

Coastal Marine Isopods of the Southern California Bight

by

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Presented to SCAMIT
13 February 2012



City of San Diego Marine Biology Laboratory
Environmental Monitoring & Technical Services Division • Public Utilities Department

Focus & Coverage

➤ Overview of coastal marine isopods “reported” from SCB ocean monitoring programs or surveys.

- Non-technical, illustrated guide
- Supplement to existing keys (e.g., Stebbins, 1999)
- Geared to new isopod workers

➤ Coverage includes:

- All species listed in SCAMIT Ed. 6 (with corrections)
- Additional species recommended for inclusion in SCAMIT Ed. 7

➤ Higher taxonomy after Brandt & Poore (2003) as followed in WoRMS and as adopted by SCAMIT in 2011.

- Includes reassignment of families within four previous, long-standing suborders to three new suborders
- New suborders Cymothoidea, Linnoriidea and Sphaeromatidea replace Anthuridea, Epicaridea, Flabellifera and Gnathiidea

Key and Notes to the Marine Isopods (Crustacea: Isopoda) Known from Coastal Shelf Bottoms in the Southern California Bight

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(August 1999)

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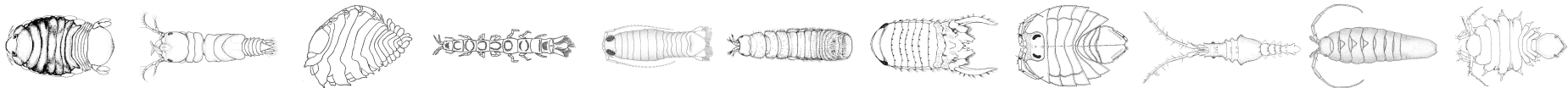
Introduction

The following key is intended to cover all macrobenthic species of isopods known to occur on coastal shelf bottoms of the Southern California Bight (SCB), from Point Conception, California, USA to Cabo Colón, Baja California, Mexico. Additional species that have been reported from the Santa Maria Basin and Western Santa Barbara Channel bordering the northernmost boundary of the SCB are listed in Appendix A. Although the focus is on species that have been captured using standard benthic sampling gear (e.g., 0.1 m² Van Veen grab) and retained on a 1.0 mm screen, other species are included that have been collected using standard trawling procedures (e.g., otter trawls with a 25 mm mesh cod-end). The use of a 0.5 mm screen or trawling gear fitted with a finer mesh trap will undoubtedly result in additional species, especially *Aeolota*.

Most of the isopods included herein are free-living species that inhabit soft-bottom habitats (e.g., sand, silt, clay) in the region. Some species, however, are more closely associated with coarser inorganic and biogenic substrates, such as rocks, cobble, large shells and shell hash. In addition, a few species are included that are more formally associated with other types of microhabitats. These include isopods living on or within sponges (some phoronid and ascidian), species living associated with kelp or other algae (some didotids), and species that are parasites of other invertebrates (bopyrids) or fishes (cymothoids). The key is part of a larger project that deals with the ecology and distribution of the marine isopod fauna for the SCB (Stebbins in prep) that is intended as an update and expansion of the earlier work by Menzies and Barnard (1959). This version approximately doubles the number of species treated by Menzies and Barnard, and includes all species that are currently recognized by the Southern California Association of Marine Invertebrate Taxonomists (SCAMIT 1998), additional species that have been identified so far from the 1998 SCB regional monitoring project (Bigh98), plus a few species recorded from other surveys in the region. Sixty-five figures are covered, representing 47 genera, 20 families, and six suborders (Table 1).

Figures are not included at this time, but will be by the time the final project is completed. Work is presently underway to provide line drawings or digital images of each species. Meanwhile, a comprehensive list of references is provided following the key that can direct the user to the original descriptions and subsequent works.

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Higher Taxonomic Changes

SCAMIT Eds. 1-5

Suborder Gnathiidea

Suborder Epicaridea

Family Bopyridae

Suborder Anthuridea

Suborder Flabellifera

Families Aegidae, Corallanidae,
Tridentellidae and Cymothoidae

Family Cirolanidae

Family Limnoridae

Families Ancinidae and Sphaeromatidae

Family Serolidae

Suborder Valvifera

Suborder Asellota

Suborder Oniscidea

SCAMIT Ed. 6 *

Suborder Cymothoidea

Superfamily Cymothooidea

Superfamily Bopyroidea

Superfamily Anthuridea

Superfamily Cirolanoidea

Suborder Limnoriidea

Suborder Sphaeromatidea

Superfamily Sphaeromatoidea

Superfamily Seroloidea

Suborder Valvifera

Suborder Asellota

Suborder Oniscidea

* After Brandt & Poore (2003); Note – Suborder Oniscidea not included in SCAMIT list prior to Ed. 6

Families & Genera of SCB Coastal Isopods

Suborder Cymothoidea

Superfamily Cymothoidea[†]

Family Aegidae

Aega

Rocinela

Family Corallanidae

Excorallana

Family Tridentellidae

Tridentella

Family Cymothoidea

Elthusa

Enispa

Nerocila

Family Gnathiidae

Caecognathia

Gnathia

Superfamily Bopyroidea

Family Bopyridae

Anathelges

Argeia

Munidion

Phyllodurus

Probopyria

Pseudione

Superfamily Anthuridea

Family Antheluridae

Ananthura

Family Anthuridae

Amakusanthura

Cyathura

Haliophasma

Mesanthura

Family Hyssuridae

Kupellonura

Family Paranthuridae

Califanthura

Paranthura

Superfamily Cirolanoidea

Family Cirolanidae

Cirolana

Eurydice

Excirrolana

Metacirolana

Natatolana

Suborder Limnoriidea

Superfamily Limnorioidea

Family Limnoriidae

Limnoria

Suborder Sphaeromatidea

Superfamily Sphaeromatoidea

Family Ancinidae

Ancinus

Bathycopea

Family Sphaeromatidae[†]

Discerceis

Dynamenella

Dynoides

Exosphaeroma

Gnorimosphaeroma

Paracerceis

Paradella

Sphaeroma

Superfamily Seroloidea

Family Serolidae

Heteroserolis

Suborder Valvifera

Family Arcturidae

Idarcturus

Neastacilla

Family Holognathidae

Cleantioides

Family Idoteidae

Colidotea

Edotia

Erichsonella

Eusymmerus

Idotea

Pentidotea

Synidotea

Suborder Asellota

Superfamily Janiroidea

Family Dendrotionidae

Acanthomunna

Family Desmosomatidae

Momedossa

Prochelator

Family Janiridae

Caecianiropsis

Ianiropsis

Janiralata

Family Joeropsididae

Joeropsis

Family Microparasellidae

Microcharon

Family Munnidae

Munna

Uromunna

Family Munnopsidae

Belonectes

Eurycope

Ilyarachna

Munnopsurus

Family Paramunnidae

Boreosignum

Munnogonium

Paramunna

Pleurogonium

Suborder Oniscidea

Superfamily Oniscoidea

Family Alloniscidae

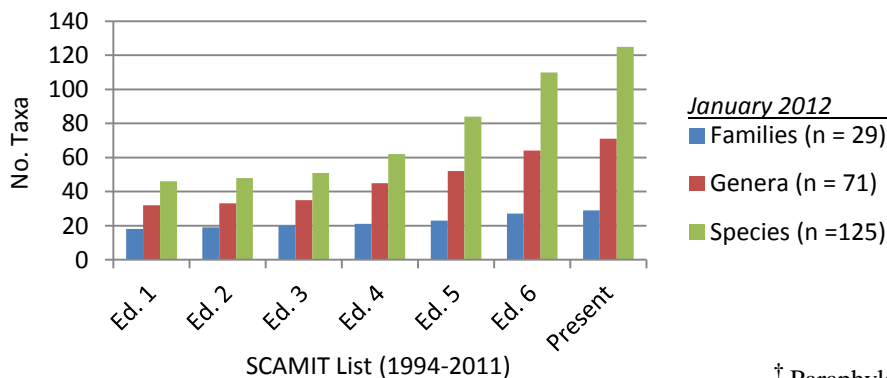
Alloniscus

Family Ligiidae

Ligia

Family Tylidae

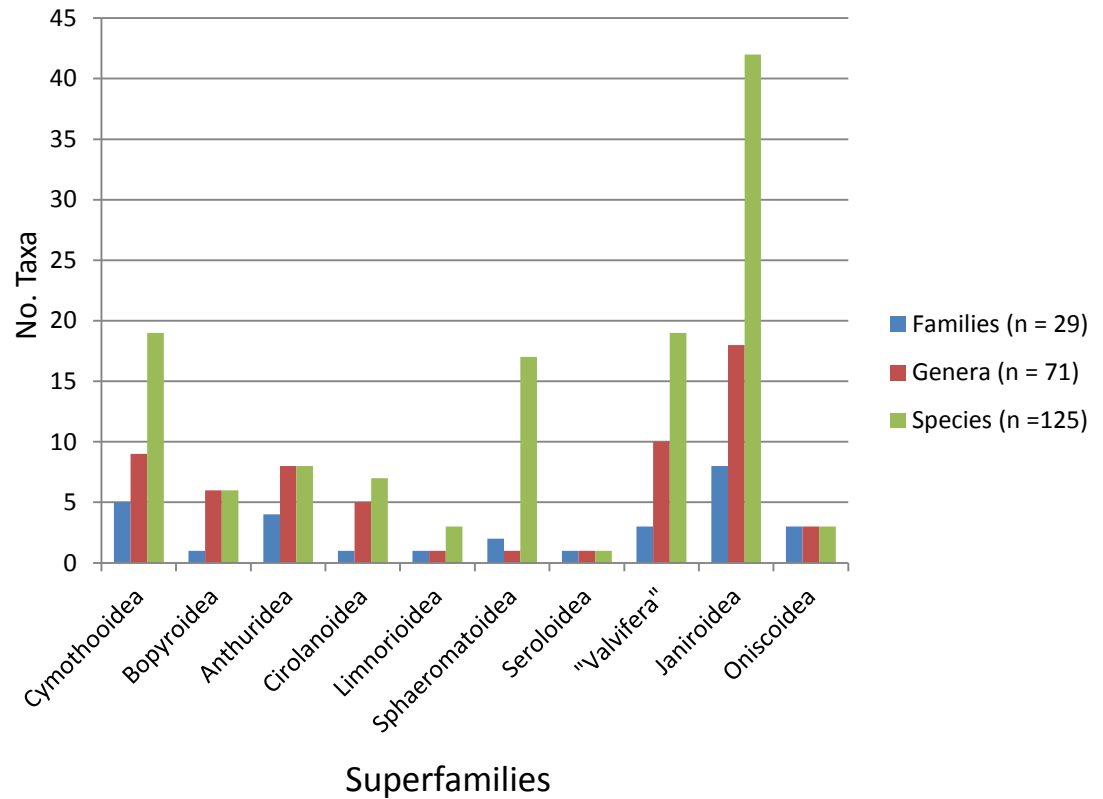
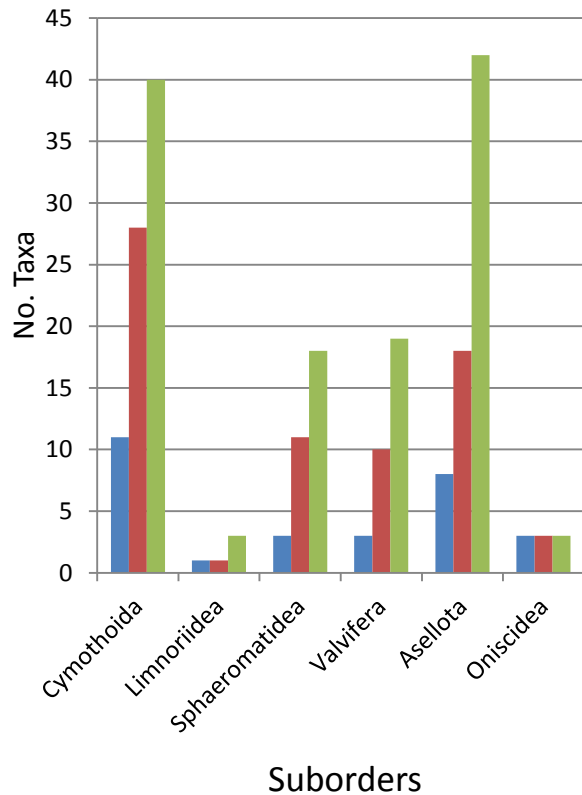
Tylos



[†] Paraphyletic taxa (see Brandt & Poore, 2003)

Diversity Amongst Higher Taxa

Southern California Bight Isopods, January 2012



Suborder Cymothoidea, Superfamily Cymothoidea

Suborder Cymothoidea

Superfamily Cymothoidea

Family Aegidae

Aega lecontii (Dana, 1854)

Rocinela angustata Richardson, 1904

Rocinela belliceps (Stimpson, 1864)

Family Corallanidae

Excorallana truncata (Richardson, 1899)

Family Tridentellidae

Tridentella glutacantha Delaney & Brusca, 1985 *

Tridentella quinicornis Delaney & Brusca, 1985

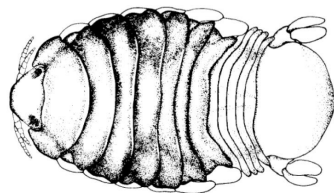
Family Cymothoidae

Elthusia californica (Schioedte & Meinert, 1884)

Elthusia vulgaris (Stimpson, 1857)

Enispa convexa (Richardson, 1905)

Nerocila acuminata Schioedte & Meinert, 1881



Family Gnathiidae

Caecognathia crenulatifrons (Monod, 1926)

Caecognathia sanctaegrucis (Schultz, 1972)

Caecognathia sp. A SCAMIT, 2005

Caecognathia sp. SD1 Haney, 2005

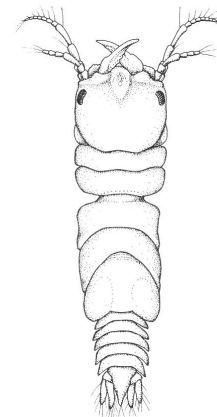
Gnathia productatridens Menzies & Barnard, 1959

Gnathia steveni Menzies, 1962

Gnathia tridens Menzies & Barnard, 1959

Gnathia trilobata Schultz, 1966

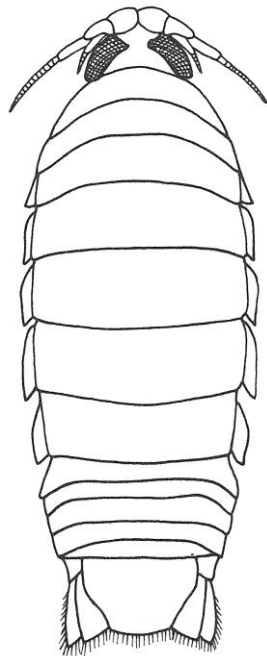
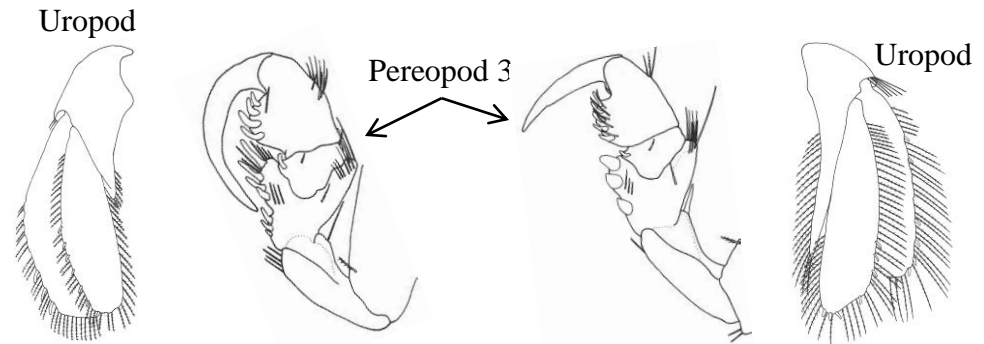
Gnathia sp. MBC1 Haney, 2005



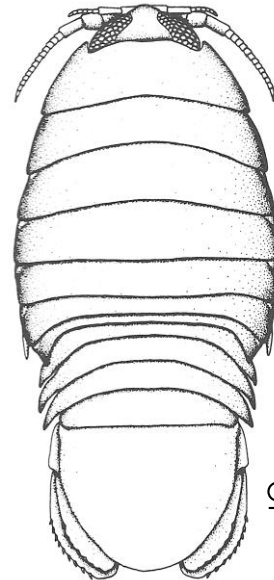
* Add to SCAMIT Ed. 7 (T. Stebbins, pers. obs.)

Genera *Aega* & *Rocinela*

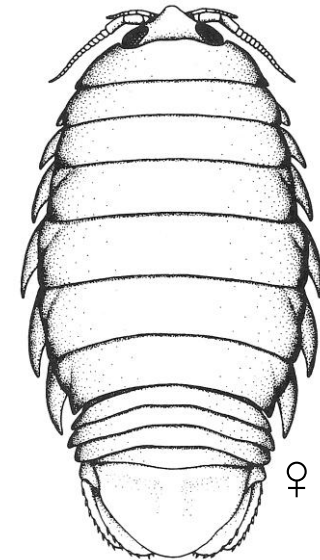
PLATE 1



Aega lecontii



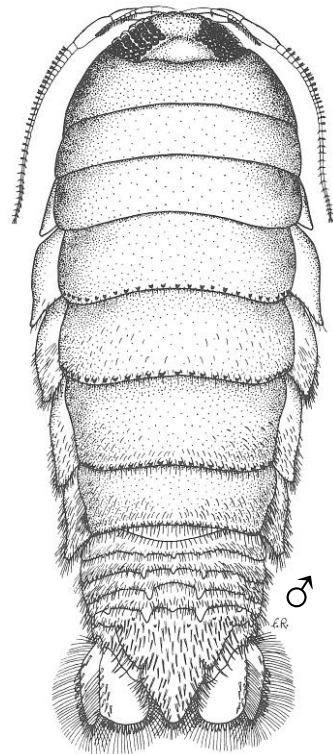
Rocinela angustata



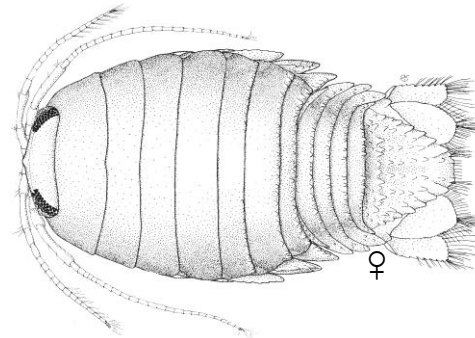
Rocinela belliceps

Genera *Excorallana* & *Tridentella*

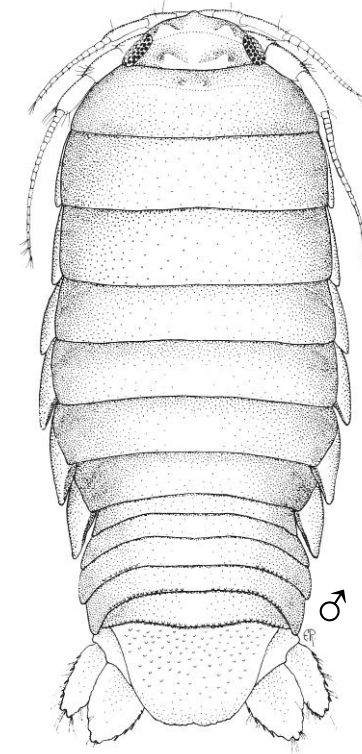
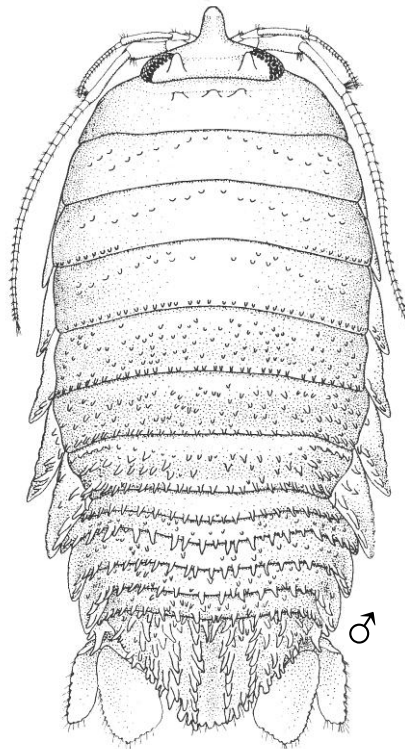
PLATE 2



Excorallana truncata



Tridentella glutacantha *

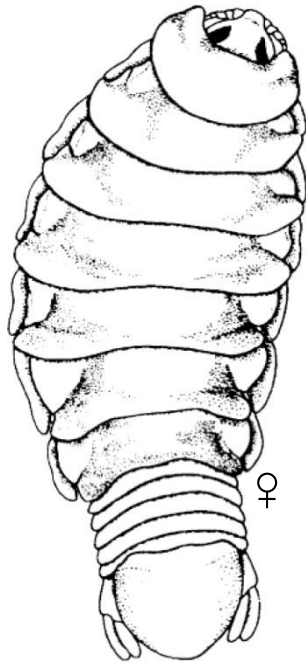


Tridentella quinicornis

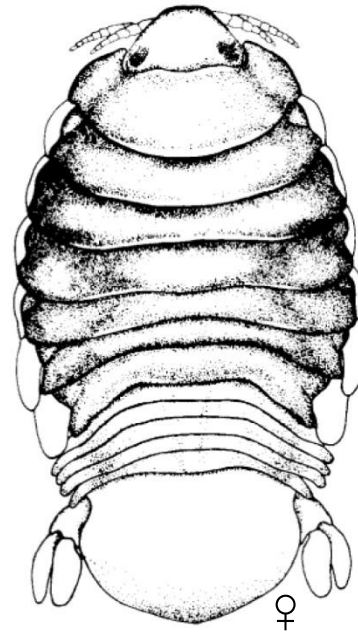
* Note: Image of female *T. glutacantha* in
MMS Atlas = male *T. quinicornis*

Genera *Elthusa* & *Enispa*

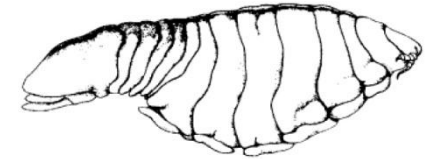
PLATE 3



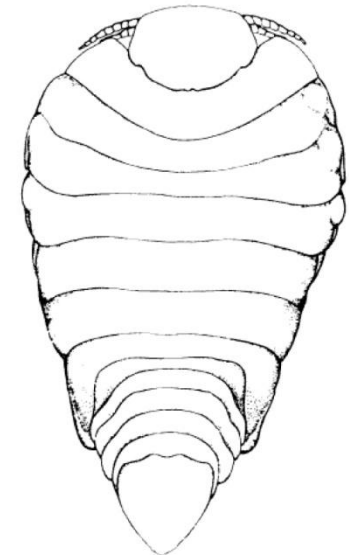
Elthusa californica



Elthusa vulgaris



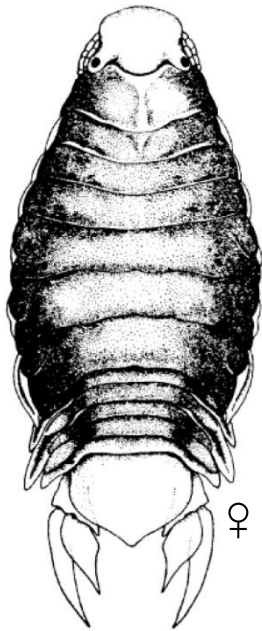
♀



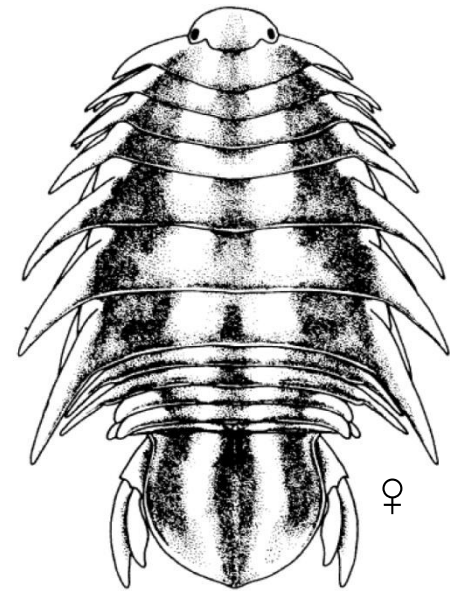
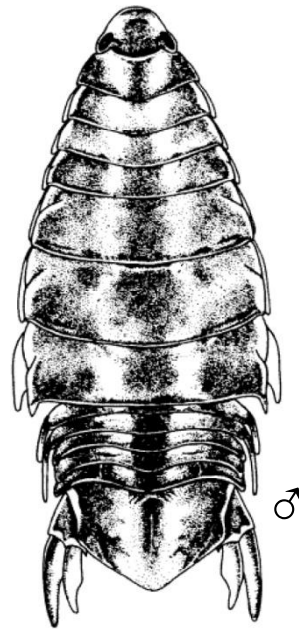
Enispa convexa

Genus *Nerocila*

PLATE 4



“acuminata” form

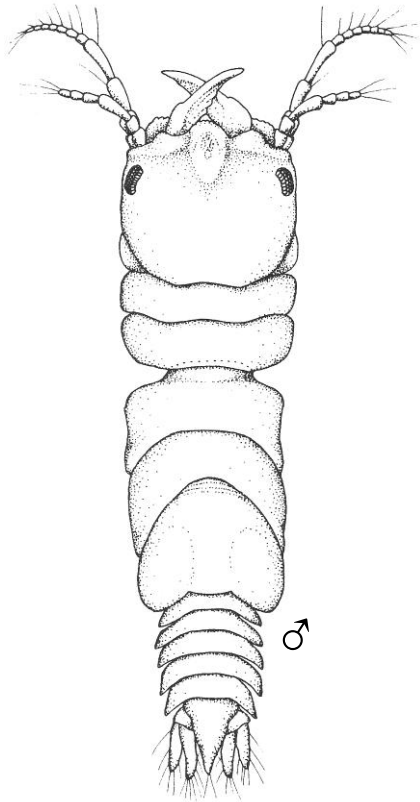


“aster” form

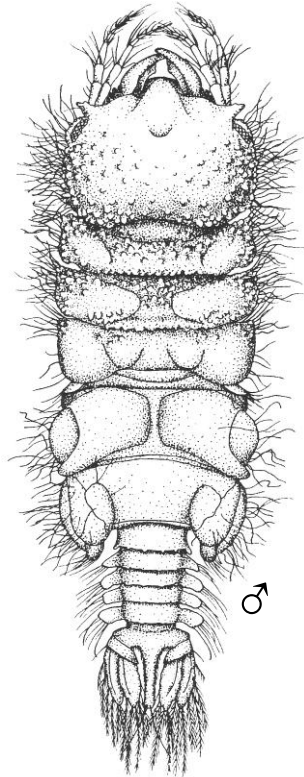
Nerocila acuminata

Genus *Caecognathia**

PLATE 5



C. crenulatifrons



C. sanctaecrucis



Caecognathia sp. A

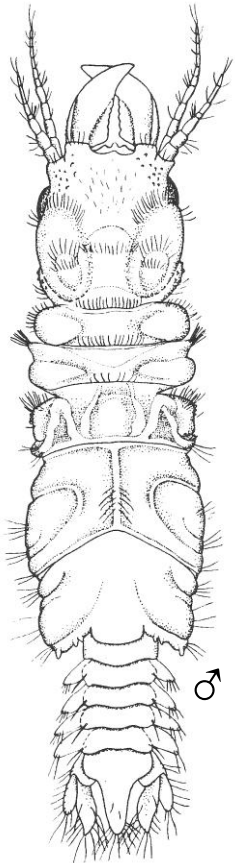


Caecognathia sp. SD1

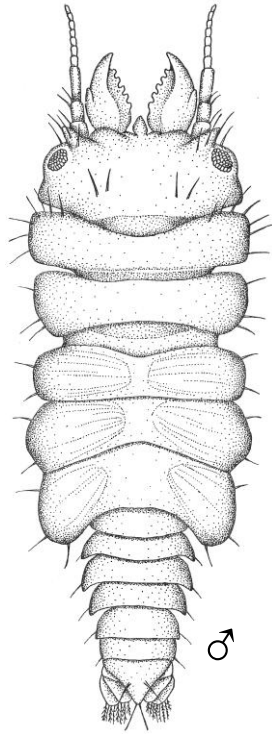
* See presentations on “Gnathiid Isopods” by Lisa Haney at www.scamit.org (under Tools)

Genus *Gnathia**

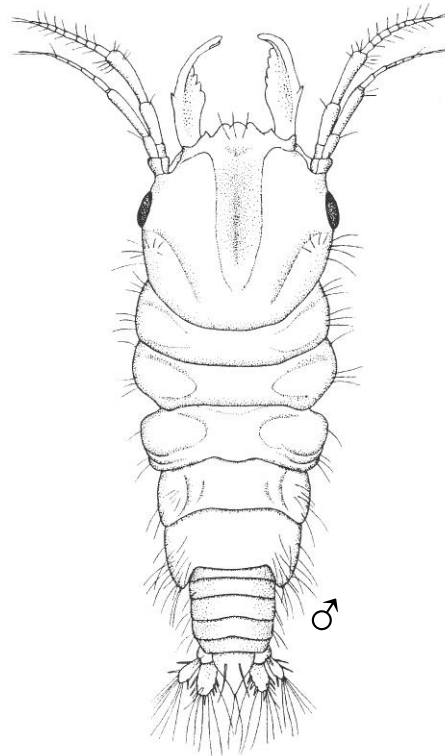
PLATE 6



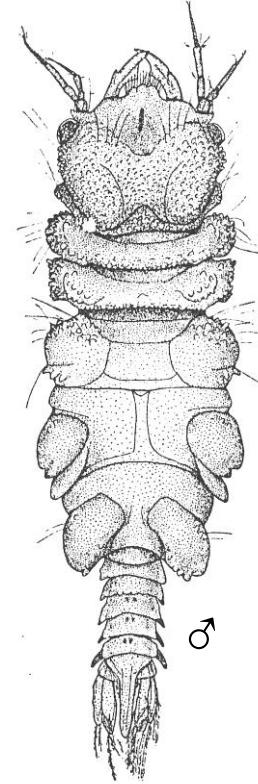
G. productatridens



G. steveni



G. tridens



G. trilobata



Gnathia sp. MBC1

* See presentations on “Gnathiid Isopods” by Lisa Haney at www.scamit.org (under Tools)

Suborder Cymothoidea, Superfamily Bopyroidea

Suborder Cymothoidea **Superfamily Bopyroidea**

Family Bopyridae

Subfamily Pseudioninae

Munidion pleuroncodis Markham, 1975

Pseudione giardi Calman, 1898

Subfamily Bopyrinae

Probopyria sp. A Stebbins, 2011 *

Subfamily Argeiinae

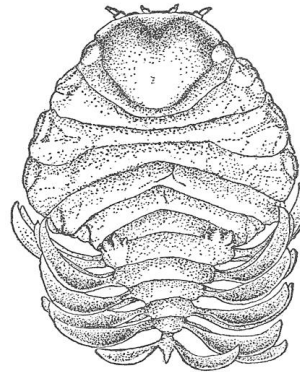
Argeia pugettensis Dana, 1853

Subfamily Phyllodurinae

Phyllodurus abdominalis Stimpson, 1857

Subfamily Athelginae

Anathelges hyphalus (Markham, 1974)

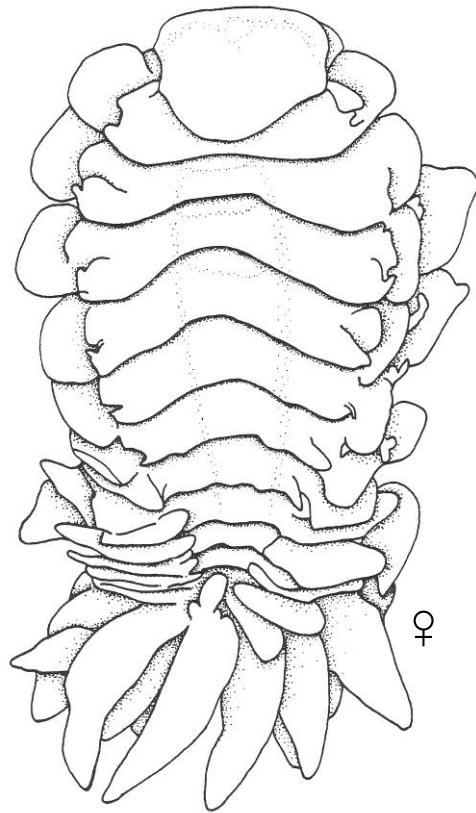


[6 species, 6 genera, 1 family]

* Add to SCAMIT Ed. 7 (T. Stebbins, pers. obs.)

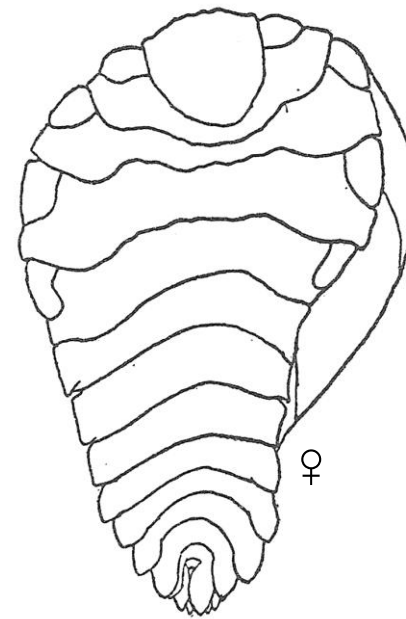
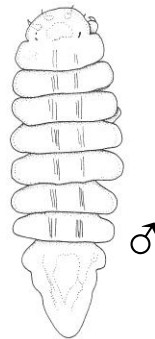
Genera *Munidion* & *Pseudione*

PLATE 7



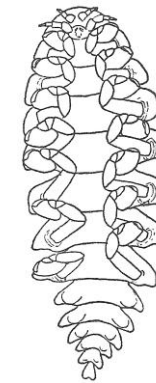
Munidion pleuroncodis

[Host = galatheid *Pleuroncodes planipes*]



Pseudione giardi *

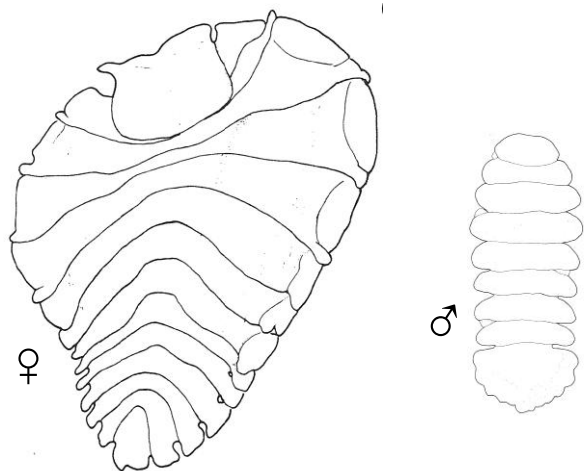
[Host = hermit crabs *Pagurus* spp.]



* *P. giardi* = questionable record (J.C. Markham, pers. comm., 7/28/11)

Genera *Probopyria* & *Argeia*

PLATE 8

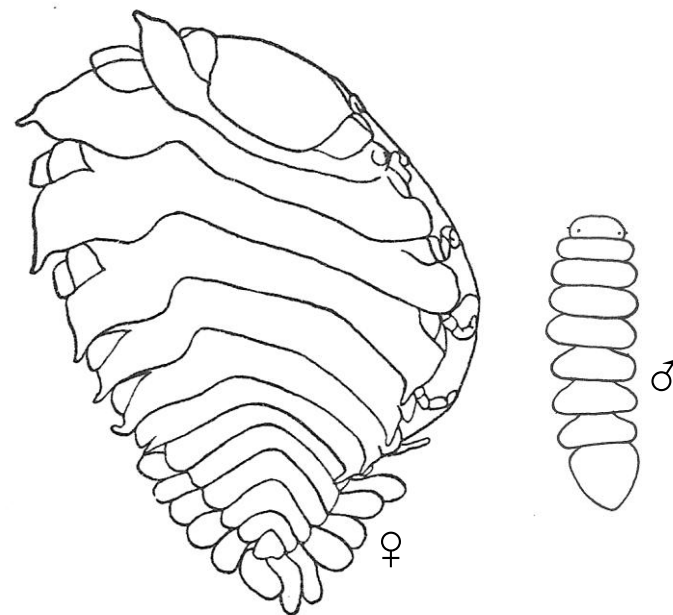


Probopyria alpei
(North Carolina – western Florida, Antigua, Brazil)



Probopyria sp. A*

[Host = alpheid shrimp *Automate* sp. A]

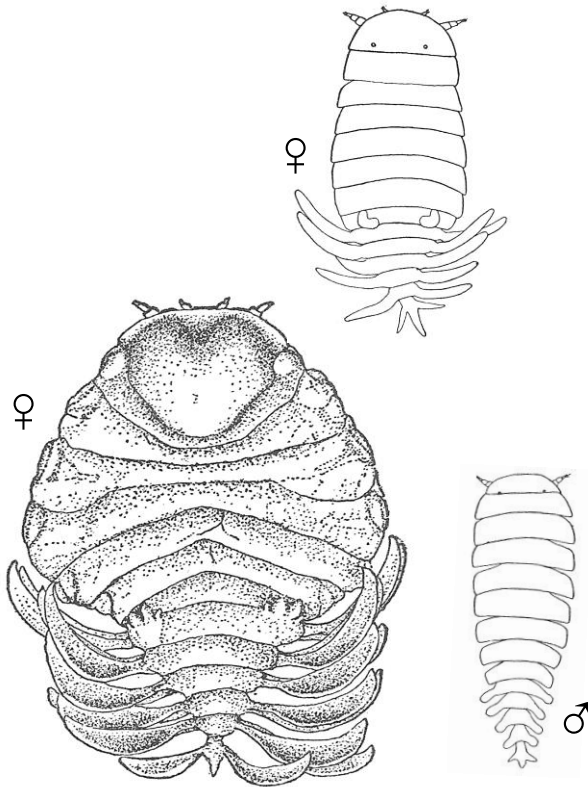


Argeia pugettensis
[Host = crangonid & hippolytid shrimps]

* See Stebbins, 2011 (provisional species sheet) at www.scamit.org (under Tools)

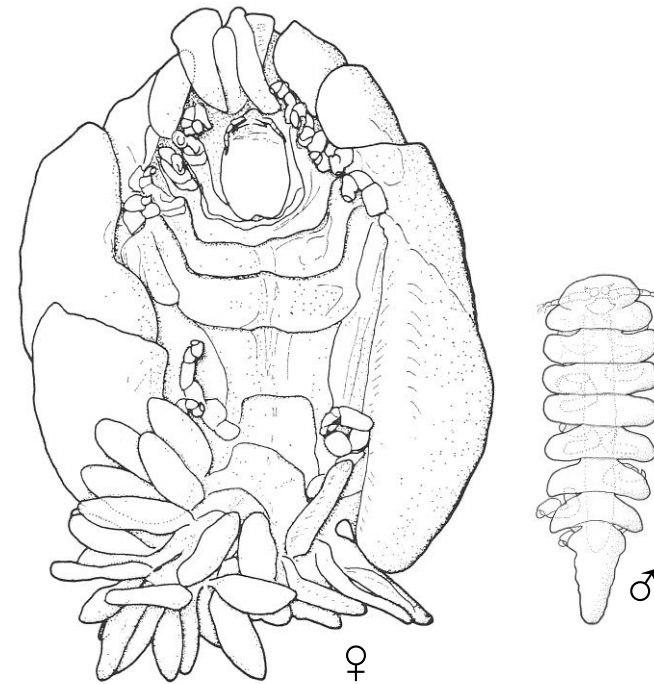
Genera *Phyllodurus* & *Anathelges*

PLATE 9



Phyllodurus abdominalis

[Host = mud shrimp *Upogebia* spp.]



Anathelges hyphalus

[Host = hermit crabs *Parapagurodes* spp.]

Suborder Cymothoida, Superfamily Anthuridea

Suborder Cymothoida

Superfamily Anthuridea

Family Antheluridae

Ananthura luna (Schultz, 1966)

Family Anthuridae

Amakusanthura californiensis (Schultz, 1964)

Cyathura munda Menzies, 1951

Haliophasma geminatum Menzies & Barnard, 1959

Mesanthura occidentalis Menzies & Barnard, 1959 *

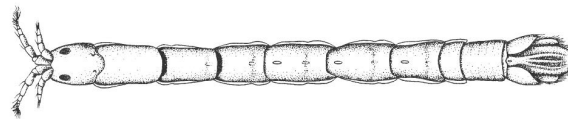
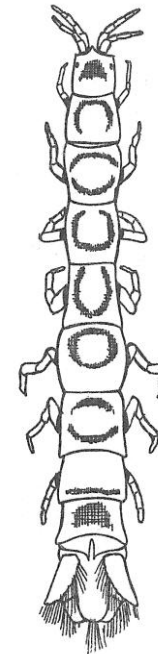
Family Hyssuridae

Kupellonura sp. A Wetzer & Brusca, 1997

Family Paranthuridae

Califanthura squamosissima (Menzies, 1951)

Paranthura elegans Menzies, 1951

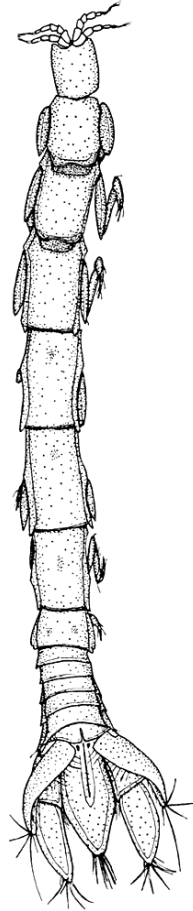


[8 species, 8 genera, 4 families]

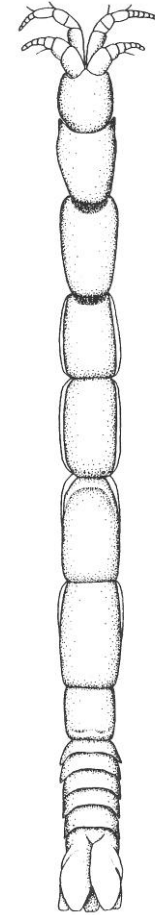
* Add to SCAMIT Ed. 7 (T. Stebbins, pers. obs.)

Genera *Ananthura* & *Kupellonura*

PLATE 10



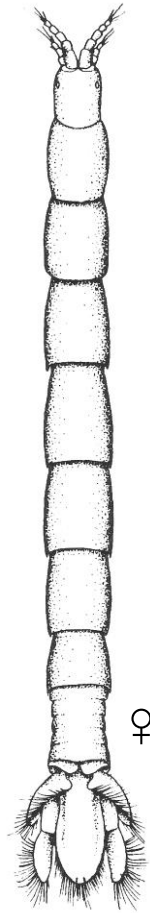
Ananthura luna



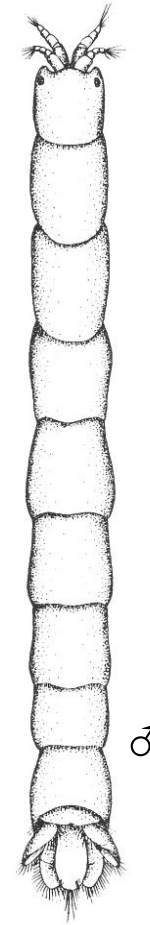
Kupellonura sp. A

Genera *Amakusanthura* & *Cyathura*

PLATE 11



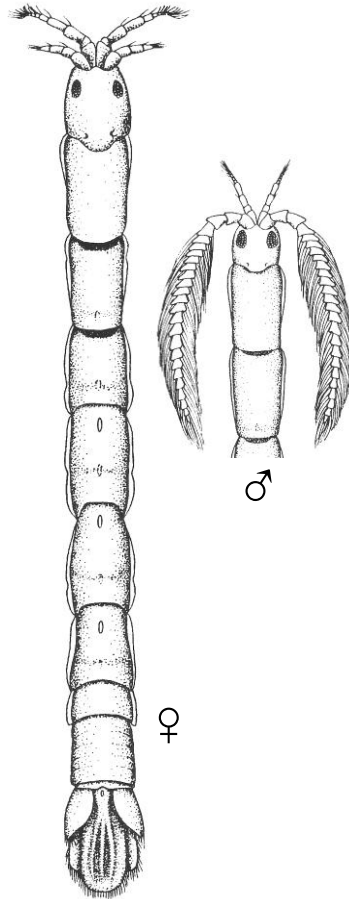
Amakusanthura californiensis



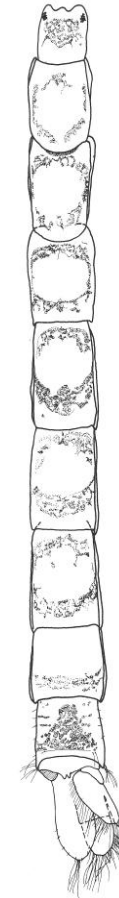
Cyathura munda

Genera *Haliophasma* & *Mesanthura*

PLATE 12



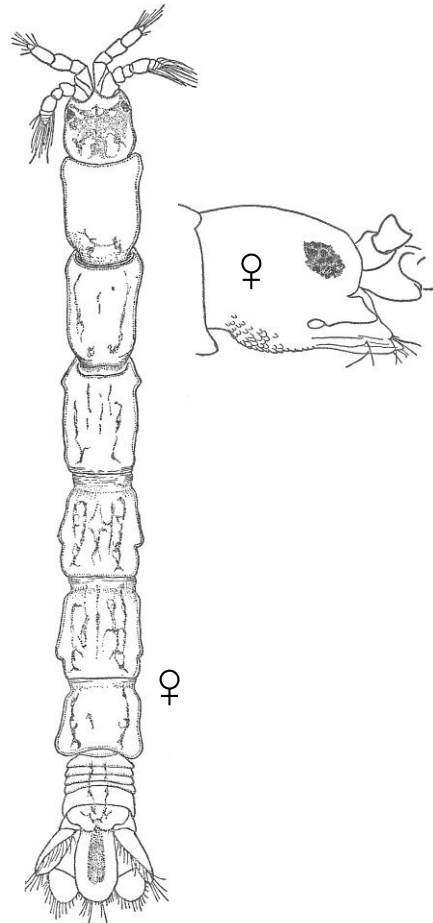
Haliophasma geminatum



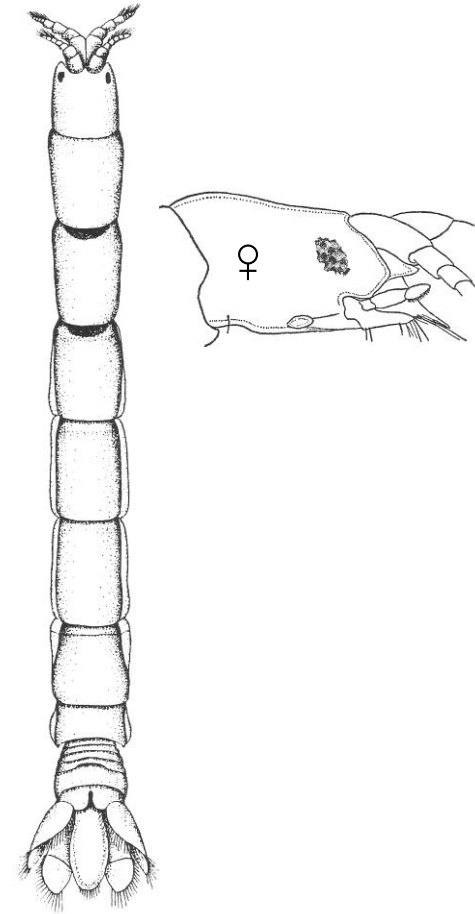
Mesanthura occidentalis

Genera *Califanthura* & *Paranthura*

PLATE 13



Califanthura squamosissima



Paranthura elegans

Suborder Cymothoida, Superfamily Cirolanoidea

Suborder Cymothoida

Superfamily Cirolanoidea

Family Cirolanidae

Cirolana diminuta Menzies & Banard, 1959

Cirolana harfordi (Lockington, 1877)

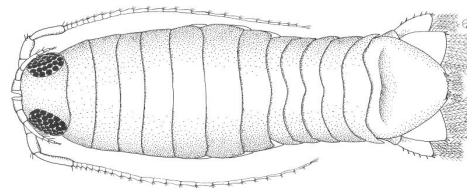
Eurydice caudata Richardson, 1899

Exciorolana chiltoni (Richardson, 1905)

Exciorolana linguifrons (Richardson, 1899)

Metacirolana joanneae (Schultz, 1966)

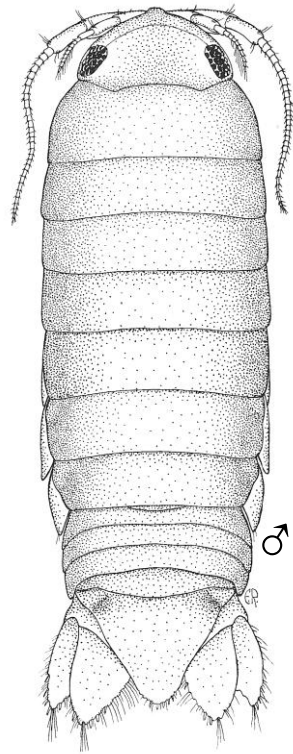
Natatolana californiensis (Schultz, 1966)



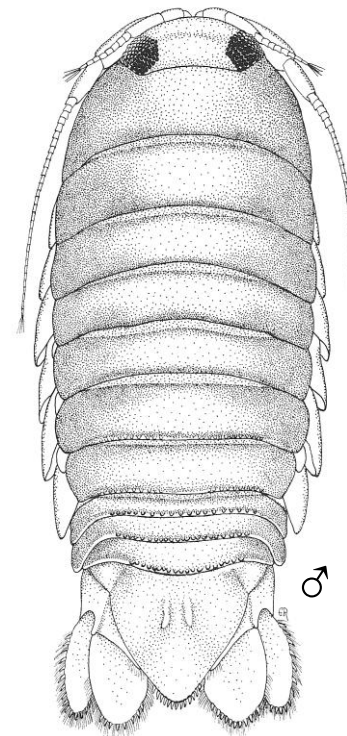
[7 species, 5 genera, 1 family]

Genus *Cirolana*

PLATE 14



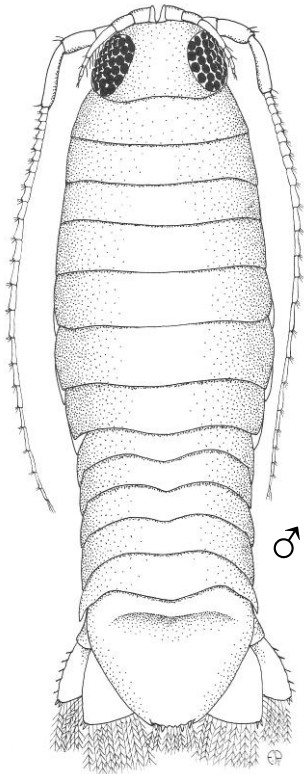
Cirolana diminuta



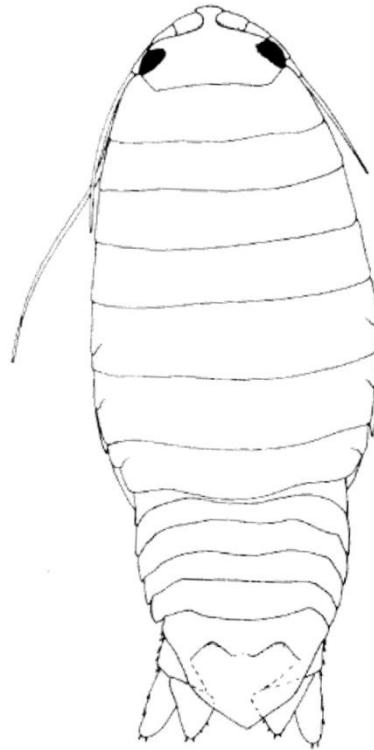
Cirolana harfordi

Genera *Eurydice* & *Excirolana*

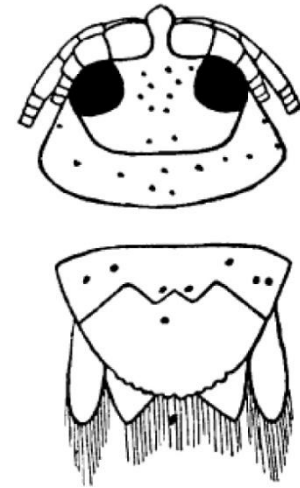
PLATE 15



Eurydice caudata



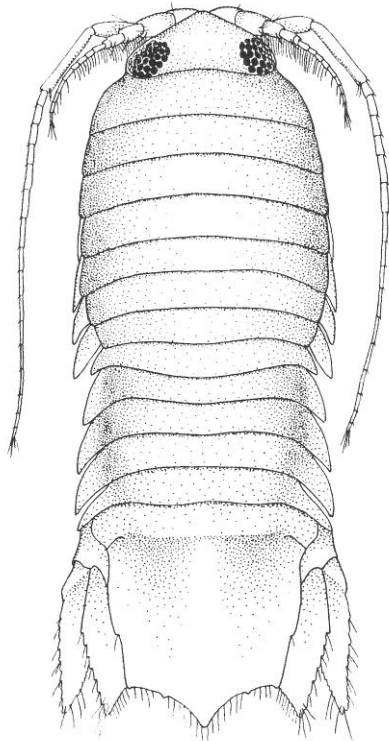
Excirolana chiltoni



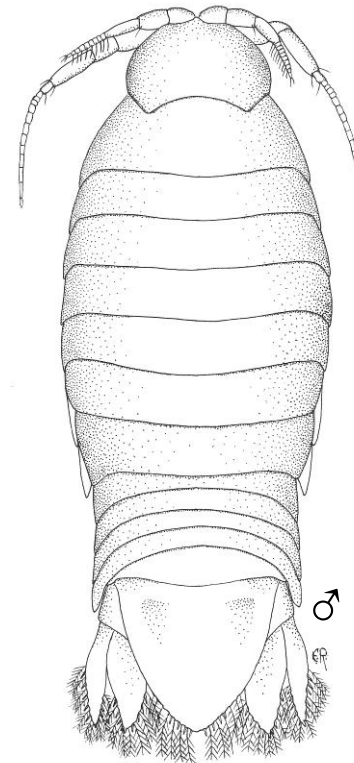
Excirolana linguifrons

Genera *Metacirolana* & *Natatolana*

PLATE 16



Metacirolana joanneae



Natatolana californiensis

Suborder Limnoriidea, Superfamily Limnorioidea

Suborder Limnoriidea
Superfamily Limnorioidea

Family Limnoridae

Limnoria algarum Menzies, 1957

Limnoria quadripunctata Holthuis, 1949 *

Limnoria tripunctata Menzies, 1951



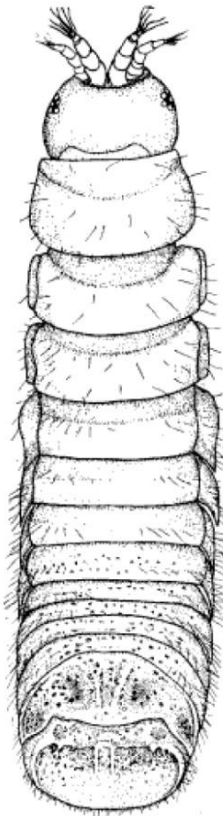
Limnoria lignorum

[3 species, 1 genus, 1 family]

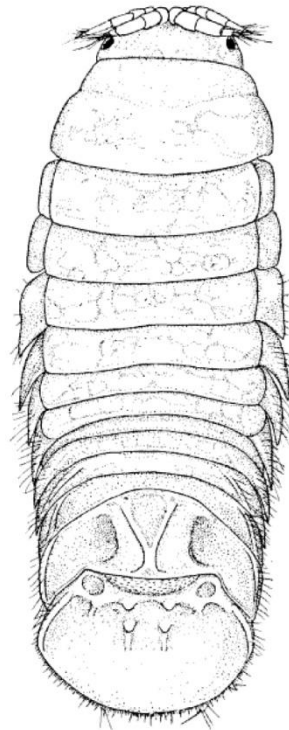
* Add to SCAMIT Ed. 7 (T. Stebbins, pers. obs.)

Genus *Limnoria*

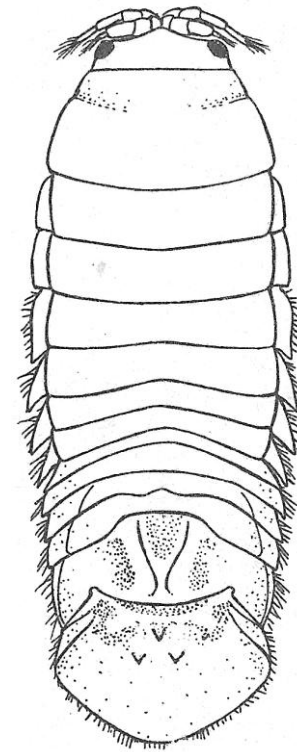
PLATE 17



Limnoria algarum



Limnoria quadripunctata



Limnoria tripunctata

Suborder Sphaeromatidea

Suborder Sphaeromatidea Superfamily Sphaeromatoidea

Family Ancinidae

Ancinus granulatus Holmes & Gay, 1909
Bathycopea daltonae (Menzies & Barnard, 1959)

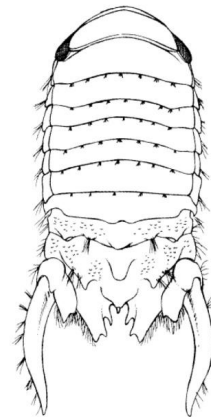
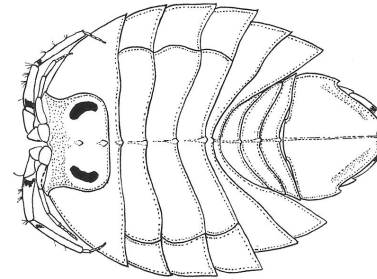
Family Sphaeromatidae

Discerceis granulosa (Richardson, 1899)
Dynamenella dilatata (Richardson, 1899)
Dynamenella glabra (Richardson, 1899)
Dynamenella sheareri (Hatch, 1947)
Dynoides saldanai Carvacho & Haasmann, 1984 *
Exosphaeroma amplicauda (Stimpson, 1857)
Exosphaeroma inornata (Dow, 1958)
Exosphaeroma rhomburum (Richardson, 1899)
Exosphaeroma sp. IS1 Cadien, 2011 *
Gnorimosphaeroma oregonense (Dana, 1853)
Paracerceis cordata (Richardson, 1899)
Paracerceis sculpta (Holmes, 1904)
Paracerceis sp. A SCAMIT 1996
Paradella diana Menzies, 1962
Sphaeroma quoyanum H. Milne Edwards, 1840

Superfamily Seroloidea

Family Serolidae

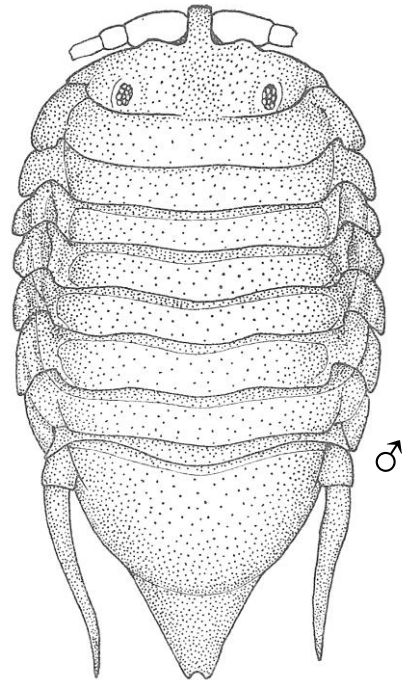
Heteroserolis carinata (Lockington, 1877)



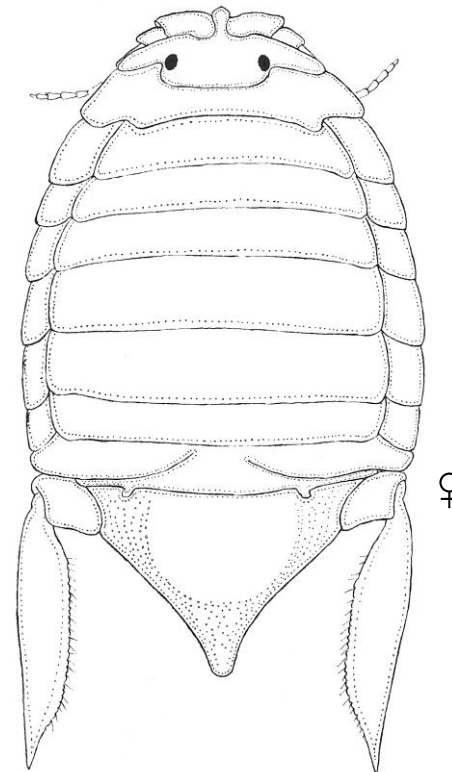
* Add to SCAMIT Ed. 7 (D. Cadien, pers. obs.)

Genera *Ancinus* & *Bathycopea*

PLATE 18



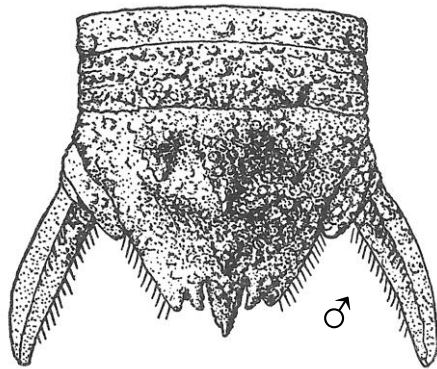
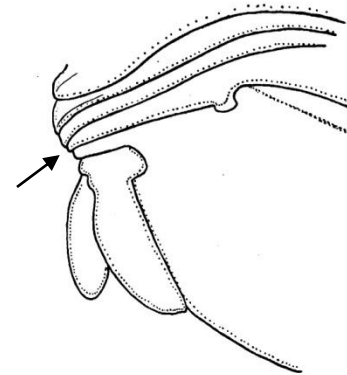
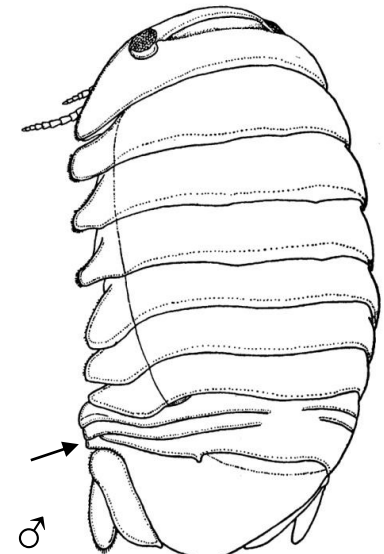
Ancinus granulatus



Bathycopea daltonae

Genera *Discerceis* & *Gnorimosphaeroma*

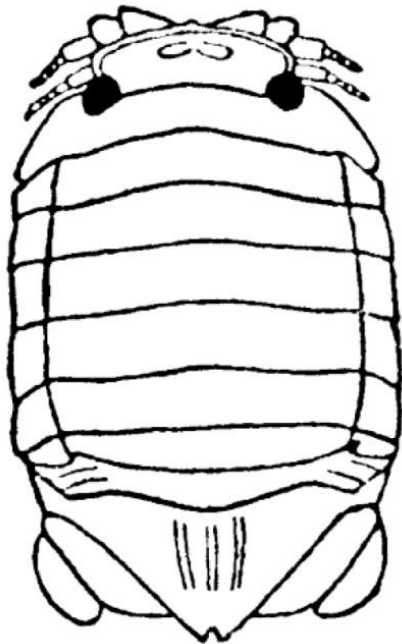
PLATE 19

*Discerceis granulosa**Gnorimosphaeroma oregonense* **G. insulare*
(not SCB species?)

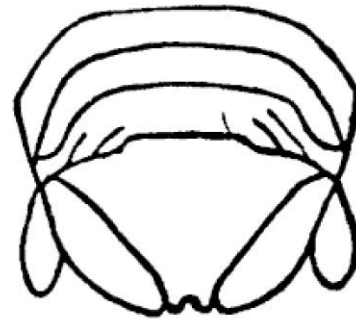
* There is confusion whether the spelling of the trivial name is '*oregonense*' (e.g., in Brusca et al., 2007; SCAMIT Ed. 6, etc.) or '*oregonensis*' (e.g., in WoRMS and Smithsonian World List). Briefly, Dana's original spelling was '*oregonensis*' but was changed to '*oregonense*' by Hoestlandt (1977) in a footnote in his paper synonymizing *G. luteum* with *G. insulare*.

Genus *Dynamenella*

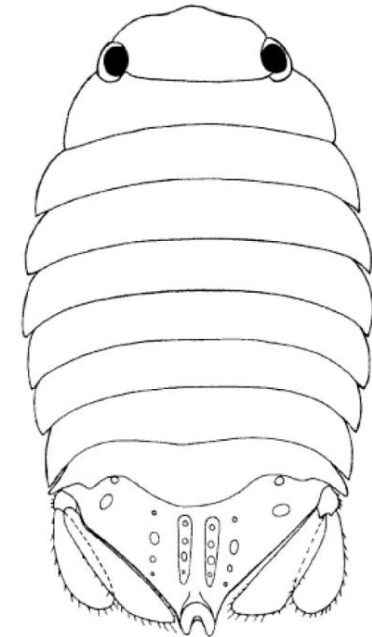
PLATE 20



Dynamenella dilatata



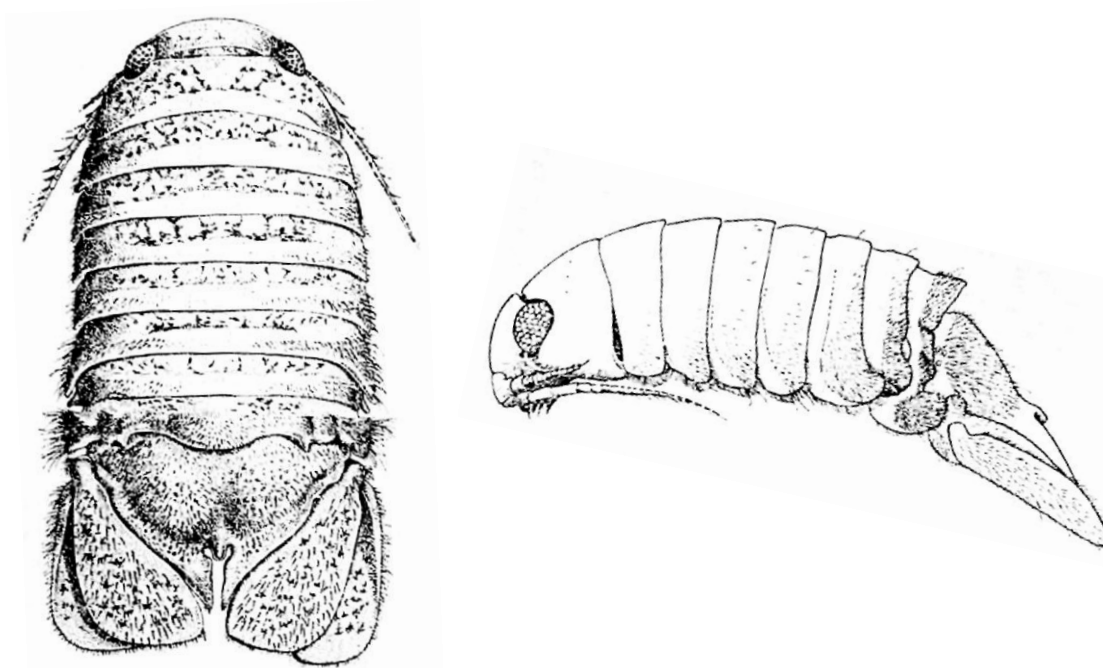
Dynamenella glabra



Dynamenella sheareri

Genus *Dynoides*

PLATE 21

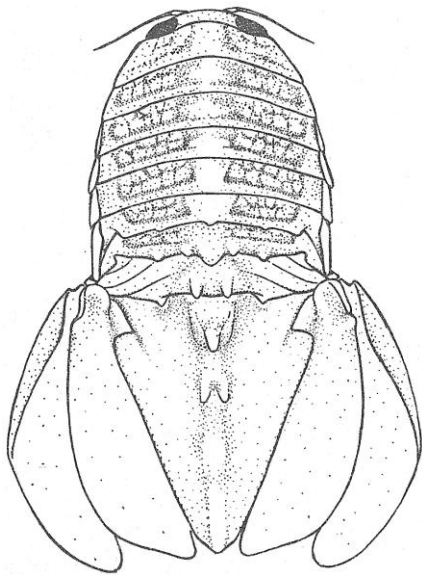


Dynoides saldanai *

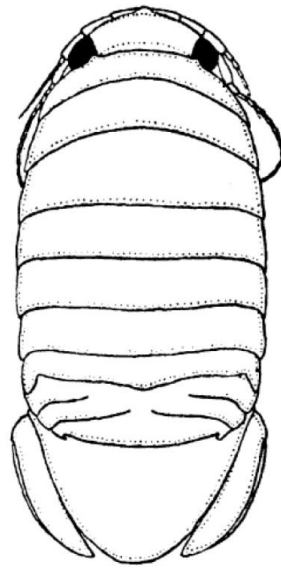
* New record from California ISS survey (D. Cadien, pers. comm., 1/19/12)

Genus *Exosphaeroma*

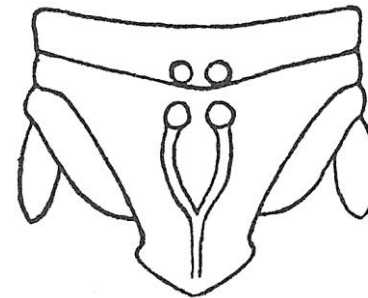
PLATE 22



*Exosphaeroma
amplicauda*[†]



*Exosphaeroma
inornata*



*Exosphaeroma
rhomburum*



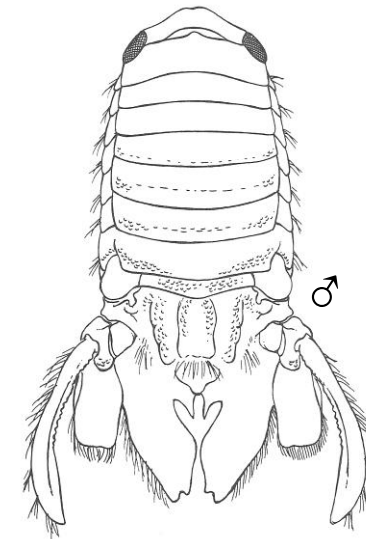
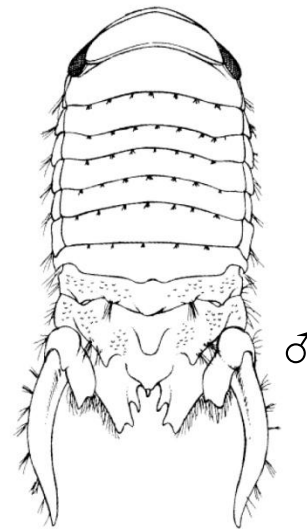
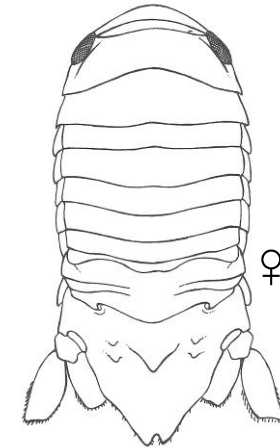
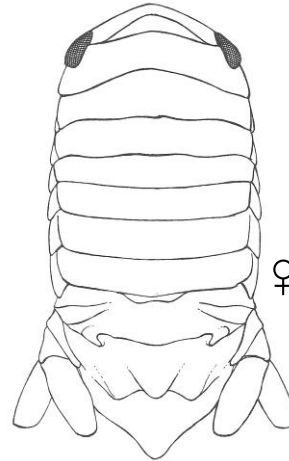
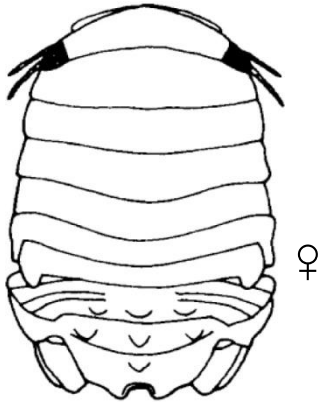
Exosphaeroma sp. IS1^{*}

[†] *E. amplicauda* = species complex (R. Wetzer, pers. comm., 2/13/12)

^{*} New record from California ISS survey (D. Cadien, pers. comm., 1/19/12)

Genus *Paracerceis*

PLATE 23



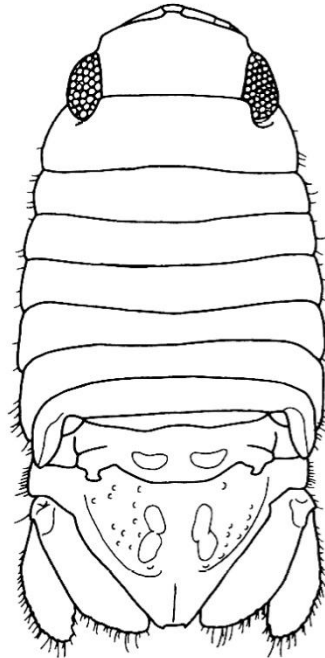
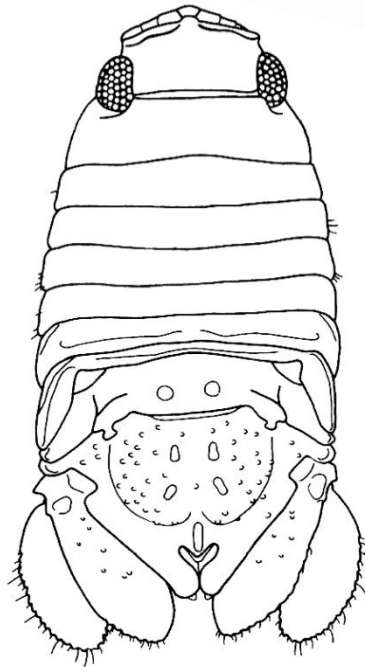
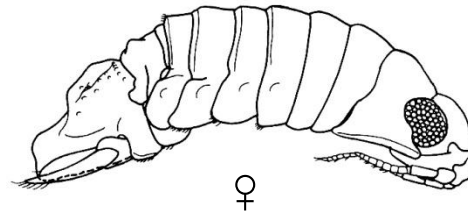
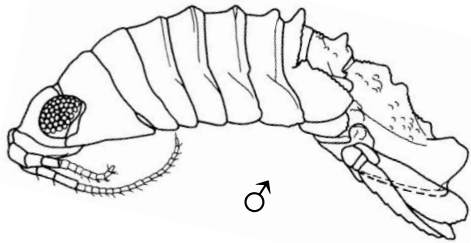
Paracerceis cordata

Paracerceis sculpta

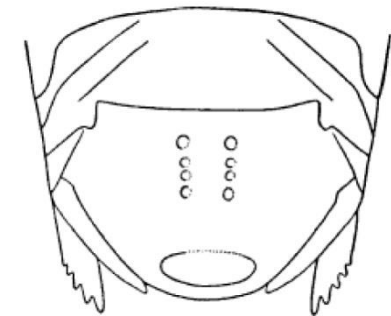
Paracerceis sp. A

Genera *Paradella* & *Sphaeroma*

PLATE 24



Paradella diana

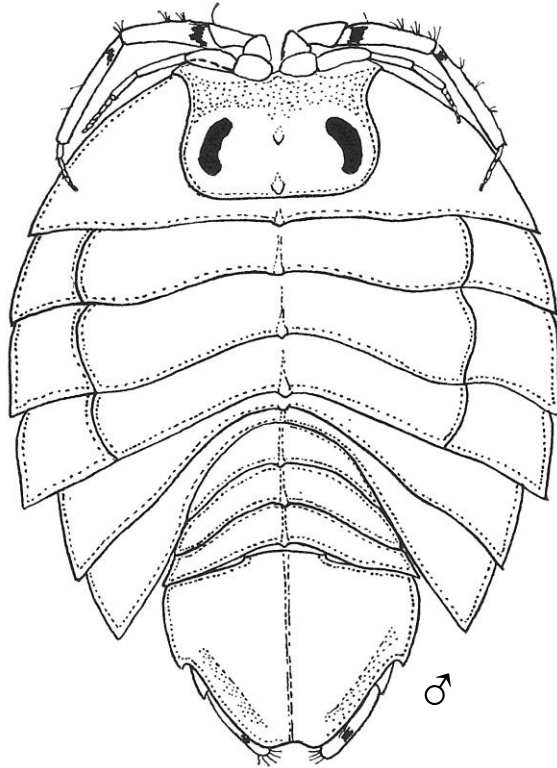


Sphaeroma quoyanum *

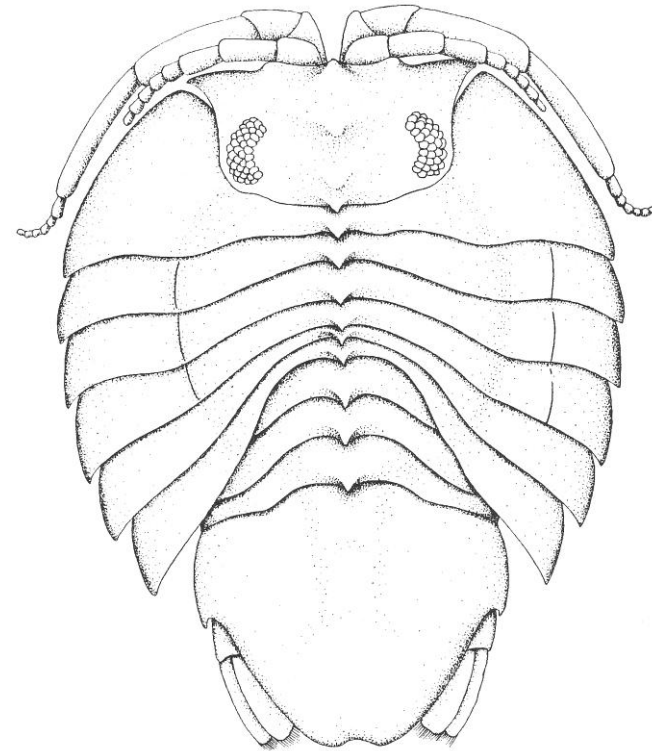
* Spelling of "quoyanum" vs. "quoianum"
(see Brusca et al., 2007)

Genus *Heteroserolis*

PLATE 25



Heteroserolis carinata
(shallow water form)



Heteroserolis carinata
(deep water form)

Suborder Valvifera

Suborder Valvifera

Family Arcturidae

Idarcturus allelomorphus Menzies & Barnard, 1959

Idarcturus hedgpethi Menzies, 1951

Neastacilla californica (Boone, 1918)

Family Holognathidae

Cleantioides occidentalis (Richardson, 1899)

Family Idoteidae

Colidotea rostrata (Benedict, 1898) *

Edotia sublittoralis Menzies & Banard, 1959

Edotia sp. B MEC, 1984

Erichsonella crenulata Menzies, 1950

Eusymmerus pseudoculata (Boone, 1923) *

Idotea fewkesi Richardson, 1905

Idotea rufescens Fee, 1927

Idotea urotoma Stimpson, 1864

Pentidotea aculeata Stafford, 1913

Pentidotea montereyensis Maloney, 1933

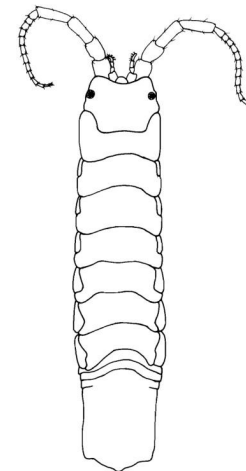
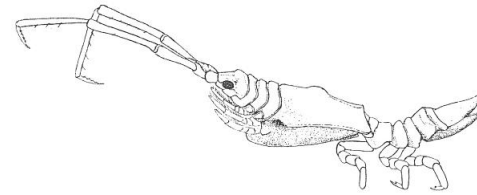
Pentidotea resecata (Stimpson, 1857)

Synidotea calcarea Schultz, 1966

Synidotea harfordi Benedict, 1897

Synidotea magnifica Menzies & Barnard, 1959

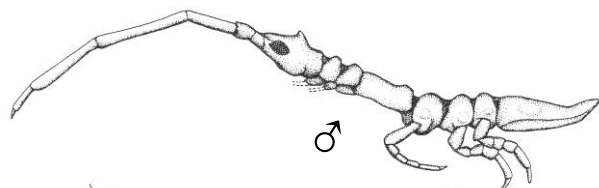
Synidotea media Iverson, 1972



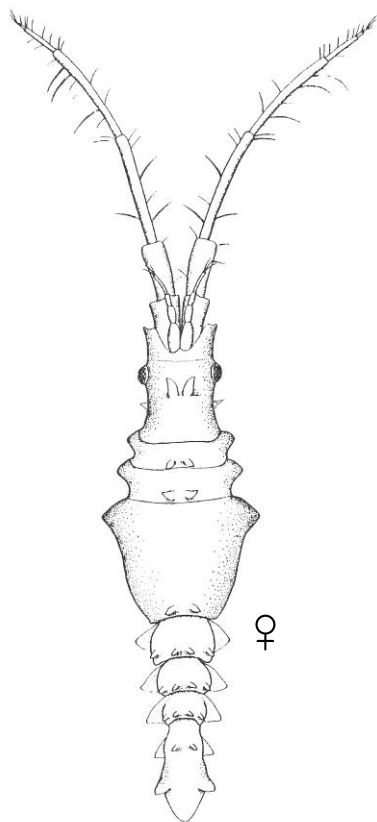
* Add to SCAMIT Ed. 7 (T. Stebbins, pers. obs.)

Genera *Idarcturus* & *Neastacilla*

PLATE 26

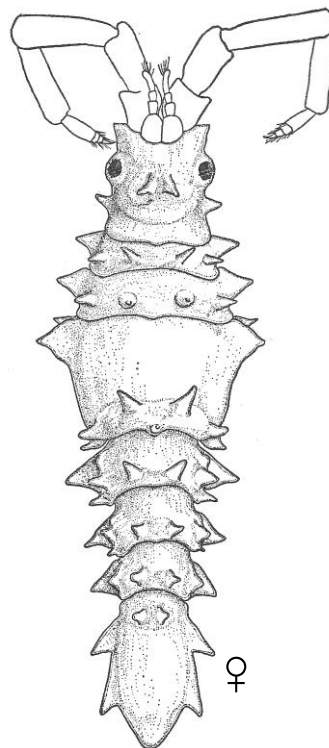


♂



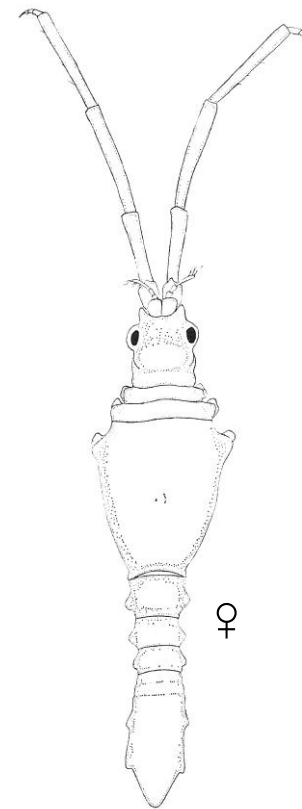
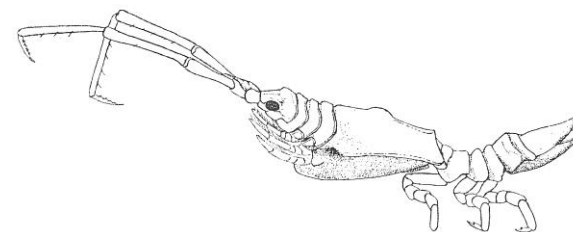
♀

Idarcturus allelomorphus



♀

Idarcturus hedgpethi

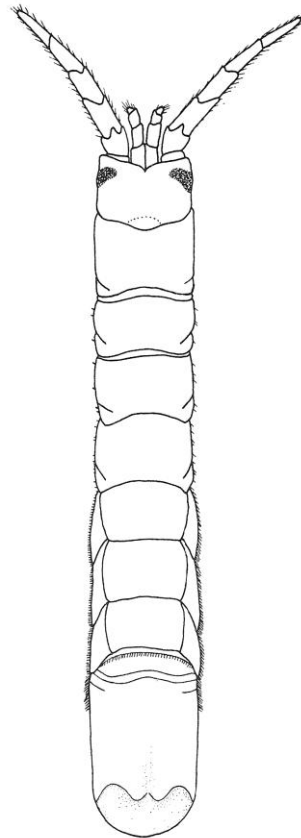


♀

Neastacilla californica

Genus *Cleantioides*

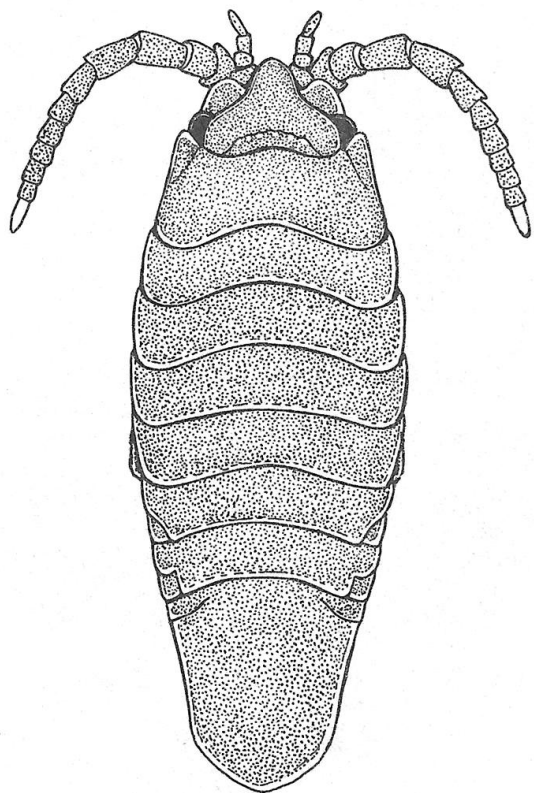
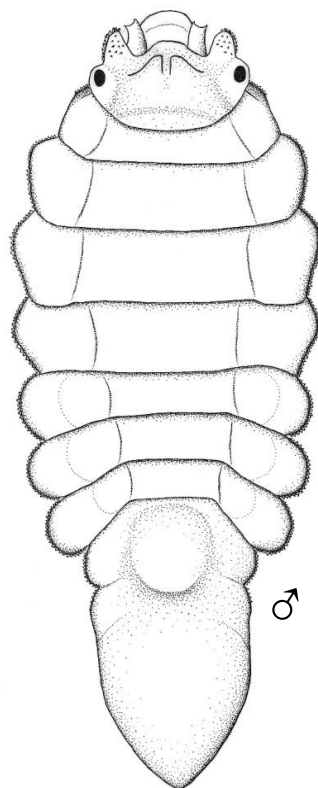
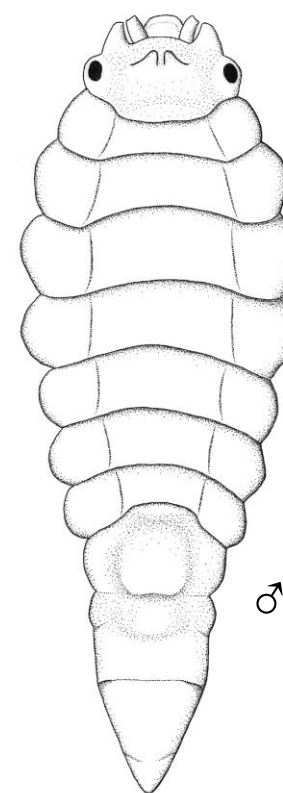
PLATE 27



Cleantioides occidentalis

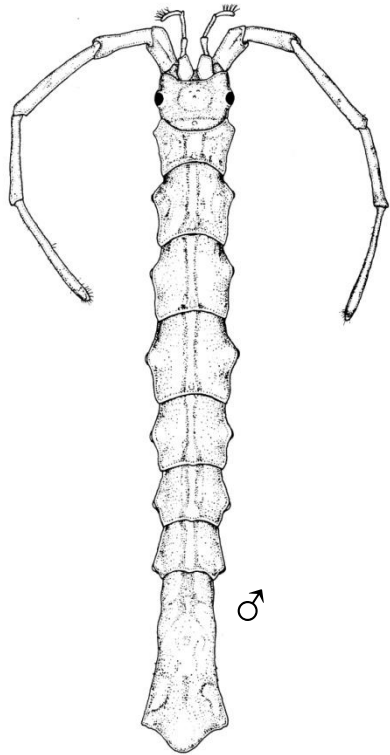
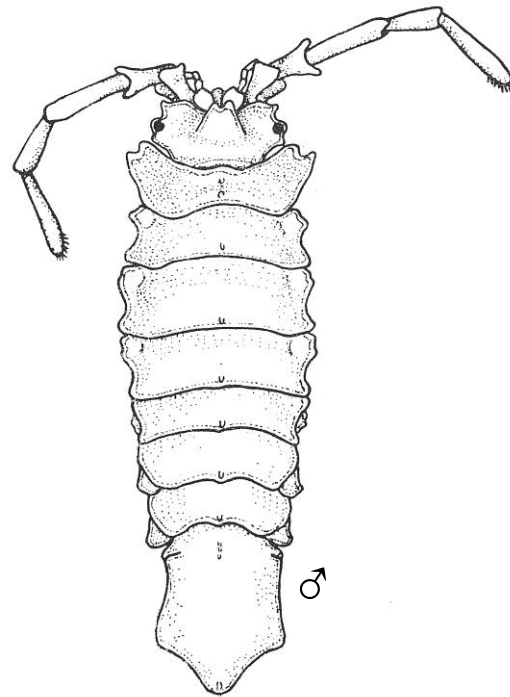
Genera *Colidotea* & *Edotia*

PLATE 28

*Colidotea rostrata**Edotia sublittoralis**Edotia* sp. B

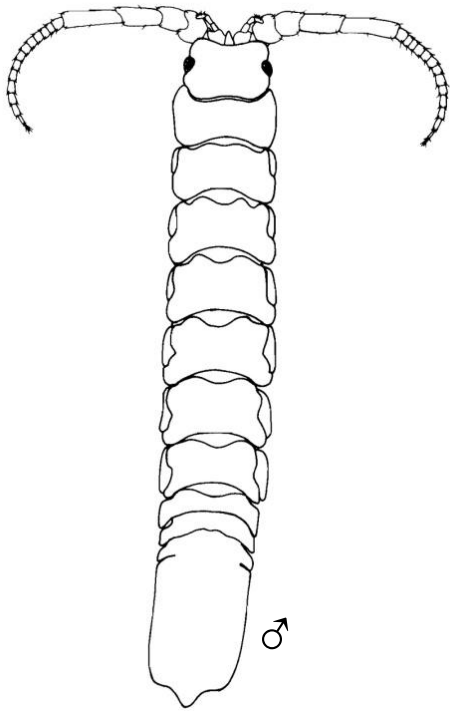
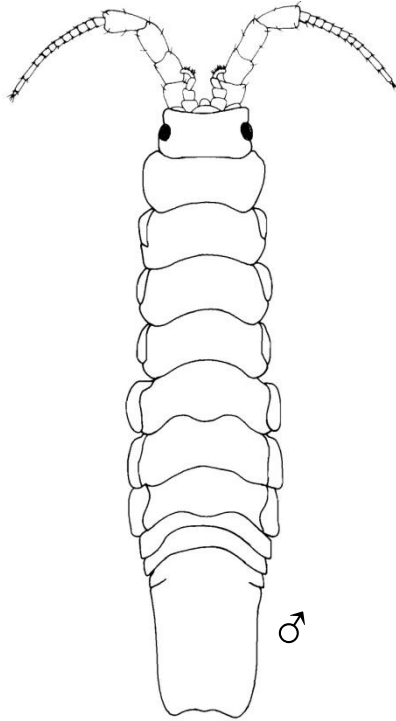
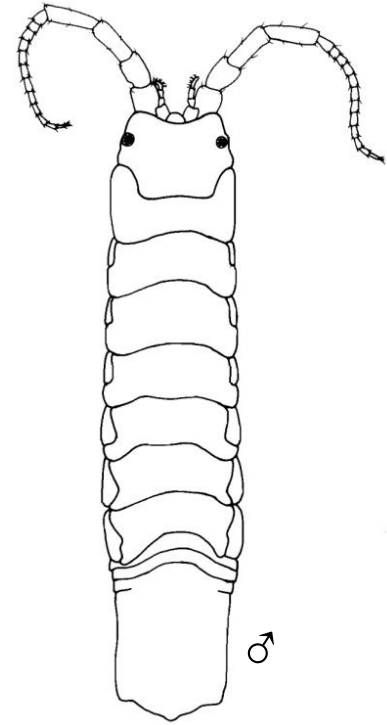
Genera *Erichsonella* & *Eusymmerus*

PLATE 29

*Erichsonella crenulata**Eusymmerus pseudocolata*

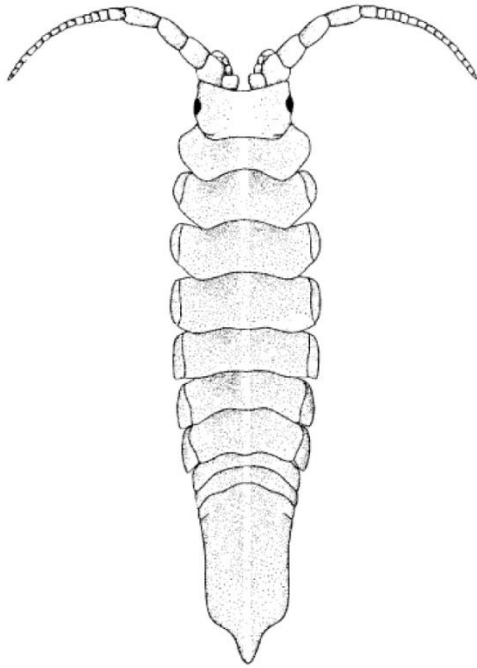
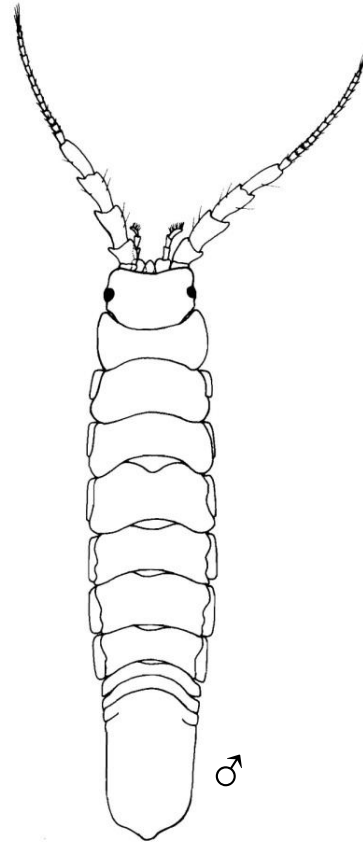
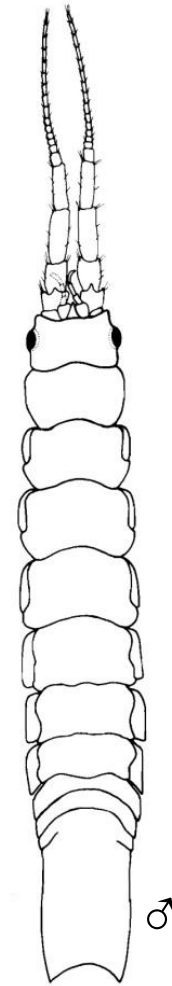
Genus *Idotea*

PLATE 30

*Idotea fewkesi**Idotea rufescens**Idotea urotoma*

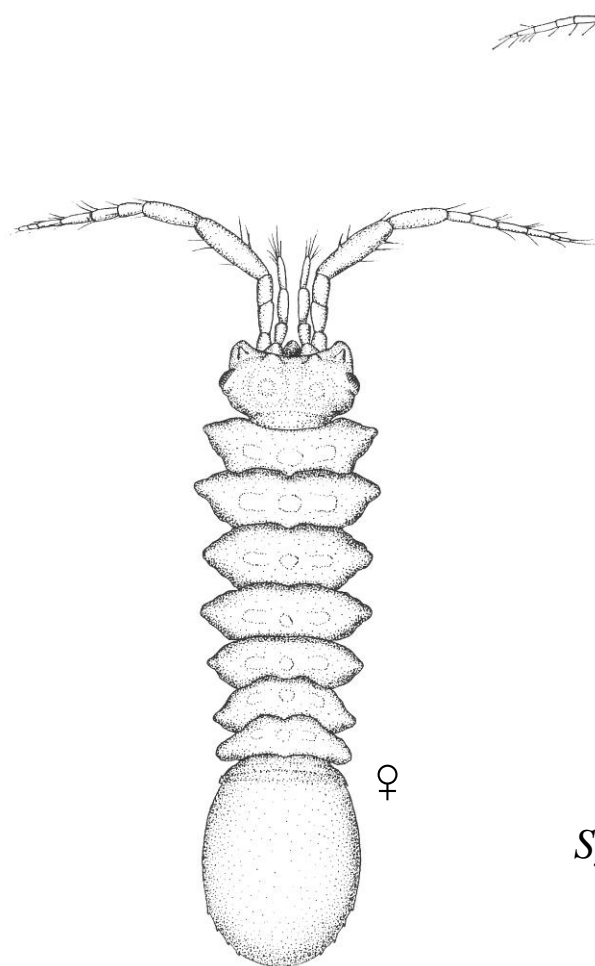
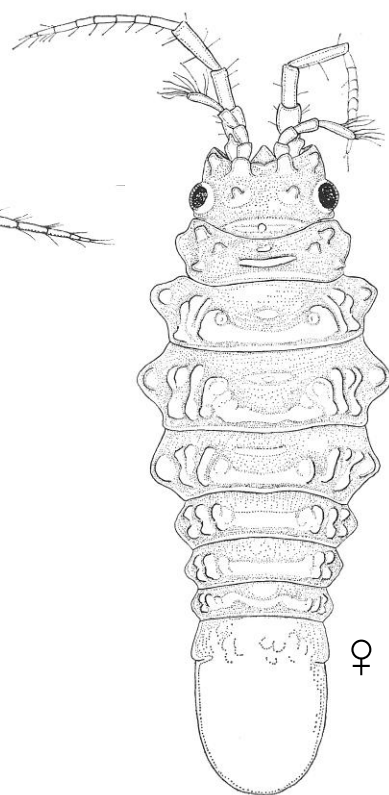
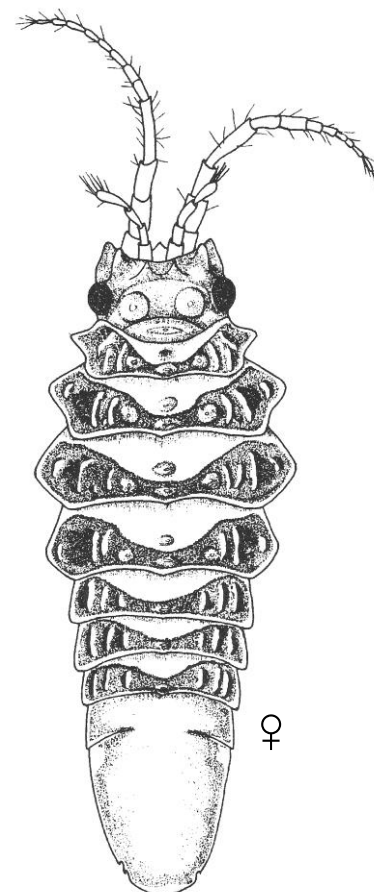
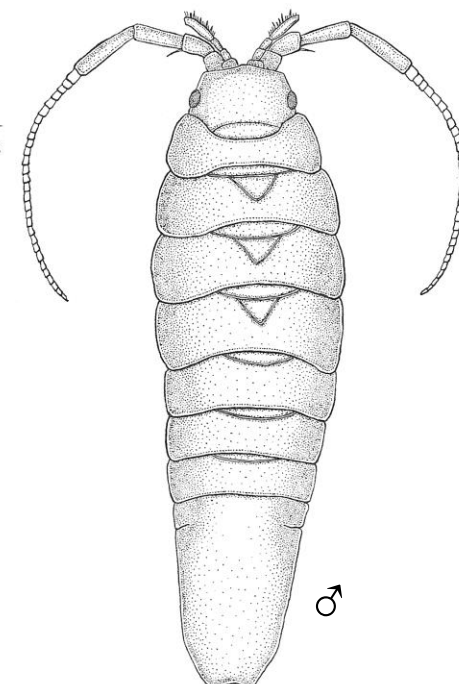
Genus *Pentidotea*

PLATE 31

*Pentidotea aculeata**Pentidotea montereyensis**Pentidotea resecata*

Genus *Synidotea*

PLATE 32

*Synidotea calcarea**Synidotea magnifica**Synidotea media**Synidotea harfordi*

Suborder Asellota, Superfamily Janiroidea

Suborder Asellota Superfamily Janiroidea

Family Dendrotonidae

Acanthomunna tannerensis Schultz, 1966

Family Desmosomatidae

Momedossa symmetrica (Schultz, 1966)

Prochelator sp. A Wilson, 1997

Family Janiridae

Caecianiropsis psammophila Menzies & Pettit, 1956

Caecianiropsis sp. LA1 Cadien, 1999

Caecianiropsis sp. LA2 Cadien, 1999

Ianiropsis analoga Menzies, 1952

Ianiropsis derjugini (Gurjanova, 1933)

Ianiropsis minuta Menzies, 1952

Ianiropsis montereyensis Menzies, 1952

Ianiropsis tridens Menzies, 1952

Janiralata occidentalis (Walker, 1898)

Janiralata solasteri (Hatch, 1947)

Janiralata sp. A Wilson, 1997

Janiralata sp. B Wilson, 1997

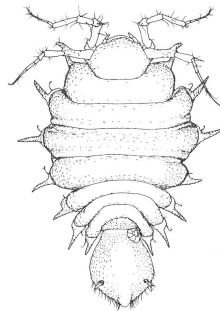
Janiralata sp. D Wilson, 1997

Family Joeropsididae

Joeropsis concava Schultz, 1966

Joeropsis dubia Menzies, 1951

Joeropsis lobata Richardson, 1899



Family Microparasellidae

Microcharon sp. A Cadien, 1999

Microcharon sp. WS1 Stebbins, 2010 †

Family Munnidae

Munna chromatocephala Menzies, 1952

Munna fernaldi George & Stromberg, 1968 *

Munna halei Menzies, 1952

Munna spinifrons Menzies & Barnard, 1959

Munna stephensi Gurjanova, 1933

Munna sp. A Wilson, 1997

Uromunna ubiquita (Menzies, 1952)

Family Munnopsidae

Belonectes sp. A Wilson, 1997

Eurycope californiensis Schultz, 1966

Ilyarachna acarina Menzies & Barnard, 1959

Ilyarachna profunda Schultz, 1966

Munnopsurus sp. A Wilson, 1997

Family Paramunnidae

Boreosignum sp. 1 Pasko, 2010 †

Boreosignum sp. IS1 Cadien, 2008 *

Munnogonium tillerae (Menzies & Barnard, 1959)

Munnogonium sp. SD1 Pasko, 2004 †

Paramunna quadratifrons Iverson & Wilson, 1981

Paramunna sp. A SCAMIT, 1996

Paramunna sp. SD1 Pasko, 2004

Pleurogonium californiense Menzies, 1951

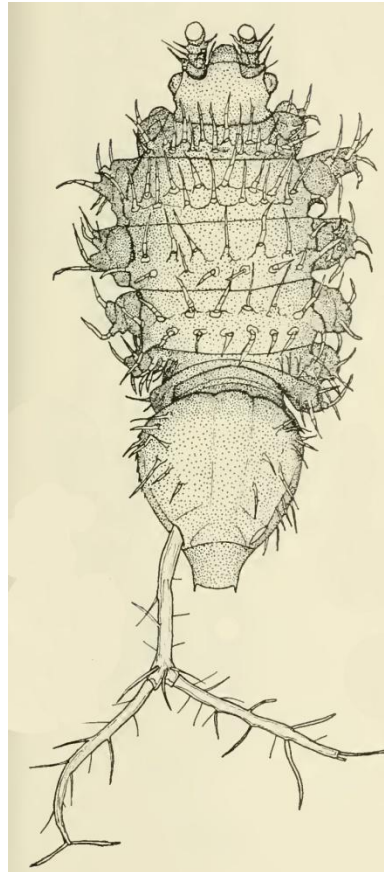
Pleurogonium sp. A Wilson, 1997

* Add to SCAMIT Ed. 7 (D. Cadien, pers. obs.)

† Possibly add to SCAMIT Ed. 7 (require voucher sheets)

Genus *Acanthomunna*

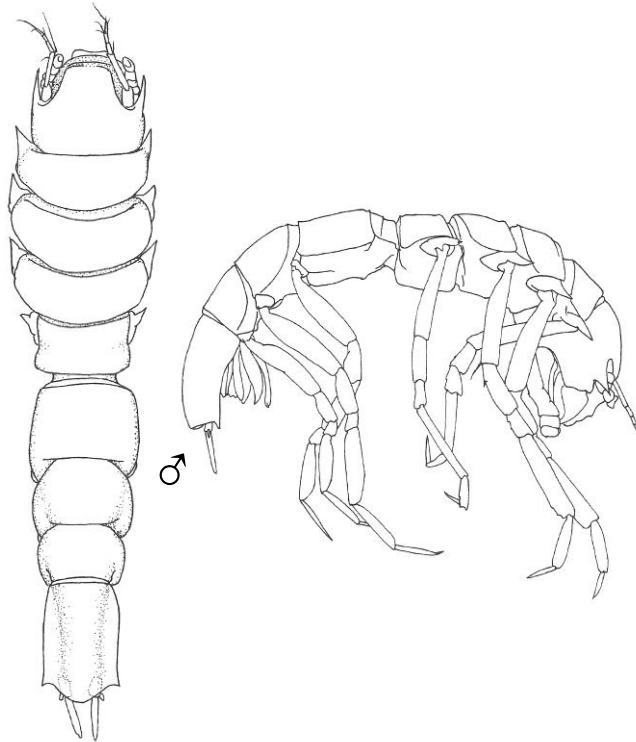
PLATE 33



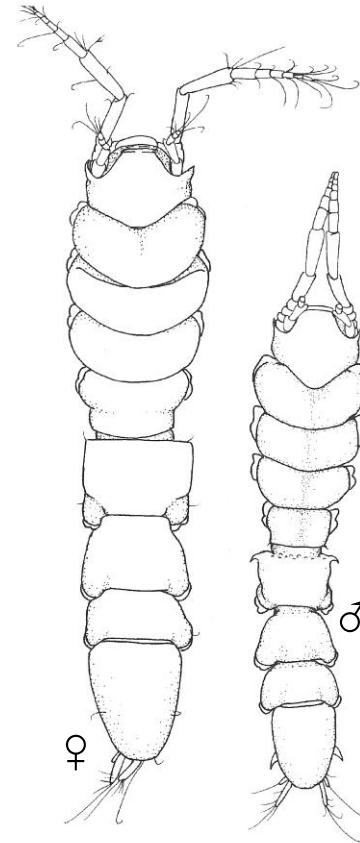
Acanthomunna tannerensis

Genera *Momedossa* & *Prochelator*

PLATE 34



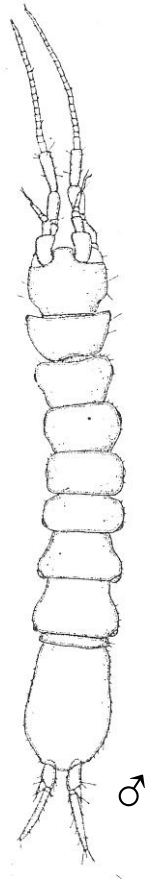
Momedossa symmetrica



Prochelator sp. A

Genus *Caecianiropsis*

PLATE 35



Caecianiropsis psammophila



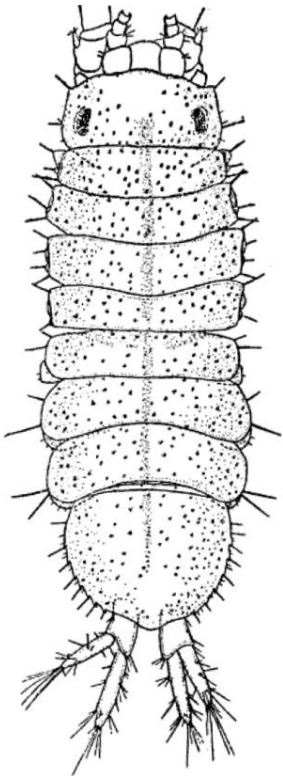
Caecianiropsis sp. LA1



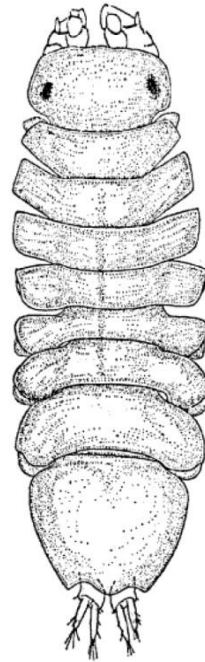
Caecianiropsis sp. LA2

Genus *Ianiropsis*

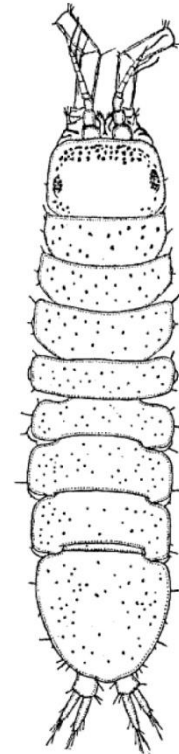
PLATE 36



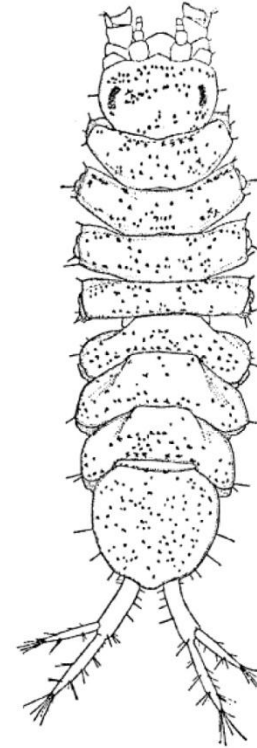
*Ianiropsis
analoga*



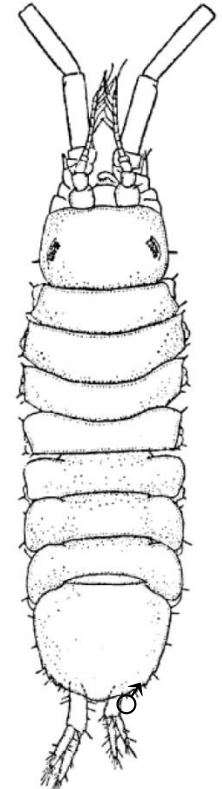
*Ianiropsis
derjugini*



*Ianiropsis
minuta*



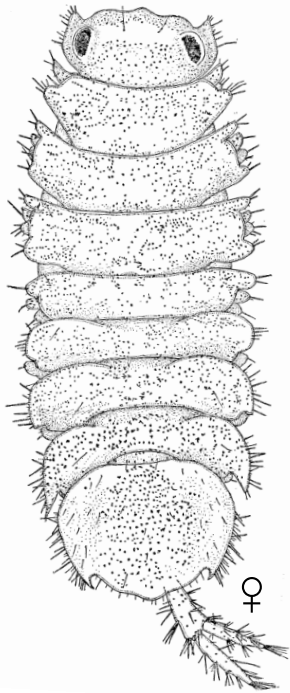
*Ianiropsis
montereyensis*



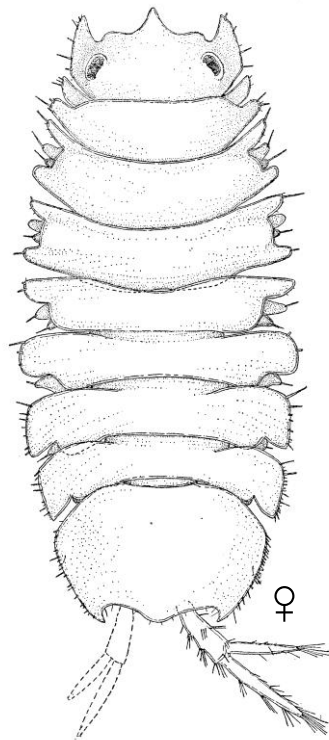
*Ianiropsis
tridens*

Genus *Janiralata*

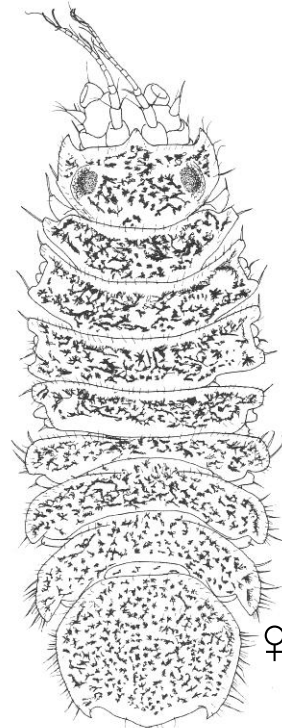
PLATE 37



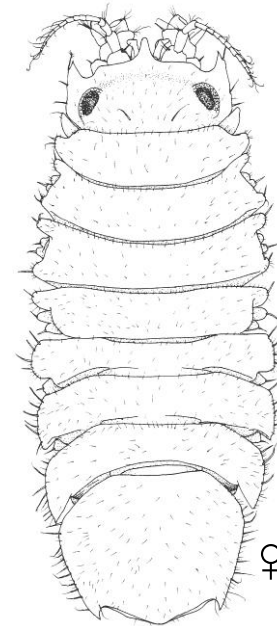
Janiralata occidentalis



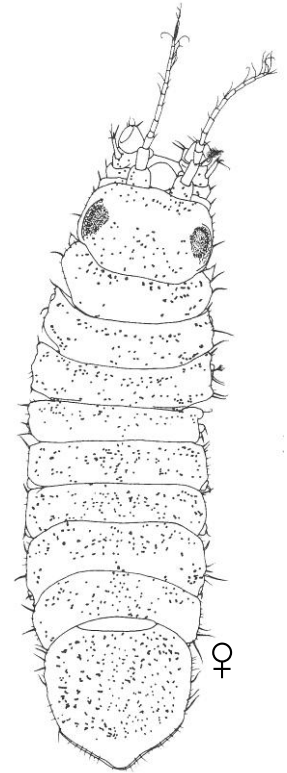
Janiralata solasteri



Janiralata sp. A



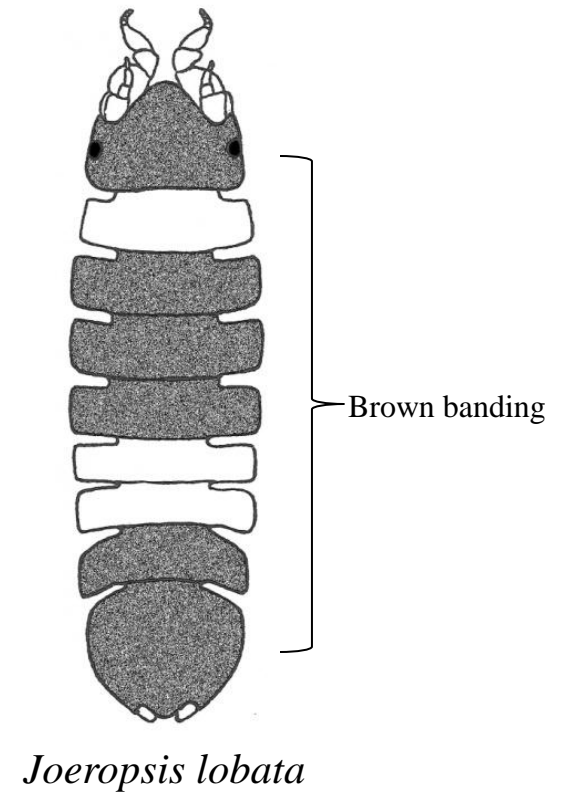
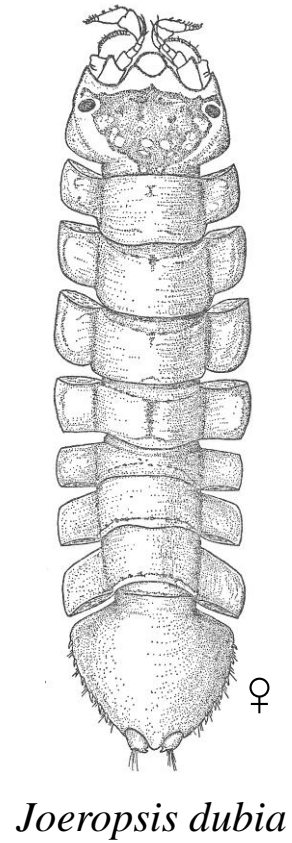
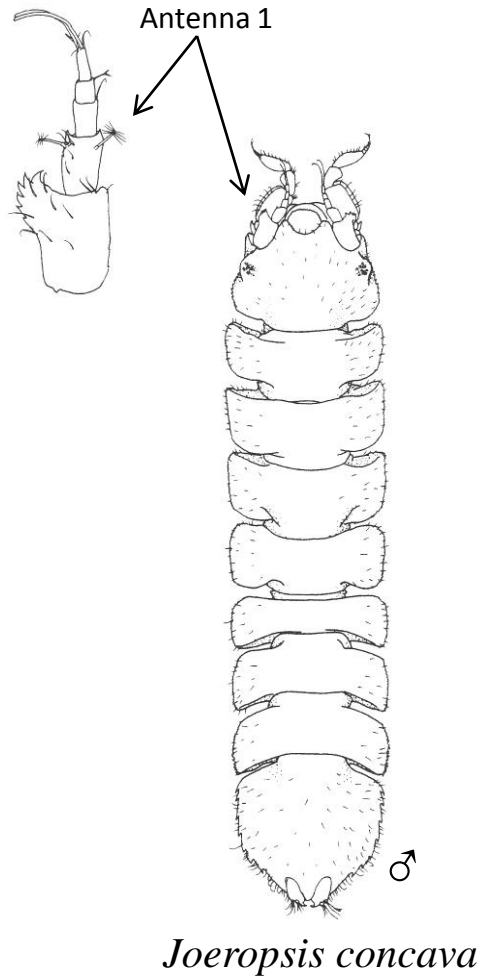
Janiralata sp. B



Janiralata sp. D

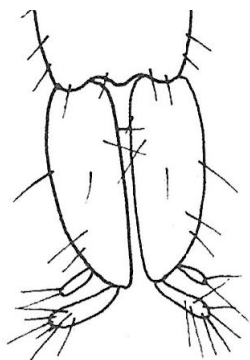
Genus *Joeropsis*

PLATE 38

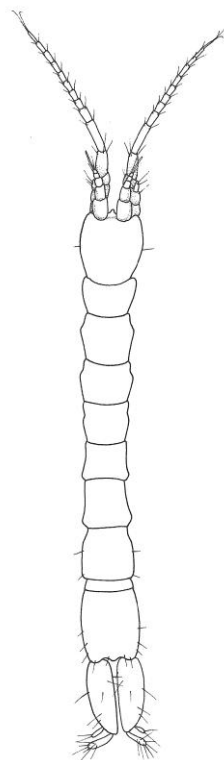


Genus *Microcharon*

PLATE 39



Close-up of uropods
of *M. sabulum*



Microcharon sabulum
Kensley, 1984
[Caribbean species]

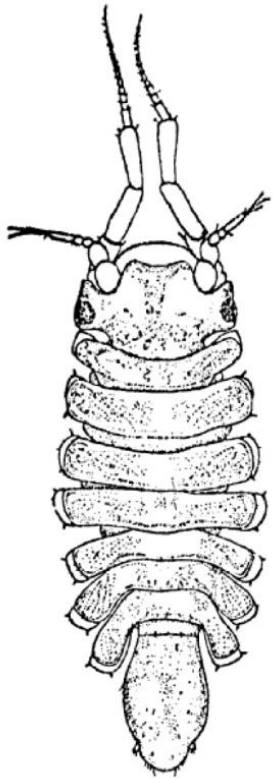


Microcharon sp. A Cadien, 1999
and
Microcharon sp. WS1 Stebbins, 2010 *

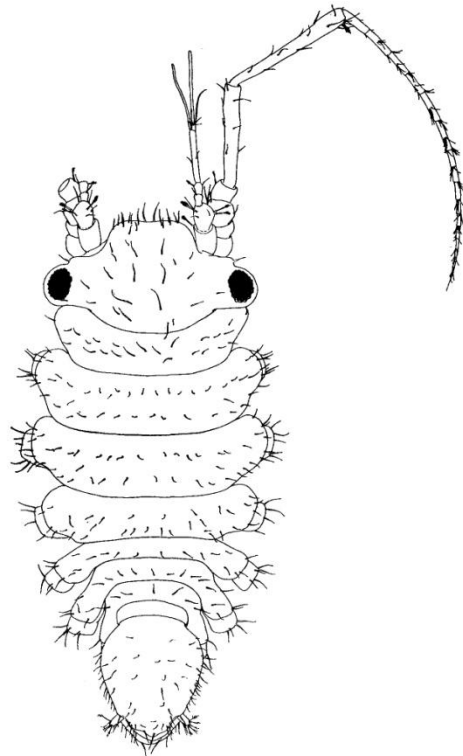
* Two California species may be synonymous and are similar in general appearance to *M. sabulum* from the Caribbean.

Genus *Munna* (in part)

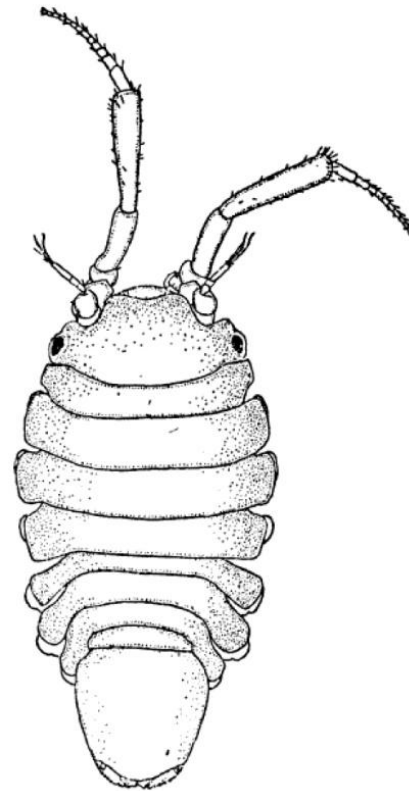
PLATE 40



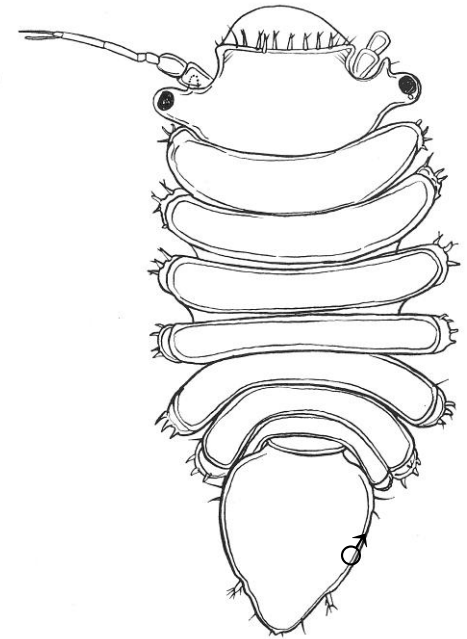
*Munna
chromatocephala*



Munna fernaldi



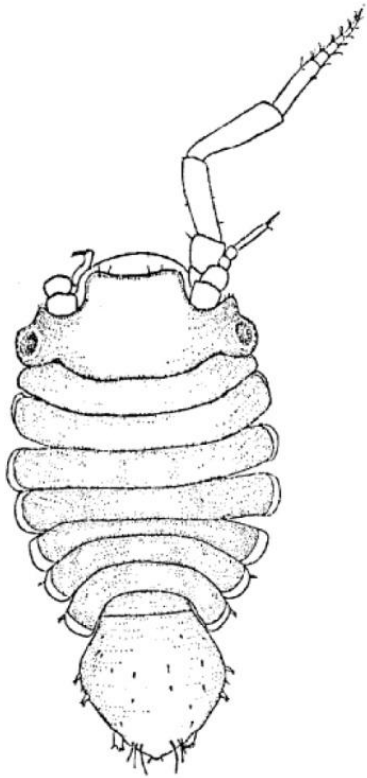
Munna halei



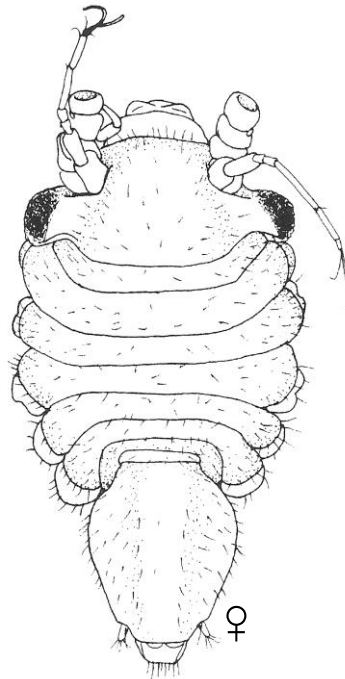
Munna spinifrons

Genera *Munna* (cont.) & *Uromunna*

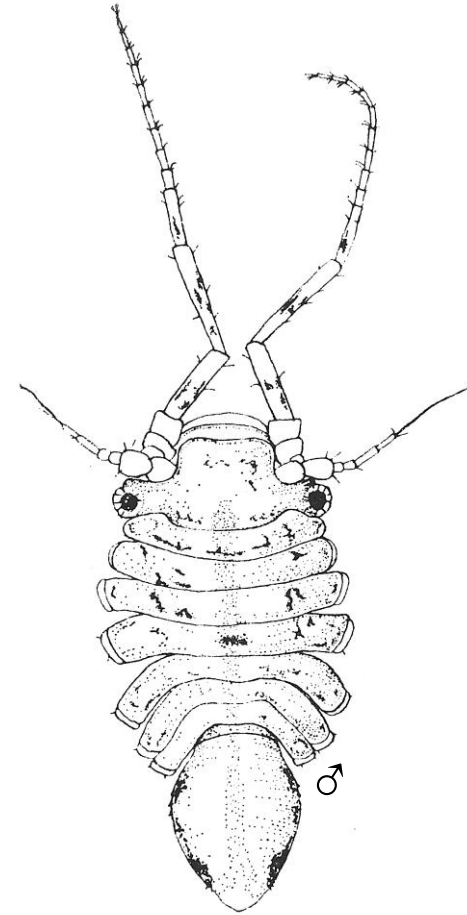
PLATE 41



Munna stephenseni



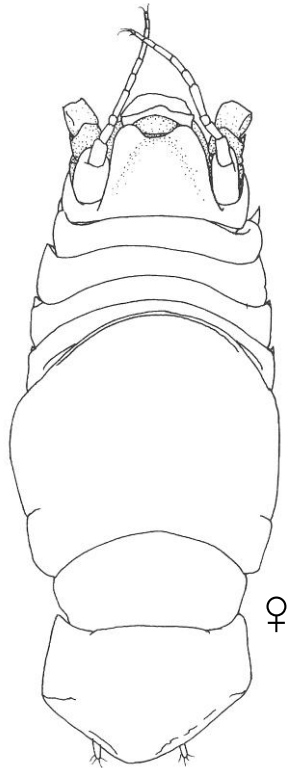
Munna sp. A



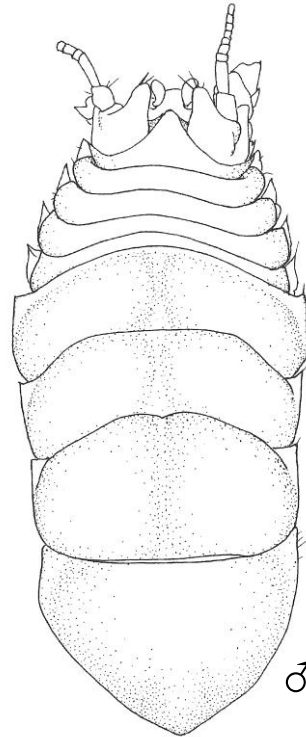
Uromunna ubiquita

Genera *Belonectes*, *Eurycope*, & *Munnopsurus*

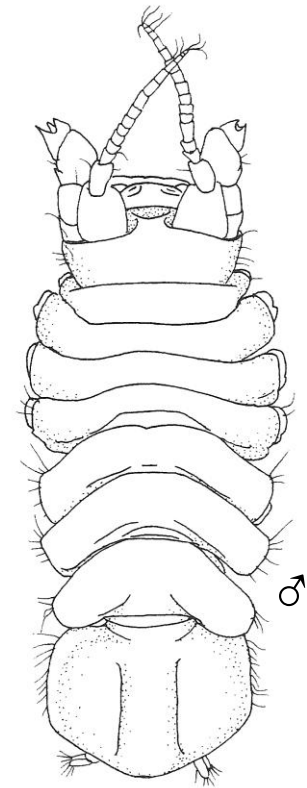
PLATE 42



Belonectes sp. A



Eurycope californiensis



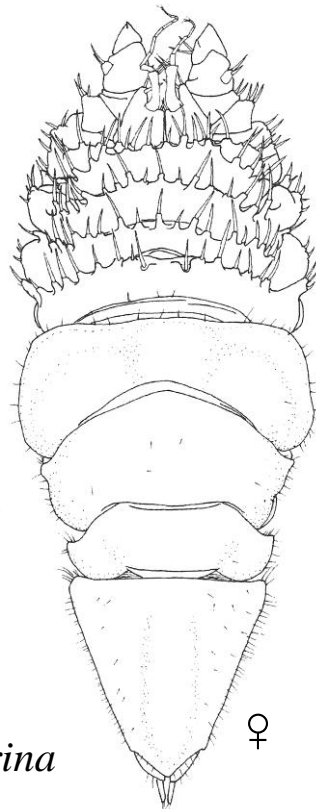
Munnopsurus sp. A

Genus *Ilyarachna*

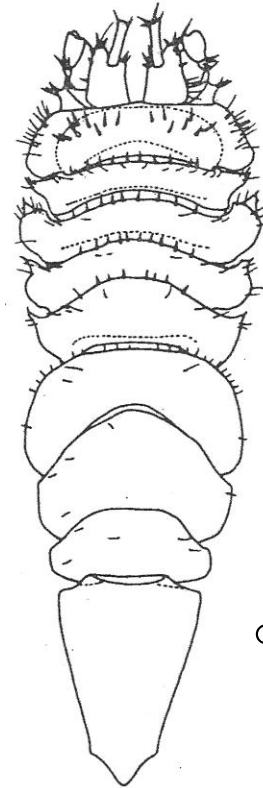
PLATE 43



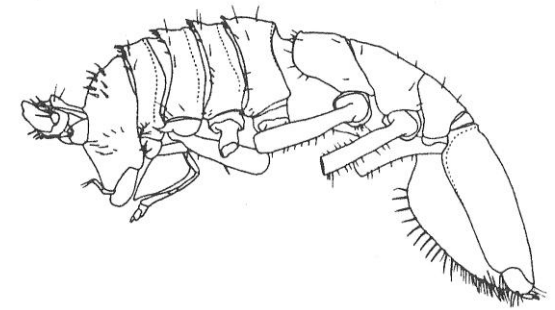
Ilyarachna acarina



♀



♂



Ilyarachna profunda

Genera *Boreosignum* & *Munnogonium*

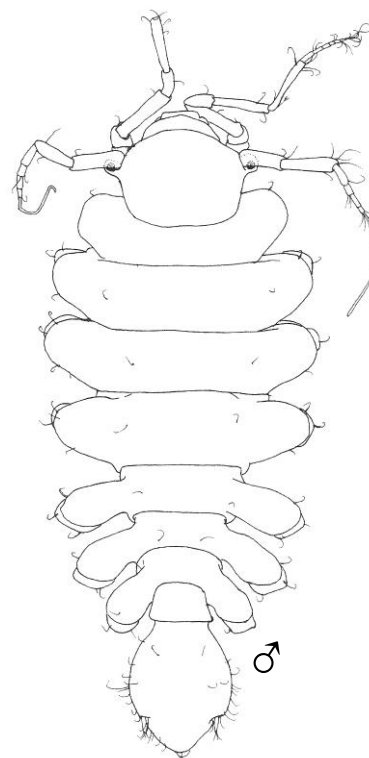
PLATE 44



Boreosignum sp. 1



Boreosignum sp. IS1



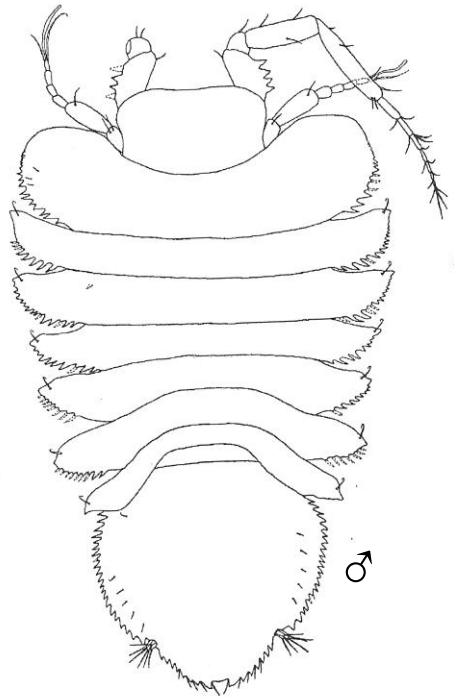
Munnogonium tillerae



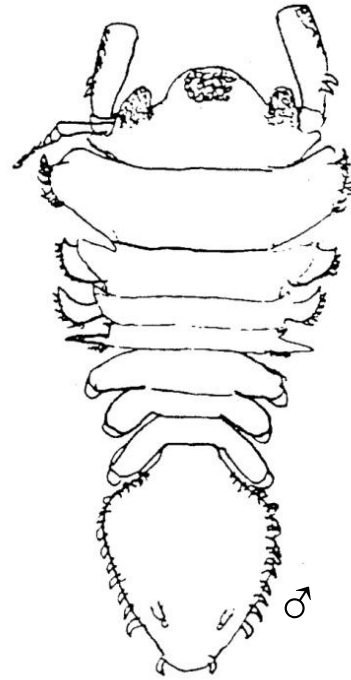
Munnogonium sp. SD1

Genus *Paramunna*

PLATE 45



Paramunna quadratifrons



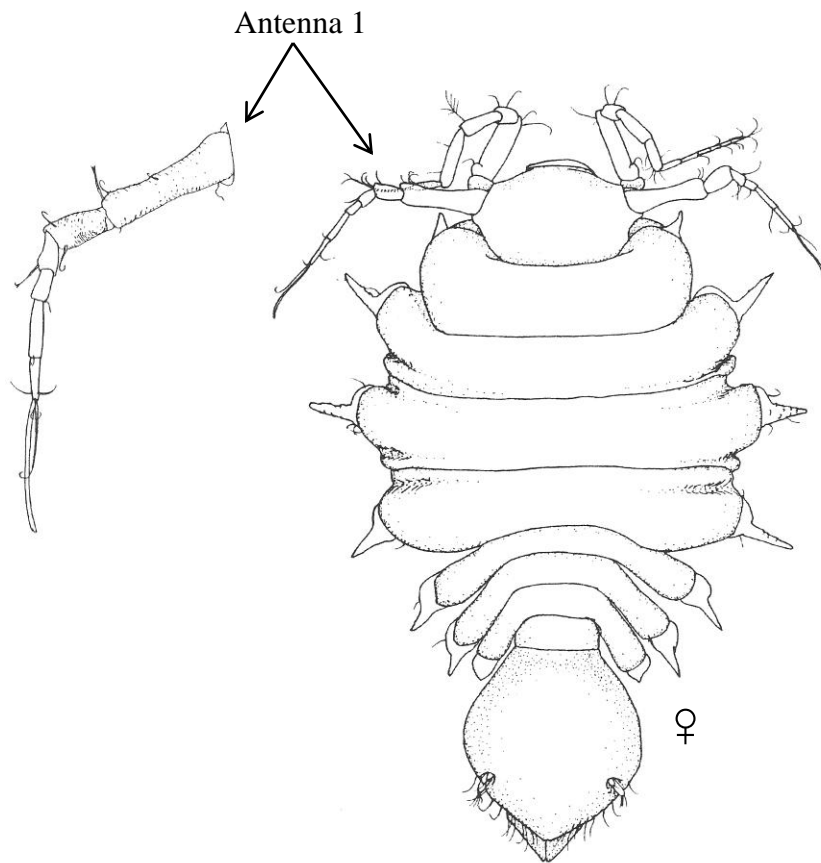
Paramunna sp. A



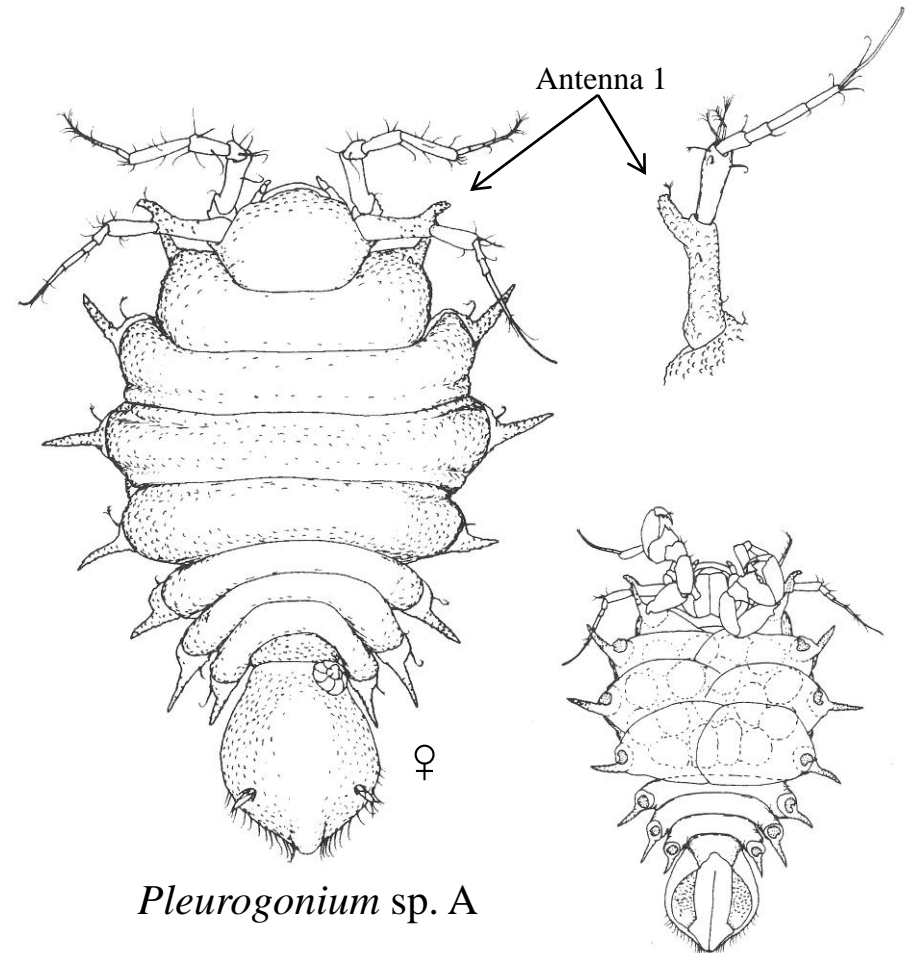
Paramunna sp. SD1

Genus *Pleurogonium*

PLATE 46



Pleurogonium californiense



Pleurogonium sp. A

Suborder Oniscidea, Superfamily Oniscoidea

Suborder Oniscidea

Superfamily Oniscoidea

Family Alloniscidae

Alloniscus perconvexus Dana, 1856 *

Family Ligiidae

Ligia occidentalis Dana, 1853 †

Family Tylidae

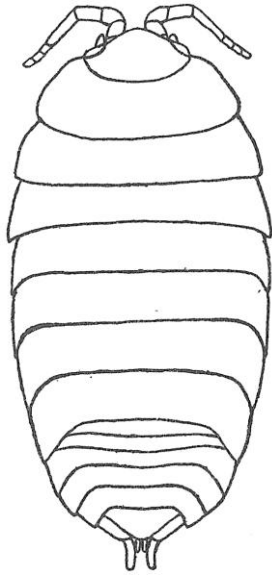
Tylos punctatus Holmes & Gay, 1909

* Placement of *A. perconvexus* in the Alloniscidae follows Schmidt (2003) and is consistent with the treatment in Brusca et al. (2007), WoRMS and the Smithsonian World Lis. In contrast, the species is listed within the Scyphacidae in SCAMIT Ed. 6, which also lists the year of description as 1858 instead of 1856 as indicated above.

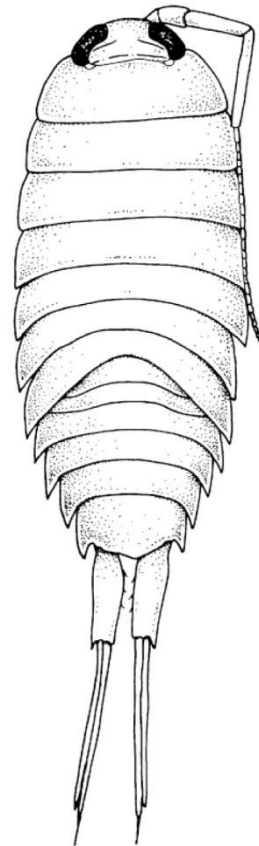
† *Ligia occidentalis* not presently in SCAMIT Ed. 7, but southern California species may actually be an undescribed new species (R. Wetzer, pers. comm., 2/13/12)

Genera *Alloniscus*, *Ligia* & *Tylos*

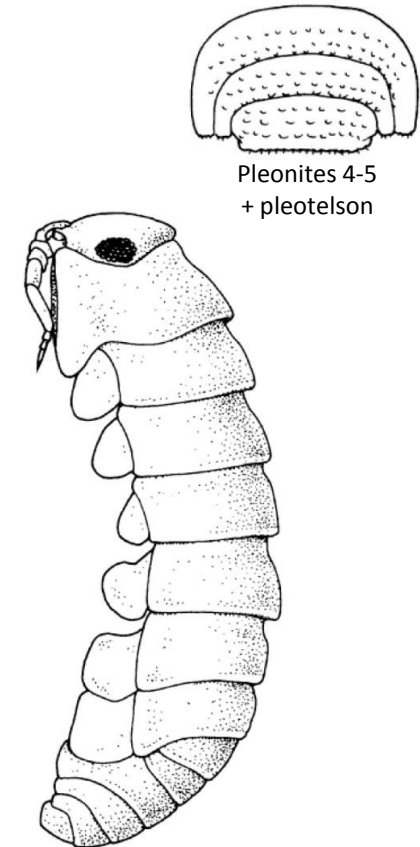
PLATE 47



Alloniscus perconvexus



Ligia occidentalis



Tylos punctatus

Pleonites 4-5
+ pleotelson

Questions?

