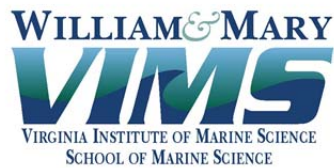

Invertebrate Identification Guide

for

ChesMMAP and NEAMAP Diet Analysis Studies

Chesapeake Bay Multispecies Monitoring and Assessment Program
Northeast Area Monitoring and Assessment Program



11/13/13

This book is a compilation of identification resources for invertebrates found in stomach samples. By no means is it a complete list of all possible prey types. It is simply what has been found in past ChesMMAAP and NEAMAP diet studies. A copy of this document is stored in both the ChesMMAAP and NEAMAP lab network drives in a folder called ID Guides, along with other useful identification keys, articles, documents, and photos. If you want to see a larger version of any of the images in this document you can simply open the file and zoom in on the picture, or you can open the original file for the photo by navigating to the appropriate subfolder within the Fisheries Gut Lab folder.

Other useful links for identification:

Isopods

<http://www.19thcenturyscience.org/HMSC/HMSC-Reports/Zool-33/htm/doc.html>

<http://www.19thcenturyscience.org/HMSC/HMSC-Reports/Zool-48/htm/doc.html>

Polychaetes

<http://web.vims.edu/bio/benthic/polychaete.html>

<http://www.19thcenturyscience.org/HMSC/HMSC-Reports/Zool-34/htm/doc.html>

Cephalopods

<http://www.19thcenturyscience.org/HMSC/HMSC-Reports/Zool-44/htm/doc.html>

Amphipods

<http://www.19thcenturyscience.org/HMSC/HMSC-Reports/Zool-67/htm/doc.html>

Molluscs

<http://www.oceanica.cofc.edu/shellguide/>

<http://www.jaxshells.org/slifex4.htm>

Bivalves

<http://www.jaxshells.org/atlanticb.htm>

Gastropods

<http://www.jaxshells.org/atlantic.htm>

Crustaceans

<http://www.jaxshells.org/slifex26.htm>

Echinoderms

<http://www.jaxshells.org/eich26.htm>

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NEMATA (NEMATODE WORMS)	5
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0994 no sample
0995 unidentified species
0629 unidentified worm

Phylum Protozoa

FORAMINIFERA

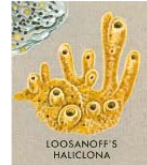
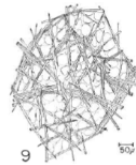
Class Granuloreticulosea
1090 unidentified foram



Phylum Porifera

SPONGES

0548 unidentified sponge
0989 *Haliclona loosanoffi*



Phylum Cnidaria

JELLYFISHES

0900 unidentified jellyfish

HYDROIDS

Class Hydrozoa
Order Hydroida
0703 unidentified hydroids
1024 *Diphasia* spp.
0551 *Sertularia* spp.



SEA ANEMONES

Class Anthozoa\
Order Pennatulacea
0776 *Renilla reniformis*, sea pansy
Order Actiniaria
0643 unidentified sea anemones



Phylum Ctenophora

COMB JELLIES
0774 unidentified comb jelly

Phylum Platyhelminthes

FLATWORMS
Class Turbellaria
Order Polycladida
0935 unidentified flatworms

Phylum Nemertea

NEMERTEANS
0572 unidentified nemertean
0575 *Zygeupolia rubens*, sharp-headed nemertean
1091 *Malacobdella grossa*

Phylum Nemata

NEMATODES
0901 unidentified nematode



Phylum Acanthocephala

SPINY-HEADED WORMS
1105 unidentified acanthocephalan



Phylum Priapula

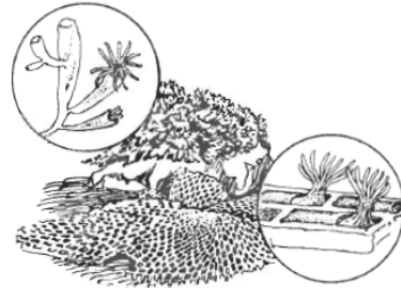
PRIAPULID WORM
Family Priapulidae
0778 *Priapulus caudatus*



Priapulus caudatus

Phylum Ectoprocta

1114 unidentified bryozoans



Individual zooids of a bushy bryozoan such as cushion moss and an encrusting type bryozoan differ in the construction of their homes (the zoecium), but each feeds similarly, capturing food with protruding tentacles.

MARINE BRYOZOANS
Class Gymnolaemata
0689 unidentified marine bryozoans
0825 *Alcyonidium spp.*, dead man's fingers



Alcyonidium spp.

Phylum Mollusca

0709 unidentified mollusc meat
5036 unidentified mollusc

CHITONS

Class Polyplacophora
 Order Neoloricata

0501 *Chaetopleura apiculata*, eastern beaded chiton



Chaetopleura apiculata

SNAILS, DRILLS, NUDIBRANCHS

Class Gastropoda

0884 unidentified snail or drill (aka unidentified gastropod)
0855 unidentified nudibranch
0048 unidentified whelk

5028 *Acteocina canaliculata*, barrel bubble
0514 *Rictaxis punctostriatus*, pitted baby-bubble
0806 *Haminoea solitaria*, solitary bubble



Acteocina canaliculata



Rictaxis punctostriatus



Acteocina canaliculata



Haminoea solitaria

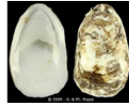
5027 *Anachis* spp., dove snails
5025 *Mitrella lunata*, lunar dove snail
0737 *Mitrella* spp., dove snails
1049 *Crepidula fornicata*, common Atlantic slipper shell
0881 *Crepidula* spp., slipper shells
0891 *Sinum perspectivum*, ear shell



Crepidula fornicata



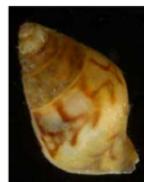
C. convexa



C. plana



Anachis spp.



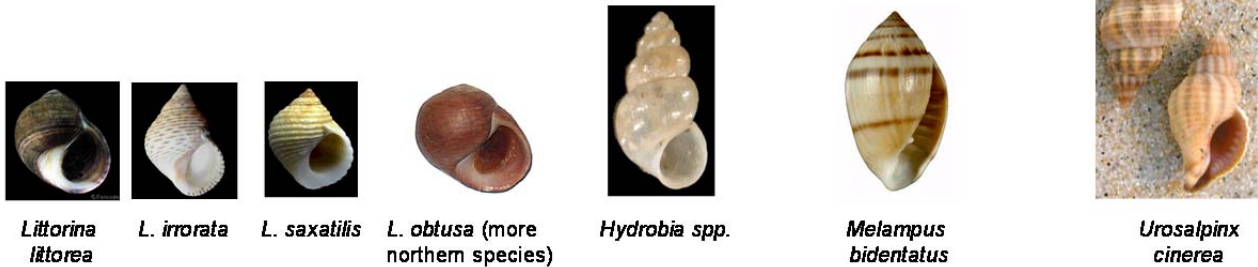
Mitrella lunata



Sinum perspectivum

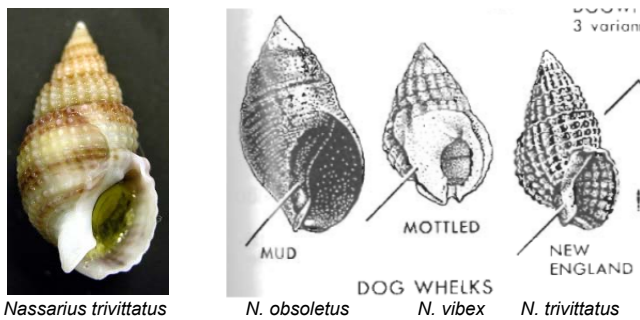
Phylum Mollusca (Gastropods continued)

- 0818 *Littorina* spp., periwinkles
- 0538 *Melampus bidentatus*, eastern melampus
- 0563 *Hydrobia* spp., seaweed snails
- 0838 *Urosalpinx cinerea*, Atlantic oyster drill



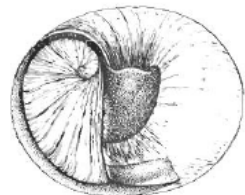
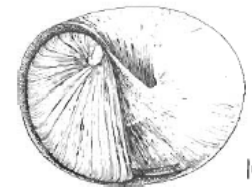
Littorina littorea *L. irrorata* *L. saxatilis* *L. obtusa* (more northern species) *Hydrobia* spp. *Melampus bidentatus* *Urosalpinx cinerea*

- 0742 *Nassarius trivittatus*, New England dog whelk
- 0506 *Nassarius vibex*, mottled dog whelk
- 1083 *Nassarius* spp., unidentified whelk



Nassarius trivittatus *N. obsoletus* *N. vibex* *N. trivittatus*

- 0704 *Polinices duplicatus*, shark-eye moon snail
- 0800 *Polinices heros*, moon snail
- 1059 unidentified moon snail
- 0984 *Bittium varium*, grass cerith
- 5015 *Turbonilla interrupta*, interrupted turbonilla
- 1021 *Turbonilla* spp., turbonillas
- 1158 *Epitonium rupicola*, lined wentletrap



Polinices heros

Polinices duplicatus

CLAMS, MUSSELS, SCALLOPS, OYSTERS

Class Bivalvia

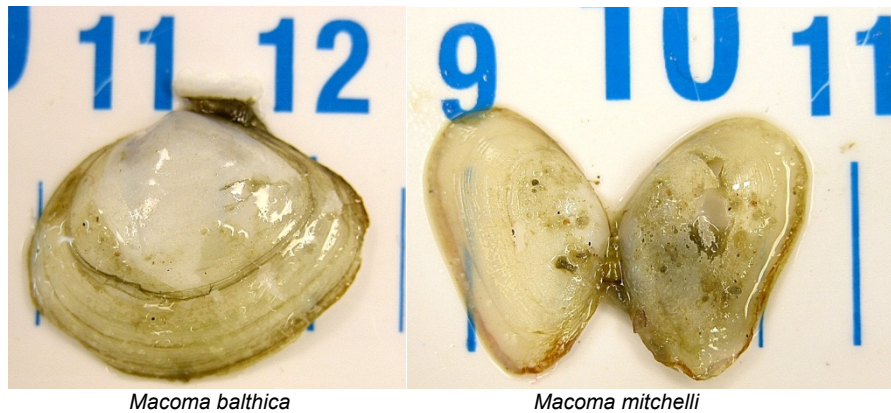
- 5039 unidentified clams
- 5003 unidentified clam siphon
- 0498 unidentified bivalve

Phylum Mollusca (Bivalves continued)

- 0790 unidentified jackknife/razor clams
- 0888 *Tagelus plebeius*, stout tagelus
- 0803 *Tagelus divisus*
- 1020 *Tagelus spp.*, tagelus
- 0816 *Ensis directus*, Atlantic jackknife clam
- 0947 *Solen viridis*, green jackknife clam



- 0820 *Macoma spp.*, macoma clams
- 0583 *Macoma balthica*, baltic macoma
- 0964 *Macoma mitchelli*, Mitchell's macoma
- 0584 *Macoma tenta*, narrowed macoma



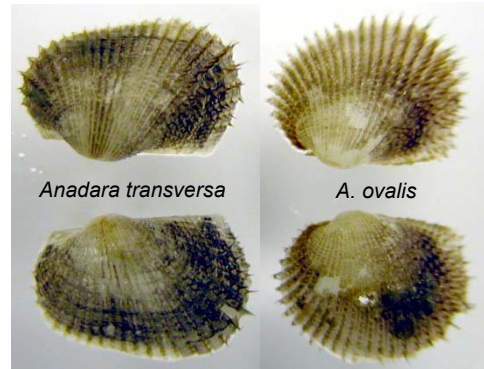
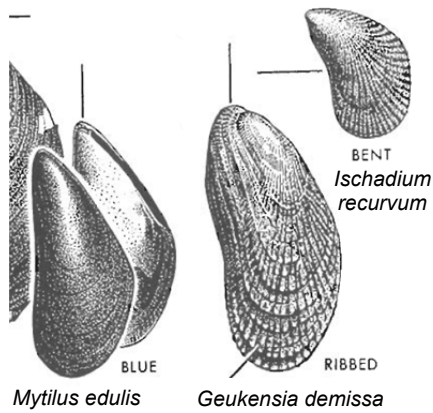
- 0801 *Mya arenaria*, soft shell clam
- 0882 *Mulinia lateralis*, dwarf surf clam



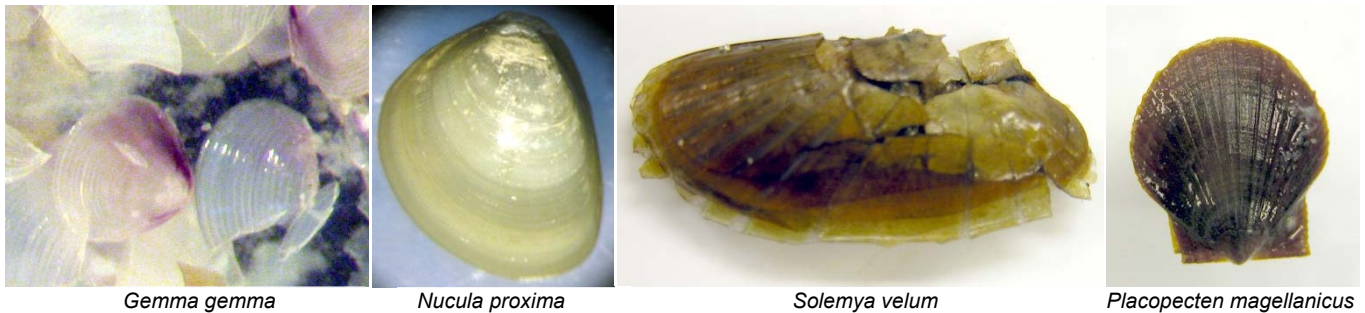
Phylum Mollusca (Bivalves continued)

- 1053 unidentified mussel
- 0802 *Mytilus edulis*, blue mussel
- 0842 *Ischadium recurvum*, bent mussel
- 5024 *Geukensia demissa*, Atlantic ribbed mussel

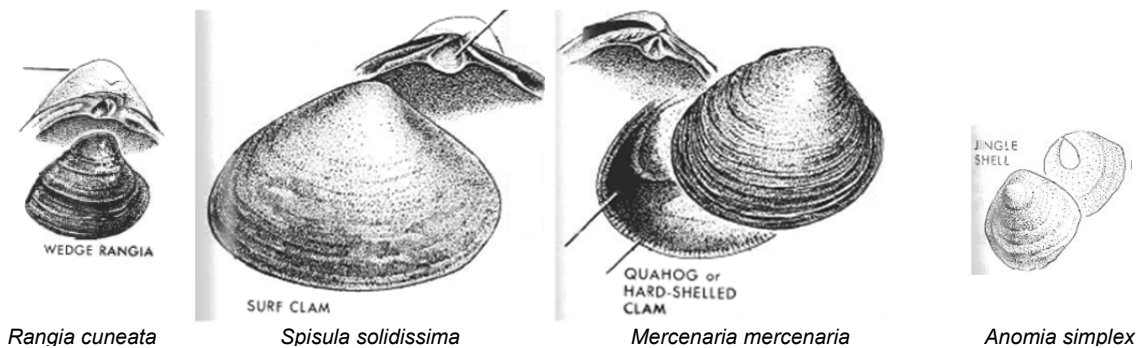
- 0826 *Anadara ovalis*, blood ark
- 0886 *Anadara transversa*, transverse ark
- 0558 *Anadara spp.*, arks



- 5013 *Gemma gemma*, amethyst gemclam
- 1063 *Nucula proxima*, Atlantic nutclam
- 1068 *Solemya velum*, Atlantic awningclam
- 0022 *Placopecten magellanicus*, sea scallop



- 0837 *Rangia cuneata*, wedge rangia
- 0821 *Mercenaria mercenaria*, quahog
- 0091 *Spisula solidissima*, Atlantic surf clam
- 0809 *Anomia simplex*, common jingle



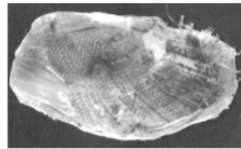
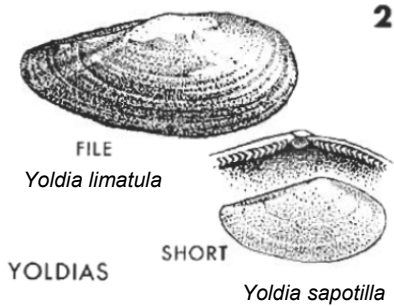
Phylum Mollusca (Bivalves continued)

0836 *Yoldia* spp., yoldia clam

0804 *Lyonsia hyalina*, glassy lyonsia

0805 *Cyrtopleura costata*, angel wing

0885 *Petricolaria pholadiformes*, false angel wing



Lyonsia hyalina



Cyrtopleura costata



Petricolaria pholadiformes

0819 *Crassostrea virginica*, common oyster

0938 *Abra aequalis*, common Atlantic abra

0832 *Laevicardium* spp., mud clams



Crassostrea virginica



Abra aequalis



Laevicardium mortoni

Phylum Mollusca (continued)

SQUID, OCTOPUSES

Class Cephalopoda

0661 unidentified cephalopod

1110 unidentified squid

0017 *Loligo* spp.

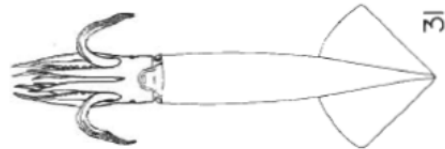
1028 *Loligo pealeii*, longfin inshore squid

0725 *Lolliguncula brevis*, Atlantic brief squid

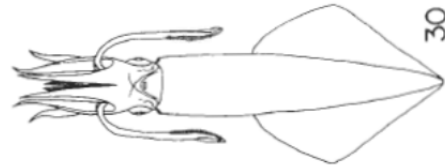
0854 *Octopus vulgaris*, common Atlantic shore octopus



Loligo pealei



Ilex illacebrosus



Loligo pealei



Lolliguncula brevis

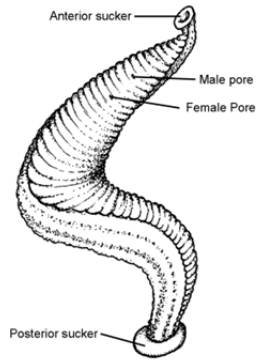


Octopus vulgaris

Phylum Annelida

LEECHES

Class Clitellata
 Subclass Hirudinea
0883 unidentified leech



OLIGOCHAETES

Class Clitellata
 Subclass Oligochaeta
0532 unidentified oligochaete



POLYCHAETES

Class Polychaeta
0775 unidentified polychaete
0892 worm tubes
0645 *Aphrodita hastata*, sea mouse
1037 unidentified scale worm
0510 *Nereis spp.*, clam worms
5010 *Neanthes succinea*, clam worm



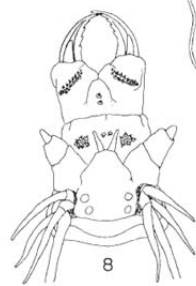
Aphrodita hastata



15-SCALED WORMS
Harmothoe spp.



12-SCALED WORMS
Lepidonotus spp.



Neanthes succinea

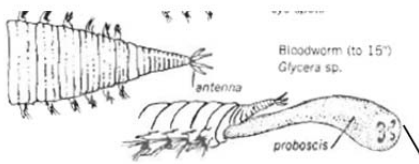


Nereis spp.

0697 *Glycera spp.*, blood worms

0682 *Drilonereis spp.*

1071 *Arabella iricolor*, opal worm



Glycera spp.
 4 black hook-like jaws



Drilonereis spp.



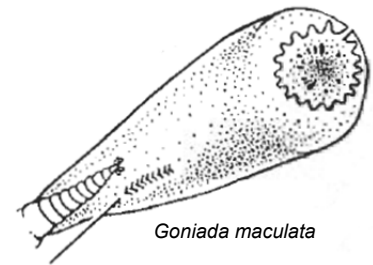
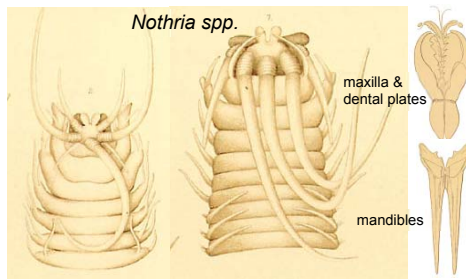
Arabella iricolor

Phylum Annelida (polychaetes continued)

1111 *Diopatra cuprea*, fringed worm

1097 *Nothria* spp.

1107 *Goniada maculata*, chevron worm



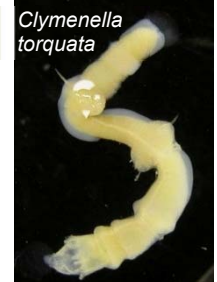
0798 Terebellid worms

0667 *Pectinaria gouldi*, trumpet worm

0764 *Pherusa affinis*, broomworm

0668 *Clymenella torquata*, bamboo worm

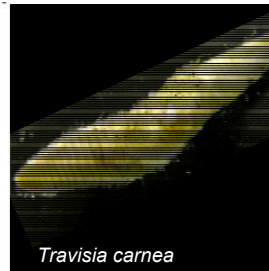
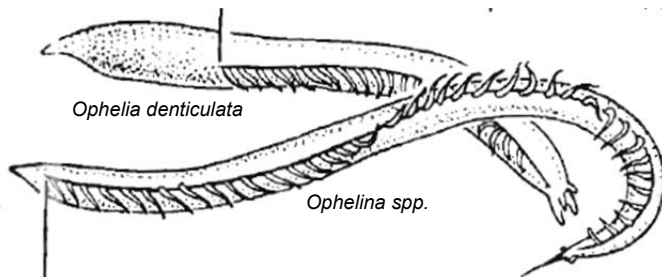
0731 Maldanidae, bamboo worms



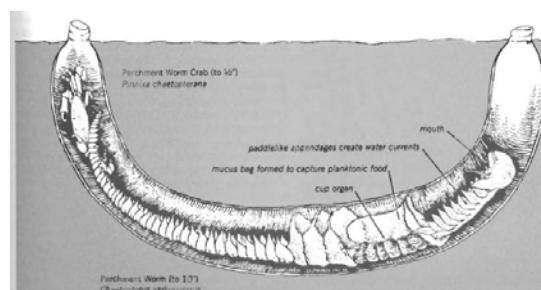
0754 *Ophelia denticulata*

1103 *Travisia carnea*

1115 *Ophelina* spp



0925 *Chaetopterus variopedatus*, parchment tube worm

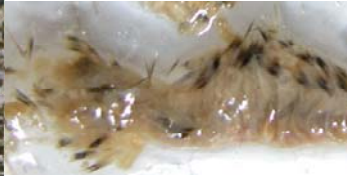


Phylum Annelida (polychaetes continued)

Arenicola spp., lugworm
Polychaete #1
Polychaete #2



Arenicola spp.



Polychaete #1



Polychaete #2

Phylum Sipuncula

SIPUNCULIDS
1109 unidentified sipunculid

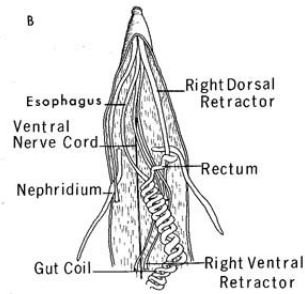
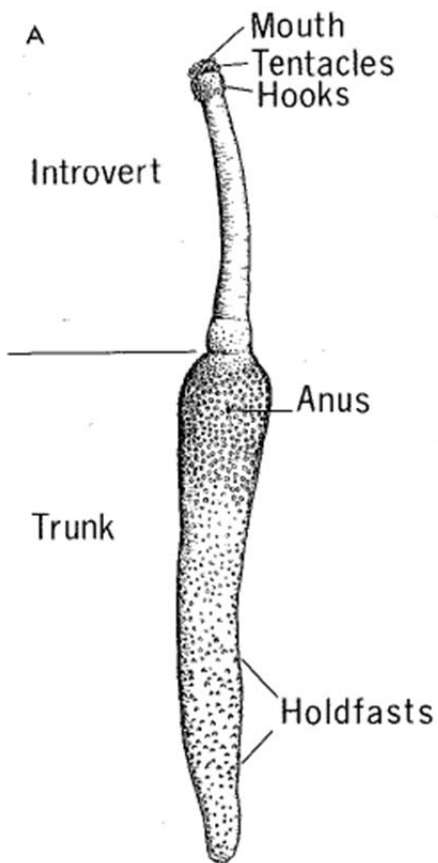


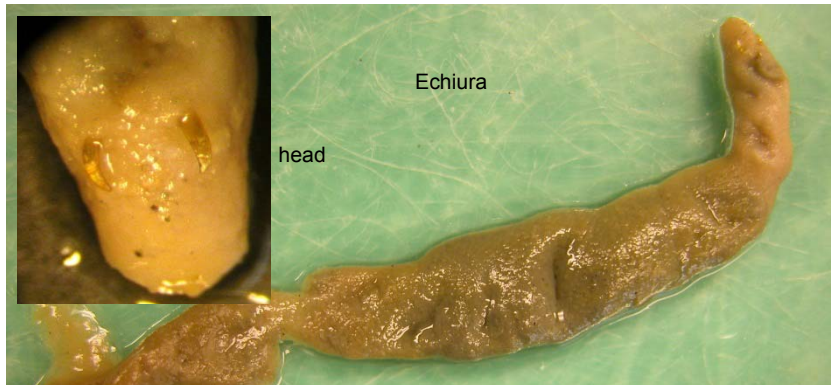
Figure 1.—General morphology of Sipuncula. A. External form of *Phascolion strombi*. B. Internal form of *Phascolopsis gouldi*.



Phylum Echiura

BURROW WORMS

1089 Echiura, burrow worms



Phylum Arthropoda

HORSESHOE CRABS

Class Merostomata

Order Xiphosura

Family Limulidae

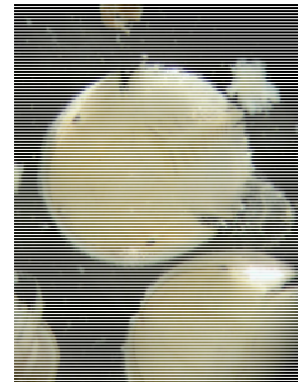
0603 *Limulus polyphemus*



legs and book gills



molting



3 mm juvenile

SPIDERS

Class Arachnida

Order Araneae

0531 unidentified spider



Phylum Arthropoda (continued)

INSECTS

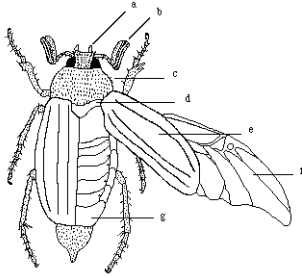
Class Insecta

0505 unidentified insect

0898 Coleoptera, beetles (adult)

0571 Hymenoptera, wasps/bees/ants

0564 Tricoptera, caddisflies



Coleoptera

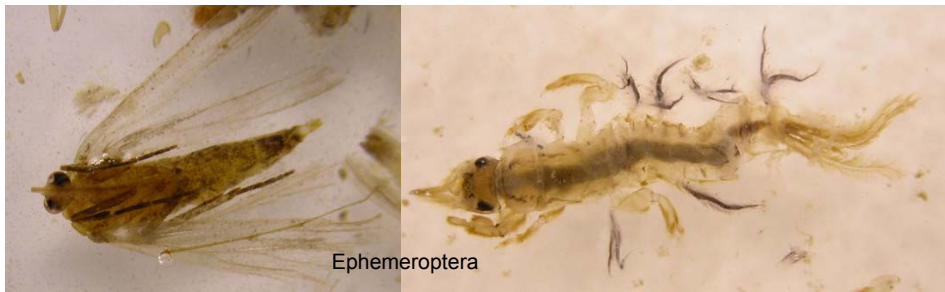


Hymenoptera



Tricoptera

1014 Ephemeroptera, mayflies



Ephemeroptera

0512 Chironomidae, midge flies

1013 *Chaoborus* spp., phantom midges

0991 Formicidae, ants



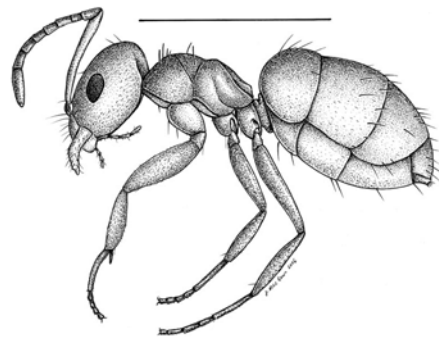
Chironomidae larva



Chironomidae pupa



Chaoborus spp.



Formicidae

Phylum Arthropoda (insects continued)

0913 Cicadellidae, leafhoppers
1048 Pentatomidae, stink bugs



Cicadellidae



Pentatomidae

0521 Ephydriidae, brine flies/shore flies
0958 Psychodidae, moth flies/sand flies
1017 Tabanidae, deer flies, horseflies



Ephydriidae



Psychodidae



Tabanidae

CRUSTACEANS

Subphylum Crustacea

0673 unidentified crustaceans
1113 crustacean parts

CLADOCERANS

Class Branchiopoda

Order Diplostraca

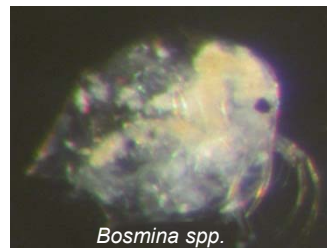
1016 *Leptodora* spp., cladocerans
0517 unidentified cladocerans
1015 *Bosmina* spp., cladocerans



unidentified
Cladoceran



Leptodora spp.



Bosmina spp.



Diaphanosoma brachyurum

Phylum Arthropoda (Crustaceans continued)

COPEPODS

Class Maxillopoda

Subclass Copepoda

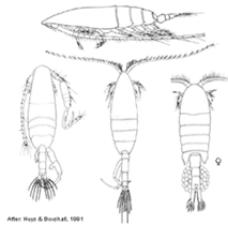
Orders Calanoida, Harpacticoida, Cyclopoida

5038 unidentified copepod

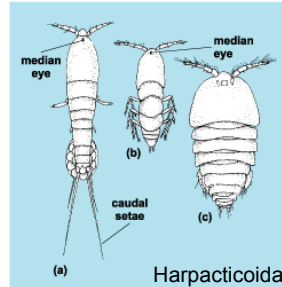
0518 calanoid copepod

0509 harpacticoid copepod

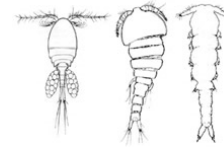
0565 cyclopoid copepod



Calanoida



Harpacticoida

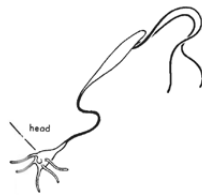
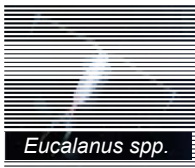


Cyclopoida

0516 *Labidocera* spp.

0687 *Eucalanus* spp.

0952 *Lernaeenicus radiatus*, anchor worm parasite



Lernaeenicus radiatus



on an anchovy

BARNACLES

Class Cirripedia

0808 sessile barnacles

0556 *Balanus eburneus*

0537 *Lepas anatifera*



Balanus eburneus



Lepas anatifera

Phylum Arthropoda (Crustaceans continued)

MANTIS SHRIMP

Class Malacostraca
Order Stomatopoda

1094 unidentified mantis shrimps

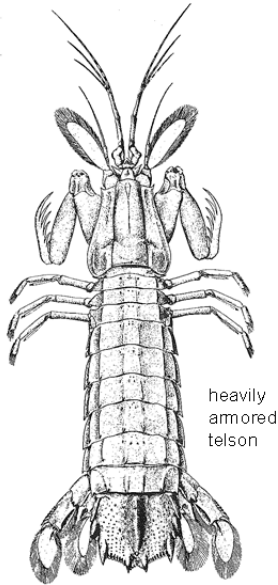
0960 *Squilla* spp.

1161 *Platysquillaoides enodis*

0621 *Squilla empusa*

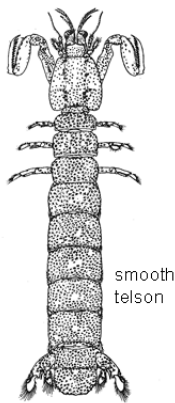
1112 *Nannosquilla grayi*

1052 larval stomatopod



heavily armored telson

Squilla empusa



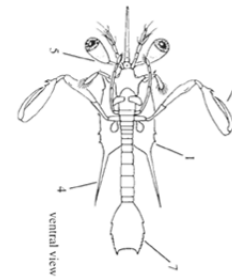
smooth telson

Nannosquilla grayi
Usually smaller specimens



moderately armored telson

Platysquillaoides enodis
Usually smaller specimens



larval *S. empusa*

AMPHIPODS

Class Malacostraca
Order Amphipoda

0841 unidentified amphipod

0694 *Gammarus* spp., scud

5019 *Gammarus mucronatus*, spined-back scud

0919 *Listriella clymenellae*



Gammarus spp.



Gammarus mucronatus



Listriella clymenellae

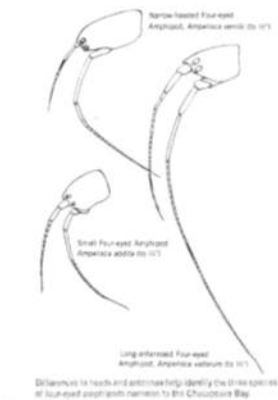
Phylum Arthropoda (amphipods continued)

0507 *Leptocheirus plumulosus*, common burrower amphipod

0659 *Casco bigelowi*

0738 *Monoculodes edwardsi*, one-eyed amphipod

0636 *Ampelisca* spp., four-eyed amphipod



0671 *Corophium* spp., tube-builder amphipods

5021 *Corophium lacustre*, slender tube-builder amphipod

0670 *Corophium crassicorne*

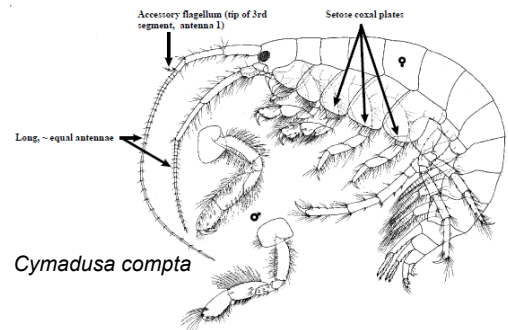


Phylum Arthropoda (amphipods continued)

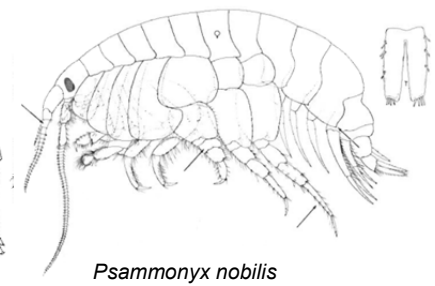
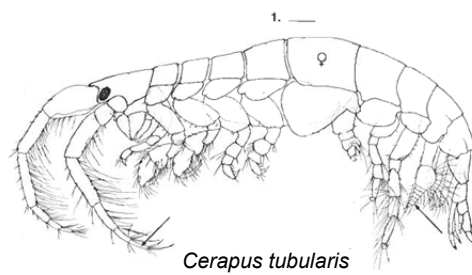
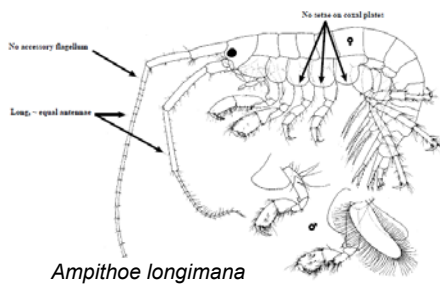
- 0579 *Erichthonius brasiliensis*
- 0722 Hyperiidae, big-eyed amphipods
- 0534 *Microtopopus raneyi*



- 1008 Haustoriidae, digger amphipods
- 1012 *Amphiporeia virginiana*
- 0549 *Cymadusa compta*



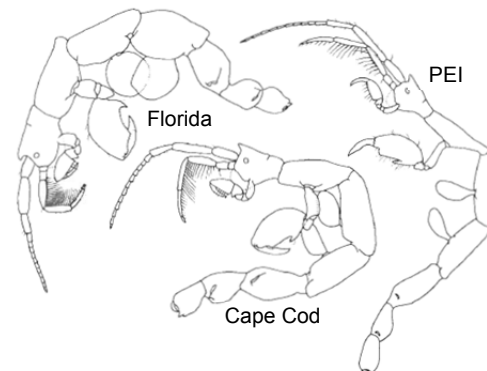
- 0922 *Ampithoe longimana*
- 0535 *Cerapus tubularis*
- 1102 *Psammonyx nobilis*



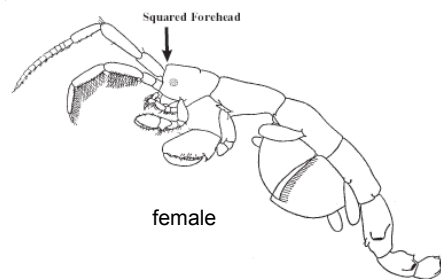
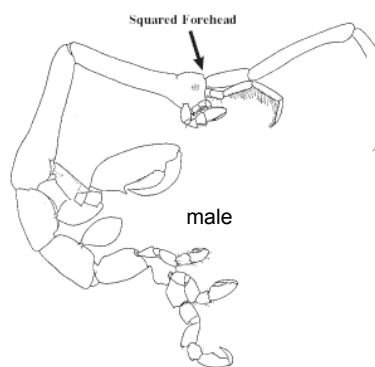
Phylum Arthropoda (amphipods continued)

0658 unidentified skeleton shrimp

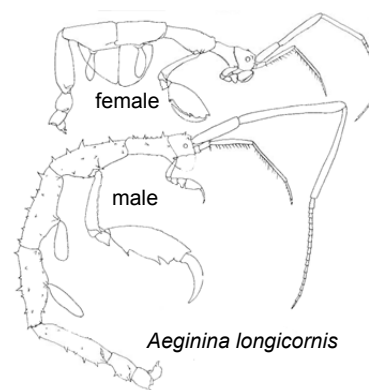
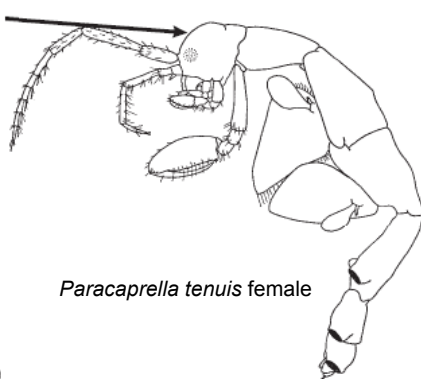
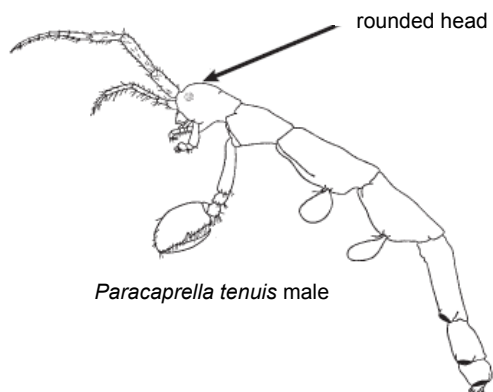
1009 *Caprella* spp.
0921 *Caprella penantis*



1106 *Caprella equilibria* (in NEAMAP samples)



0923 *Paracaprella tenuis*
0630 *Aeginina longicornis*



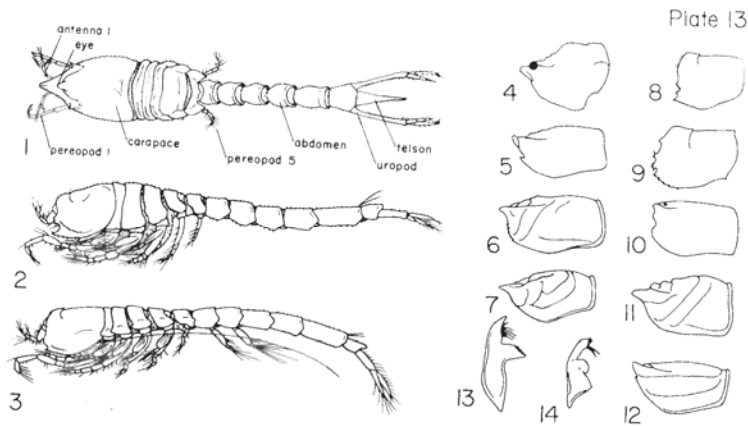
Phylum Arthropoda (Crustaceans continued)

CUMACEANS

Class Malacostraca

Order Cumacea

- 0674 unidentified cumacean
- 0539 *Oxyurostylis smithi* (11)
- 0690 *Eudorella hispida* (8)
- Eudorella emarginata* (2-3)
- 0566 *Almyracuma proximoculi* (4)
- Cyclaspis varians* (5)
- Eudorella truncatula* (9)
- Psuedoleptocuma minus* (10)
- 0672 *Petalosarsia* spp. (12-13)
- 0677 *Diastylis bispinosa*
- 0678 *Diastylis sculpta* (7)
- 0975 *Diastylis quadrispinosa* (1)
- Diastylis polita* (6)

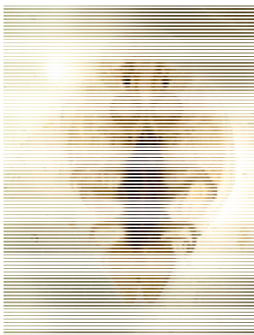


ISOPODS

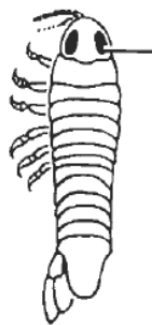
Class Malacostraca

Order Isopoda

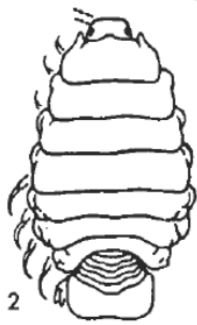
- 0657 unidentified isopod
- 0959 *Argulus* spp., lazy fish lice
- 0929 Cymothoidae
- 0942 *Cymothoa* spp.
- 0683 *Livoneca redmanii*, fish lice/fish-gill isopod
- 0982 *Olencira praequstator*
- 1022 *Nerocila acuminata*



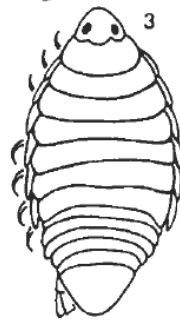
Argulus spp.



larval Cymothoidae



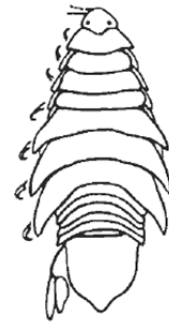
Cymothoa excisa



Livoneca redmanii



Olencira praequstator



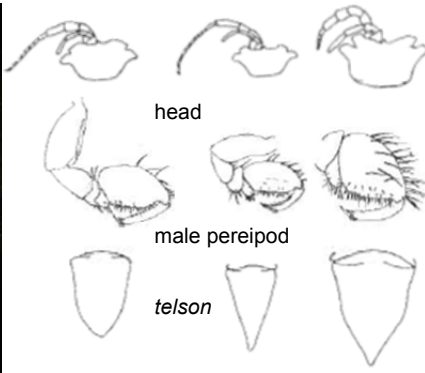
Nerocila acuminata

Phylum Arthropoda (isopods continued)

- 0526 Chiridotea spp.
- 0570 Chiridotea almyra, sand isopod
- 0663 Chiridotea tuftsi
- 0582 Chiridotea coeca
- 0918 Edotia spp.
- 5020 Edotia triloba, mound back isopod
- 0685 Edotia montosa
- 0684 Edotia acuta



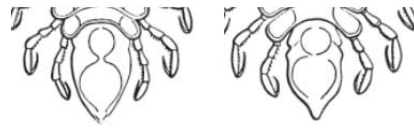
Chiridotea spp.



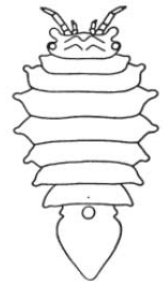
C. almyra *C. tuftsi* *C. coeca*



Edotia spp.

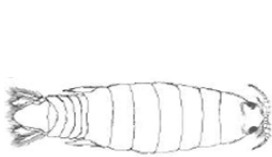


E. triloba *E. montosa*



E. acuta

- 1025 Politolana concharum
- 0665 Cirolana polita
- 0508 Ancinus depressus
- 0559 Sphaeroma quadridentatum
- 0513 Cyathura polita, slender isopod
- 0925 Erichsonella attenuata, seagrass isopod



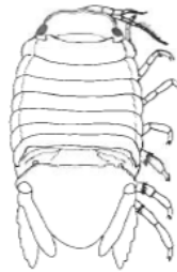
Politolana concharum



Cirolana polita



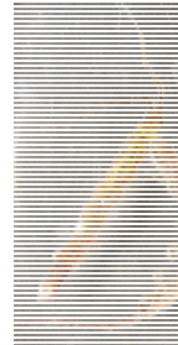
Ancinus depressus



Sphaeroma quadridentatum



Cyathura polita



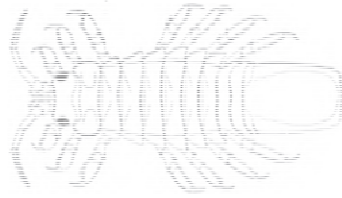
Erichsonella attenuata



- 0912 Idotea spp.
- 0655 Idotea balthica, sea slater
- 1061 Idotea metallica
- 0981 Synidotea laevidorsalis



Idotea baltica



Idotea metallica



Synidotea laevidorsalis

Phylum Arthropoda (crustaceans continued)

MYSIDS

Class Malacostraca

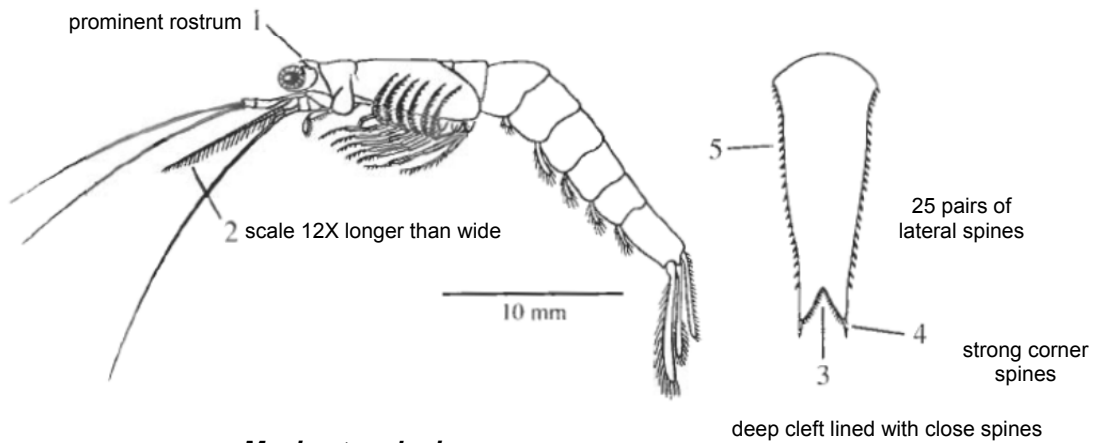
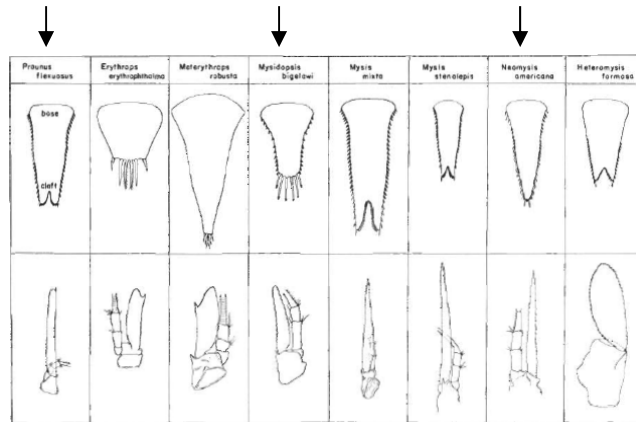
Order Mysida

0574 unidentified mysid

0699 *Neomysis americana*

0740 *Americamysis (Mysidopsis) bigelowi*

1018 *Praunus flexuosus*, chameleon shrimp

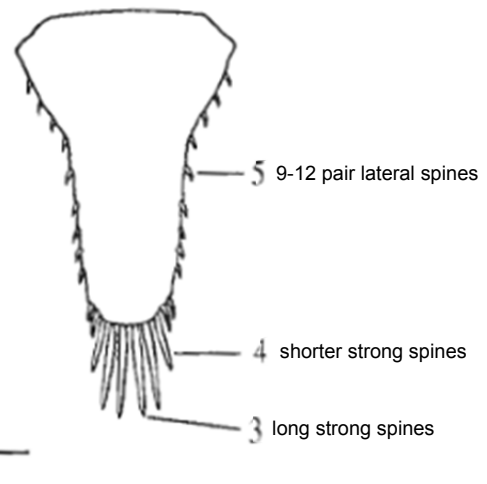
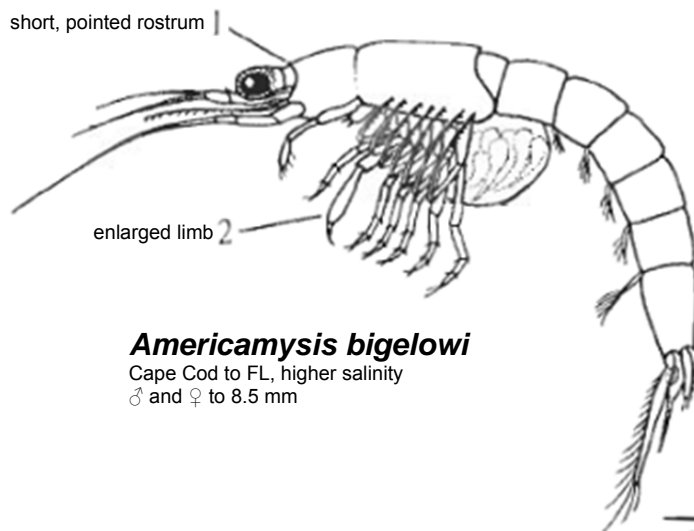
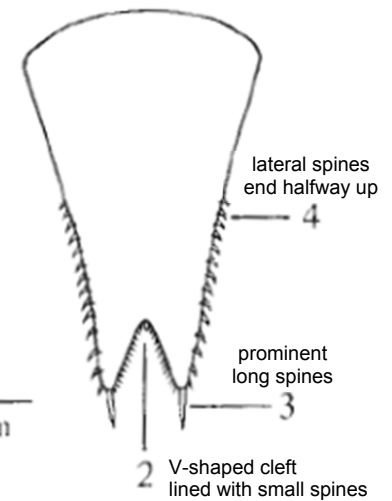
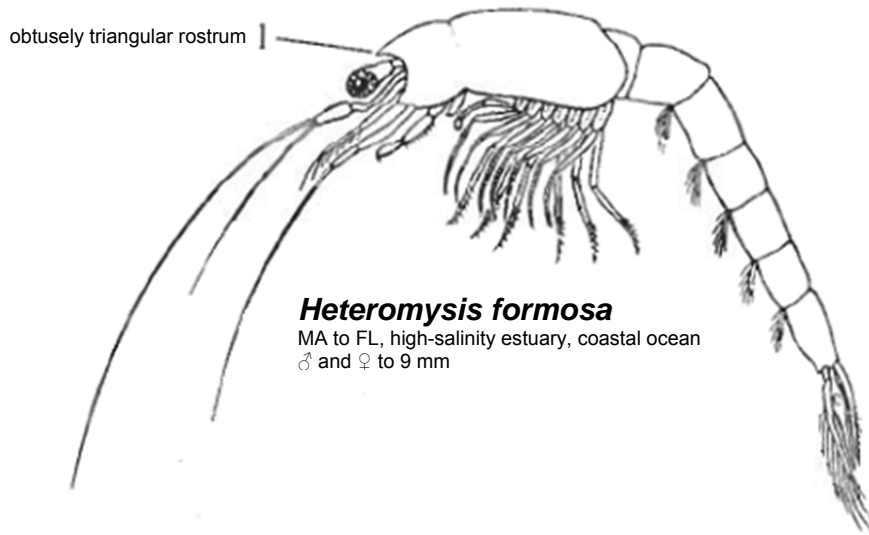
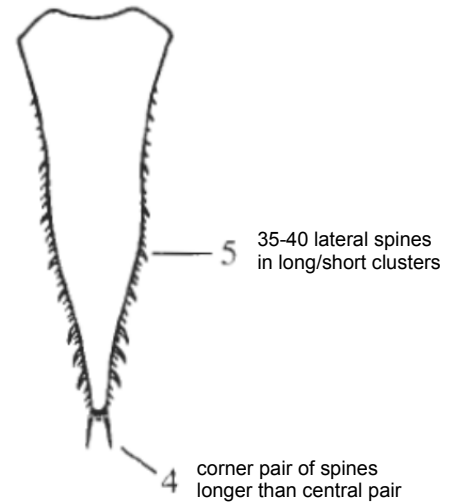
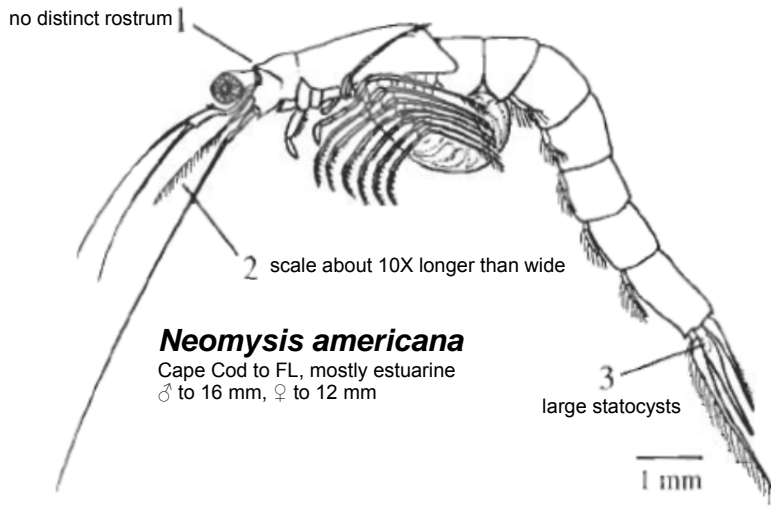


Mysis stenolepis

MA to NJ, intertidal, subtidal, seagrass

♂ to 25 mm. ♀ to 30 mm

Phylum Arthropoda (mysids continued)



Phylum Arthropoda (crustaceans continued)

TANAIDS

Class Malacostraca

Order Tanaidacea

0525 unidentified tanaid



OSTRACODS

Class Ostracoda

0523 unidentified ostracod



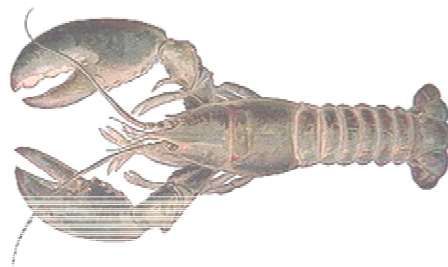
CRABS, SHRIMPS, LOBSTERS

Class Malacostraca

Order Decapoda

0675 unidentified decapod

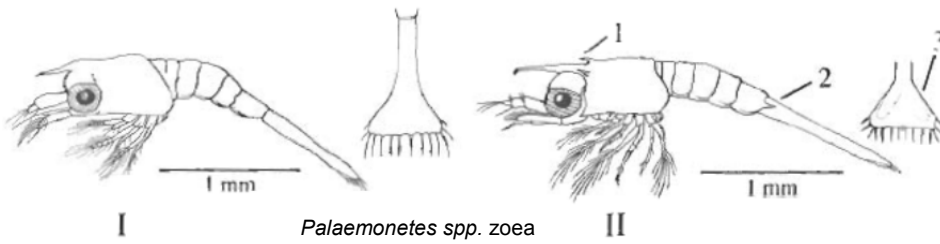
0020 *Homarus americanus*, American lobster



Homarus americanus

Phylum Arthropoda (decapods continued)

5001 unidentified shrimp
 5011 unidentified shrimp zoea



0595 *Rimapenaeus constrictus*, roughneck shrimp
 0604 *Crangon septemspinosa*, sand shrimp

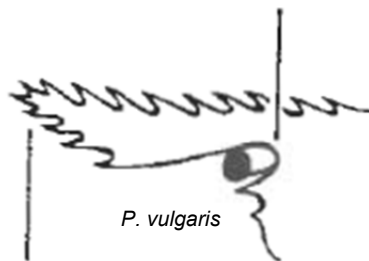


0620 *Palaemonetes* spp., grass shrimp
 1003 *Palaemonetes vulgaris*, common grass shrimp
 1007 *Palaemonetes intermedius*, brackish grass shrimp
 0569 *Palaemonetes pugio*, daggerblade grass shrimp

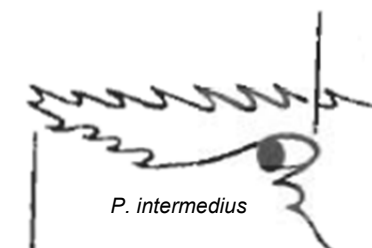
2 teeth behind eye

1 tooth behind eye

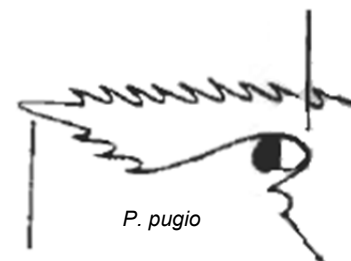
1 tooth behind eye



P. vulgaris



P. intermedius



P. pugio

forked

forked

pointed

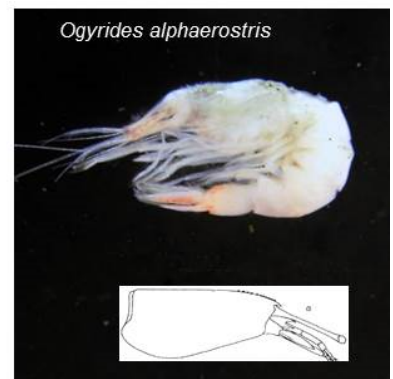
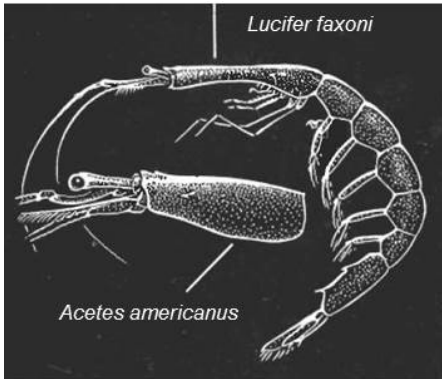
Phylum Arthropoda (shrimp continued)

0623 *Acetes* spp.

0546 *Lucifer* spp.

0550 *Lucifer faxoni*

0573 *Ogyrides alphaerostris*, estuarine long-eyed shrimp



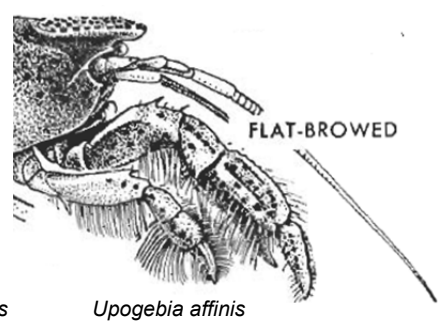
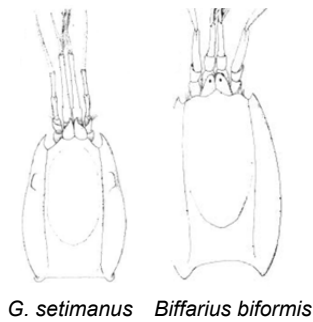
1010 Thalassinidea, unidentified mud shrimps

0933 Callianassidae, unidentified ghost shrimps

0500 *Gilvossius setimanus*, short-browed mud shrimp

1035 *Biffarius biformis*, biform ghost shrimp

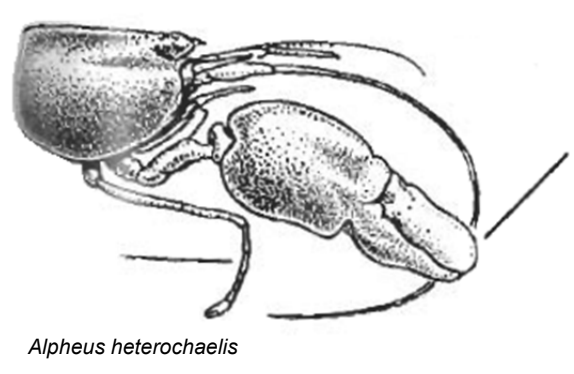
0590 *Upogebia affinis*, flat-browed mud shrimp



0653 *Axius serratus*, burrowing shrimp

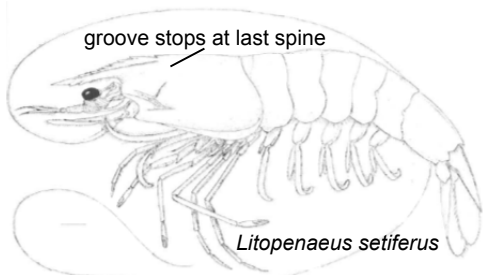
1058 Alpheidae, unidentified snapping shrimps

0591 *Alpheus heterochaelis*, big-clawed snapping shrimp

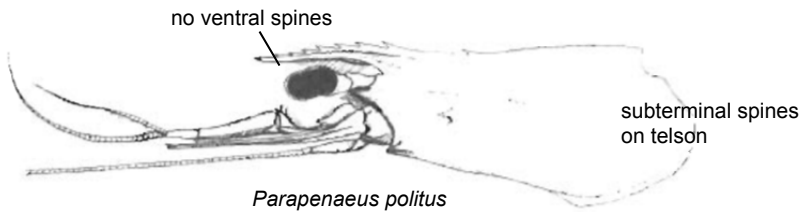


Phylum Arthropoda (shrimp continued)

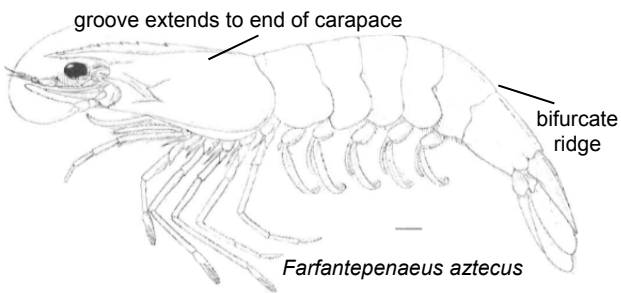
- 6220 Penaeidae, unidentified penaeid
- 0597 *Litopenaeus setiferus*, white shrimp
- 0596 *Farfantepenaeus duorarum*, pink shrimp
- 0622 *Farfantepenaeus aztecus*, brown shrimp
- 1034 *Parapenaeus politus*, rose shrimp



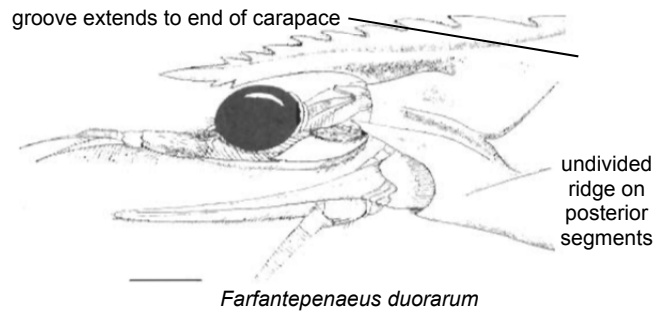
Litopenaeus setiferus



Parapenaeus politus

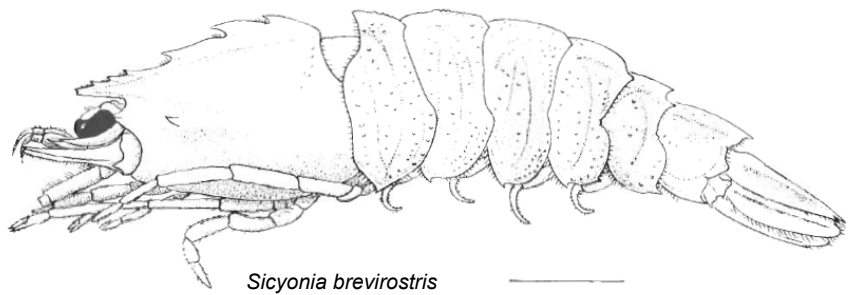


Farfantepenaeus aztecus



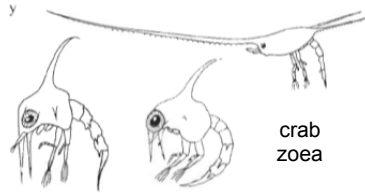
Farfantepenaeus duorarum

- 1077 *Pandalus spp.*
- 0679 *Dichelopandalus leptocerus*, bristled longbeak
- 0844 *Sicyonia brevirostris*, rock shrimp

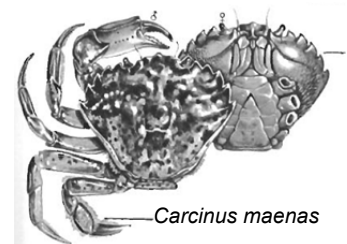
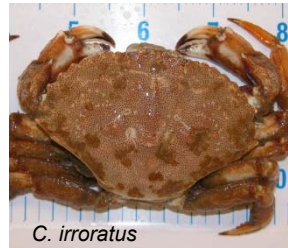
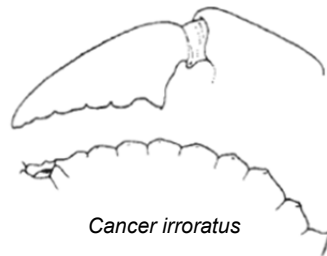
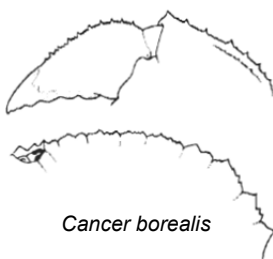


Phylum Arthropoda (crabs continued)

- 5035 unidentified crab
- 5012 crab parts
- 0973 unidentified crab zoea
- 1054 unidentified crab megalopa

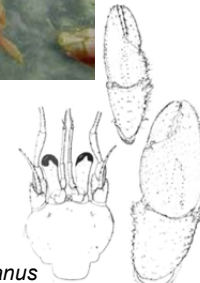
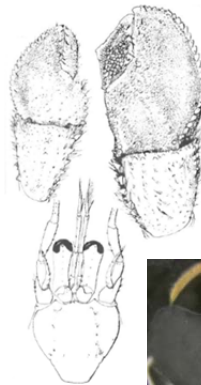
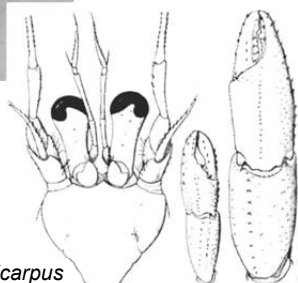


- 5016 *Cancer* spp.
- 0656 *Cancer irroratus*, Atlantic rock crab
- 0600 *Cancer borealis*, Jonah crab
- 0626 *Carcinus maenas*, green crab



- 0917 unidentified hermit crab
- 0758 *Pagurus* spp.

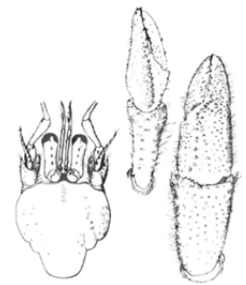
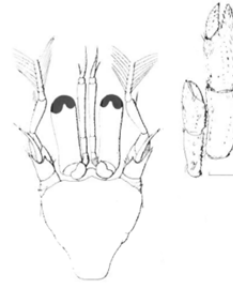
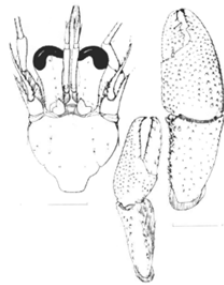
- 7581 *Pagurus longicarpus*, long-clawed hermit crab
- 7582 *Pagurus pollicaris*, flat-clawed hermit crab
- 0617 *Pagurus acadianus*, acadian hermit crab



Phylum Arthropoda (crabs continued)

0757 *Pagurus arcuatus*, hairy hermit crab

0618 *Pagurus annulipes*, banded hermit crab

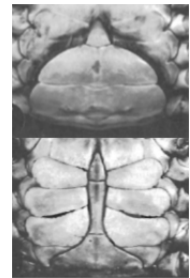
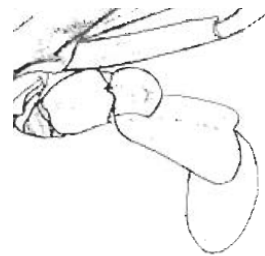
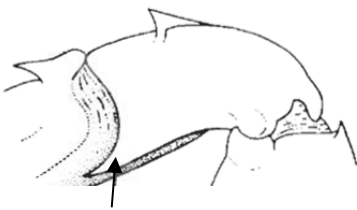


0839 Portunidae, swimming crabs

0578 *Portunus* spp.

0861 *Callinectes* spp.

1095 *Ovalipes* spp.



0614 *Callinectes sapidus*, blue crab (sex unknown)

6141 *Callinectes sapidus*, blue crab (male)

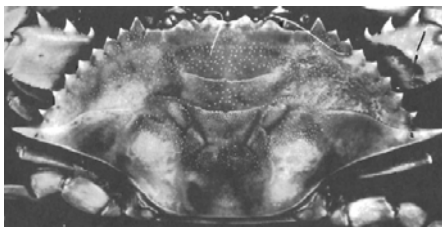
6142 *Callinectes sapidus*, blue crab (juvenile female)

6143 *Callinectes sapidus*, (adult female)

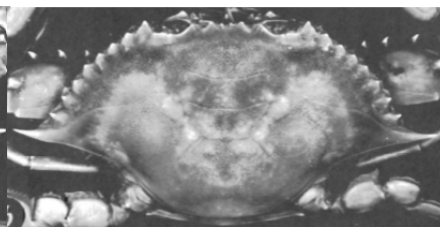
0835 *Callinectes similis*, lesser blue crab

0545 *Callinectes sapidus*, blue crab (megalopa)

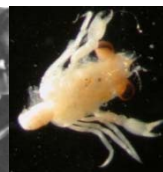
0848 *Arenaeus cribrarius*, speckled crab



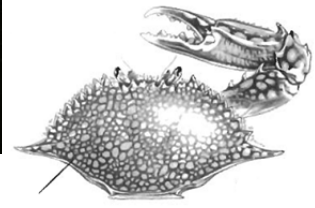
Callinectes sapidus



C. similis



C. sapidus
megalopa



Arenaeus cribrarius

0612 *Ovalipes ocellatus*, lady crab

0611 *Ovalipes stephensoni*, course-hand lady crab



Ovalipes

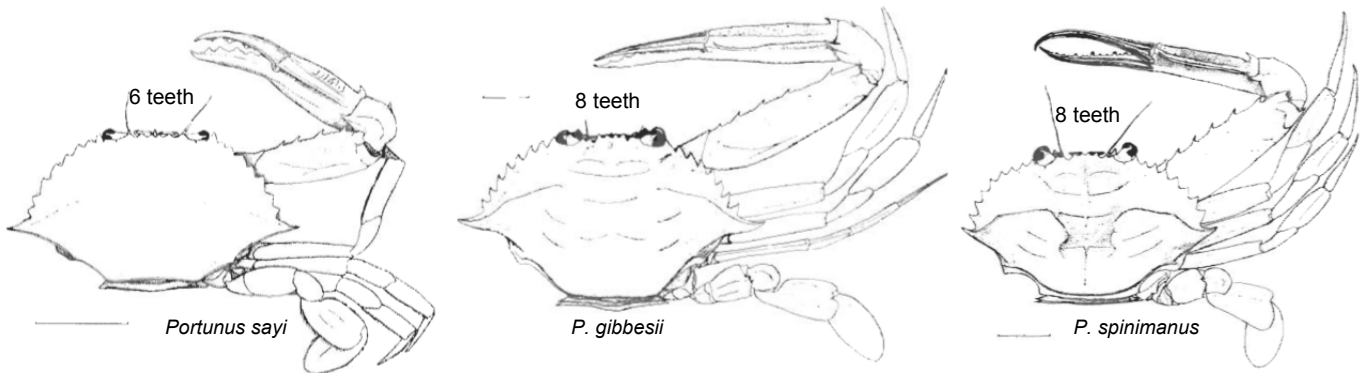
O. stephensoni

Phylum Arthropoda (crabs continued)

0875 *Portunus sayi*, sargassum swimming crab

0607 *Portunus gibbesii*, iridescent swimming crab

0608 *Portunus spinimanus*, blotched swimming crab



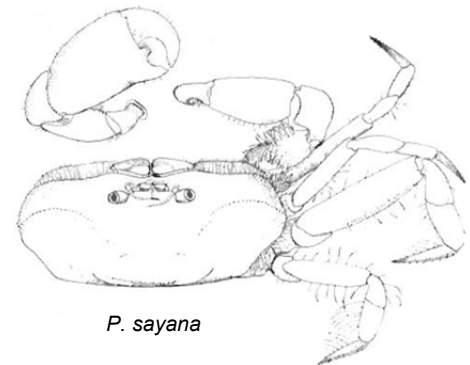
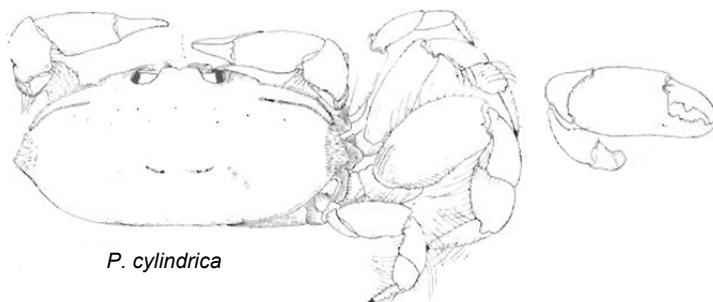
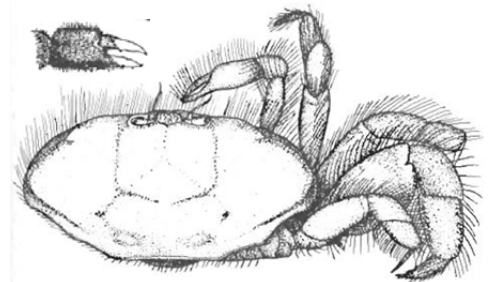
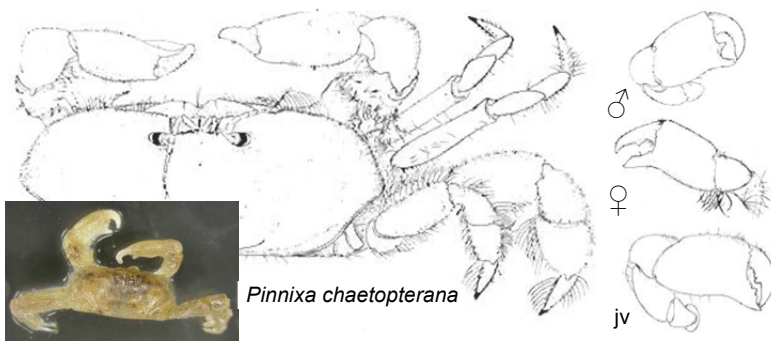
0833 *Pinnixa* spp., unidentified pea crab

0547 *Pinnixa chaetoptera*, parchment worm tube crab

5018 *Pinnixa retinens*, pea crab

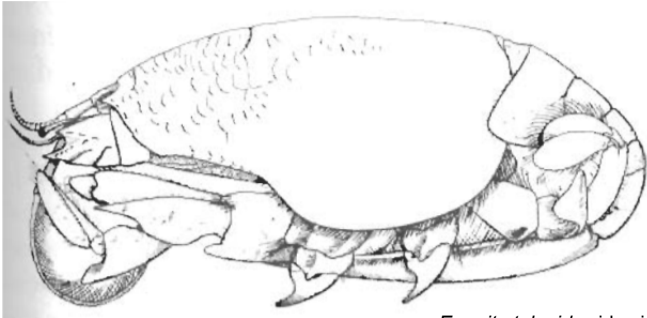
5023 *Pinnixa cylindrica*, pea crab

0927 *Pinnixa sayana*, pea crab



Phylum Arthropoda (crabs continued)

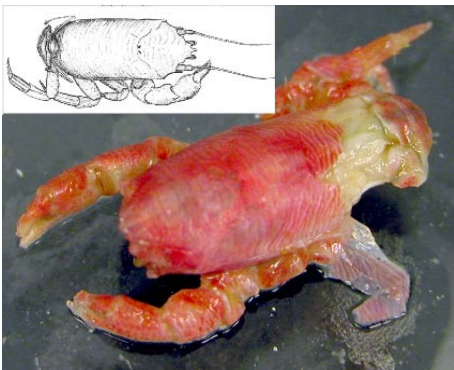
- 1043 unidentified mole crabs
- 0861 *Emerita talpoida*, Atlantic sand crab
- 0624 *Euceramus praelongus*, olivepit porcelain crab
- 0625 *Lepidopa websteri*, square-eyed mole crab
- 1080 *Albunea paretii*, beach mole crab



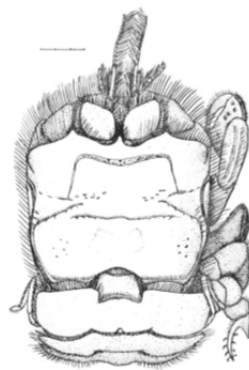
Emerita talpoida side view



E. talpoida dorsal view



Euceramus praelongus

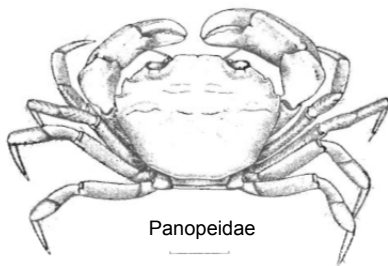


Lepidopa websteri



Albunea paretii

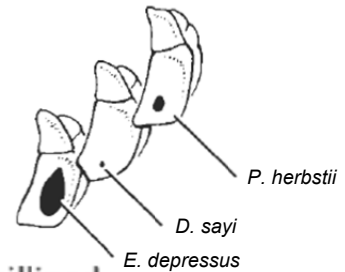
- 0594 Panopeidae, unidentified mud crabs
- 5943 *Rhithropanopeus harrissii*, white-fingered mud crab
- 5942 *Panopeus herbstii*, Atlantic mud crab
- 0552 *Hexapanopeus angustifrons*, smooth mud crab
- 5944 *Dyspanopeus sayi*, Say's mud crab
- 5941 *Eurypanopeus depressus*, flat-back mud crab



Panopeidae



3rd maxilliped



P. herbstii

D. sayi

E. depressus



Rhithropanopeus harrissii



Panopeus herbstii



Hexapanopeus angustifrons



Dyspanopeus sayi



Eurypanopeus depressus

Phylum Arthropoda (crabs continued)

0870 *Persephona mediterranea*, mottled purse crab

0849 *Persephona punctata*, purse crab

0601 *Polyonyx gibbesi*, eastern tube crab

0873 *Porcellana sayana*, spotted porcelain crab

0609 *Porcellana sigsbeiana*, porcelain crab



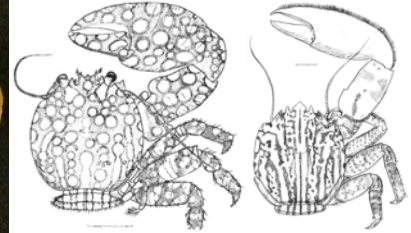
Persephona mediterranea



Persephona punctata



Polyonyx gibbesi



Porcellana sayana

Porcellana sigsbeiana

1079 *Calappa flammea*, flame box crab

0865 *Hepatus epheliticus*, calico box crab



Hepatus epheliticus

Calappa flammea



C. flammea claw

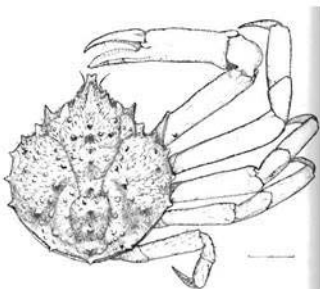
5026 *Libinia* spp., unidentified spider crab

0605 *Libinia emarginata*, common spider crab (9 spines)

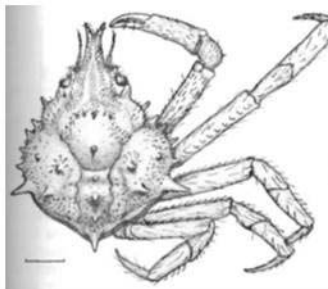
0593 *Libinia dubia*, six-spine spider crab

0499 *Pelia mutica*, cryptic teardrop crab

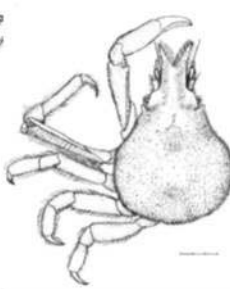
1174 *Hyas coarctatus*, Arctic lyre crab



Libinia emarginata



Libinia dubia



Pelia mutica



Hyas coarctatus

Phylum Echinodermata

0496 unidentified echinoderm

SEA STARS

Class Asterozoa

0650 Asteroidea

0651 unidentified sea star



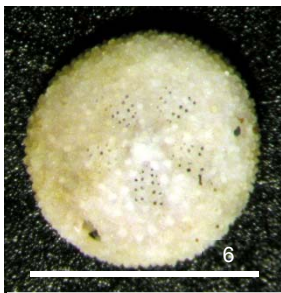
SEA URCHINS, SAND DOLLARS

Class Echinozoa

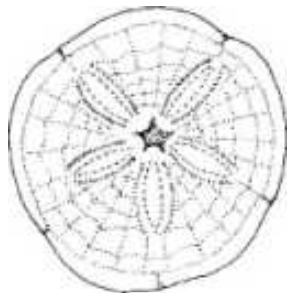
0702 Echinarachnius parma, sand dollar

0847 Mellita quinquesperforata, keyhole urchin

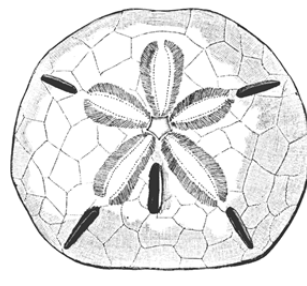
0840 Arbacia punctulata, purple sea urchin



Echinarachnius parma



E. parma



Mellita quinquesperforata

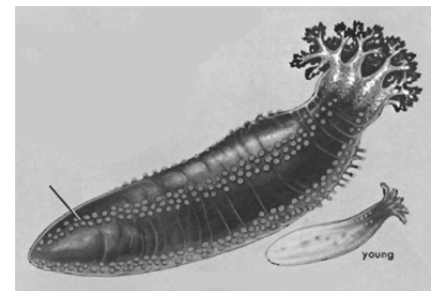


Arbacia punctulata

SEA CUCUMBERS

Class Holothurozoa

0828 unidentified sea cucumbers



BRITTLE STARS

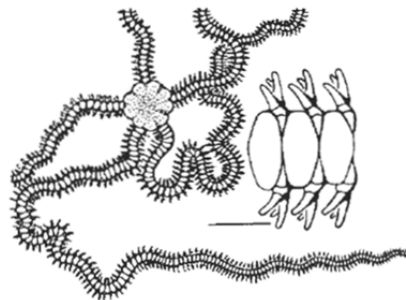
Class Ophiurozoa

0755 unidentified brittle stars

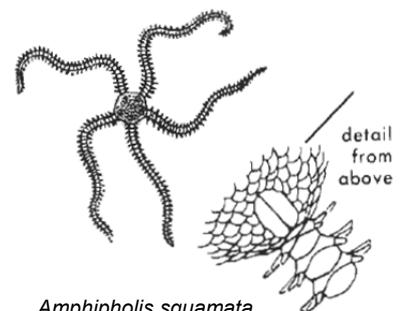
0920 Amphiplus abdita

0652 Amphipholis squamata

5014 Micropholis atra



Amphiplus abdita



Amphipholis squamata

Phylum Chordata

SEA SQUIRTS

Class Ascidiacea

0648 unidentified sessile tunicates



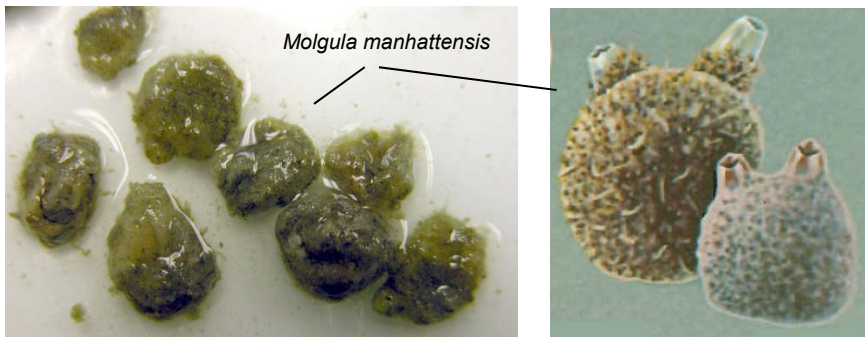
tunicate encrusting eelgrass

Order Pleurogona

Family Molgulidae

5007 *Molgula manhattensis*

0824 *Molgula* spp.



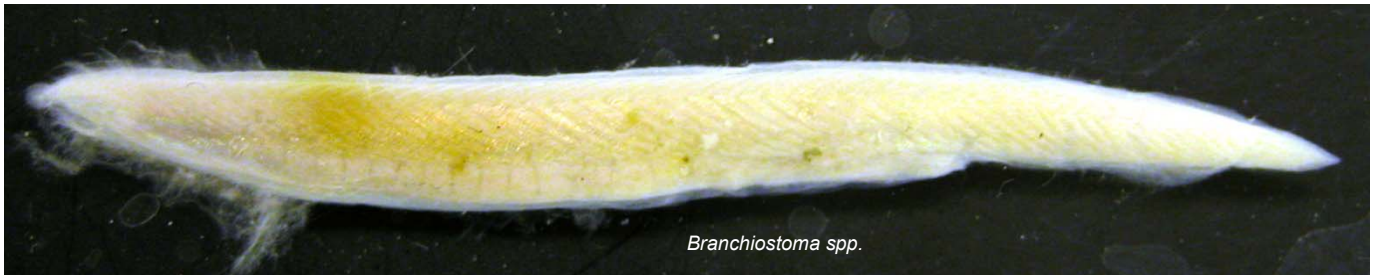
LANCELETS

Class Cephalochordata

Order Amphioxiformes

Family Branchiostomatidae

0495 *Branchiostoma* spp.



Branchiostoma spp.

Miscellaneous Materials

0708 unidentified material
0895 trash
0542 plastic trash
0554 cigarette butt
0930 fishing lure
5005 detritus

ANIMAL MATTER

0016 bait (scrap)
0705 shell
0970 eggs
1046 feather
5032 animal tubes
5033 unidentified meat
0892 worm tubes

PLANT MATTER

0504 wood
5006 vegetation
0478 macro algae
0503 red algae
0580 leaf
0957 plant seed
0965 diatoms
1002 unidentified seagrass
5029 *Zostera marina*
5030 corn

MINERAL MATTER

0585 mud
0706 sand tubes
0894 coal
5004 gravel
5037 sand
5031 rock