

ISOPODS KNOWN FROM CITY OF SAN DIEGO OCEAN MONITORING PROGRAM

ORDER ISOPODA

SUBORDER ANTHURIDEA

Family Anthuridae

Haliophasma geminata Menzies and Barnard, 1959

SUBORDER ASELLOTA

Family Joeropsididae

Joeropsis concava Schultz, 1966

Joeropsis dubia Menzies, 1951

Family Munnidae

Munna sp.

Family Paramunnidae

Munnogonium erratum (Schultz, 1964)

Munnogonium tillerae (Menzies and Barnard, 1959)

Pleurogonium californiense Menzies, 1951

SUBORDER EPICARIDEA

Family Bopyridae

Phyllodurus abdominalis Stimpson, 1857

SUBORDER FLABELLIFERA

Family Aegidae

Rocinela belliceps (Stimpson, 1864)

Family Cirolanidae

Eurydice caudata Richardson, 1899

Family Corallanidae

Excorallana truncata (Richardson, 1899)

Family Cymothoidae

Livoneca vulgaris Stimpson, 1857

Family Limnoridae

Limnoria algarum Menzies, 1957

Family Serolidae

Serolis carinata Lockington, 1877

Family Sphaeromatidae

Exosphaeroma rhomburum (Richardson, 1899)

Paracerceis sculpta (Holmes, 1904)

SUBORDER GNATHIIDEA

Family Gnathiidae

Gnathia crenulatifrons Monod, 1926

Gnathia trilobata Schultz, 1966

Gnathia sp.

SUBORDER VALVIFERA

Family Arcturidae

Idarcturus allelomorphus Menzies and Barnard, 1959

Neastacilla californica (Boone, 1918)

Family Idoteidae

**Edotia sublittoralis* Menzies and Barnard, 1959

**Idotea resecata* Stimpson, 1857

Synidotea magnifica Menzies and Barnard, 1959

**Edotia* sp B MEC

KEY TO THE ISOPODS OFF POINT LOMA

- 1a. Parasitic on other crustaceans; body with slightly to highly distorted bilateral symmetry; female much larger than male (Suborder Epicaridea) 2
- 1b. Not parasitic on other crustaceans; body with clear bilateral symmetry; females similar in size to males 3
- 2a. Pleonites with long pleural lamellae; pleonite 1 with dorsal-lateral papillae; parasitic on mudshrimp, *Upogebia* spp. (Fig. 1) *Phyllodurus abdominalis*
- 2b. Body not as above unidentified epicarid
- 3a. Body with 5 pairs of pereopods; adult males with mandibles grossly enlarged, forceps-like, projecting in front of head; adult females without mandibles (Suborder Gnathiidea) 4
- 3b. Body with 7 pairs of pereopods (6 pairs in manca); males without projecting, forceps-like mandibles; females with mandibles 6
- 4a. Projecting, forceps-like mandibles absent; body often sac-like (Fig. 2A) *Gnathia* sp.
- 4b. Projecting, forceps-like mandibles present; body never sac-like 5
- 5a. Frontal margin of cephalon (frons) broad and minutely crenulate; dorsum of cephalon without tubercles; body not hirsute; pleotelson triangular; eyes dark brown (Fig. 2B) *Gnathia crenulatifrons*
- 5b. Frons not as above; dorsum of cephalon tuberculate; body hirsute, covered with many long fine setae; pleotelson T-shaped; eyes golden (Fig. 2C) *Gnathia trilobata*
- 6a. Uropods operculate, modified into a pair of covers folded under the pleon and covering the pleopods 7
- 6b. Uropods not as above (lateral or terminal) 11
- 7a. First 4 pair pereopods different from last 3 pair pereopods; pereopods 1-4 slender, fringed with setae, directed anteriorly against ventral body wall; pereopods 5-7 stout, prehensile; pereonite 4 much longer (> 2x) than other pereonites 8
- 7b. All pereopods similar; length of pereonite 4 subequal to other pereonites 9
- 8a. Cephalon incompletely fused with pereonite 1, with distinct lateral incision just behind eye; dorsum of pereonite 3 smooth; dorsum of pereonite 4 smooth or with medial swelling or spines (Fig. 3A) *Neastacilla californica*
- 8b. Cephalon completely fused with pereonite 1, lateral margin entire; dorsum of pereonites 3-4 smooth or with posterior spines (Fig. 3B) *Idarcturus allelomorphus*

- 9a. Antennae 2 shorter than antennae 1; flagellum of antennae 2 rudimentary; pereonites 3 and 4 much wider ($\approx 2x$) than pleotelson (Fig. 4A) *Edotia sublittoralis* *
- 9b. Antennae 2 much longer than antennae 1; flagellum of antennae 2 multiarticulate; pereonites 3 and 4 slightly wider than pleotelson 10
- 10a. Pleon 2-segmented (1 pleonite + pleotelson); pleotelson spatulate, rounded posteriorly; cephalon and anterior pereonites with distinct dorsal tubercles (Fig. 4B) . . . *Synidotea magnifica*
- 10b. Pleon 4-segmented (3 pleonites + pleotelson); pleotelson concave posteriorly; cephalon and pereonites without tubercles (Fig. 4C) *Idotea resecata*
- 11a. Uropods lateral, hinged at sides of pleotelson, usually forming a "tail fan" (may be greatly reduced) 12
- 11b. Uropods terminal or nearly so, hinged on the posterior margin of the pleotelson, usually minute and styliform 21
- 12a. Body elongate (L:W ratio $> 6:1$); uropods curve up and over pleotelson; pleotelson with three raised dorsal longitudinal ridges (Fig. 5) *Haliophasma geminata*
- 12b. Body not elongate (L:W ratio $< 4:1$) 13
- 13a. Uropods greatly reduced, claw-like, generally not visible in dorsal view; left mandible without a rasp; burrowing in algal holdfasts (Fig. 6A) *Limnoria algarum*
- 13b. Uropods expanded and flattened ("tail fan"), clearly visible in dorsal view 14
- 14a. Pleon composed of 3 or fewer free pleonites plus pleotelson 15
- 14b. Pleon composed of 4-5 free pleonites plus pleotelson 18
- 15a. Pleon composed of 3 pleonites plus pleotelson; body strongly depressed and broad, platter-like; dorsum of pereonites and pleonites with distinct medial carinae (Fig. 6B) *Serolis carinata*
- 15b. Pleon composed of 1-2 dorsally visible free pleonites plus pleotelson (Sphaeromatidae) 16
- 16a. Uropodal exopod developed into long caudal process extending beyond posterior margin of pleotelson; pleotelson with "complex" posterior incision (Fig. 7A) . . . *Paracerceis sculpta*
- 16b. Uropods and pleotelson not as above 17
- 17a. Pleotelson apically produced into a rhomboid process; lateral margins of pleotelson deeply indented for uropods (Fig. 7B); *Exosphaeroma rhomburum*
- 17b. Pleotelson not as above unidentified Sphaeromatidae

*compare
to Edotia
sp B, shown
in Fig. 9A

- 18a. Antennae 1 with first articles thin and extending straight in front, second articles affixed at a right angle to the first, thus directing the antennae laterally; uropodal rami truncate distally; posterior margin of pleotelson broad with spines and setae set between a pair of larger, marginal teeth (Fig. 8A) *Eurydice caudata*
- 18b. Antennae 1, uropods, and pleotelson not as above 19
- 19a. Pleotelson triangular, with lateral incisions; entire dorsum of pleotelson densely covered with bifid golden setae (Fig. 8B) *Excorallana truncata*
- 19b. Pleotelson not as above, rounded posteriorly 20
- 20a. All pereopods prehensile; pleonite 1 dorsally visible; parasitic on fishes (Fig. 9A) *Livoneca vulgaris*
- 20b. Pereopods 1-3 prehensile, pereopods 4-7 ambulatory; pleonite 1 covered by pereonite 7 (Fig. 9B) *Rocinela bellicept*
- 21a. Body elongate, sides parallel; pleotelson about as wide as pereonites 3-4; antennae 2 short, subequal to length of cephalon 22
- 21b. Body not elongate, lateral margins convex, not parallel; pleotelson much narrower than pereonites 3-4; antennae 2 long, > 2x length of cephalon 23
- 22a. Basal article of antennae 1 with large distolateral process, bearing about 6 sharp, flat spines curving toward article 2; cephalon with distinctive indentation in the lateral margin below the eyes; L:W ratio > 4:1 (Fig. 10A) *Joeropsis concava*
- 22b. Basal article of antennae 1 lacking spinose projection; cephalon without indentation below eyes; L:W ratio < 4:1 (Fig. 10B) *Joeropsis dubia*
- 23a. Pereonites 1-7 all subequal in length; antennae 2 much longer (> 2x) than antennae 1 (Fig. 11A) *Munna* sp.
- 23b. Pereonites 1-4 longer than pereonites 5-7; antennae 1 and 2 subequal in length 24
- 24a. Without eyes; anterior pereonites with distinct lateral spines, spines > 2x long as wide (Fig. 11B) *Pleurogonium californiense* *
- 24b. Eyes present (may be only visible ventrally); anterior pereonites lacking lateral spines 25
- 25a. Eyes borne on peduncles, visible dorsally (Fig. 11C) *Munnogonium tillerae*
- 25b. Eyes directed ventrally, not visible dorsally (Fig. 11D) *Munnogonium erratum*

* Compare TO *Pleurogonium* sp. A. SCAMIR voucher sheet.

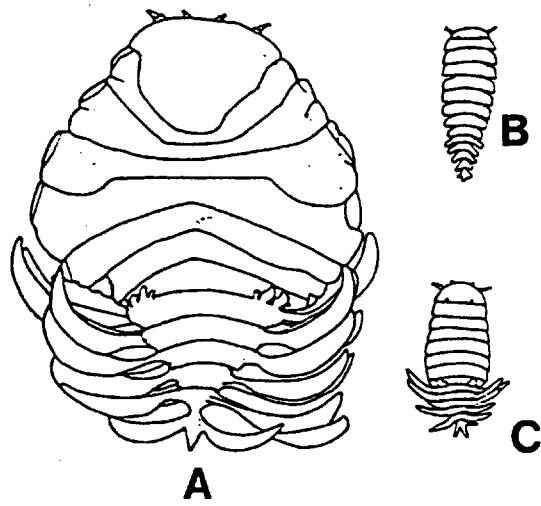


Figure 1. *Phyllodurus abdominalis*. A, adult female; B, male; C, juvenile female

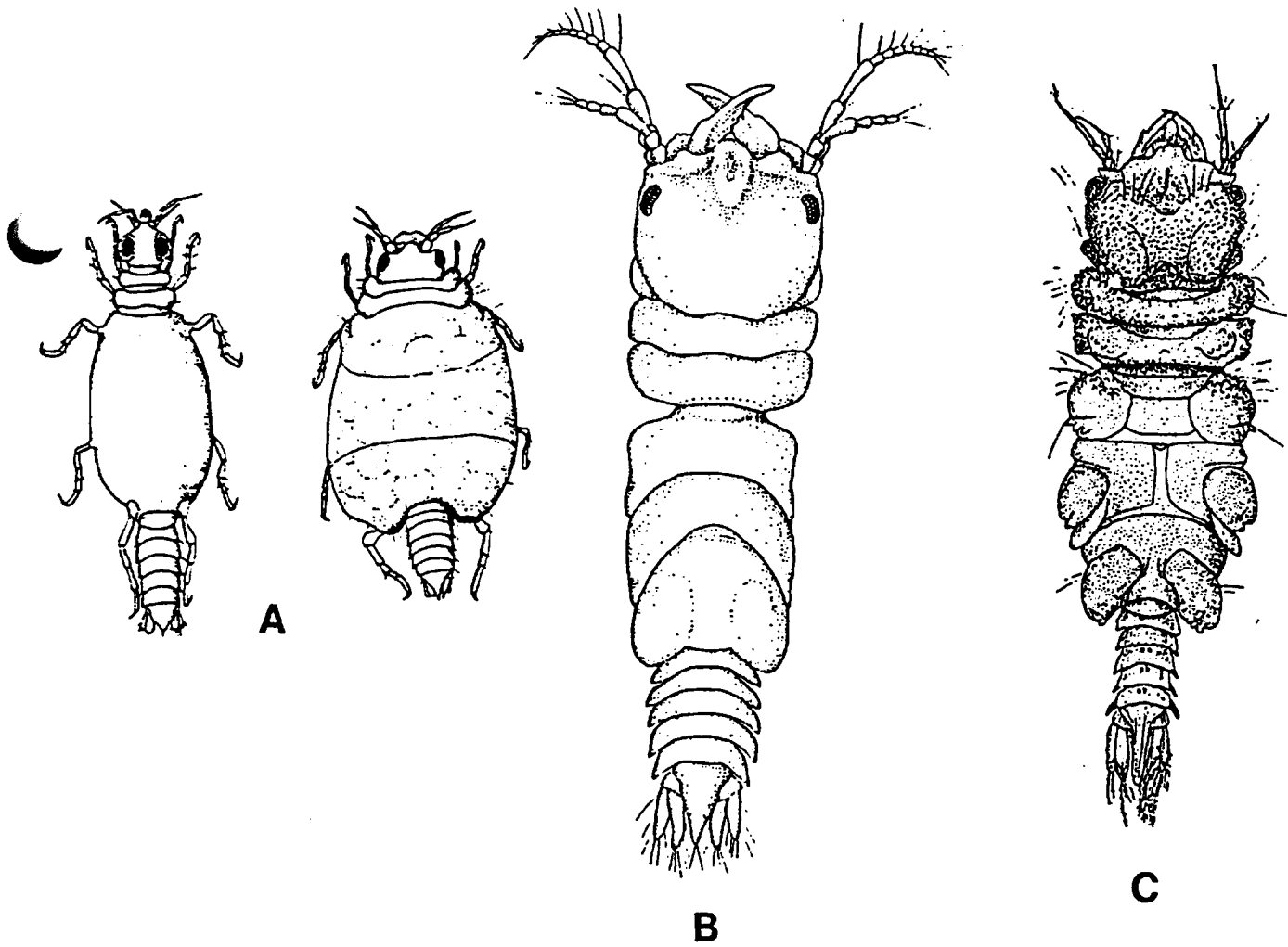


Figure 2. A, *Gnathia* sp. (praniza, gravid ♀); B, *Gnathia crenulatifrons*; C, *Gnathia trilobata*

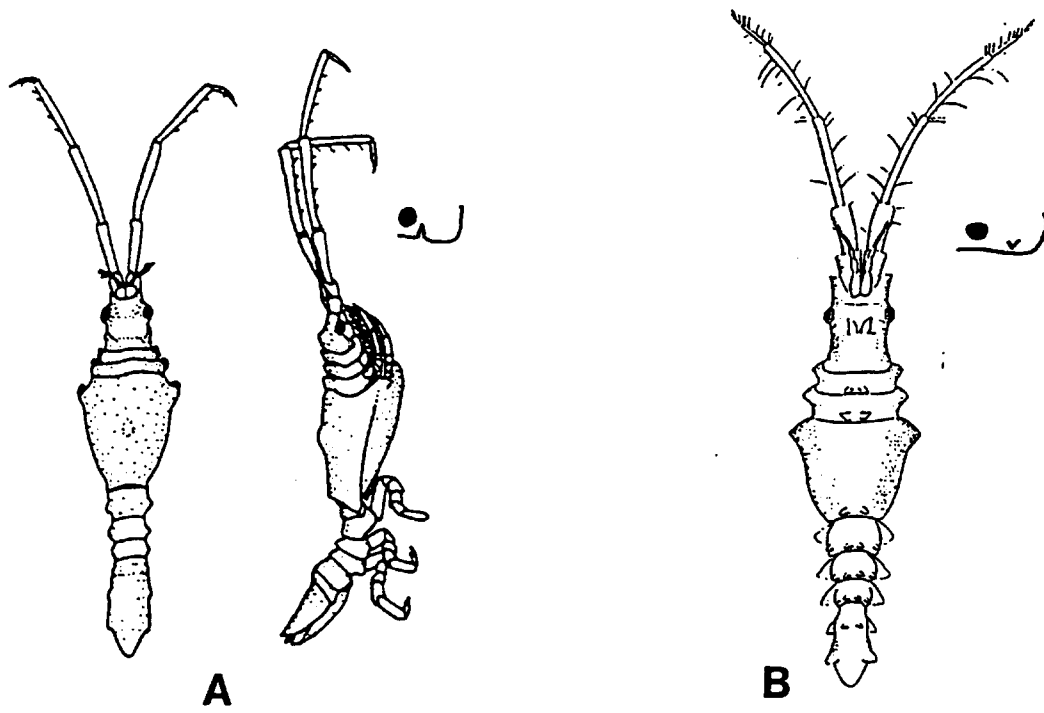


Figure 3. A, *Neastacilla californica*; B, *Idarcturus allelomorphus*

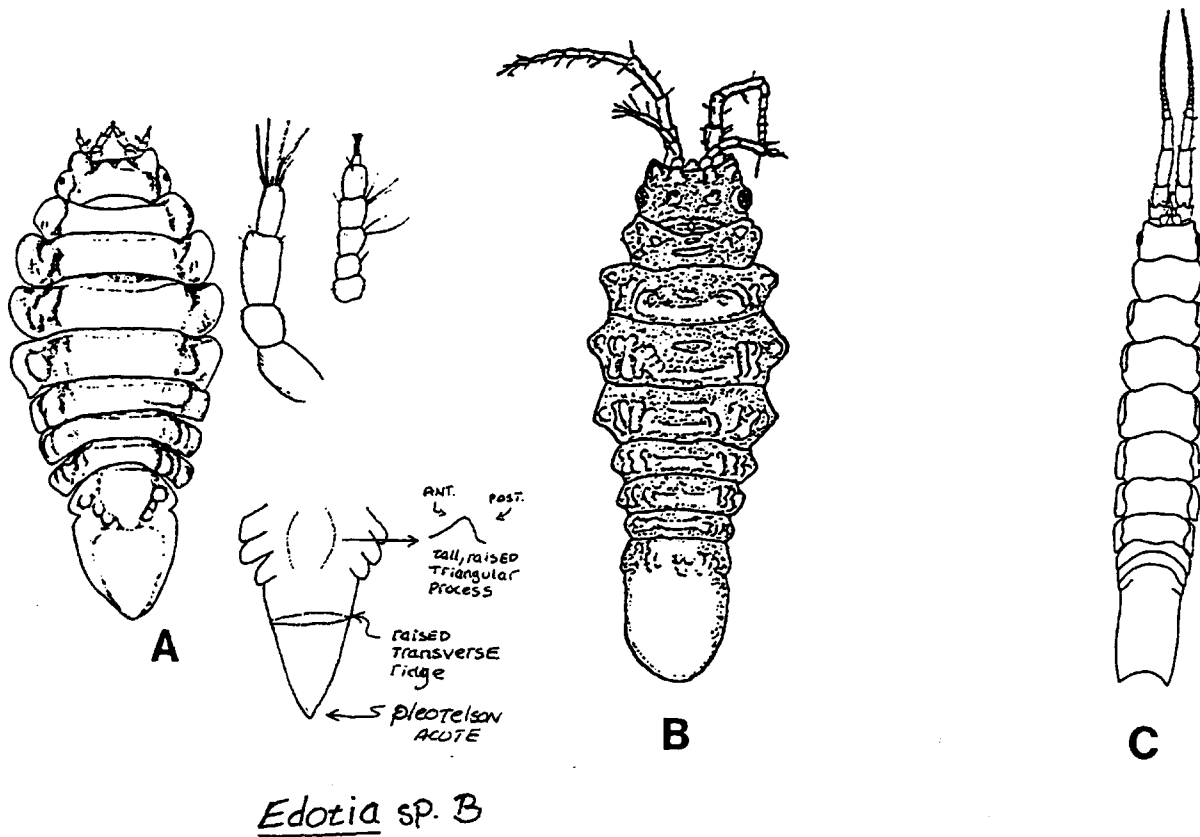


Figure 4. A, *Edotia sublittoralis*; B, *Synidotea magnifica*; C, *Idotea resecata*

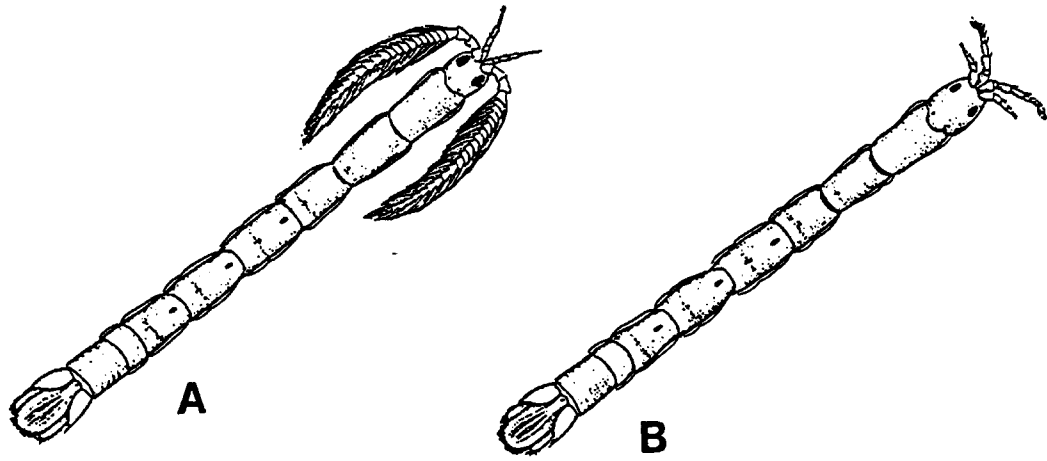


Figure 5. *Haliophasma geminata*. A, male; B, female

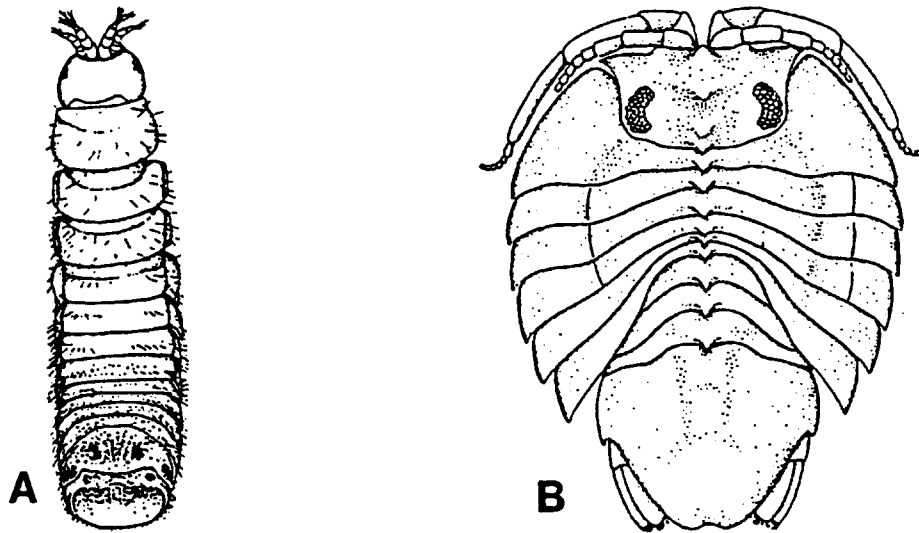


Figure 6. A, *Limnoria algarum*; B, *Serolis carinata*

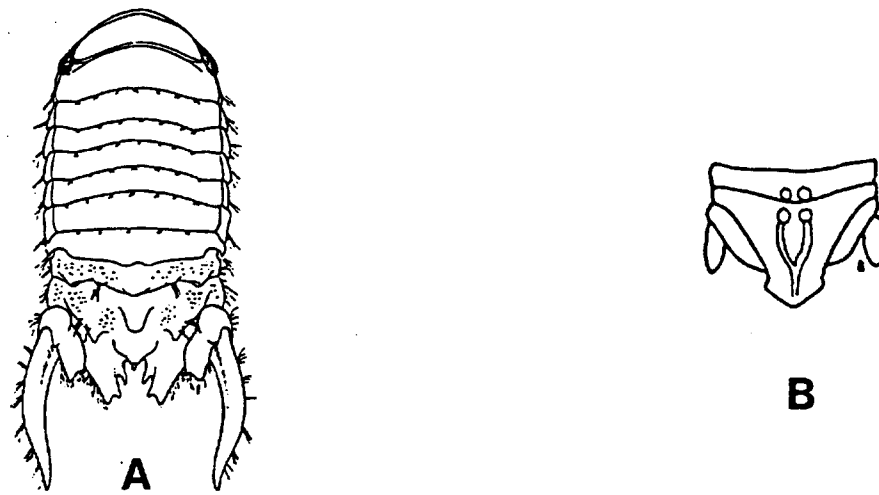
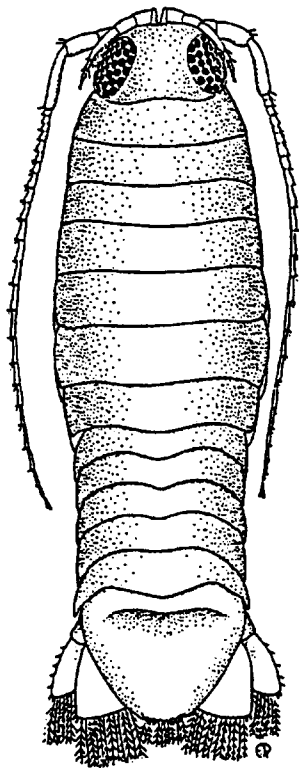
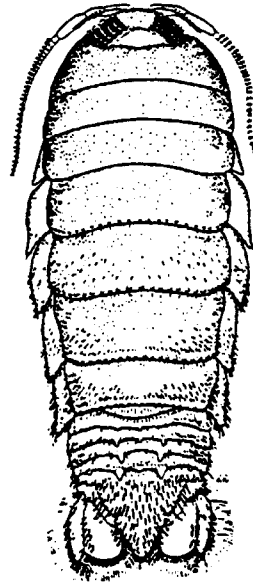


Figure 7. A, *Paracerceis sculpta* (male); B, *Exosphaeroma rhomburum*, pleotelson

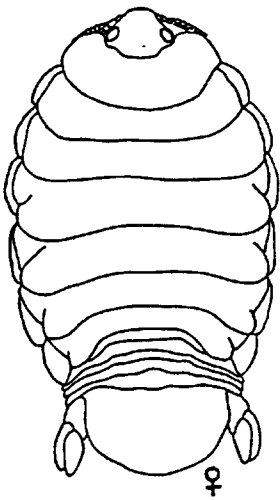


A

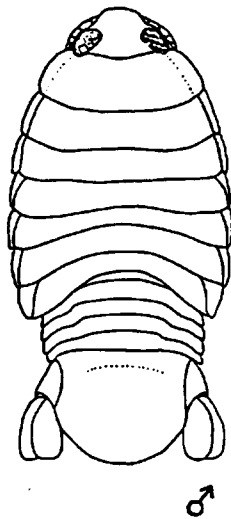


B

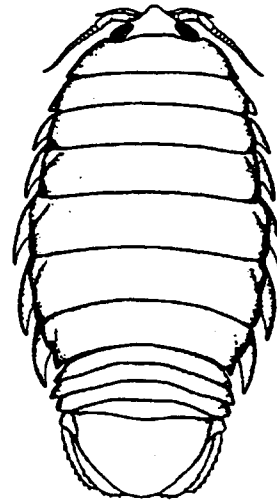
Figure 8. A, *Eurydice caudata*; B, *Excorallana truncata*



A



♂



B

Figure 9. A, *Livoneca vulgaris* (female, male); B, *Rocinela belliceus*

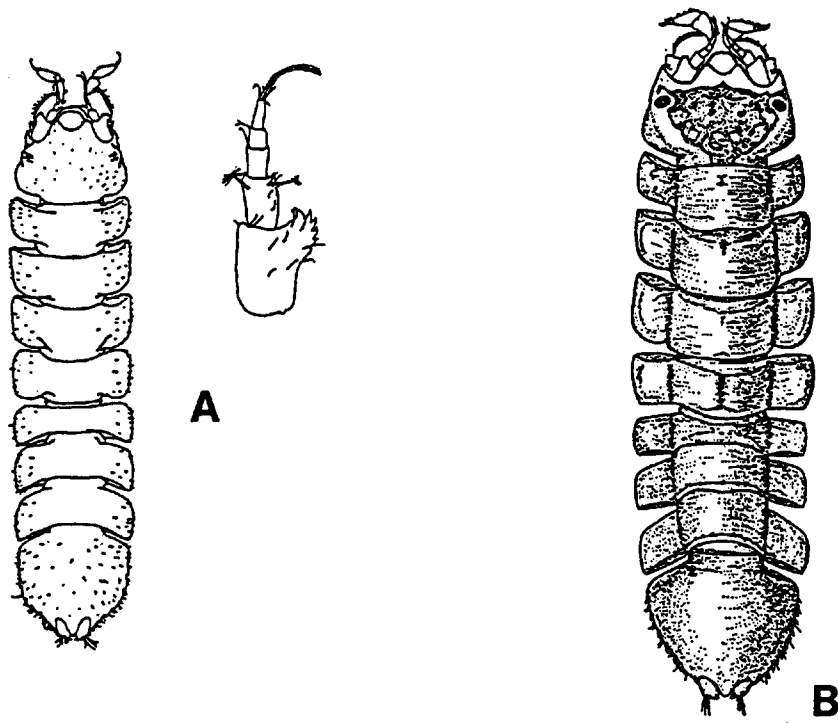


Figure 10. A, *Joeropsis concava*; B, *Joeropsis dubia*

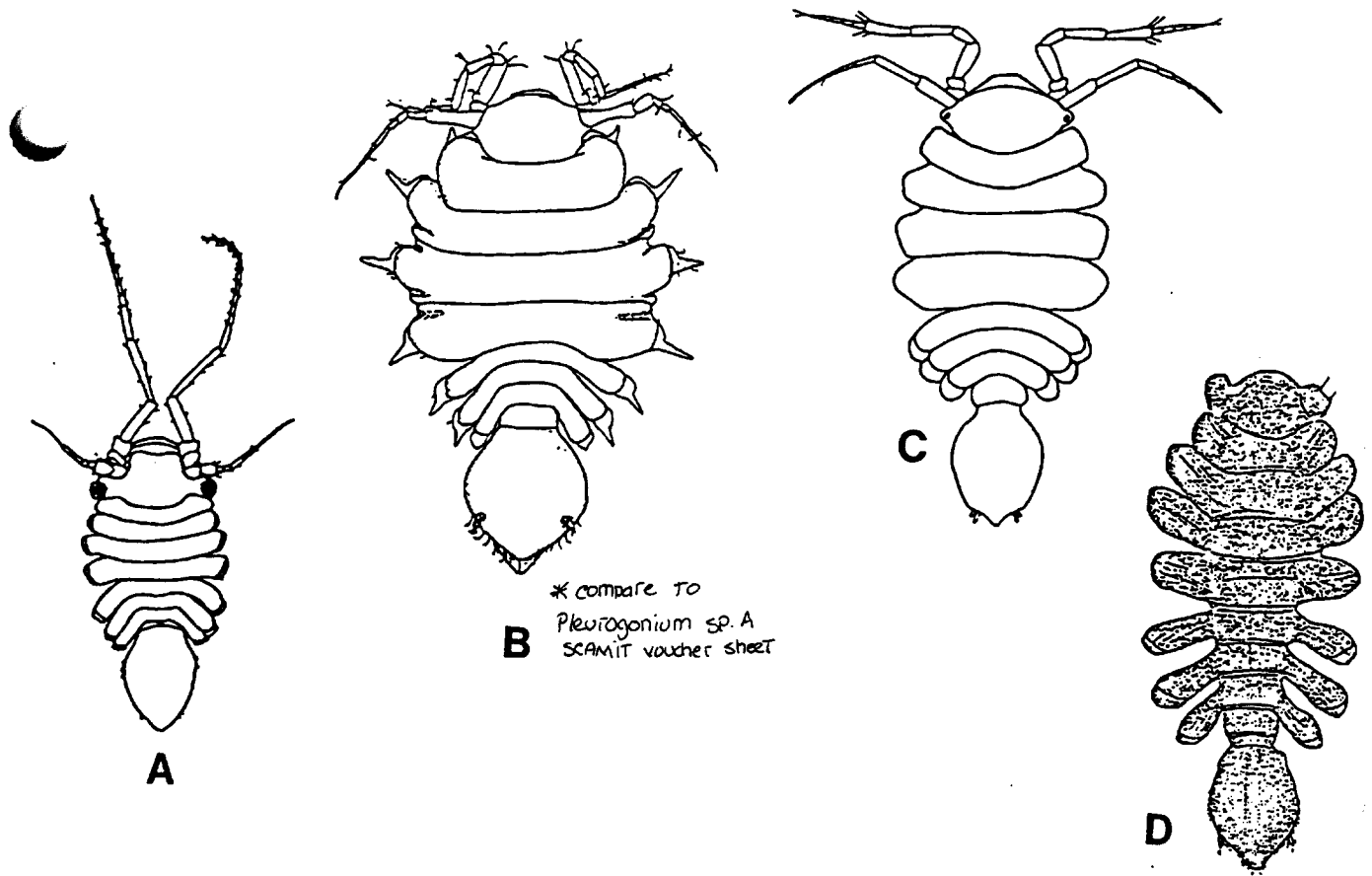


Figure 11. A, *Munna* sp.; B, *Pleurogonium californiense*; C, *Munnogonium tillerae*; D, *Munnogonium erratum*

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