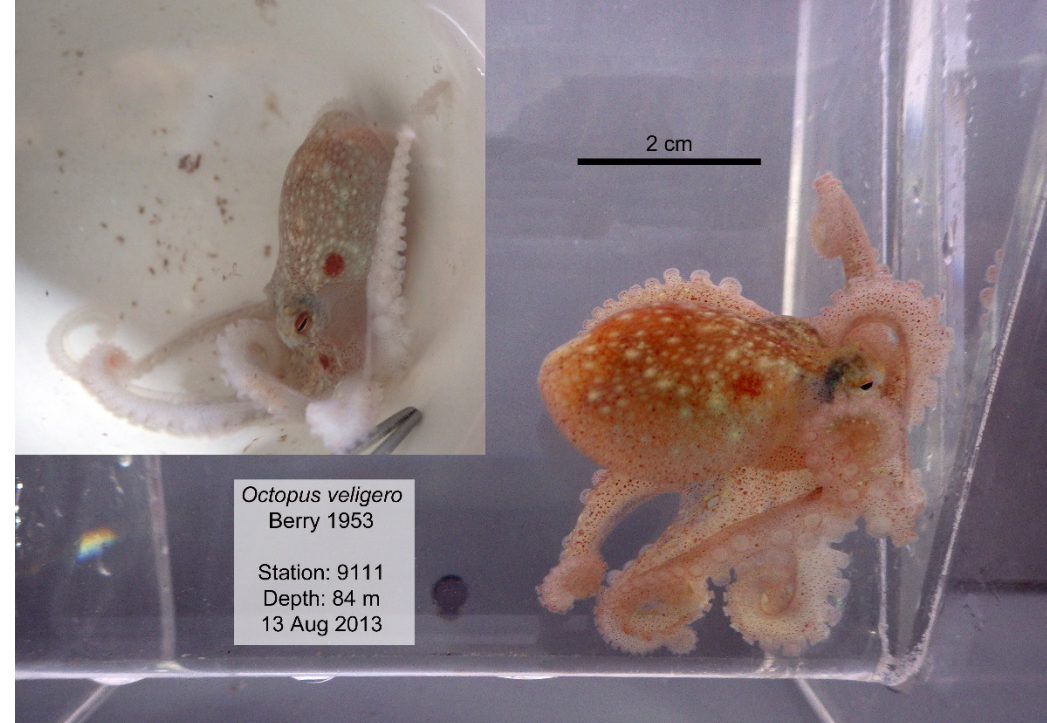
*Octopus rubescens*  
Berry 1953

Station: 9006  
Depth: 14 m  
16 Jul 2013



*Octopus rubescens*  
vs  
*Octopus veligero*\*

\**O. veligero* - usually seen during, or shortly after, El Niño events.



*Octopus veligero*  
Berry 1953

Station: 9111  
Depth: 84 m  
13 Aug 2013

*Octopus rubescens*  
Berry 1953



CSDB08T200  
7002, 23 July 08, 36m

*Octopus veligero*



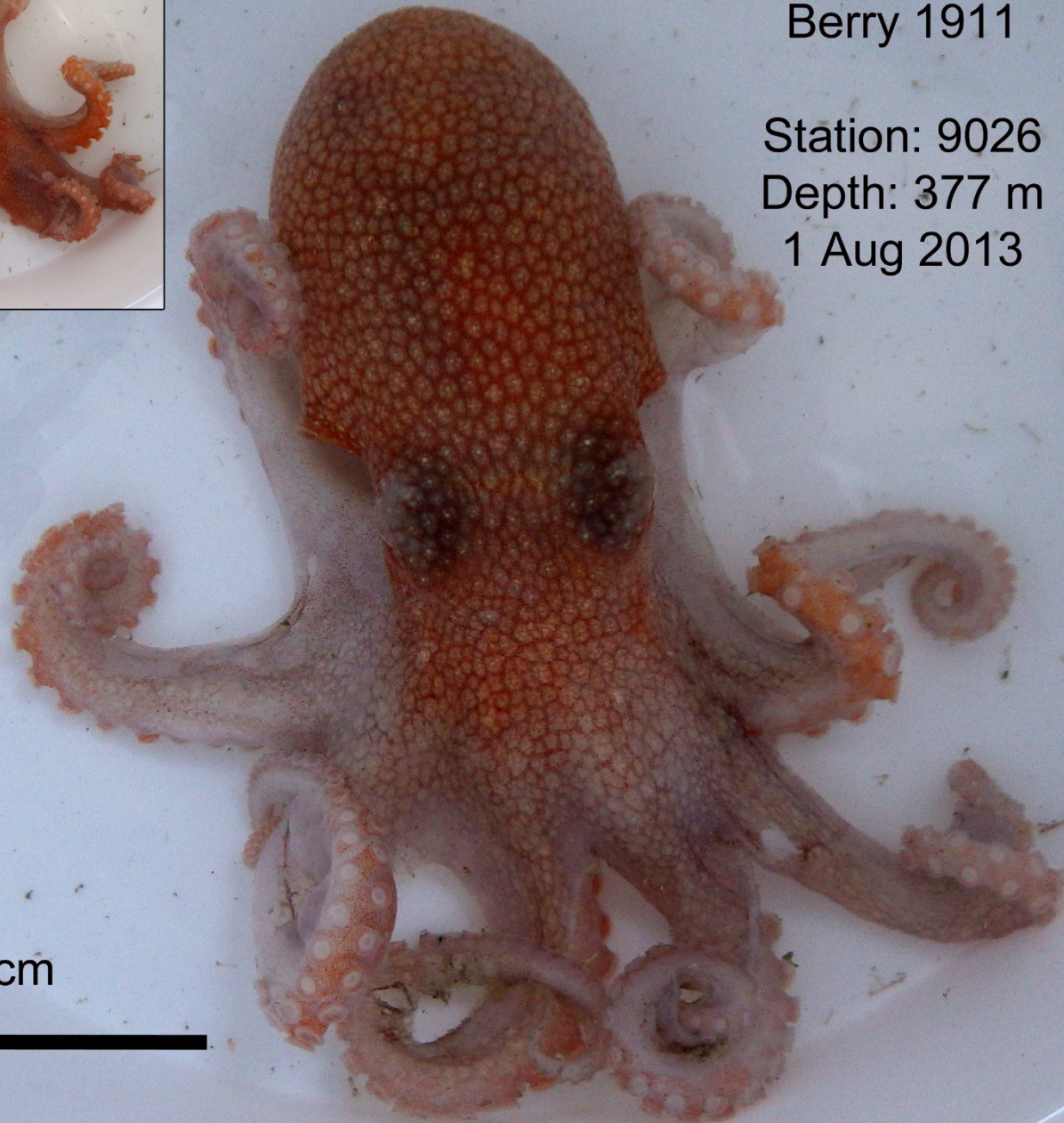




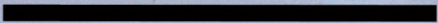
*Octopus californicus*  
Berry 1911

Station: 9026  
Depth: 377 m  
1 Aug 2013

Usually seen  $\geq 200\text{m}$   
Stellate granules beneath the  
skin, as well as  
proportionately very large  
eyes, are diagnostic

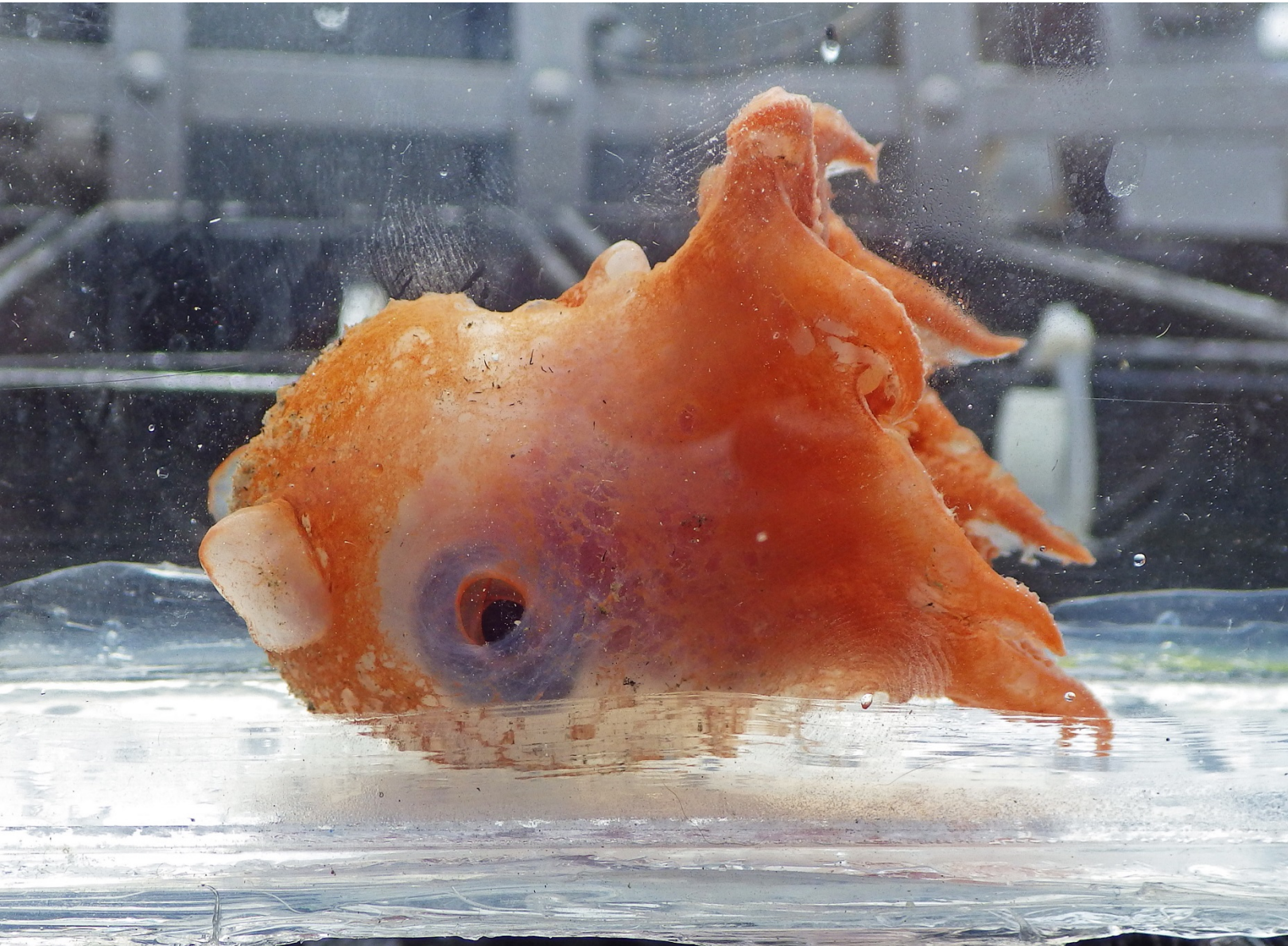


5 cm





*Opisthoteuthis* sp A  
Approx 400m





# MISCELLANEOUS PHYLA



SD-19, Jan '11, 30m

*Aphrodita armifera*

Animal is approx 9cm

Note the large, brassy notosetae that extend almost across the dorsum





Station 2243 29 Nov 98  
4 meters  
Actinaria sp SD1  
SD Bay, 4m, B'98



Any guesses?



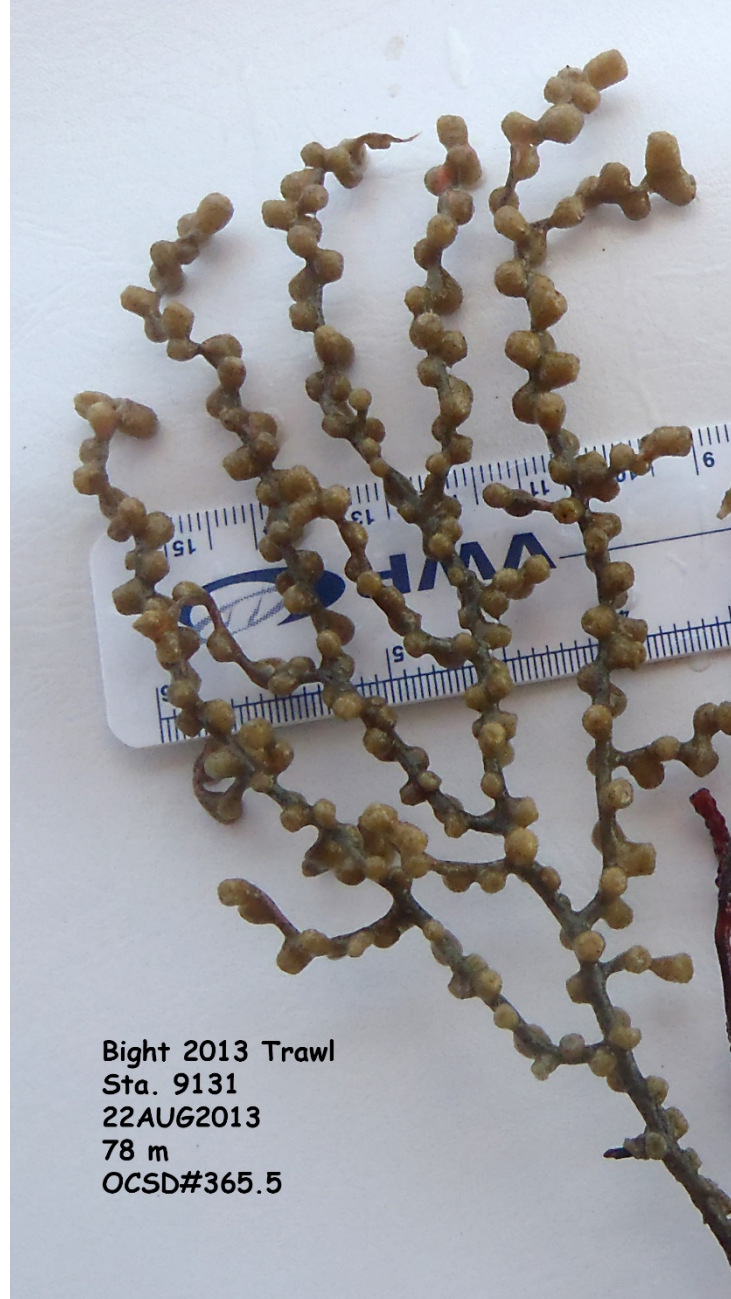


4 cm

*Renilla koellikeri*  
Pfeffer 1886

Station: 9005  
Depth: 18 m  
16 Jul 2013

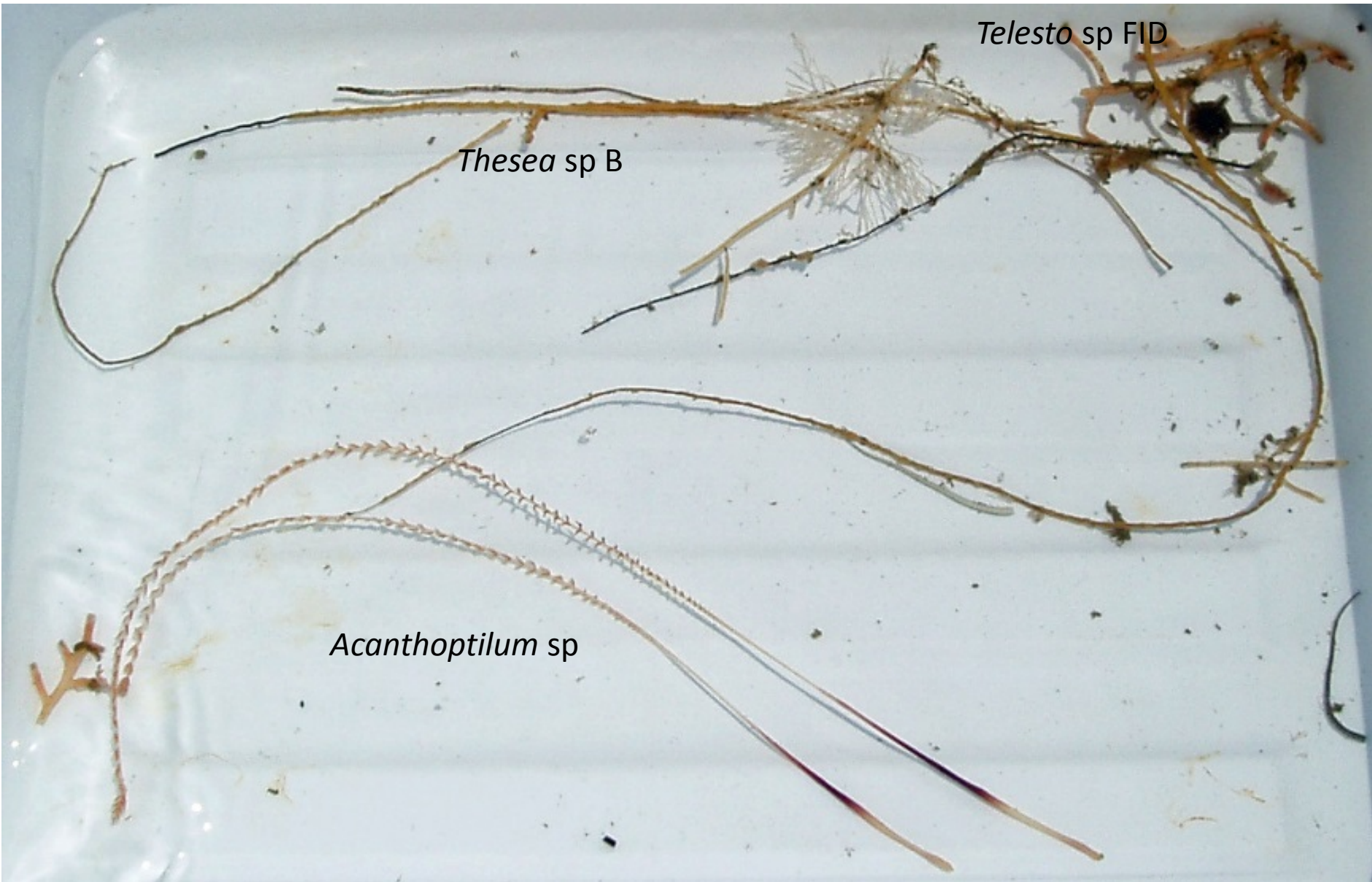




Bight 2013 Trawl  
Sta. 9131  
22AUG2013  
78 m  
OCSD#365.5

***Savalia lucifica***  
**(Cutress C.E. & Pequenat W.E. 1960)**



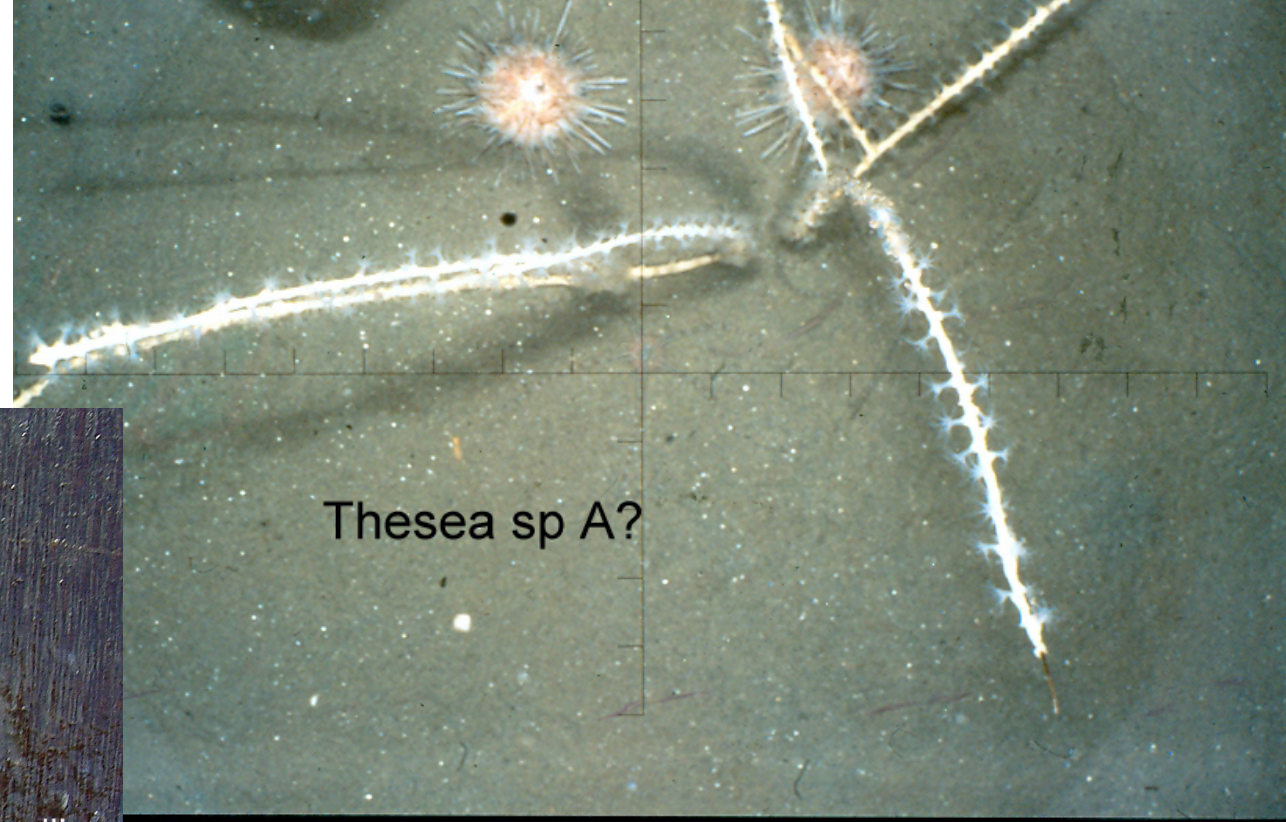


Can you name the 3 “species” seen here?

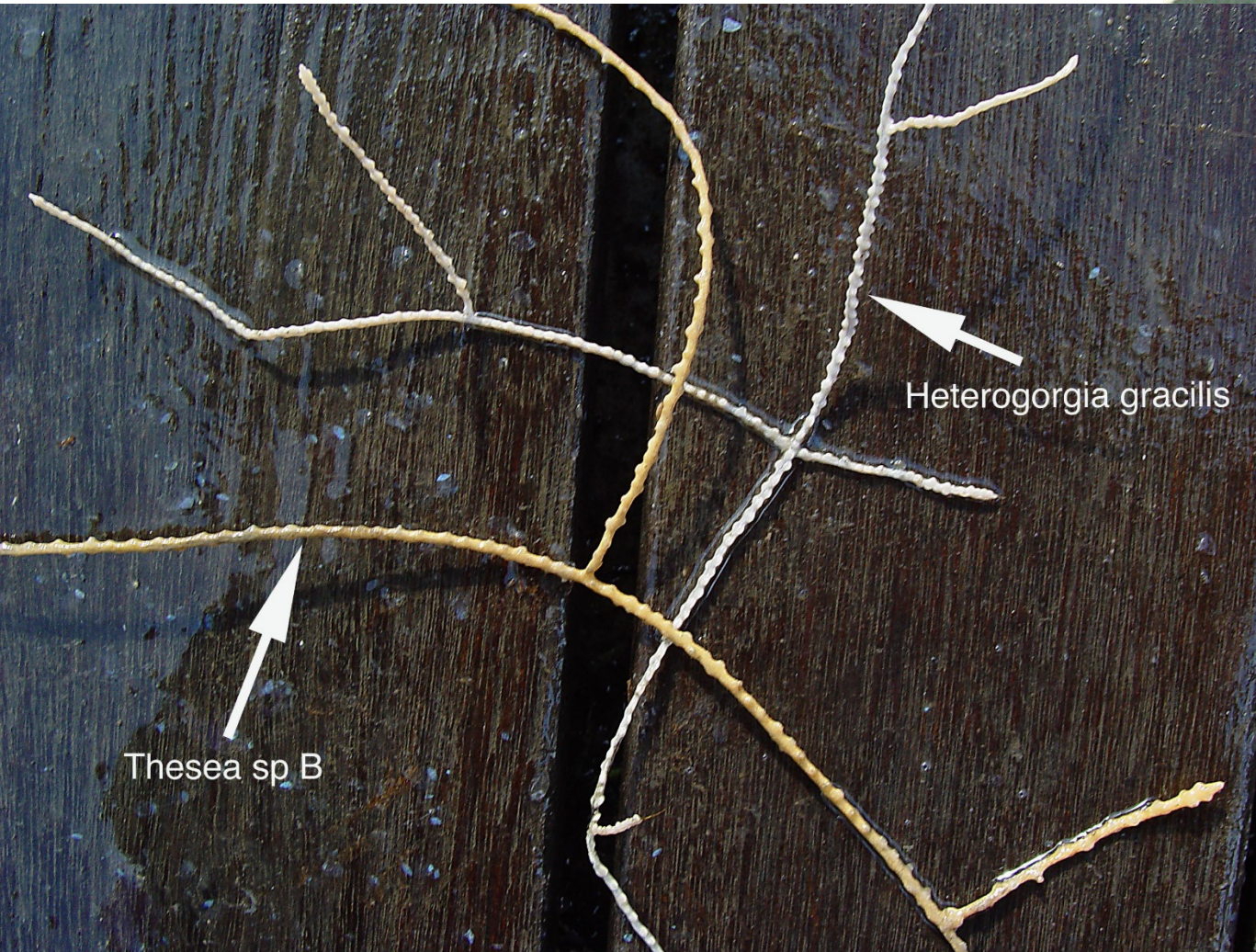
- *Acanthoptilum* sp
- *Thesea* sp B
- *Telesto* sp (see MMS Atlas Vol 3. The Cnidaria, to speciate *Telesto* spp)



See SCAMIT NL Vol 32 no 4 for a discussion of *Heterogorgia*.



*Thesea* sp A?

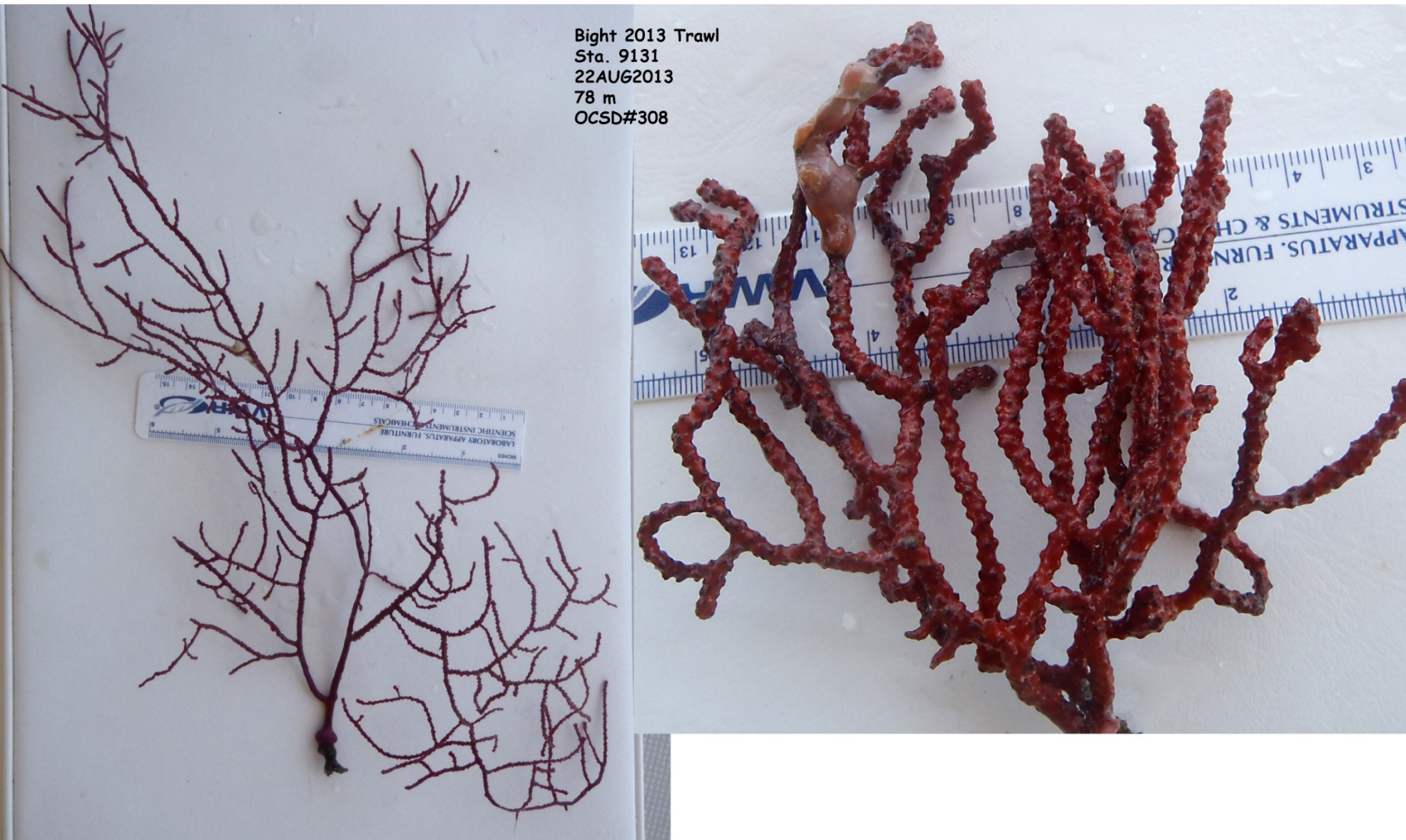


*Thesea* sp B

*Heterogorgia gracilis*



Bight 2013 Trawl  
Sta. 9131  
22AUG2013  
78 m  
OCSD#308



Literature to use for  
Gorgonian sea fans in the  
field – Gotschall 1994  
If in doubt of ID take a  
piece back for spicule prep

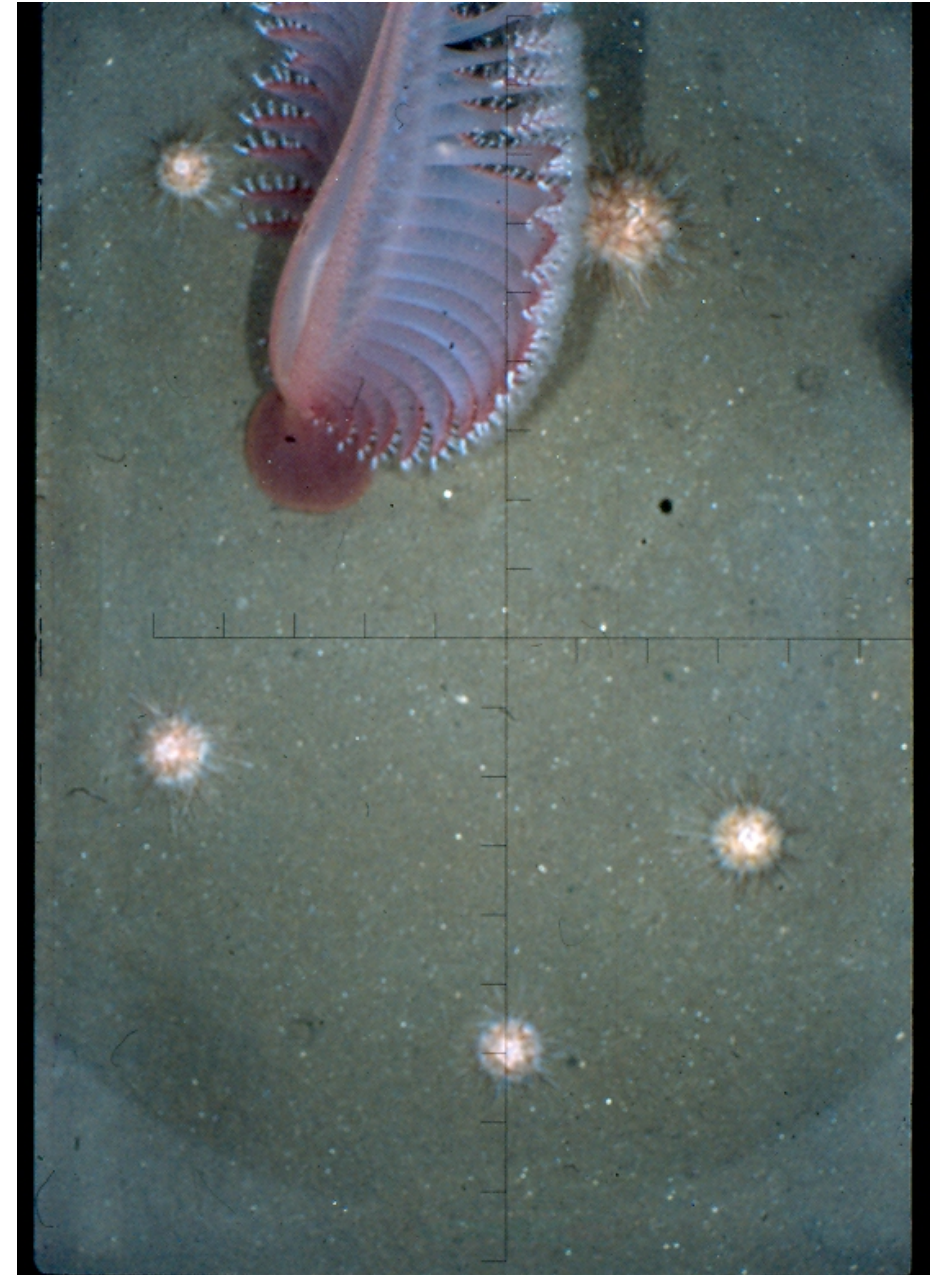
*Eugorgia rubens* Verrill 1868



*Ptilosarcus gurneyi*  
LACSD B'13 intercal trawls  
28 March 2013, 100m



Depth range: usually around 100m for SCB





*Stephanauge* sp A



Depth range: unsure,  
but never seen  
shallower than 150m

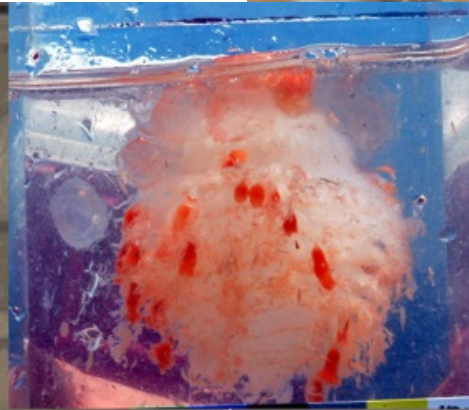


Depth range: 200m+

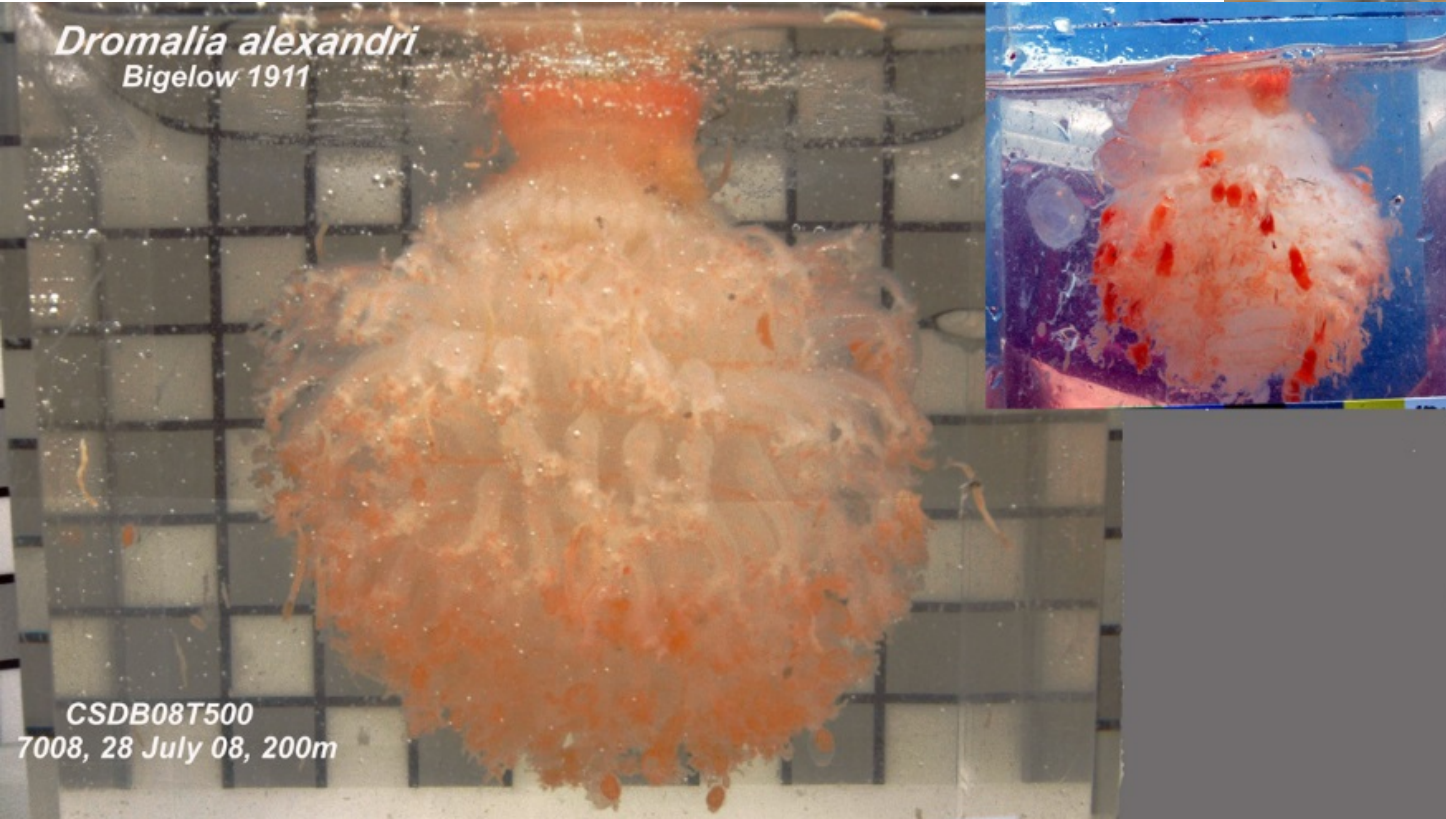
*Dromalia alexandri*  
B'13 Intercal trawls LACSD




*Dromalia alexandri*  
Bigelow 1911



CSDB08T500  
7008, 28 July 08, 200m







*Halipteris californica*

*Asteronyx longifissus*

Depth range: 300 -2000m



Depth range: usually 500m+

*Umbellula magniflora*





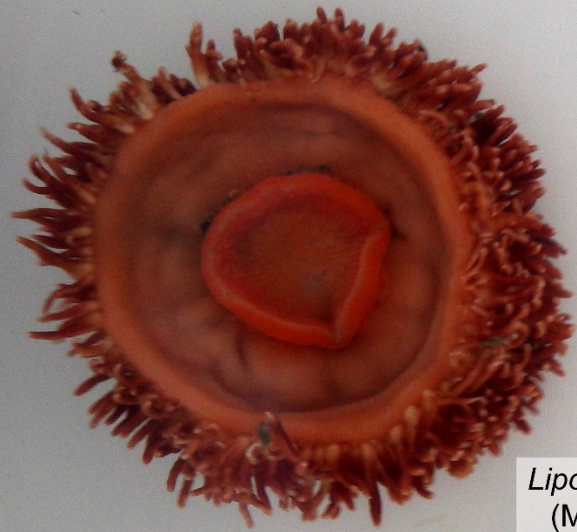
Determined to be *Urticina columbiana*

*Urticina columbiana*  
LACSD B'13 intercal trawls  
28 March 2013, 450m





*Liponema brevicorne*



6 cm



*Liponema brevicorne*  
(McMurrich 1893)

Station: 9035  
Depth: 466 m  
6 Aug 2013



*Liponema brevicornis*

2003.6.10 10:45



6 cm



*Hormathia digitata*  
(Müller 1776)

Station: 9035  
Depth: 466 m  
6 Aug 2013





SPONGES





Porifera  
sp SD 4  
from SD Bay  
B'98

Very common in  
SD bay; covered  
the bottom;  
spicule  
examination  
revealed it to be a  
species of  
*Suberites*



Stick sponge of LACSD



As of yet, still not identified



**Aphrocallistes vastus**



Deep water.... 300m+



*Aphorme horrida*  
B'08, CSD



Depth range  
unsure, but this  
specimen collected  
at 420m



JUST SAY NO....

