

Key to the Families of Amphipods Reported in the Southern California Bight & Nearby Environs

Dean Pasko, 29-Sep-2023; Rev 01-Oct-2024

1. Pleon and urosome (abdomen) vestigial; pereonites typically elongate, cylindrical in free-living forms; pereonite 1 fused to head; gills three or fewer pairs; female brood plates two pairs (**Figure 1**).....**Caprellida**
- Abdomen prominent; pereonites generally laterally compressed; pereonite 1 and head separate; more than three pairs of gills and brood plates 2
2. Body vermiform, without coxal or epimeral plates; gnathopods represented by compound claw (“dactyl”) formed of propodus and dactyl closing carpus; living interstitially or within crevices (**Figure 2**).....**Ingolfiellidae**ⁱ
- Body typically not vermiform, coxal and epimeral plates well developed, visible; gnathopod 1 formed of dactyl closing against propodus when not vestigial..... Gammaridea.... 3
3. Telson fleshy, thick, short, minute or indistinct, not readily articulated at junction with urosomites, sometimes difficult to discern; rami of uropod 3 (if present) shorter than peduncle (with numerous exceptions) (**Figure 4**)..... 4
- Telson flat, laminar, and moveable, usually distinct and readily visible; uncleft or deeply cleft; rami of uropod 3 always present and usually longer than the peduncle (**Figures 27 & 29**) 26
4. Antennae and appendages strongly fossorial (see Figure 3); peduncular segments of antenna 2 posteriorly expanded; body broadened through pleon while urosome is much reduced **and** strongly bent, positioned ventral to pleon; articles 2–4 of pereopods 5–7 strongly expanded (**Figure 3**).....**Haustoriidae**
- Above character states not combined: appendages and uropods not strongly fossorial; peduncular articles of antennae and articles 2–4 of pereopods 5–7 not strongly expanded urosome normally aligned, not ventral to pleon 5
5. Antenna 1 no longer than the head, much shorter than antenna 2; telson with 10 or more irregularly distributed stout spines; pereopods particularly heavy; terrestrial or semi-terrestrial (**Figure 4**)..... **Talitridae**ⁱⁱ
- Antenna 1 significantly longer than the head, subequal to or larger than antenna 2; telson with six or less irregularly spaced stout spines (not counting long spines or setae); entirely aquatic or intertidal..... 6
6. Uropod 3 indistinct or absent (**Figures 7 & 8**) 7
- Uropod 3 large and readily visible (**Figures 9–12**) 10
7. Body dorsoventrally flattened, coxae 1–4 deeper than broad and splayed outward; rostrum spatulate; antenna 1 peduncular articles with distinct ventral processes (**Figure 5**) **Phliantidae** (*Pariphinotus escabrosus*)
- Body laterally compressed or tubular; coxae 1-4 not splayed outward; rostrum small or absent 8

NOTE: This Key was built upon previous works of Chapman (2007) and Cadien’s Amphipoda of the Northeast Pacific: 1–XXIX, the latter of which is available at the SCAMIT Website (<https://scamit.org/tools/>). Users are welcome to contact the author at deanpasko@yahoo.com to suggest corrections and make suggestions for improvement.

8. Telson fused to urosome, and urosomites 2 and 3 fused; coxae 1–4 small, rounded; coxa 5–7 smaller, rectangular, distinctly wider than deep; burrows into kelp (**Figure 6**)
 **Eopliantidae** (*Lignophilantis pyrifer*)
- Telson separate from urosome; body laterally compressed; other characters not combined..... 9
9. Pereonites 6 and 7 fused; gills absent from pereonite 6; urosomite 1 greatly elongated (>2x longer than wide) (**Figure 7**) **Dulichiidae**
- Pereonites 6 and 7 not fused together, independent; gills present on pereonite 6; urosomite 1 relatively short, length $\leq 2x$ width (**Figure 8**) **Podoceridae**
10. Pleonite 3 with immense posteriorly projecting dorsal tooth; uropod 2 peduncle greatly expanded, uropods 2 and 3 enormous (**Figure 9**)..... **Cheluridae** (*Chelura terebrans*)
- Pleonite 3 without posteriorly projecting dorsal tooth; uropod 2 without greatly expanded peduncle. 11
11. Uropod 3 biramus, rami generally prominent (short or long), inner ramus not scale-like (**Figures 10, 12, 15**) 12
- Uropod 3 uniramus (**Figure 21**) or with minute, scale-like inner ramus that is indistinct and difficult to observe 19
12. Uropod 3 outer ramus bearing conspicuous hooks (**Figure 10**) or small denticles, the latter of which may only be visible under high magnification 13
- Uropod 3 rami with setae or short, straight spines but not hooks or denticles (**Figures 14–15**)...
 14
13. Outer ramus of uropod 3 stout, with two heavy, hooked spines and inner ramus flat and apically setose (**Figure 10**) **Ampithoidae**
- Outer ramus of uropod 3 apically stout and bearing a single large hook or relatively slender and either denticulate or unornamented (**Figure 11**) (**Note**: two exceptions, *Erichthonius* and *Notopoma*, both of which have uniramus uropod 3)..... **Ischyroceridae** (in part)
14. Eyes completely enclosed on produced ocular lobes that extend about one-half way along the first article of antenna 1 (best viewed from dorsal perspective); uropod 3 biramus, peduncle much shorter than rami, without disto-ventral corona of fine spines; male gnathopod 1 carpocheilate (**Figure 12**) **Kamakidae** (*Amphideutopus oculatus*)
- These character states not combined..... 15
15. Gnathopod 2 more robust than gnathopod 1—compare article 6 of gnathopods 1 and 2 (**Figures 13–15**) 16
- Gnathopod 1 larger, more robust than gnathopod 2 (less so in females) (**Figure 16**)..... 18
16. Urosomites 1 and 2 fused; pereopods 5–7 progress from very short to long: pereopod 5 being much shorter than 6, which is much shorter than 7; pereopod dactyls 5–7 strong, heavy, bifurcate (**Figure 13**) **Chevaliidae** (*Chevalia inaequalis*)
- Urosomites 1 and 2 free; pereopods 5–7 follow normal, gradual elongation; dactyls simple... 17

17. Coxa 1 larger than coxa 2; uropod 3 inner ramus between one-third to two-thirds of outer ramus (**Figure 14**)..... **Corophiidae** (in part: Protomedeiinae)ⁱⁱⁱ
- Coxa 1 smaller than coxa 2; uropod 3 rami either subequal (*Gammaropsis*) or less than one-third of outer ramus (*Photis*) (**Figure 15**)..... **Photidae** (in part)
18. Head lobe acute; pereopod 7 not very elongate, article 6 not extending beyond pereopod 6 (**Figure 16**)..... **Unciolidae**
- Head lobe blunt or rounded; pereopod 7 article 6 extends beyond pereopod 6 (**Figure 17**)..... **Aoridae**
19. Ocular (head) lobe immense, extending beyond first article of antenna 1 (best viewed dorsally); uropod 3 peduncle short, slightly longer than broad (**Figure 18**) **Photidae** (in part: *Ampelisciphotis podophthalma*)
- Ocular lobe not immense, not extending beyond first article of antenna 1; uropod 3 peduncle long, twice as long as broad 20
20. Combined lengths of urosomites 2 and 3 greater than one-half of urosomite 1 or urosomites 1–3 fused (**Figures 19–20**); mandibular palp present (**Figure 32**); oöstegites lined with evenly curved or straight setae 21
- Urosomites 2 and 3 combined lengths less than one-half of urosomite 1 (**Figures 22–23**); mandibular palp absent (**Figure 33**); oöstegites lined with distally curled setae 23
21. Male gnathopod 1 or gnathopod 2 carpochelate; pereonite 2 with coxal gill 22
- Male and female gnathopod 2 merochelate or simple (not carpochelate), ventrally lined with long pinnate setae, and larger than gnathopod 1; pereonite 2 lacking coxal gill (**Figure 19**) **Corophiidae** (in part: Corophiinae)
22. Male gnathopod 1 carpochelate (**Figure 20**) **Aoridae** (in part: *Grandidierella japonica*)
- Male gnathopod 2 carpochelate (**Figure 21**) **Ischyroceridae** (in part: *Erichthonius* and *Notopoma* sp A)
23. Head anteriorly decurved, antenna 1 insertion ventral to the eye; uropod 3 ramus indistinct; mandibular molar indistinct flat plate; restricted to algal habitats (**Figure 22**)..... **Najnidae** (*Carinonajna kitamati*)
- Head anteriorly square, antenna 1 insertion dorsal to the eye; uropod 3 ramus short, readily apparent; mandibular molar prominent 24
24. Telson uncleft; pleonites 1 and 2 postero-dorsal margin acutely produced (**Figure 23**)..... **Hyaellidae** (*Hyaella azteca*)
- Telson cleft one-third or more its length 25
25. Telson cleft one-third its length; uropod 3 ramus with terminal spines only, margins naked; maxilla 1 palp extremely reduced or absent (**Figure 24**)..... **Dogielinotidae**
- Telson cleft one-half or more its length; uropod 3 ramus with short stout marginal and terminal spines; maxilla 1 palp extending to distal end of outer plate (**Figure 25**)..... **Hyalidae**

26. Body elongate, subcylindrical, thin; flagellum of antennae 1 and 2 strongly reduced (one to few segments); coxae minute, very short, and overlapping (**Figure 26**).....
 **Colomastigidae** (*Colomastix* sp A)
- Body laterally compressed, not notably elongate or cylindrical; flagellum of antennae not reduced, normal with multiple segments; coxae of varying lengths, not uniformly short..... 27
27. Gnathopod 1 vestigial, reduced to two articles (coxa plus linear basis); telson laminar and deeply cleft (**Figure 27**)..... **Bateidae**
- Gnathopod 1 normally articulated; telson cleft or uncleft 28
28. Coxa 1 small, often less than one-half of coxa 2, and obscured by coxa 2; coxae 2–4 often enlarged..... 29
- Coxa 1 at least half as large as coxa 2; coxae 2–4 progressing normally 31
29. Gnathopod 1 carpochele (**Figure 28**).....
 **Leucothoidae** (In part: Anamixinae, *Anamixis pacifica*)
- Gnathopod 1 simple, transverse or subchelate, not carpochele (**Figures 28–29**)..... 30
30. Uropod 3 biramous, rami uniarticulate; uropod 2 not reaching distal end of uropod 3; article 5 of gnathopods 1 and 2 extend along the posterior edge of article 6 (**Figure 29**).....
 **Amphiloichidae**
- Uropod 3 uniramus, ramus biarticulate; uropod 2 terminating with uropods 1 and 3; article 5 of gnathopod 2 short, not extending along posterior edge of article 6 (**Figure 30**).....
 **Stenothoidae**
31. Urosomites 2 and 3 fused – interpret carefully as some taxa (e.g., Pardaliscidae and Platyschnopidae) have a narrowed urosomite 2 (compare **Figures 31, 48, and 51**)..... 32
- Urosomites separate (**Figures 47, 48, 51**) 34
32. When present, with four eyes (two per side), consisting of a anterodorsol and anteroventral cuticular lens; pereopod 3 and 4 dactyls as long as or longer than articles 5 and 6 combined; pereopods 6 and 7 dissimilar (**Figure 31**)..... **Ampeliscidae**
- With one pair of normal, multifaceted eyes; pereopods 3 and 4 dactyls shorter than articles 5 and 6 combined; pereopods 6 and 7 similar; 33
33. Multi-articulate mandibular palp present (**Figure 32**)..... **Atylidae** (*Atylus tridens*)
- Mandibular palp absent or vestigial (**Figure 33**)..... **Dexaminidae**
34. Gnathopod 2 with article 3 elongate, at least 1.5 times longer than wide 35
- Gnathopod 2 with article 3 normal, not markedly elongate..... 41
35. Gnathopod 2 minutely subchelate (“mitten-shaped,” dactyl minute, concealed by dense setae); antenna 1, article 1 squat, thickened, depth usually half or more of length; body typically white, compact, shiny and densely calcified (**Figure 34**)..... **Lysianassoidea**^{iv}
- Gnathopod 2 not “mitten-shaped,” dactyl typically prominent but never concealed by dense setae; antenna 1, article 1 not exceptionally thickened, usually longer than deep..... 36

36.	Pereonites smooth, without dorsal or dorsolateral crests or processes	37
—	Pereonites with dorsal or dorsolateral crest(s) or processes	39
37.	Rostrum and eyes present; obligate fish parasite (Figure 35).....	Lafystiidae
—	Rostrum and eyes absent.....	38
38.	Gnathopods 1 and 2 nearly simple; gnathopod 2 propod elongate, narrow (Figure 36).....	Stegocephalidae^v
—	Gnathopods 1 and 2 subchelate (Figure 37).....	Valettiopsidae (<i>Valettiopsis dentatus</i> , <i>Valettiopsis</i> sp DC1)
39.	Rostrum and eyes absent (Channel Islands) (Figure 38)	Amathillopsidae (<i>Amathillopsis annectens</i>)
—	Rostrum and eyes present	40
40.	Pereonites and pleonites strongly cuspidate; mandibular palp well-developed, article 3 not reduced; telson short, laminar, weakly cleft to weakly emarginated (Figure 39)..	Iphimediidae
—	Pereonites 7 and pleonites 1 and 2 weakly cuspidate; article 3 of mandibular palp much reduced; telson elongate, deeply cleft (Figure 40).....	Synopiidae (In part: <i>Garosyrrhoë bigarra</i>)
41.	Rostrum strongly decurved, often helmet-shaped; eyes, when present, frequently positioned dorsally, sometimes coalesced (Figures 41–42)	42
—	Rostrum present or absent, rarely strongly decurved or helmet-shaped; eyes typically positioned laterally on head	43
42.	Telson short, evenly rounded or emarginate; urosome dorsally unarmed; gnathopod 1 article 6 normally robust (Figure 41)	Oedicerotidae (In part)
—	Telson long, cleft; urosomites 1 and 2 dorsally toothed; gnathopod 1 article 6 weak (Figure 42)	Synopiidae
43.	Gnathopod 1 carpochelate (Figure 43).....	Leucothoidae (In part, Leucothoinae)
—	Gnathopod 1 not carpochelate	44
44.	Coxa 4 deeper than coxa 3 by nearly 50% or more	45
—	Coxae 3 and 4 of the same depth	46
45.	Coxae 1–3 become progressively smaller, with coxa 3 the smallest and coxa 4 much enlarged; eye composed of four distinct, round ommatidia (Figure 44)...	Argissidae (<i>Argissa hamatipes</i>)
—	Eye variously shaped, multifaceted; coxa 2 larger than coxae 1 or 3 (Figure 45).....	Megaluropidae
46.	Fossorial—antennae 2 peduncle and articles 4–6 of pereopod 5 lined with stout spines (Figures 46–49); body often white, shiny and strongly calcified	47
—	Nonfossorial—antennae 2 and articles 4–6 or pereopod 5 weakly setose or, if densely setose or spinose, setae and spines thin, not stout (Figures 50–52).....	50

47. Rostrum present; coxal gills on pereonites 2–7 48
 — Rostrum absent; coxal gills on pereonites 2–6; entirely freshwater or low-salinity estuary
 (**Figure 46**)..... **Pontoporeiidae**^{vi}
48. Head truncated, short, with rostrum weak or absent; anteroventral cephalic margin extended
 downward; antenna 1 peduncular articles elongate (**Figure 47**)
 **Urothoidae: (*Urothoe elegans* Cmplx)**^{vii}
 — Head typically elongate, rostrum strong, occasionally weak or narrowed in front of eyes;
 ventral cephalic margin poorly developed, not ventrally produced; antenna 1 articles compact
 49
49. Rostrum strong, cylindrical, with subapical ventral process directed posteriorly between
 antennae; pereopods 6 and 7 subsimilar, pereopod 7 slightly longer (**Figure 48**)
 **Platyischnopidae (*Tiburonella viscana*)**
 — Rostrum visor-like or narrowed anterior to eyes, not cylindrical and without ventral process;
 pereopod 7 different in form and $\geq 40\%$ shorter than pereopod 6 (**Figure 49**).....
 **Phoxocephalidae**
50. Coxae 1–4 short (i.e., shallow); coxae 3 and 4 subequal, posterior margin of coxa 4 not
 excavate nor concave **and** uropod 3 rami or telson never lined with robust spines 51
 — Coxae 1–4 of varying sizes and shape (usually deeper than long); coxae 3 and 4 typically
 different, posterior margin of coxa 4 often slightly concave, proximally excavate, or lobed
 [**NOTE** uropod 3 rami and/or telson of Melitidae, Maeridae, and Horneillidae are lined with
 robust spines even if coxa 4 does not appear excavate or concave] 52
51. Eyes laterally bulging; pleonites strongly toothed, epimera posterior margins serrate; telson
 short and emarginated (**Figure 50**) **Melphidippidae (*Melphisana bola* Cmplx)**^{viii}
 — Eyes absent or normal, not bulging laterally; pleonites weakly toothed, posterior margins not
 serrate; telson frequently elongate and deeply cleft (**Figure 51**)..... **Pardaliscidae**
52. Accessory flagellum of two or more articles, apparent at magnifications of 40x or less; telson
 cleft **with** prominent distal setae or spines 57
 — Accessory flagellum absent or of single article; telson cleft or uncleft **without** prominent,
 stout, distal setae or spines..... 53
53. Telson evenly rounded or emarginated (**Figures 52–53**) 54
 — Telson cleft more than one-quarter length or elongate and notched (**Figures 55–56**) 56
54. Pereopods 6 and 7 of similar length and shape; coxa 4 excavate proximally; dactyls of
 pereopods often short and/or falcate 55
 — Pereopod 7 much longer than pereopod 6; dactyls of pereopods elongate, nearly straight; coxa
 4 not excavate proximally, posterior margin straight or weakly concave (**Figure 52**)
 **Oedicerotidate (in part)**

55. Gnathopod 2 with articles 5 and 6 much elongated (length $\geq 5x$ width); inner and outer lobes of lower lip not pillow shaped, outer lobes bearing large extensions (**Figure 53**)
 **Calliopiidae** (*Oradarea longimana*)
- Gnathopods with article 5 or 6 normally proportioned (never over 3x width); lower lip with inwardly tilting pillow shaped inner and outer lobes (**Figure 54**) **Pleustidae**
56. Telson broad, relatively short, barely reaching beyond uropod 3 peduncle, each lobe typically rounded or squared (**Figure 55**) **Pontogeneiidae**
- Telson tapering, elongate, often reaching to mid-point of uropod 3 rami (**Figure 56**)
 **Eusiridae**
57. Mandibular molar reduced, palp article 1 elongate (nearly one-half article 2); pereopod 7 longer and stronger than pereopod 6 (**Figure 57**) **Liljeborgiidae**
- Mandibular molar prominent, palp article 1 short ($\leq 1/4$ of article 2); pereopods 6 and 7 subequal or pereopod 7 shorter than 6 58
58. Antenna 1 accessory flagellum with 3 or more segments; pereopod 7 subequal to or longer than pereopod 6 59
- Antenna 1 accessory flagellum with 2 segments, terminal segment much reduced; pereopod 6 longer pereopod 7 (**Figure 58**) **Crangonyctidae**^{ix}
59. Gnathopod 1 subequal to, and sometimes larger than gnathopod 2; all urosomal segments with dorsal and dorsolateral clusters of stout spines or setae (**Figure 59**)
 **Gammaroidea** (Gammaridae/Anisogammaridae)^x
- Gnathopod 1 distinctly smaller than gnathopod 2; urosome dorsum bare or variously toothed but without clusters of spines, if spines present, inserted singly among serrations of abdominal segments 60
60. Antenna 2 longer than antenna 1; antenna 1 accessory flagellum long, from five to seven segments; eye large, reniform; gnathopod 2 article 5 narrow, elongate (**Figure 60**)
 **Hornellidae** (*Hornellia occidentalis*)
- Antenna 1 longer than antenna 2; accessory flagellum short; eye typically round, relatively small; gnathopod 2 article 5 typically short and more or less ventrally lobate 61
61. Inner ramus of uropod 3 strongly reduced, less than one-fifth as long as outer ramus (**Figure 61**) **Melitidae**^{xi}
- Ramus of uropod 3 similar in length (**Figure 62**) **Maeridae**^{ix}

ENDOTES

- ⁱ The one record from the SCB came from the Northern Channel Islands collected during the 2008 Regional Monitoring Program
- ⁱⁱ See Cadien, DB (2015) [Amphipoda of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): II. Talitroidea - a review. Donald B. Cadien 24March2006 (revised 27Mar2015)] for a listing of species found in the NEP and Bousfield, EL (1982) for a key to the species. [The Amphipod Superfamily Talitroidea in the Northeastern Pacific Region. 1. Family Talitridae: Systematics and Distributional Ecology. Publications in Biological Oceanography 11: 1-73.]
- ⁱⁱⁱ Note that *Cheirpohotis* has a short uropod 3 inner ramus like *Photis*, just different in structure.
- ^{iv} A Key to North Eastern Pacific Lysianassooid genera can be found in Cadien, (2015). Cadien, D.B. 2015. Amphipoda of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): XV. Lysianassoidea – an updated and revised review Donald B. Cadien, LACSD 15Feb2007 (Revised 29Mar2015), which can be found in the SCAMIT toolbox <http://www.scamit.org/taxontools/toolbox>. D Pasko produced a key restricted to species from the Southern California Bight: Artificial Key to the Lysianassoidea Reported from the Southern California Bight, SCAMIT Ed 14 (Rev20June2023).
- ^v In addition to *Alania hancocki* (Hurley 1956) listed in SCAMIT Ed 14, two specimens representing previously unreported species were collected in Bight'23 samples, both from >400m samples. While *A. hancocki* has epimeron 3 bluntly produced with ~9 fine serrations at the posterior angle, one of the new taxa has epimeron 3 distinctly notched, and the second has epimeron 3 rounded and smooth, among other distinguishing characters.
- ^{vi} Pontoporeiidae are a primarily freshwater family. The family is included here because some members may be found in low salinity environments encountered during some regional sampling efforts.
- ^{vii} *Urothoe elegans* Bate 1857, a north Atlantic species, and *U. varvarini* Gurjanova 1953 are very similar and may represent the same species. SCAMIT has not been able to adequately resolve the two species and reports them as a species complex, *Urothoe elegans* Cmplx.
- ^{viii} Due to considerable variability in the telson of specimens from the Northeastern Pacific, there is insufficient information to separate *Melphidippa amorita* and *Melphisana bola*, which led to the adoption of *Melphisana bola* Cmplx designation by SCAMIT.
- ^{ix} Crangonyctidae are a primarily freshwater family. The family is included here because some members may be found in low salinity environments encountered during some regional sampling efforts.
- ^x Members of the superfamily Gammaroidea (Anisogammaridae and Gammaridae) are found along shorelines in estuaries, tidal creeks, and freshwater environments.
- ^{xi} These two families remain difficult to distinguish, even with the revision of Lowry and Myers (2013). The following comparison was excerpted directly from their publication. “*Maeridae* is also very similar to *Melitidae*. They are separated by the head shape of lateral cephalic lobe [not described]; gnathopod 1 with robust setae along palm; the form of the first and second uropods and the inner ramus of uropod 3.” The latter is the only valid character.” A key to the genera representing these two families can be found in Cadien (2015). Cadien, D.B. 2015. Amphipoda of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): X. Hadzioidea – an expanded and updated review Donald B. Cadien, LACSD 31Aug2005 (revised 8Mar2015), which can be found in the SCAMIT toolbox <http://www.scamit.org/taxontools/toolbox>.

**Figures: Key to the Families of Amphipods
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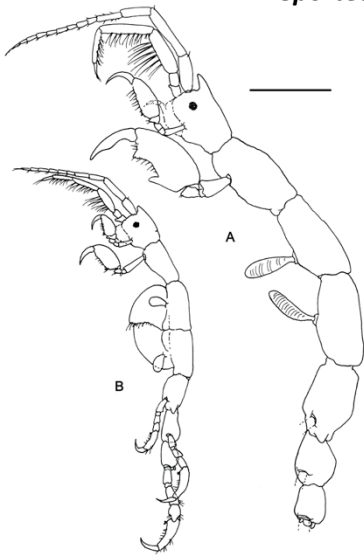


Figure 1. Caprellida: Caprellidae *Caprella penantis*.

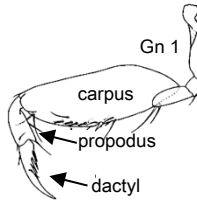


Figure 2. Ingolfiellidea: *Ingolfiella fuscina*.

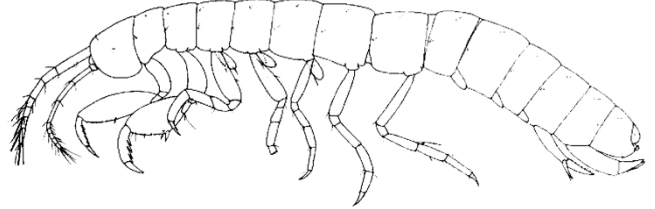


Figure 3. Haustoridae: *Eohaustorius washingtonianus*.

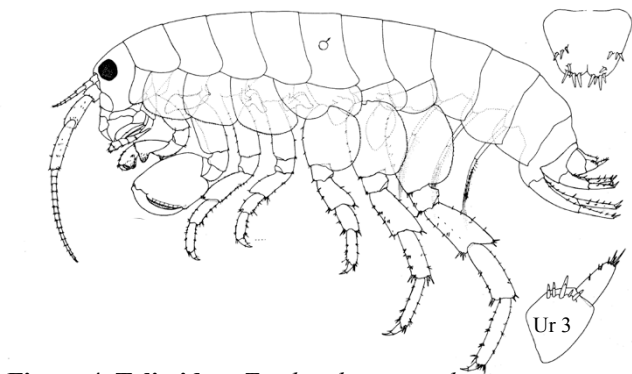
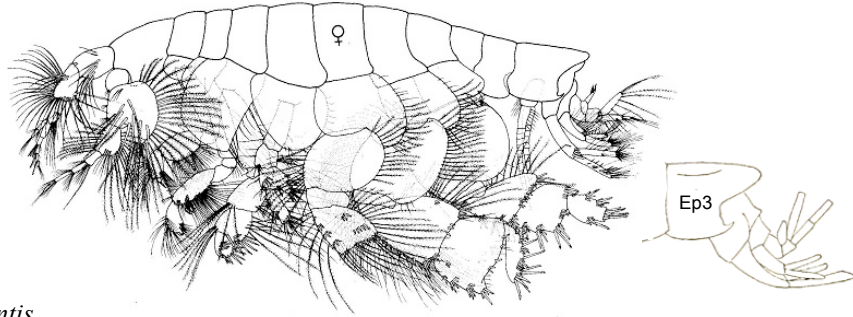


Figure 5. Phliantidae: *Pariphinotus seclusus* (lateral and dorsal views); *Pariphinotus escabrosus*, antenna 1.

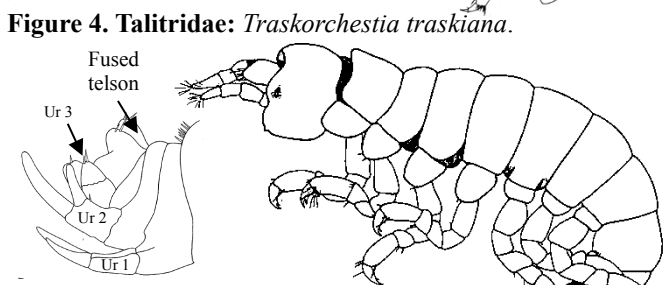


Figure 6. Eophliantidae: *Lignophliantis pyrifera*, lateral view; *Eophliantis tindalei* urosome.

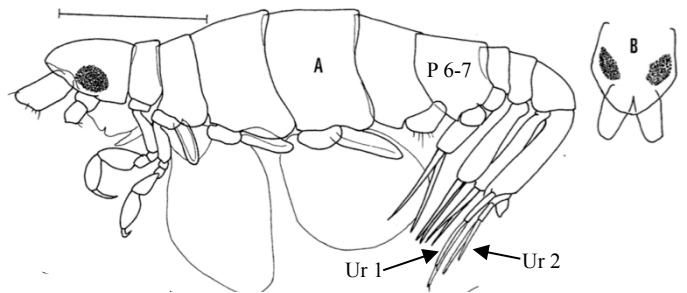


Figure 7. Dulichiidae: *Dulichia rhabdoplastis*, head dorsal view.

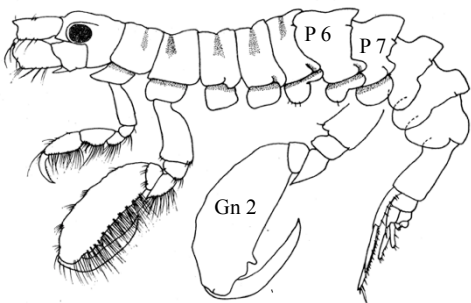


Figure 8. Podoceridae: *Podocerus cristatus*.

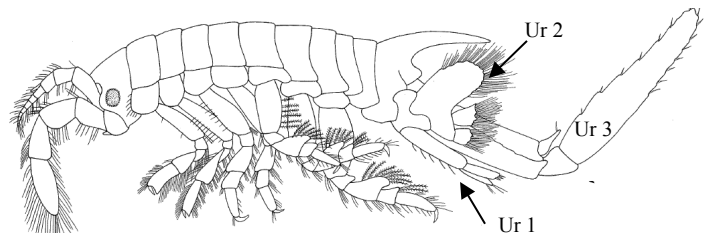


Figure 9. Cheluridae: *Chelura terebrans*.

Figures: Key to the Families of Amphipods
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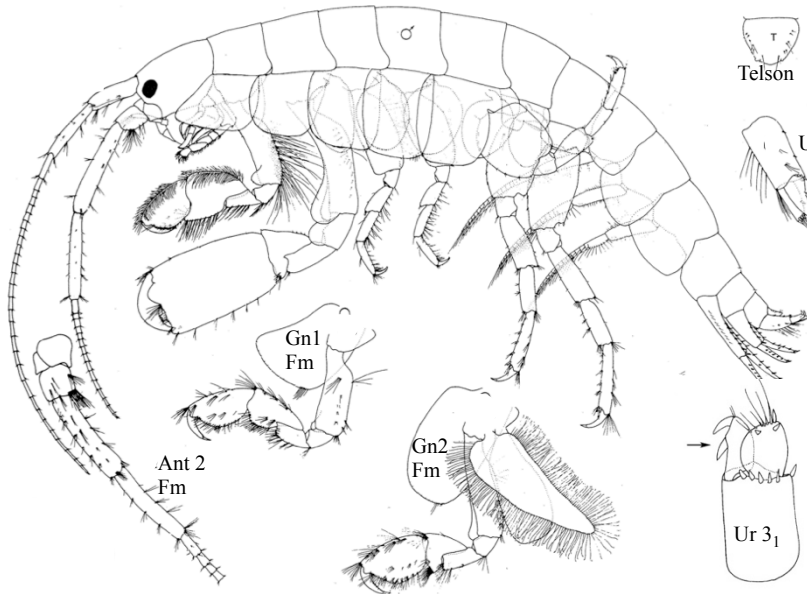


Figure 10. Amphithoidae: *Ampithoe valida*; uropod 3 (Ur 3₁) of *Ampithoe kaneohe*.

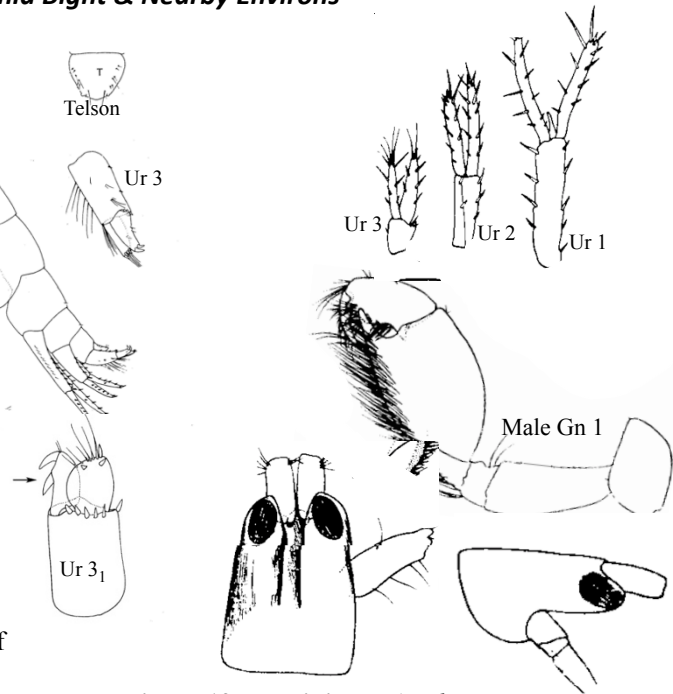


Figure 12. Kamikidae: *Amphiaetopus oculatus*, head dorsal and lateral view.

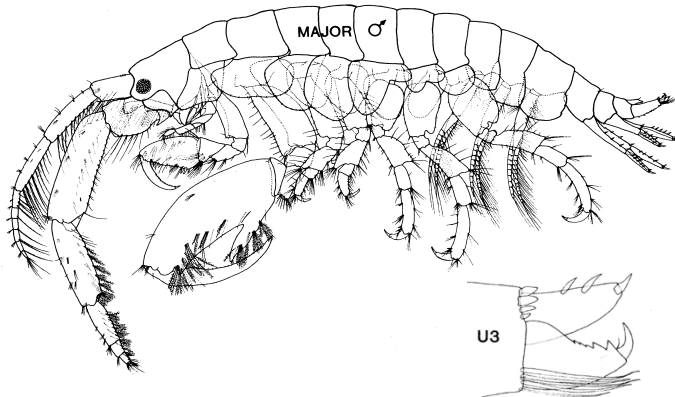


Figure 11. Ischyroceridae: *Jassa slatteryi*; uropod 3 (U3) of *J. falcata*.

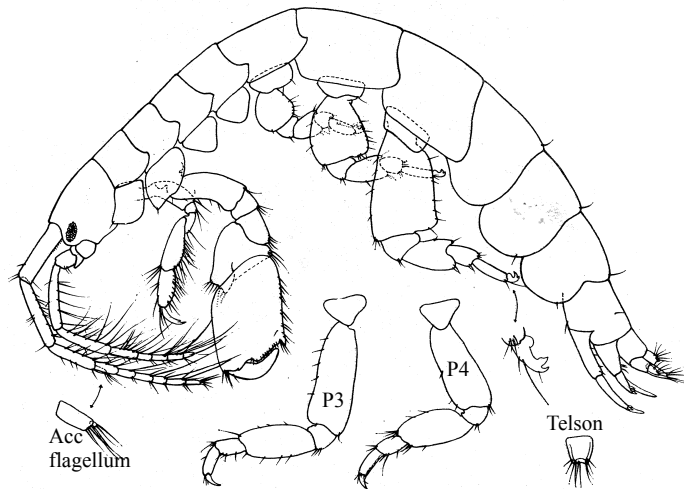


Figure 13. Chevaliidae: *Chevalia inaequalis*.

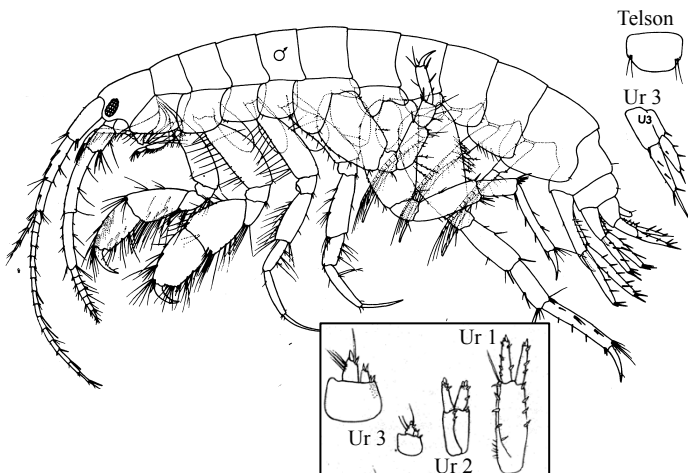


Figure 14. Protomeiidae, Protomeidiinae: *Protomeidia articulata*; inset, uropods 1-3 of *Cheiriphotis megacheles*.

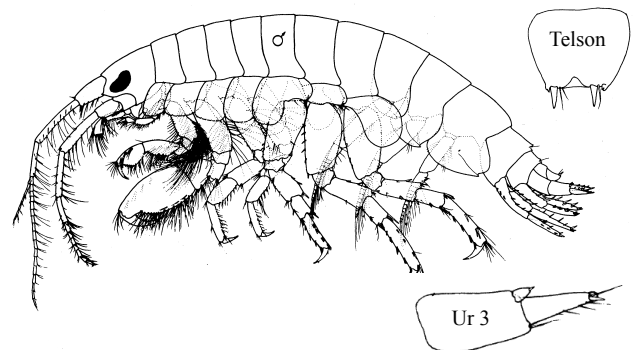


Figure 15. Photidae: *Gammaropsis shoemakeri*; uropod 3 (Ur3) of *Photis brevipes*.

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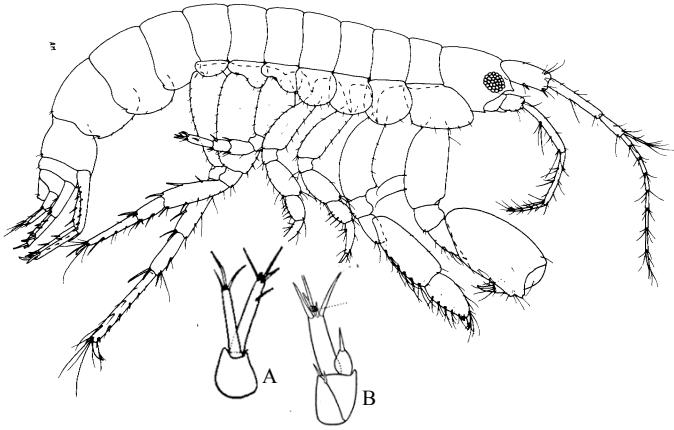


Figure 16. Unicolidae, Acuminideutopinae: *Rudilemboides naglei*; uropod 3 of *Rudilemboides stenopropodus* (A) and *Acuminodeutopus heteruopus* (B).

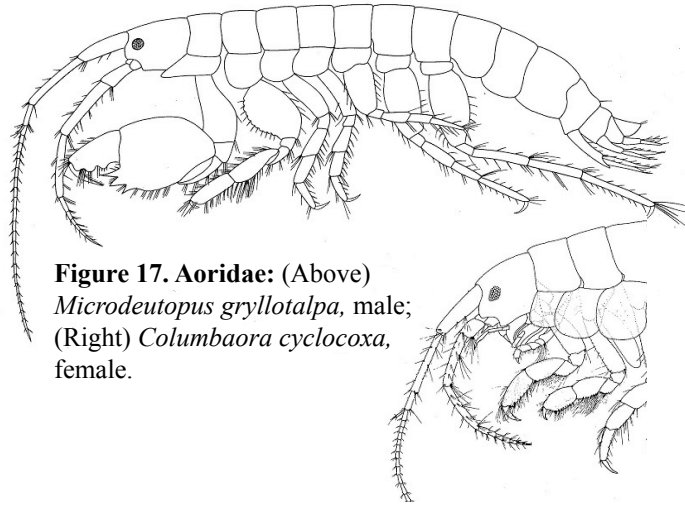


Figure 17. Aoridae: (Above) *Microdeutopus gryllotalpa*, male; (Right) *Columbaora cyclocoxa*, female.

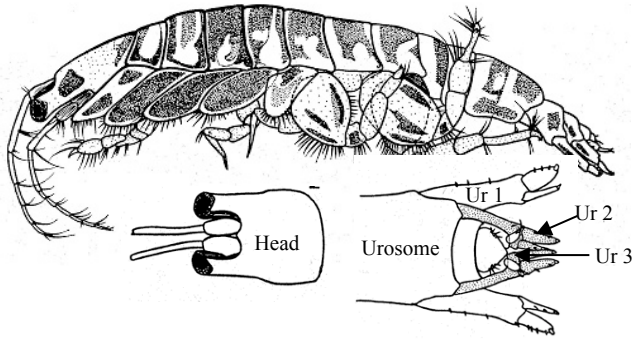


Figure 18: Photidae: *Ampelisciphotis podophthalma*.

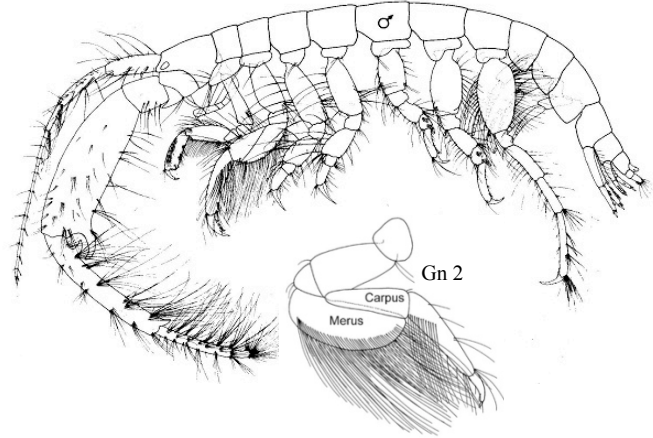


Figure 19: Corophiidae, Corophiinae: *Americorophium spinicorne*; generic merochela gnathopod 2.

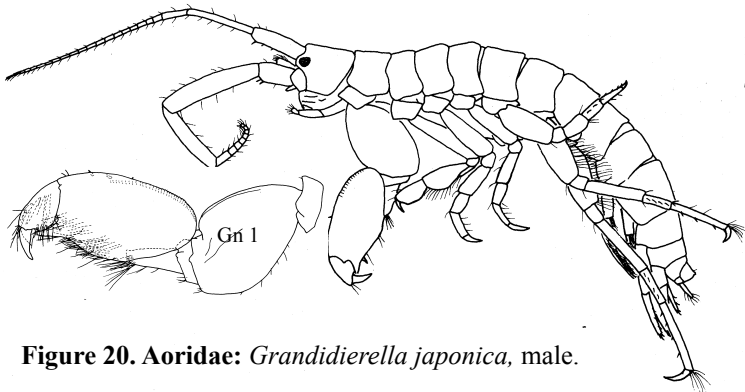


Figure 20. Aoridae: *Grandierella japonica*, male.

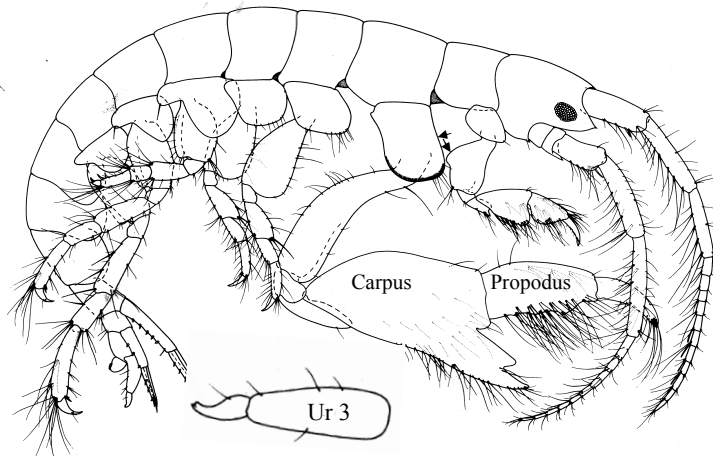


Figure 21. Ischyroceridae: *Erichthonius brasiliensis*.

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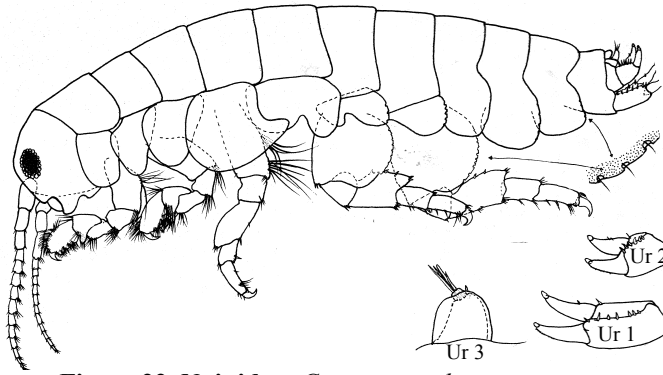


Figure 22. Najnidae: *Carinonajna kitamati*.

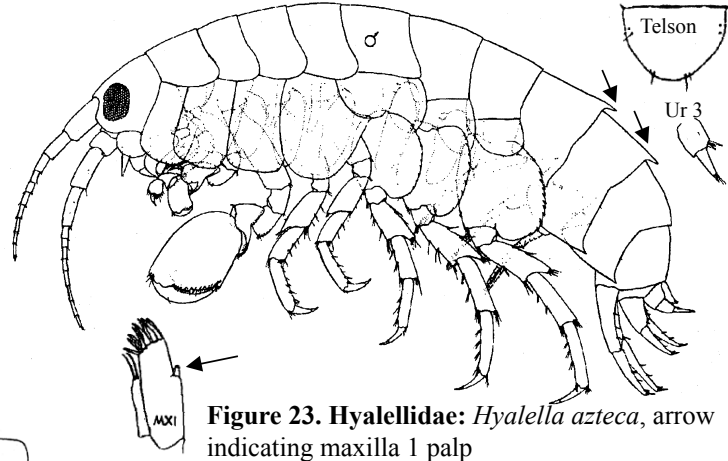


Figure 23. Hyaellidae: *Hyaella azteca*, arrow indicating maxilla 1 palp

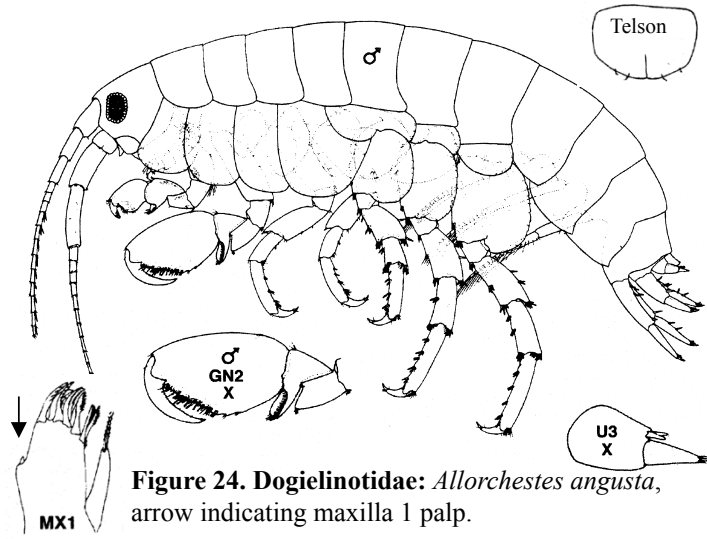


Figure 24. Dogielinotidae: *Allorchestes angusta*, arrow indicating maxilla 1 palp.

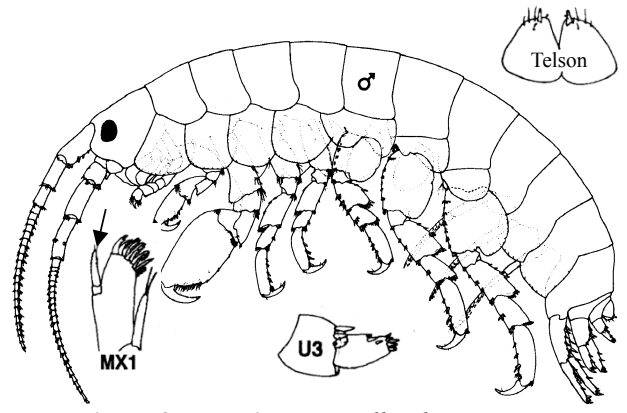


Figure 25. Hyalidae: *Parallorchestes cowan*, arrow indicating maxilla 1 palp.

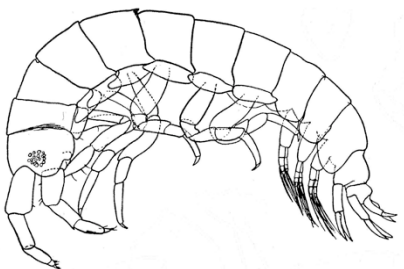


Figure 26. Colomastigidae: *Colomastix "pusilla."*

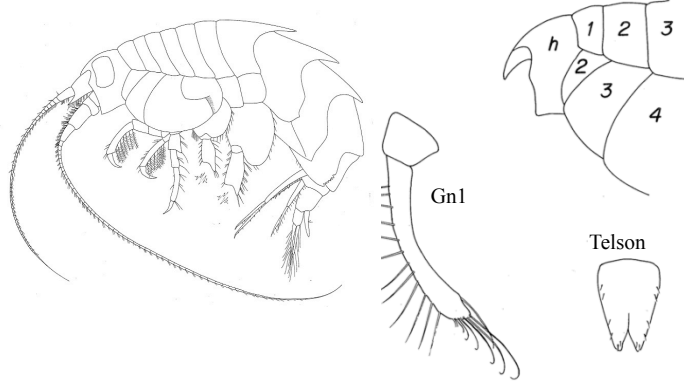


Figure 27. Bateidae: *Batea cuspidata*, whole; gnathopod 1, telson, head and pereonites 1-3.

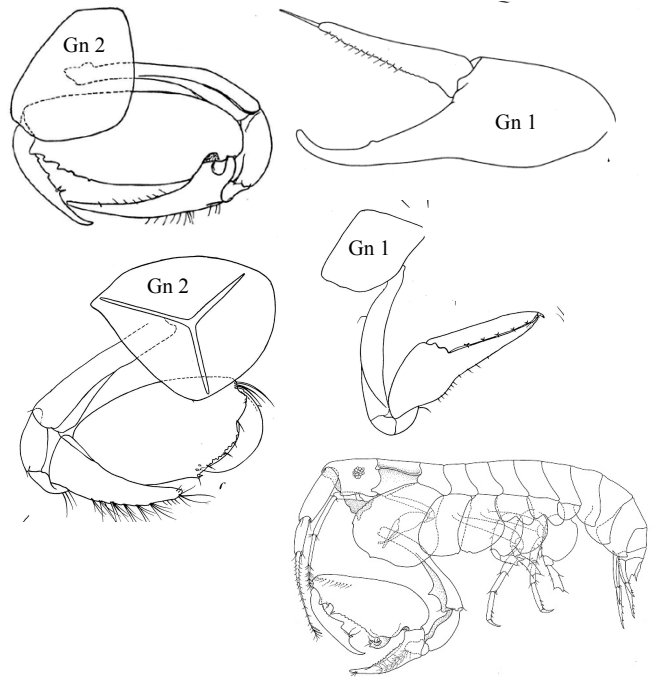


Figure 28. Leucothoidae: Anamixinae: *Anamixis pacifica*, gnathopods 1 and 2; *Anamixis papuaensis*, anamorph whole.

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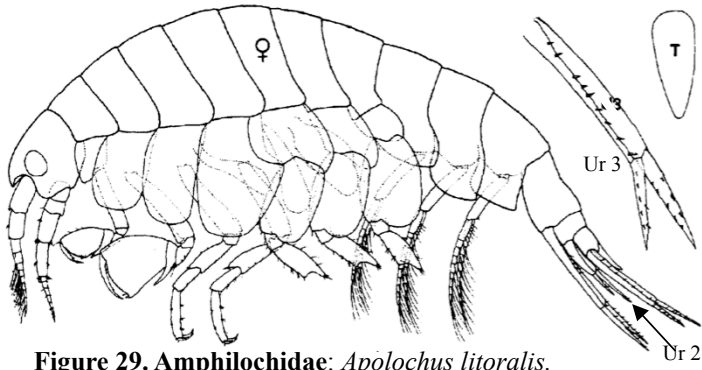


Figure 29. Amphilochidae: *Apolochus litoralis*.

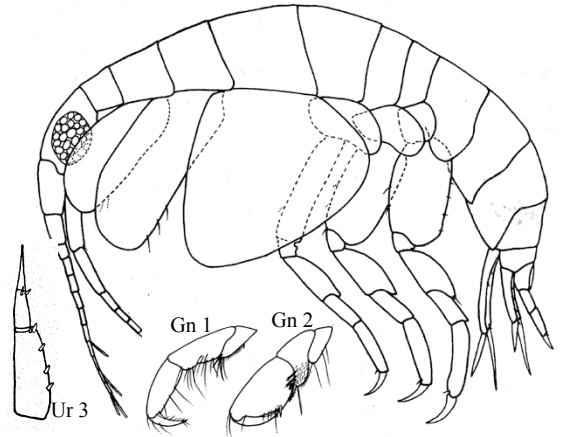


Figure 30. Stenothoidae: *Stenula modosa*; *Stenothoe valida*, uropod 3.

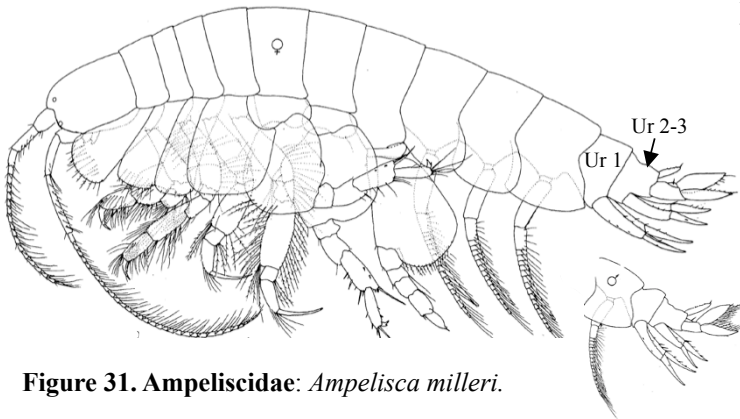


Figure 31. Ampeliscidae: *Ampelisca milleri*.

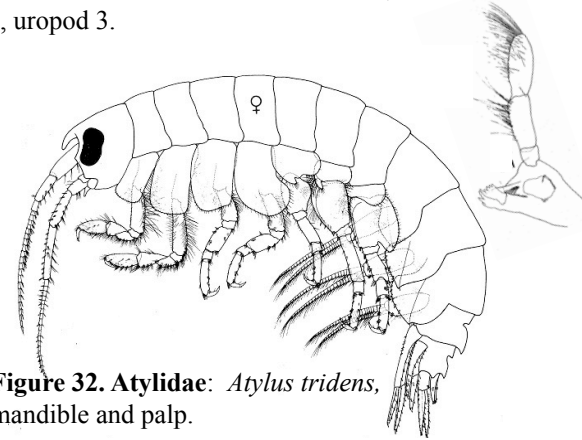


Figure 32. Atylidae: *Atylus tridens*, mandible and palp.

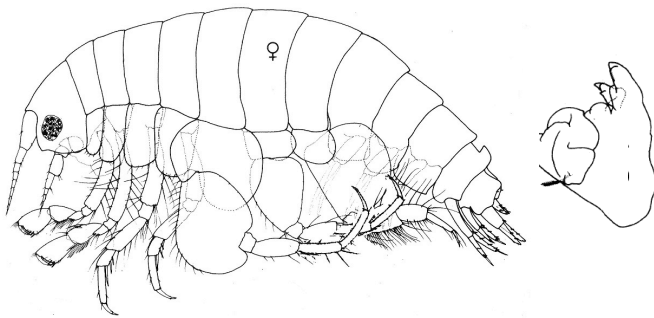


Figure 33. Dexamiiniidae: *Guernea reduncans*, right mandible (palp vestigial).

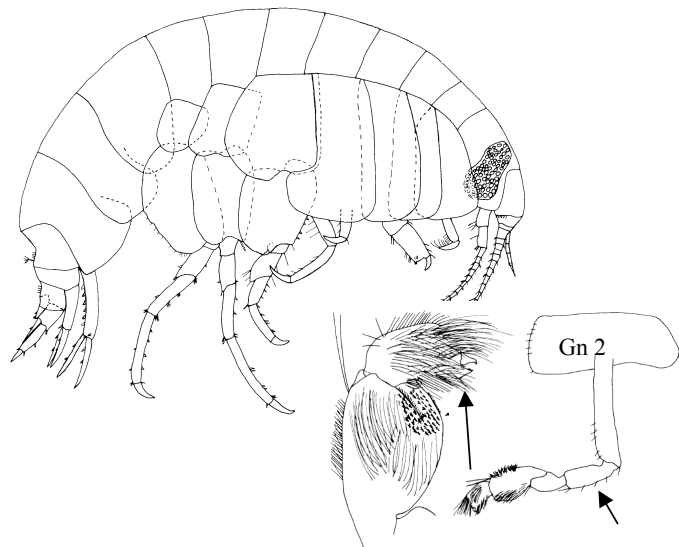


Figure 34. Lysianassoidea: *Orchomene limodes*, gnathopod 2

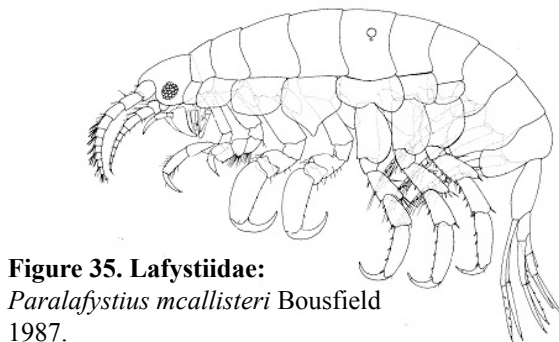


Figure 35. Lafystiidae: *Paralafystius mcallisteri* Bousfield 1987.

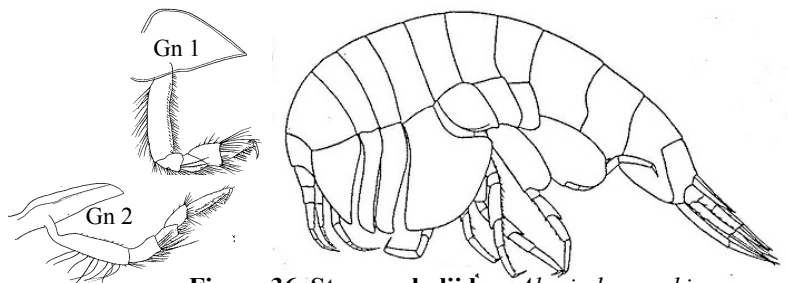


Figure 36. Stegocephaliidae: *Alania hancocki*.

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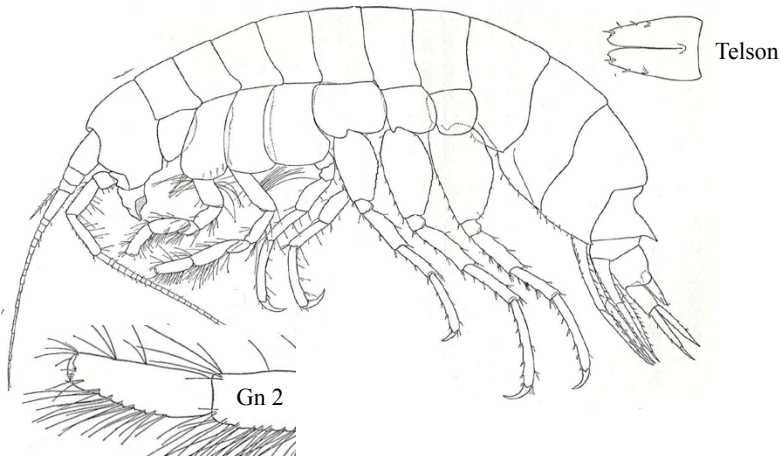


Figure 37. Valettiopsidae: *Valettiopsis dentatus* (Holmes 1908) (from JL Barnard 1967).

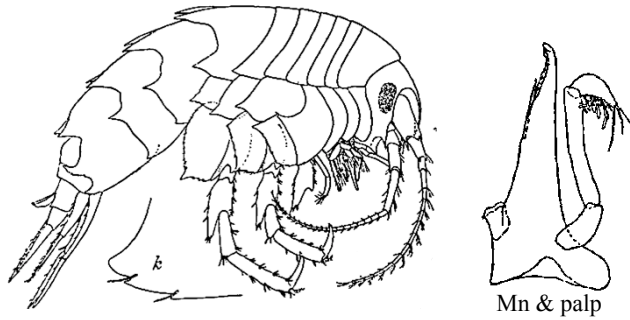


Figure 39. Iphimediidae: *Iphimedia rickettsi* mandible and palp.

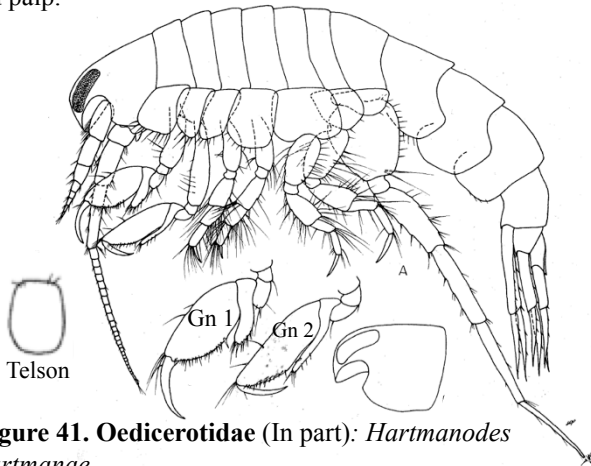


Figure 41. Oedicerotidae (In part): *Hartmanodes hartmanae*.

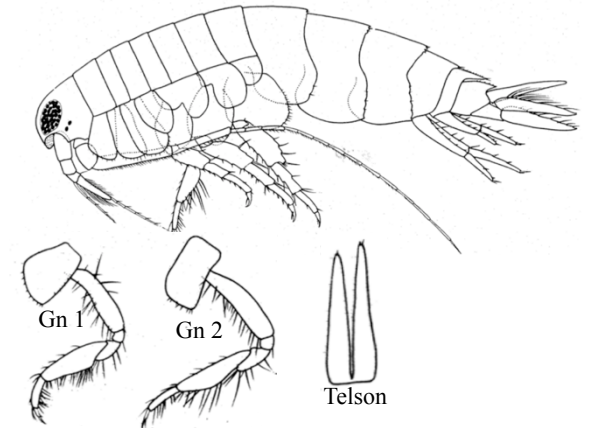


Figure 42. Synopiidae (In part): *Tiron biocellata*.

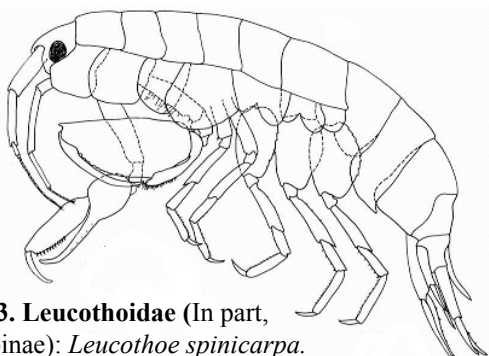


Figure 43. Leucothoidae (In part, Leucothoinae): *Leucothoe spinicarpa*.

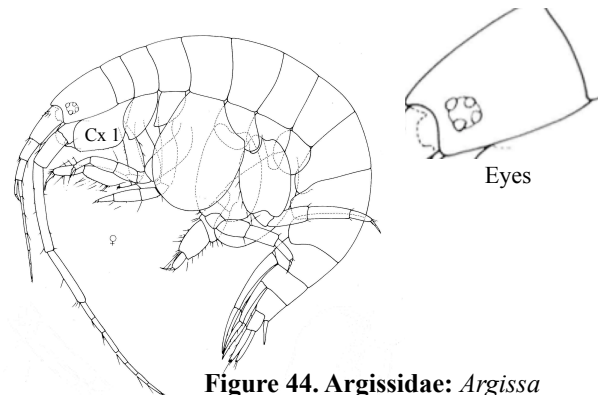


Figure 44. Argissidae: *Argissa hamatipes*.

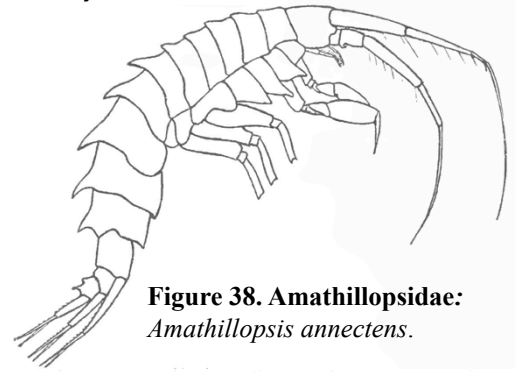


Figure 38. Amathillopsidae: *Amathillopsis annectens*.

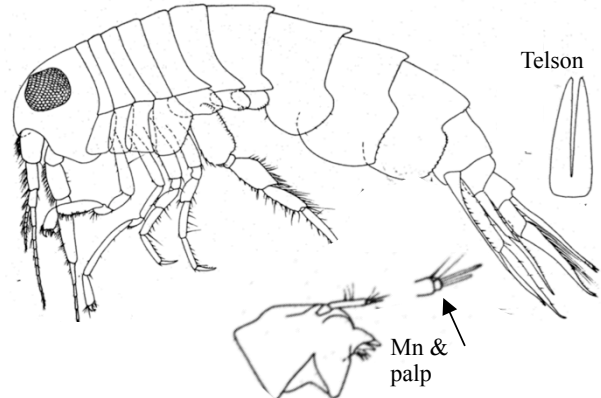


Figure 40. Synopiidae (In part): *Garosyrrhoe bigarra*, mandible and palp, telson.

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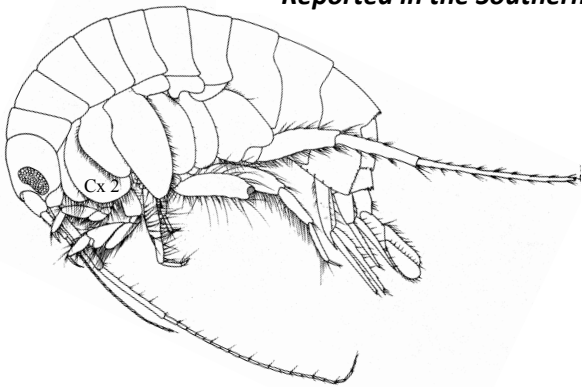


Figure 45. Megalurotidae: *Gibberosus myersi*.

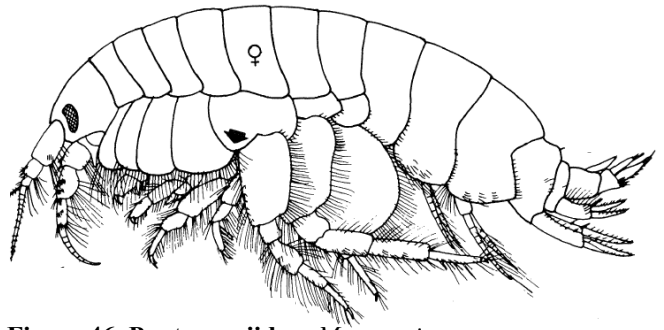


Figure 46. Pontoporeiidae: *Monopreia* sp.

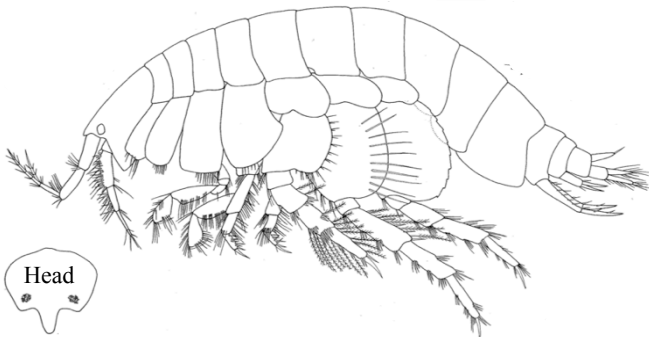


Figure 47. Urothoidea: *Urothoe elegans* Cmplx.

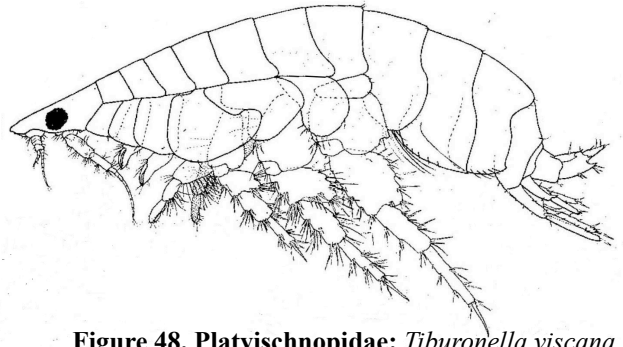


Figure 48. Platyischnopidae: *Tiburonella viscana*.

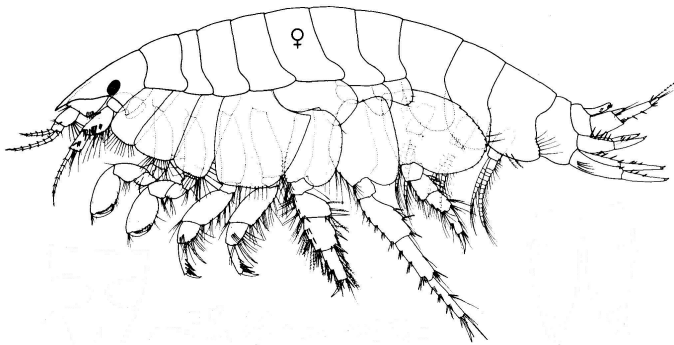


Figure 49. Phoxocophalidae: *Foxiphalus similis*

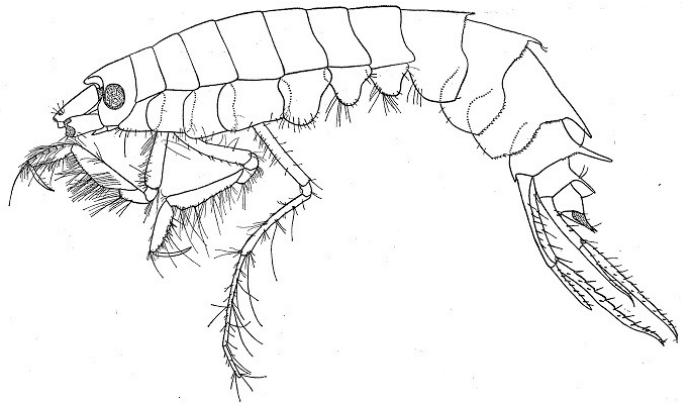


Figure 50. Melphidippidae: *Melphidippa amorita*.

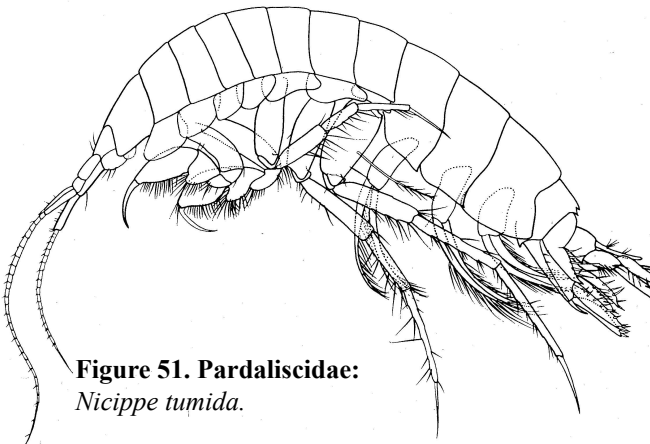


Figure 51. Pandaliscidae:
Nicippe tumida.

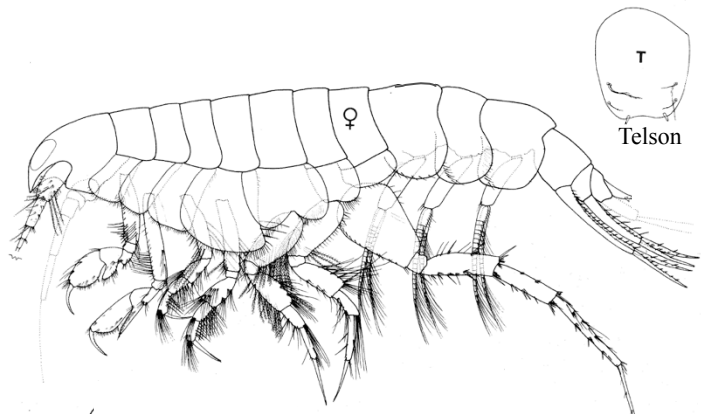


Figure 52. Oedicerotidae: *Deflexilodes enigmaticus*.

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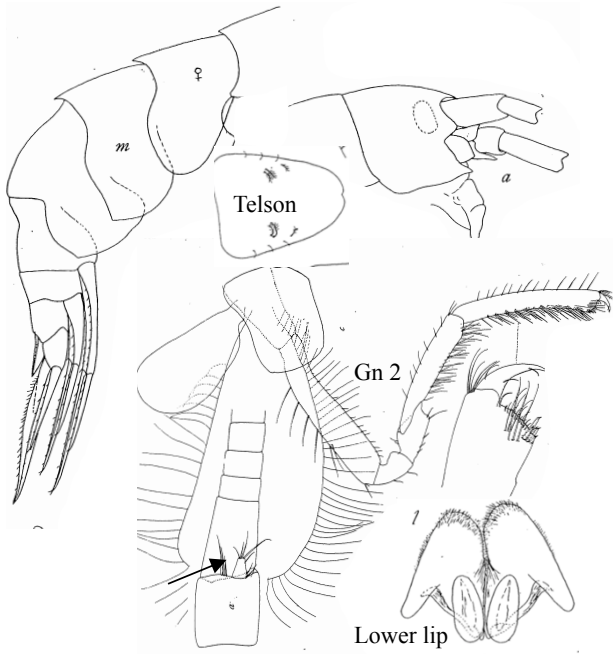


Figure 53. Calliopiidae: *Oradarea longimana*, arrow indicating uniaarticulate antenna 1 flagellum.

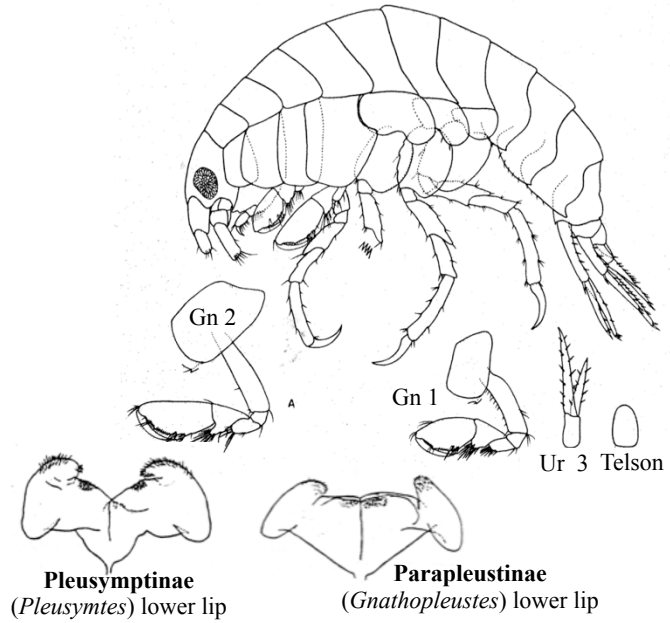


Figure 54. Pleustidae: *Pleusymtes subglaber*; Pleusymptinae and Parapleustinae lower lips.

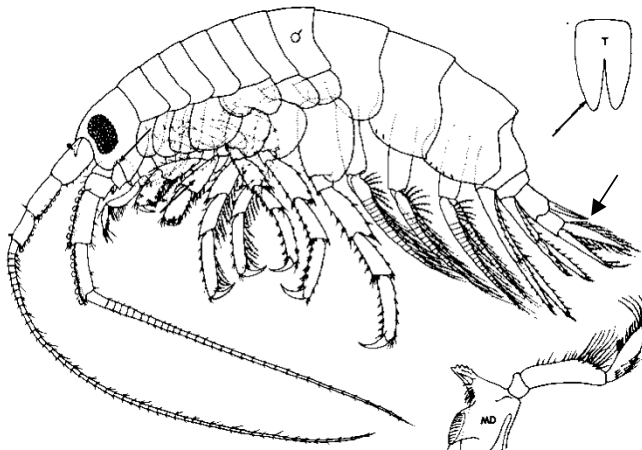


Figure 55. Pontogeneiidae: *Pontogenia inermis*.

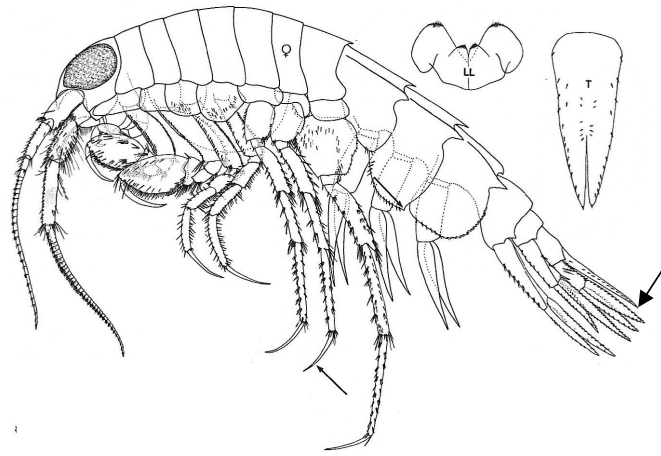


Figure 56. Eusiridae: *Rhachotropis oculus*.

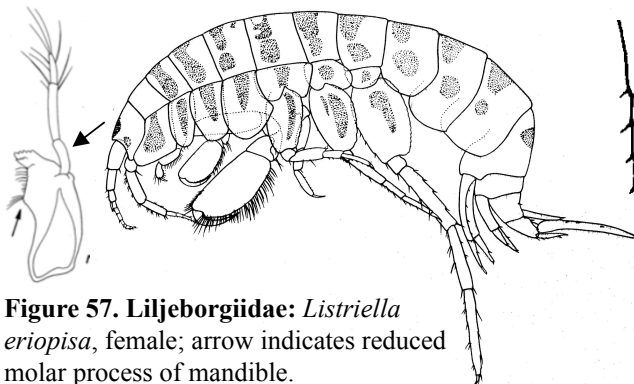


Figure 57. Liljeborgiidae: *Listriella eriopisa*, female; arrow indicates reduced molar process of mandible.

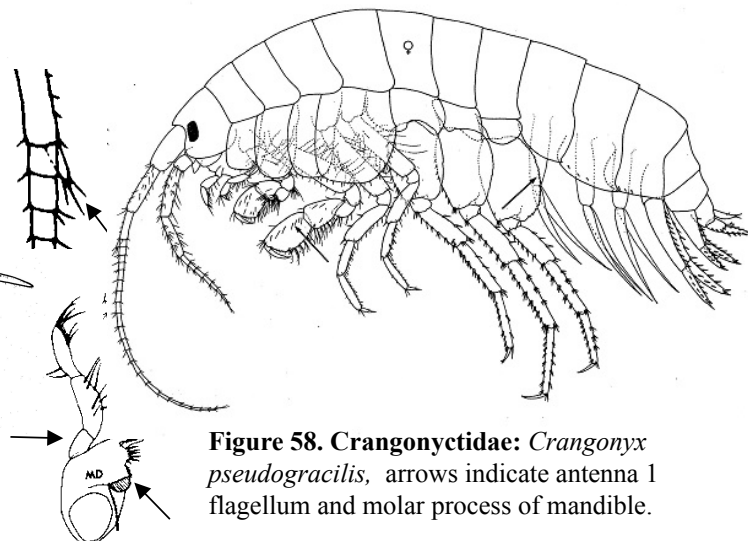


Figure 58. Crangonyctidae: *Crangonyx pseudogracilis*, arrows indicate antenna 1 flagellum and molar process of mandible.

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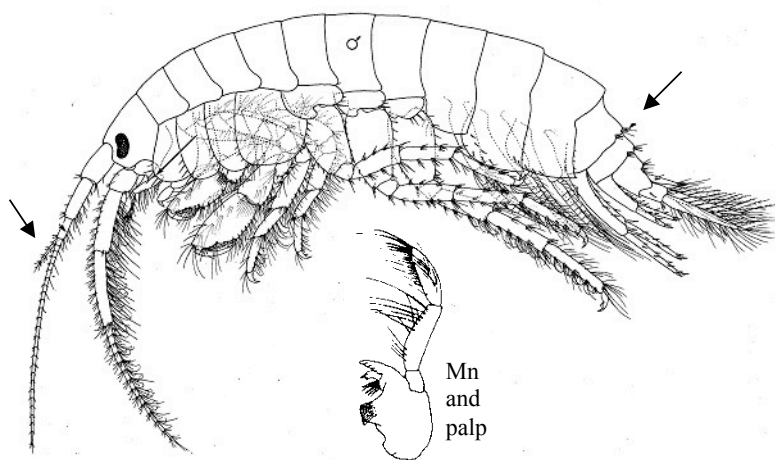


Figure 59. Gammaridae: *Gammarus daiberi*

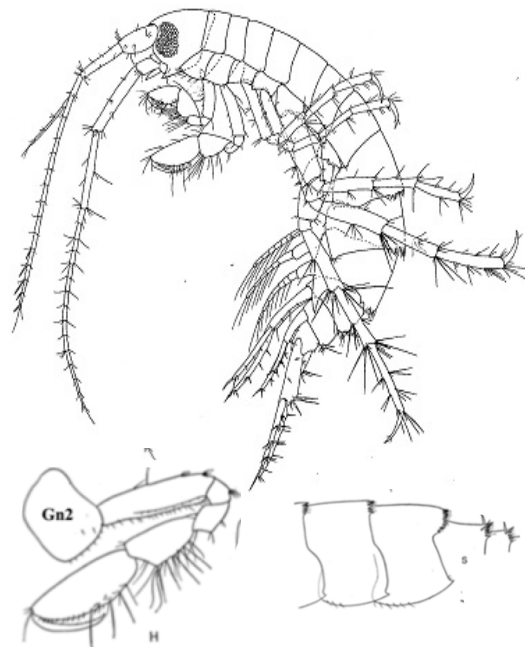


Figure 60. Hornellidae: *Hornellia tequestae*; pleon and gnathopod 2 of *Hornella occidentalis*.

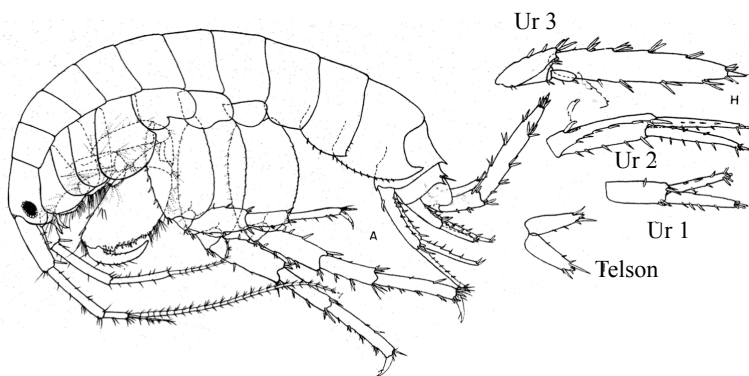


Figure 61. Melitidae: *Desdimelita desdicahada*.

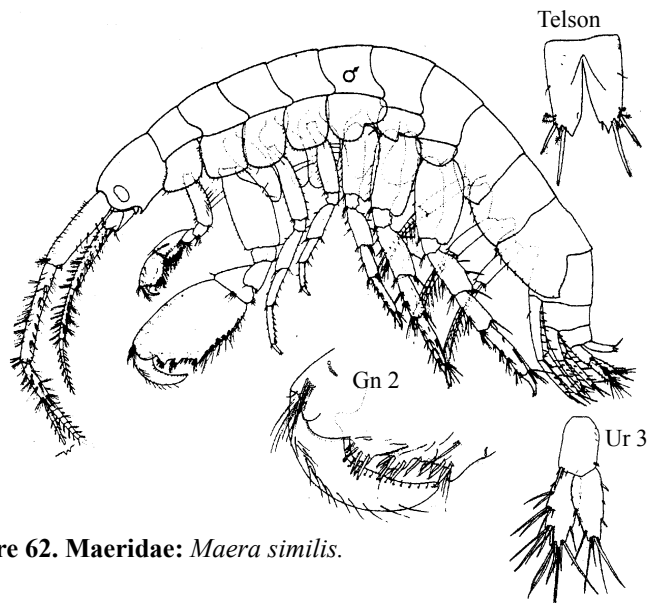


Figure 62. Maeridae: *Maera similis*.

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Figure 60. Hornellidae: *Hornellia tequestae* Thomas & JL Barnard 1986. From Thomas & JL Barnard 1986. Pleon and gnathopod 2, *Hornella occidentalis* (J. L. Barnard in J. L. Barnard & Reish 1959). From JL Barnard & D Reish 1959.

Figure 61. Melitidae: *Desdimelita desdichada* (J. L. Barnard 1962) (From JL Barnard 1962)

Figure 62. Maeridae: *Maera similis* Stout 1913 (From Krapp-Schickel & Jarrett 2000)

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