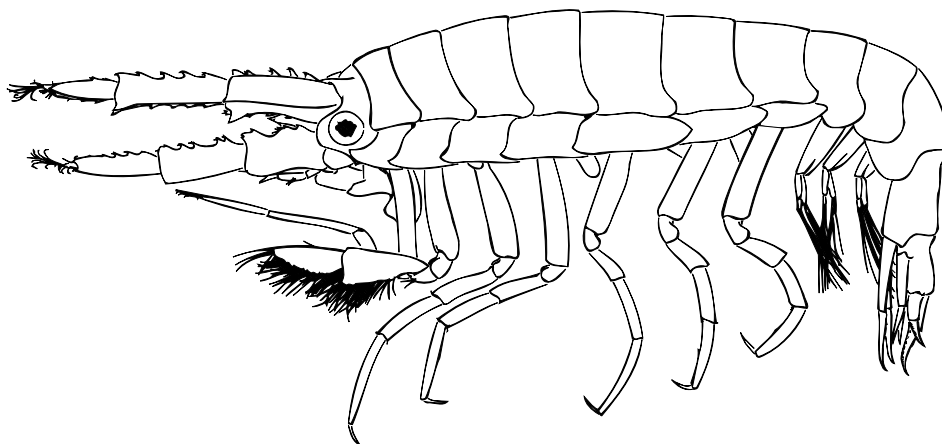


AN ILLUSTRATED IDENTIFICATION GUIDE TO THE NEARSHORE MARINE AND ESTUARINE GAMMARIDEAN AMPHIPODA OF FLORIDA

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VOLUME 3
FAMILIES BATEIDAE, BIANCOLINIDAE, CHELURIDAE,
COLOMASTIGIDAE, COROPHIIDAE, CYPROIDEIDAE AND DEXAMINIDAE

Cover illustration: *Colomastix denticornis* LeCroy, 1995 by Sara E. LeCroy.

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Gammaridean Amphipoda of Florida

Volume 3
Families Bateidae, Biancolinidae, Cheluridae,
Colomastigidae, Corophiidae, Cyproideidae and Dexaminidae

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Family Bateidae Stebbing, 1906

Regional diagnosis: Gnathopod 1 vestigial, biarticulate, hidden by coxal plates 1-2; gnathopod 2, article 3 usually not elongate, less than twice as long as wide (rarely elongate); urosome segments 1-3 separate.

Florida genera: *Batea*

Remarks: The genus *Carinobatea* was synonymized with *Batea* by Barnard and Karaman (1991) and, as a result, the family Bateidae is currently monotypic, with *Batea* constituting the only known genus worldwide.

Genus *Batea* Müller, 1865

Regional diagnosis: That of the family.

Florida species: *B. campi*, *B. carinata*, *B. catharinensis*, *B. cuspidata*

Remarks: See Ortiz (1991) for a key that includes all known Gulf of Mexico and Caribbean species of *Batea* but one, including a deeper water member of the genus from Florida, *B. bousfieldi* (Ortiz, 1991) (37-73 meters; West Florida Shelf). This species is immediately recognizable by its single dorsal process on pleon segment 1. Ortiz (1991) also reports on records of a species from Cuba (*Batea* cf. *transversa*) that is very similar to the Baja California species *B. transversa* Shoemaker, 1926. This species, although apparently rare, was found in shallow (1-2 m) water on the north and south coasts of Cuba and could potentially occur in the Florida Keys as well. It can be distinguished from all other species of *Batea* in the region except *B. catharinensis* by the lack of dorsal processes on the pereon and pleon segments. *Batea* cf. *transversa* differs from *B. catharinensis* by having a very short, transverse palmar margin on the propodus of gnathopod 2 (palmar margin relatively long and oblique in *B. catharinensis*) and by having distal setae only on the medial margin of mandibular palp article 2 (setae lining entire margin in *B. catharinensis*). The species that is not included in the Ortiz (1991) key is *Batea schotti* Ortiz and Lemaitre (1997), a species that occurs on the Caribbean coast of Colombia.

Bateids superficially resemble some of the eusirids such as *Pontogenia*, *Tethygenia* and *Nasagenia* because of the subrectangular eye and similar uropod morphologies. However, upon closer examination, they can readily be distinguished from members of these genera by the vestigial gnathopod 1 (fully developed in the eusirid genera) and by the larger coxae 2-4, with coxa 1 reduced and hidden by coxa 2 (coxae 2-4 smaller, coxa 1 not hidden in *Pontogenia*, *Tethygenia* and *Nasagenia*). *Batea* species can also be distinguished from members of the first two eusirid genera by the presence of a serrate posterior margin on epimeron 3 (entire in *Pontogenia* and *Tethygenia*), although this margin is similarly serrate in *Nasagenia* species.

KEY TO FLORIDA SPECIES OF *BATEA*

1. < Antenna 1, peduncle article 1 without distoventral process; gnathopod 2, carpus, carpal lobe well-developed, nearly reaching palmar angle, propodus, palmar margin longer than posterior margin; pleon segments 1-2 dorsally smooth, without processes; telson lobes narrowly rounded, inner margins slightly convex..... *Batea catharinensis*

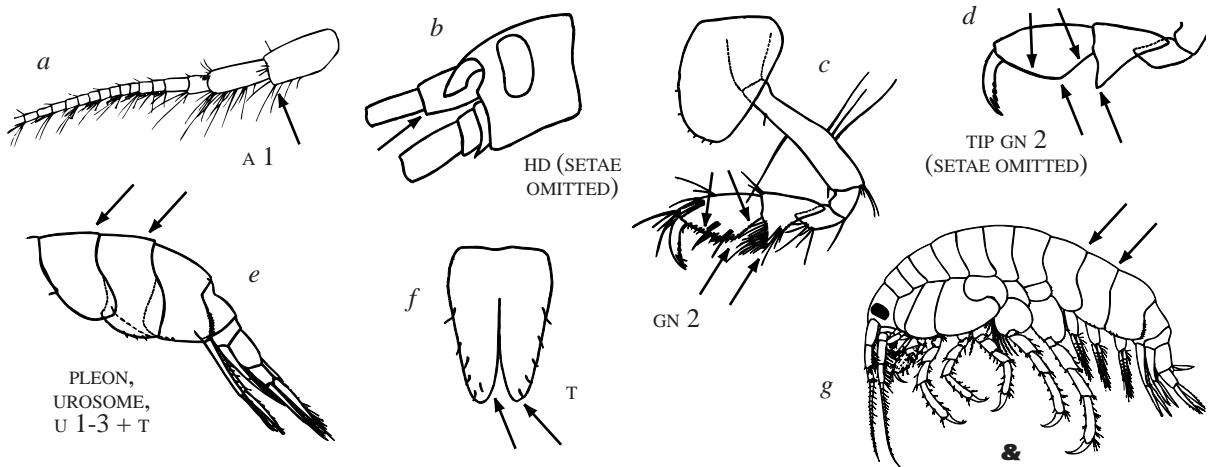


Figure 385.

- < Antenna 1, peduncle article 1 with distoventral process; gnathopod 2, carpus, carpal lobe poorly developed, far underreaching palmar angle, propodus, palmar margin shorter than posterior margin; pleon segments 1-2 with dorsal processes; telson lobes subacute, inner margins straight to slightly concave 2

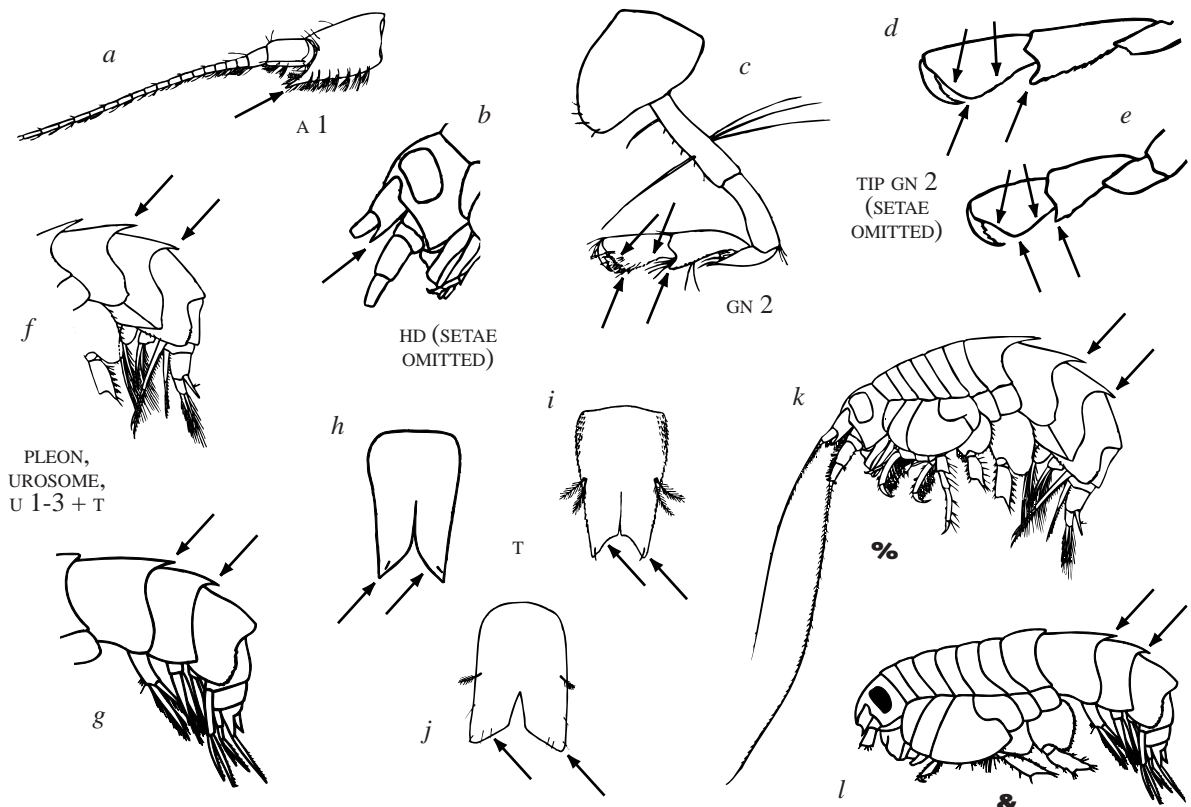


Figure 386.

2. < Gnathopod 1 stout, with terminal setae only; peraeon and pleon with 2 dorsal processes (peraeon segment 7 without dorsal process) *Batea campi*

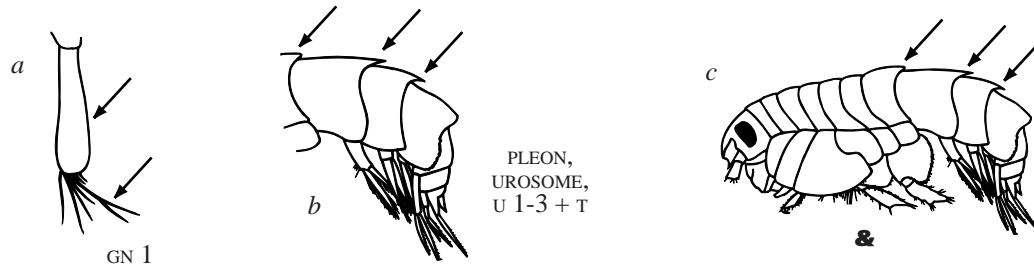


Figure 387.

- < Gnathopod 1 slender, with both terminal and marginal setae; peraeon and pleon with 3 dorsal processes (peraeon segment 7 with dorsal process) 3

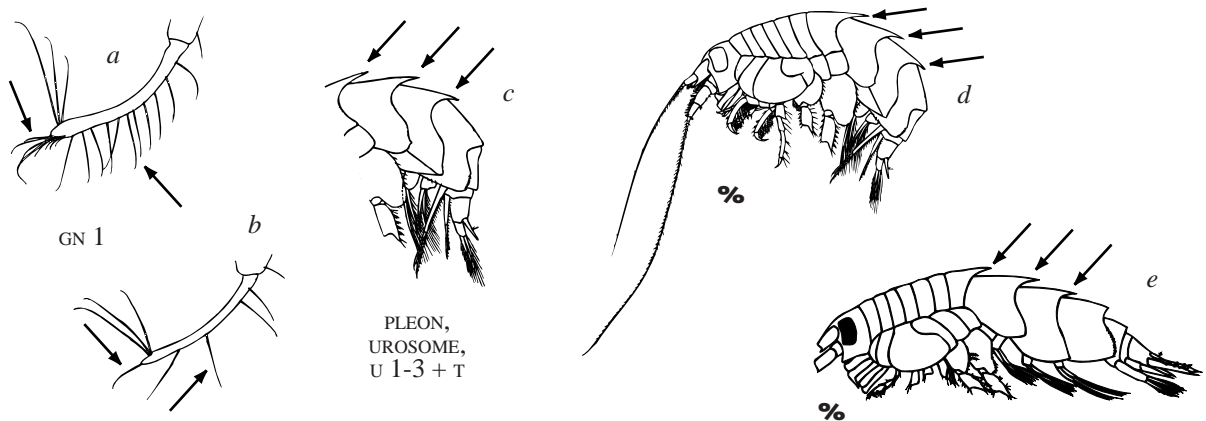


Figure 388.

3. < Gnathopod 2, ischium relatively elongate, slender, much longer than merus; peraeopod 7, basis not narrowing distally, posterodistal margin convex *Batea cuspidata*

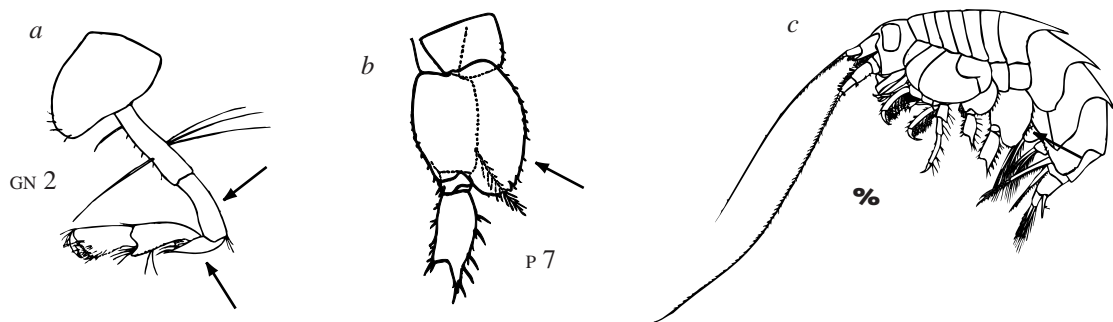


Figure 389.

- < Gnathopod 2, ischium relatively short, stout, slightly longer than merus; peraeopod 7, basis narrowing distally, posterodistal margin straight or slightly concave *Batea carinata*

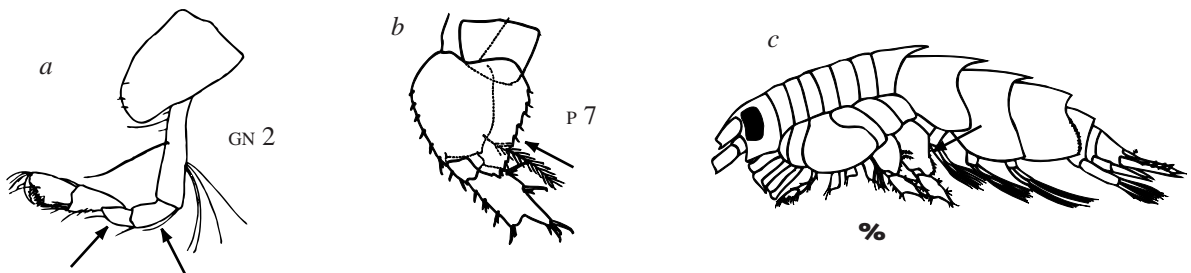


Figure 390.

***Batea campi* (Ortiz, 1991)
(Figure 387)**

Carinobatea campi Ortiz, 1991, pp. 21-25, figs. 16-19.

Batea campi: Ortiz and Lalana, 1993, p. 19.

Regional diagnosis: Antenna 1, peduncle article 1 with distoventral process; mandibular palp article 2, medial margin with distal setae only; peraeon segment 7 without dorsal process; pleon segments 1-2 with dorsal process; gnathopod 1 stout, with terminal setae only; gnathopod 2, ischium relatively short, stout, slightly longer than merus, carpus with carpal lobe poorly developed, far underreaching palmar angle, propodus, palmar margin shorter than posterior margin; peraeopod 7, basis narrowing slightly distally, posterodistal margin straight to slightly convex; telson lobes subacute, inner margins straight to slightly concave.

Distribution: Biscayne Bay; Florida Bay; Southeastern Gulf of Mexico between the lower Florida Keys and Cape Sable, Florida; Central West Florida Shelf off Tampa and Ft. Myers, Florida (Ortiz, 1991); North coast of Cuba (Ortiz, 1991; Ortiz and Lalana, 1996).

Ecology: This species occurs on sandy or silty mud bottoms covered with *Thalassia* grassbeds and soft corals. In addition, it has been reported from areas characterized by limestone outcroppings interspersed with open patches of crushed shell, Loggerhead sponges (*Spherospongia*), the brown alga *Sporochnus*, the calcareous alga *Lithothamnion* and covered by a heavy layer of white calcareous silt (Ortiz, 1991; Joyce and Williams, 1969). *Batea campi* has been found at depths ranging from 1.5 to 37 m, with the shallower records occurring in samples from Cuba and Florida Bay.

Remarks: Although the genus *Carinobatea* was synonymized with *Batea* by Barnard and Karaman (1991) (based on the lack of consistent differences between the two genera other than the presence or absence of dorsal processes on the body), *B. campi* was not mentioned in their list of included taxa because Ortiz's (1991) paper describing that species (as *Carinobatea campi*) was not published until after Barnard and Karaman's paper had gone to press. However, later authors (e.g. Ortiz and Lalana, 1993, 1996; Ortiz and Lemaitre, 1994; Camp, 1998) have followed this synonymy and included *B. campi* in the genus *Batea*. On the other hand, Bousfield (2001) retained the use of the genus *Carinobatea* for the species *B. carinata* and *B. cuspidata*, but included *B. bousfieldi* (1 dorsal process) with the other members of the genus *Batea* (*B. campi* was inadvertently omitted from the list); he does not, however, mention his reasons for doing so. Barnard and Karaman's (1991) synonymy is followed herein.

Batea campi is most easily distinguished from other Florida members of the genus by the presence of 2 dorsal processes on the posterior part of the body (*B. catharinensis* has no dorsal processes; *B. bousfieldi* has 1 process; *B. carinata* and *B. cuspidata* have 3 processes). These processes are evident even in small juveniles, although they are less well-developed than in the adults. Adult length ranges from 4 to 5 mm in *B. campi*.

See Ortiz, 1991 (as *Carinobatea campi*).

***Batea carinata* (Shoemaker, 1926)**
(Figure 390)

Carinobatea carinata Shoemaker, 1926, pp. 24-26, fig. 16.

Batea carinata: Barnard and Karaman, 1991, p. 115, fig. 28C.

Regional diagnosis: Antenna 1, peduncle article 1 with distoventral process; mandibular palp article 2, medial margin with distal setae only; peraeon segment 7 with dorsal process; pleon segments 1-2 with dorsal process; gnathopod 1 slender, with both terminal and marginal setae; gnathopod 2, ischium relatively short, stout, slightly longer than merus, carpus with carpal lobe poorly developed, far underreaching palmar angle, propodus, palmar margin shorter than posterior margin; peraeopod 7, basis narrowing distally, posterodistal margin straight to slightly concave; telson lobes subacute, inner margins straight to slightly concave.

Distribution: Central West Florida Shelf (Shoemaker, 1926; Ortiz, 1991); Golfo de Batabanó near the Isle of Pines, Cuba (Shoemaker, 1948; Ortiz, 1991); Caribbean coast of Colombia south of Cartagena (Ortiz and Lemaitre, 1994).

Ecology: *Batea carinata* occurs in live bottom habitats off the west coast of Florida and is generally more common in deeper waters there (Ortiz, 1991). However, this species has also been reported from shallow (1-2 m) *Thalassia* grassbeds on the Caribbean coast of Colombia (Ortiz and Lemaitre, 1994). The depths at which it has been found range from 1 to 73 m.

Remarks: This species can be distinguished from all other species of *Batea* in Florida waters except *B. cuspidata* by the presence of 3 dorsal processes on the posterior body segments (*B. catharinensis* lacks processes; *B. campi* has 2 processes; *B. bousfieldi* has 1 process). *Batea carinata* and *B. cuspidata* are very similar, but differ in the shorter ischium of gnathopod 2 and the distally narrowing basis of peraeopod 7 in *B. carinata* (ischium of gnathopod 2 elongate and basis of peraeopod 7 not narrowing in *B. cuspidata*). In addition, because of its preference for somewhat deeper waters, *B. carinata* tends to be much less frequently encountered than *B. cuspidata*. Adult *B. carinata* are approximately 5 mm in length.

See Shoemaker, 1926 (as *Carinobatea carinata*); Ortiz, 1991 (as *C. carinata*).

***Batea catharinensis* Müller, 1865**
(Figure 385)

Batea catharensis Müller, 1865, p. 276, pl. 10.
Batea secunda Holmes, 1903, p. 284.

Regional diagnosis: Antenna 1, peduncle article 1 without distoventral process; mandibular palp article 2, medial margin lined with setae along entire length; peraeon and pleon segments dorsally smooth, without processes; gnathopod 1 moderately slender, with both terminal and marginal setae; gnathopod 2, ischium relatively short, stout, subequal to merus in length, carpus with carpal lobe well-developed, nearly reaching palmar angle, propodus, palmar margin longer than posterior margin; peraeopod 7, basis not narrowing distally, posterodistal margin convex; telson lobes narrowly rounded, inner margins slightly convex.

Distribution: Western Atlantic from Cape Cod, Massachusetts to Florida; Gulf of Mexico; Caribbean Sea to Brazil (Bousfield, 1973; Ortiz, 1991); eastern Pacific from Cedros Island and Magdalena Bay, Baja California (Shoemaker, 1942).

Ecology: *Batea catharinensis* is a very widespread species that occurs in a variety of habitats in moderate to high salinity waters (20-36 ppt.). It is most frequently found in grassbeds (*Halodule*, *Thalassia*) on soft sandy mud or sandy shell bottoms (Ortiz, 1991; pers. obs.), but it is also relatively common in patches of floating *Sargassum* (pers. obs.) or on stony or gravelly bottoms (Bousfield, 1973). It may also occasionally be found on oyster reefs or on fine, moderately well-sorted sand bottoms (pers. obs.), in the plankton (Williams and Bynum, 1972), or in filamentous green algae (Shoemaker, 1942). However, it does not appear to be common in live bottom habitats and was not collected at the West Florida Shelf localities sampled during the Hourglass Cruises (Ortiz, 1991). This species occurs at depths of 1 to 45 m (Ortiz, 1991).

Remarks: *Batea catharinensis* is the only Florida species of *Batea* that completely lacks dorsal processes on the body. Males differ from females in having larger, more subrectangular eyes, calceoli on the antennae, somewhat more robust pleopods and broader, more heavily setose rami on uropod 3. The color of living specimens from *Sargassum* is clear speckled with red, with a dark red dorsal stripe and with body segments and appendage articles outlined in red. Adult *B. catharinensis* range in length from 5 to 8 mm.

See Shoemaker, 1926; Bousfield, 1973; Ortiz, 1991.

***Batea cuspidata* (Shoemaker, 1926)**
(Figure 389)

Carinobatea cuspidata Shoemaker, 1926, pp.21–24, figs. 14–15.

Batea cuspidata: Barnard and Karaman, 1991, p. 115, fig. 28B.

Regional diagnosis: Antenna 1, peduncle article 1 with distoventral process; mandibular palp article 2, medial margin with distal setae only; peraeon segment 7 with dorsal process; pleon segments 1–2 with dorsal process; gnathopod 1 slender, with both terminal and marginal setae; gnathopod 2, ischium relatively elongate, slender, much longer than merus, carpus with carpal lobe poorly developed, far underreaching palmar angle, propodus, palmar margin shorter than posterior margin; peraeopod 7, basis not narrowing distally, posterodistal margin convex; telson lobes subacute, inner margins straight to slightly concave.

Distribution: Biscayne Bay, Florida Bay, southeastern Gulf of Mexico between the lower Florida Keys and Cape Sable, Florida (pers. obs.); off Key Largo, Florida (Shoemaker, 1933); Central west Florida Shelf (Ortiz, 1991); Homosassa Islands and Port Richey, Florida (pers. obs.); Cuba (Shoemaker, 1948; Ortiz, 1978, 1991; Ortiz and Lalana, 1996); Caribbean coast of Colombia south of Cartagena (Ortiz and Lemaitre, 1994); St. Thomas, U.S. Virgin Islands (Shoemaker, 1926).

Ecology: *Batea cuspidata* is relatively common in South Florida waters, usually occurring in *Thalassia* or *Halodule* grassbeds or in algae on sandy, shelly or muddy bottoms. It is found in similar habitats on the Caribbean coast of Colombia (Ortiz and Lemaitre, 1994); however, on the Florida west coast it is also found in live bottom areas characterized by limestone outcroppings, corals, and sponges interspersed with patches of sand and shell bottom covered with the green macroalga *Caulerpa* and the seagrass *Halophila* (Joyce and Williams, 1969; Ortiz, 1991). This species occurs at depth ranging from 1 to 49 m.

Remarks: *Batea cuspidata* can be separated from all other species of Florida bateids except *B. carinata* by the presence of 3 dorsal processes on the posterior body segments. Differences between these two species are presented in the **Remarks** section for *B. carinata*. Adult *B. cuspidata* range from 5 to 6 mm in length.

See Shoemaker, 1926 (as *Carinobatea cuspidata*); Ortiz, 1991 (as *C. cuspidata*).

Family Biancolinidae Barnard, 1972

Regional diagnosis: Antenna 2 very short, less than half length of antenna 1; head globular, buccal mass very large relative to size of head; mandible lacking both molar and palp; coxae 1-3 subequal, not becoming shorter posteriorly, coxae 1-2 not reduced; gnathopods 1-2 well-developed, parachelate; gnathopod 2, article 3 not elongate, less than twice as long as wide; peraeopods 5-7 parachelate; urosome segments 1-3 separate.

Florida genera: *Biancolina*

Remarks: Species in this family are small (2-5 mm), cryptic forms that tunnel into the stems of various algae, frequently *Sargassum* species. There are eight known species worldwide, currently all belonging to the genus *Biancolina*; however, Ishimaru (1996) suggests that one species, *B. australis* Nicholls, 1939, differs from the others at the generic level. He also points out the similarity between *B. brassicacephala* Lowry, 1974 from the western Atlantic and *B. mauihina* Barnard, 1970, a Hawaiian species, and considers the separate identity of the two species to be questionable. Lowry (1974) also mentions that *B. brassicacephala*, *B. mauihina* and *B. algicola* Della Valle, 1893, a Mediterranean species, may be conspecific; Ishimaru (1996) considers *B. algicola* to be distinct.

Genus *Biancolina* Della Valle, 1893 (Volume 1, Figure 51)

Regional diagnosis: That of the family.

Florida species: *B. brassicacephala*

Remarks: Although *Biancolina brassicacephala* is the only species of *Biancolina* that has been reported from Florida waters, a second species, *B. lowryi*, was described from the northeastern coast of Cuba by Ortiz and Lalana (1996) and could potentially occur in Florida as well. This species differs from *B. brassicacephala* in the presence of dark pigment patches on the basis of peraeopods 3-4 and by the absence of the large, striated spine on the "palm" of the propodus of peraeopods 5-7, adjacent to the insertion of the dactyl. *Biancolina brassicacephala* lacks pigmentation and has the large, striated spine on the propodus of P5-7, although this spine may be folded flat against the propodal margin and thus difficult to see.

***Biancolina brassicacephala* Lowry, 1974**

Biancolina brassicacephala Lowry, 1974, pp. 71-78, figs. 1-35.

Regional diagnosis: Lower lip, inner lobes not free, fused along most of their length; peraeopods 3-4, basis without dark pigment patches; peraeopods 5-7, propodus with large, striated spine on “palm”, adjacent to insertion of dactyl.

Distribution: Gulf Stream off North and South Carolina, Sargasso Sea (Lowry, 1974); Sapelo Island, Georgia (pers. obs.); eastern Gulf of Mexico southwest of Tampa Bay, Florida Middle Ground (Steele and Collard, 1981); Horn Island, Mississippi (pers. obs.); Boca Chica Beach, south of Port Isabel, Texas (pers. obs.).

Ecology: This species burrows into the stems of *Sargassum natans* and *S. fluitans* (Lowry, 1974; Steele and Collard, 1981) and is common in pelagic rafts of these two species.

Remarks: Although the actual water depths in the areas where *B. brassicacephala* has been found is frequently quite deep (e.g. 27-96 m, Steele and Collard, 1981) and outside the range of depths generally considered for this guide, the algae in which this species lives is floating at the surface and often washes in to shore on both the east and west coasts of Florida. As a consequence, *B. brassicacephala* is very likely to be found in shallower waters as well. It has, in fact, been found in very shallow water (<1 m) off southern Texas (pers. obs.).

Males of *B. brassicacephala* are very similar to females, but may be distinguished by their somewhat smaller size, the presence of penes, and the modified outer rami of uropods 1-2. In the female, the outer ramus of uropods 1-2 is slender, rod-like and approximately half the length of the inner ramus, with a simple terminal seta. However, in the male, the outer ramus of uropod 1 is very stout, tapering distally and tipped with a stout, curved spine that extends beyond the tip of the inner ramus. The outer ramus of uropod 2 is also somewhat stouter than in the female and tipped with a strong spine that extends to or slightly beyond the tip of the inner ramus. These modifications are similar to those illustrated for *B. mauihina* by Barnard (1970) and *B. japonica* by Ishimaru (1996) and are especially close to those of the former species, reinforcing the possibility that the two are conspecific. The adult size in this species is 2-3 mm.

See Lowry, 1974; Steele and Collard, 1981; Ishimaru, 1996.

Family Cheluridae Allman, 1847

Regional diagnosis: Antenna 1, accessory flagellum present; head globular; mandible, palp3-articulate, articles stout; pleon segment 3 with posterodorsal teeth or processes; urosome segments 1-3 fused; uropod 2, peduncle broadly expanded, longer than rami; uropod 3 elongate, extending well beyond uropods 1-2.

Florida genera: *Chelura*, *Tropichelura*

Remarks: Members of this family are wood-raspers and usually live in association with various species of wood-boring isopods whose burrows they take over and enlarge, forming interconnecting galleries (Barnard, 1955, 1959; Ortiz, 1976; Thomas, 1979). They occur in submerged timbers and decaying red mangrove prop roots (Thomas, 1979).

KEY TO FLORIDA GENERA OF CHELURIDAE

1. < Antenna 2, peduncle and first flagellar article stout; gnathopod 1 parachelate, propodus unenlarged; pleon segment 3 with elongate, slightly curved posterodorsal process; uropod 2, peduncle deeper than long; uropod 3 biramous, inner ramus reduced, but distinct, outer ramus of male slender, tapering distally, extremely elongate; telson short, tip subacute, length subequal to width at base, at most barely extending beyond distal end of uropod 3 peduncle ..
..... *Chelura*

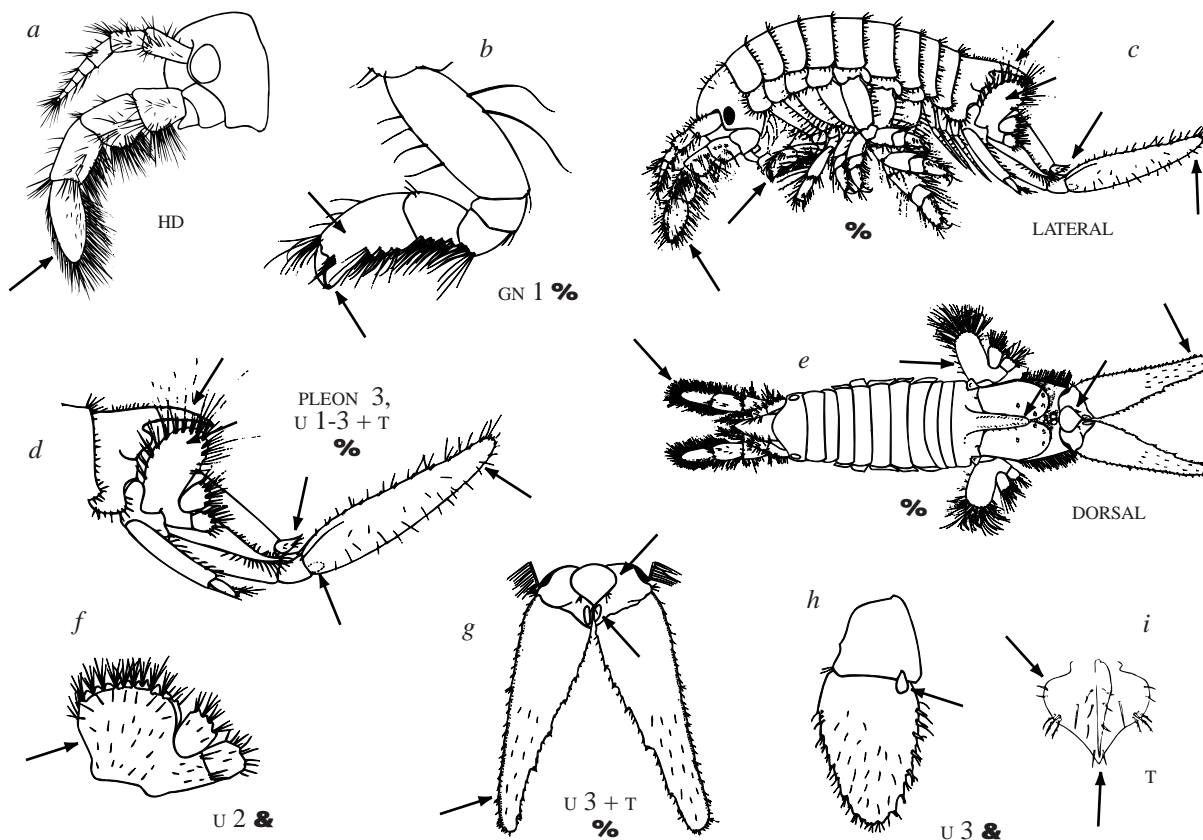


Figure 391.

< Antenna 2, peduncle and first flagellar article slender; gnathopod 1 subchelate, propodus enlarged; pleon segment 3 with short, straight subtriangular posterodorsal process; uropod 2, peduncle longer than deep; uropod 3 uniramous, inner ramus lacking, outer ramus of male stout, subovate, not extremely elongate; telson long, tip narrowly rounded, length one and one half times width at base, extending well beyond distal end of uropod 3 peduncle.....
 *Tropichelura*

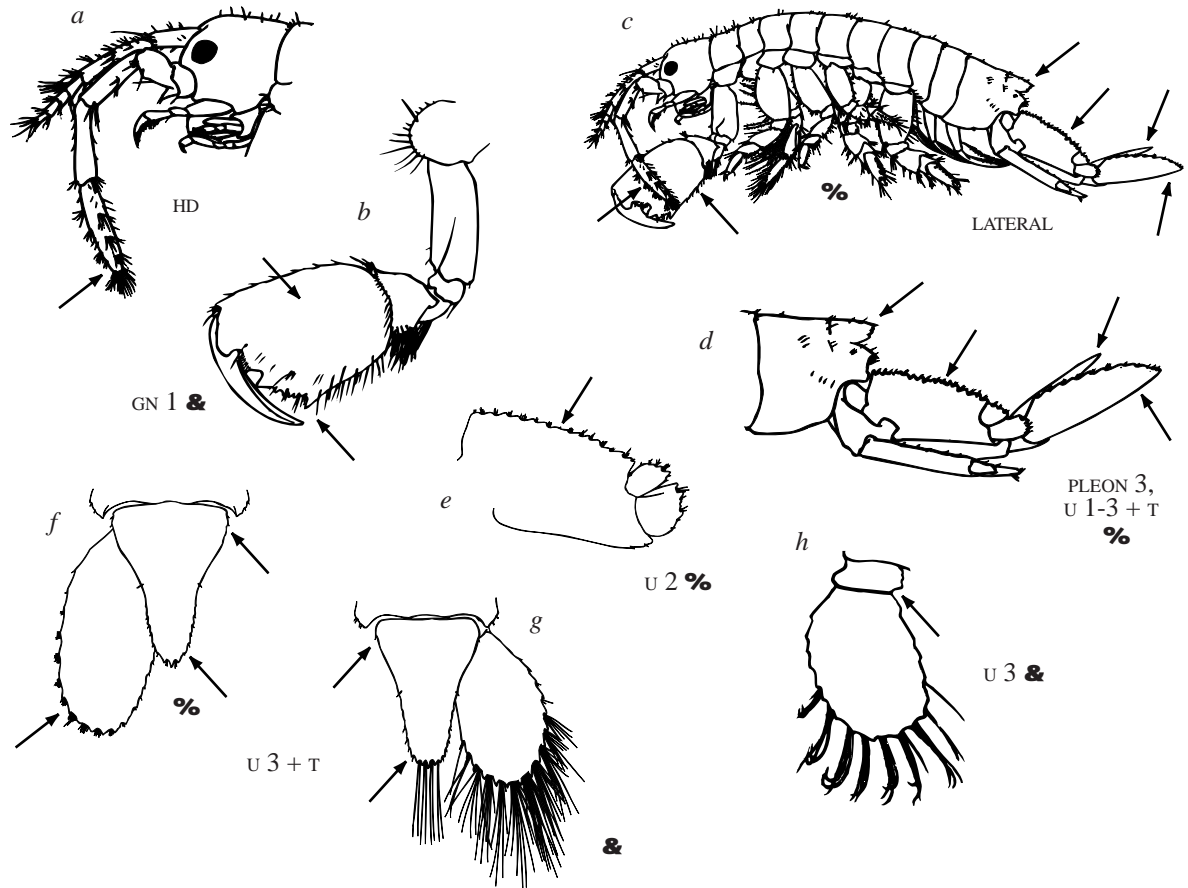


Figure 392.

Genus *Chelura* Philippi, 1839

Regional diagnosis: Antenna 2, peduncle and first flagellar article stout; gnathopod 1 parachelate, propodus unenlarged; pleon segment 3 with elongate, slightly curved posterodorsal process; uropod 2, peduncle deeper than long; uropod 3 biramous, inner ramus reduced, but distinct, outer ramus of male slender, tapering distally, extremely elongate; telson short, tip subacute, length subequal to width at base, barely extending beyond distal end of uropod 3 peduncle.

Florida species: *C. terebrans*

Chelura terebrans Philippi, 1839 (Figure 391)

Chelura terebrans Philippi, 1839, pp. 120-121, pl. 3, fig. 5.

Regional diagnosis: That of the genus.

Distribution: Widespread worldwide in cool temperate waters of both the northern and southern hemispheres; found along the east coast of the United States from Cape Cod to north Florida (Bousfield, 1973); Bermuda (Kunkel (1910)).

Ecology: Members of this species take over and enlarge burrows formed in submerged wood by the wood-boring isopods *Limnoria* spp.. They are found from the low water line to depths of several meters and are often associated with man-made structures such as pilings or wooden boats.

Remarks: Males and females of *C. terebrans* are similar, but there are some differences. The posterodorsal process on pleon segment 3 is shorter in the female than in the male and the outer ramus of uropod 3 is shorter and subovate in the female, versus longer and tapering distally in the male. In addition, the setation on the peduncle and rami of uropod 2 is much longer and somewhat denser in the male than it is in the female. The length of adult *C. terebrans* ranges from 3 to 6 mm and the color of live material is described by Barnard (1950) as “pinkish”.

Although this species has been reported from as far south as northeastern Florida (Bousfield, 1973), it is apparently rare in Florida waters. Further south, in the Florida Keys, it is replaced by *Tropichelura gomezi*, a tropical species which exhibits a similar wood-boring lifestyle.

See Kunkel, 1910; Barnard, 1950, 1955, 1959; Bousfield, 1973; Lincoln, 1979.

Genus *Tropichelura* Barnard, 1959

Regional diagnosis: Antenna 2, peduncle and first flagellar article slender; gnathopod 1 subchelate, propodus enlarged; pleon segment 3 with short, straight subtriangular posterodorsal process; uropod 2, peduncle longer than deep; uropod 3 uniramous, inner ramus lacking, outer ramus of male stout, subovate, not extremely elongate; telson long, tip narrowly rounded, length one and one half times width at base, extending well beyond distal end of uropod 3 peduncle.

Florida species: *T. gomezi*

Tropichelura gomezi Ortiz, 1976 (Figure 392)

Tropichelura gomezi Ortiz, 1976, pp. 22-23, figs. 1-2.

Regional diagnosis: That of the genus.

Distribution: Puerto Rico, Florida Keys, Dry Tortugas, Florida (Thomas, 1979); southwestern Cuba (Ortiz, 1976); Carrie Bow Cay, Belize (Thomas, 1979).

Ecology: This species occurs in submerged wood, taking over and enlarging the burrows of the wood-boring isopods *Limnoria platycauda*, *Limnoria simulata* and *Paralimnoria andrewsi* to form large, unroofed galleries (Ortiz, 1976; Thomas, 1978). It is generally found at depths of less than 3 m in protected coastal areas with stable salinity regimes (Thomas, 1979).

Remarks: As in *Chelura terebrans*, sexual dimorphism is not pronounced in *T. gomezi*, but there are some morphological differences between males and females. Although gnathopod 1 of both male and female *T. gomezi* is enlarged, the palmar margin in the female is less strongly sculptured than that of the male and the propodus is slightly smaller. In addition, uropods 1-3 of the female have long, dense marginal setae on the peduncle and rami (short, sparse setae in the male) and the ramus of uropod 3 is shorter in the female than in the male, only extending beyond the telson by one third of its length (extends beyond the telson by one half its length in the male). Also, the terminal setae on the telson are elongate in the female (very short in the male). Adult size in *T. gomezi* ranges from 8 to 12 mm and Ortiz (1976) mentions that the color of fresh material is yellowish orange.

See Ortiz, 1976; Thomas, 1979.

Family Colomastigidae Chevreux, 1899

Regional diagnosis: Antennae 1-2, peduncle articles stout, flagellum reduced; 1 pair of eyes present, each eye composed many ommatidia; body subcylindrical; coxae 1-4 wider than deep; gnathopod 1 simple or vestigial, smaller than gnathopod 2; gnathopod 2 subchelate, ischium not elongate, less than twice as long as wide; peraeopods 3-4, dactyl stout, short, much shorter than propodus; peraeopod 7, basis distinctly shorter in length than remaining articles combined; urosome segments 2 and 3 fused; telson entire.

Florida genera: *Colomastix*

Remarks: Members of the family Colomastigidae are generally small, cryptic species that are either commensals inhabiting the canals of marine sponges (*Colomastix*) or plant dwellers living among algal holdfasts or seagrasses (*Yulumara*). Some species of *Colomastix* are specific to one (e.g. *C. cornuticauda* in the sponge *Aplysina fistularis*) or a few (e.g. *C. irciniae* in sponges of the genus *Ircinia*) host sponges, whereas others occur in a wide variety of hosts (e.g. *C. janiceae* in at least 21 different host taxa) (LeCroy, 1995).

Genus *Colomastix* Grube, 1861

Regional diagnosis: That of the family.

Florida species: *C. bousfieldi*, *C. falcirama*, *C. gibbosa*, *C. halichondriae*, *C. heardi*, *C. irciniae*, *C. janiceae*, *C. tridentata*

Remarks: Several additional species of *Colomastix* are known to occur in deeper waters (> 10 m) off the coast of Florida. These species, which include *C. camura* LeCroy, 1995, *C. cornuticauda* LeCroy, 1995 and *C. denticornis* LeCroy, 1995, are covered in detail in LeCroy (1995) and keys to all known Florida species, including the offshore taxa, are presented in that paper.

Considerable developmental variation occurs in members of the genus *Colomastix* and is more pronounced in males than in females, resulting in potential problems in identifying subadult male specimens. Very small subadult males are indistinguishable from subadult females or juveniles except for the presence of penes at the base of peraeopod 7. As the males develop, depending on the species, any or all of the following changes in morphology may occur: 1) an increase in the head length:width ratio; 2) degeneration of the mouthparts; 3) reduction of gnathopod 1; 4) enlargement of gnathopod 2; 5) development of a species-specific adult morphology of the inner ramus of uropod 1; 6) changes in the morphology of uropod 3; and 7) elongation and enlargement of the telson. These changes are gradual and somewhat independent of each other, and, as a result, subadult males of the same species may appear quite different from one another, depending upon the developmental stages exhibited by the various appendages. See LeCroy (1995) for a more complete discussion of morphological variability in *Colomastix* species.

Because of the strong sexual dimorphism exhibited by most members of the genus *Colomastix* and the lack of consistent groupings based on combined male and female specific characters, separate keys are presented below for males and females. In general, small subadult males and juveniles will key out more easily in the key to females; larger, more well-developed subadult males may be identified in the key to males, allowing for some appendages to be somewhat less well-developed than indicated for adults.

KEY TO FLORIDA SPECIES OF *COLOMASTIX* - MALES

1. < Head length distinctly less than that of first two peraeon segments combined; mandibles, maxillae and outer plates of maxilliped not reduced; gnathopod 1 elongate, simple 2

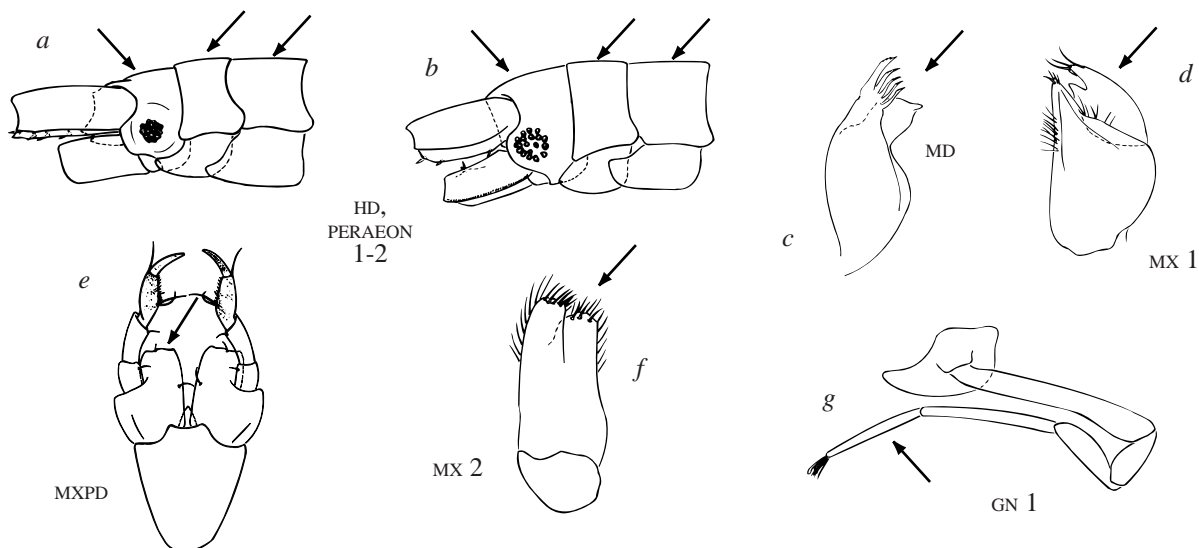


Figure 393.

- < Head length subequal to or greater than that of first two peraeon segments combined; mandibles, maxillae and outer plates of maxilliped reduced; gnathopod 1 vestigial 3

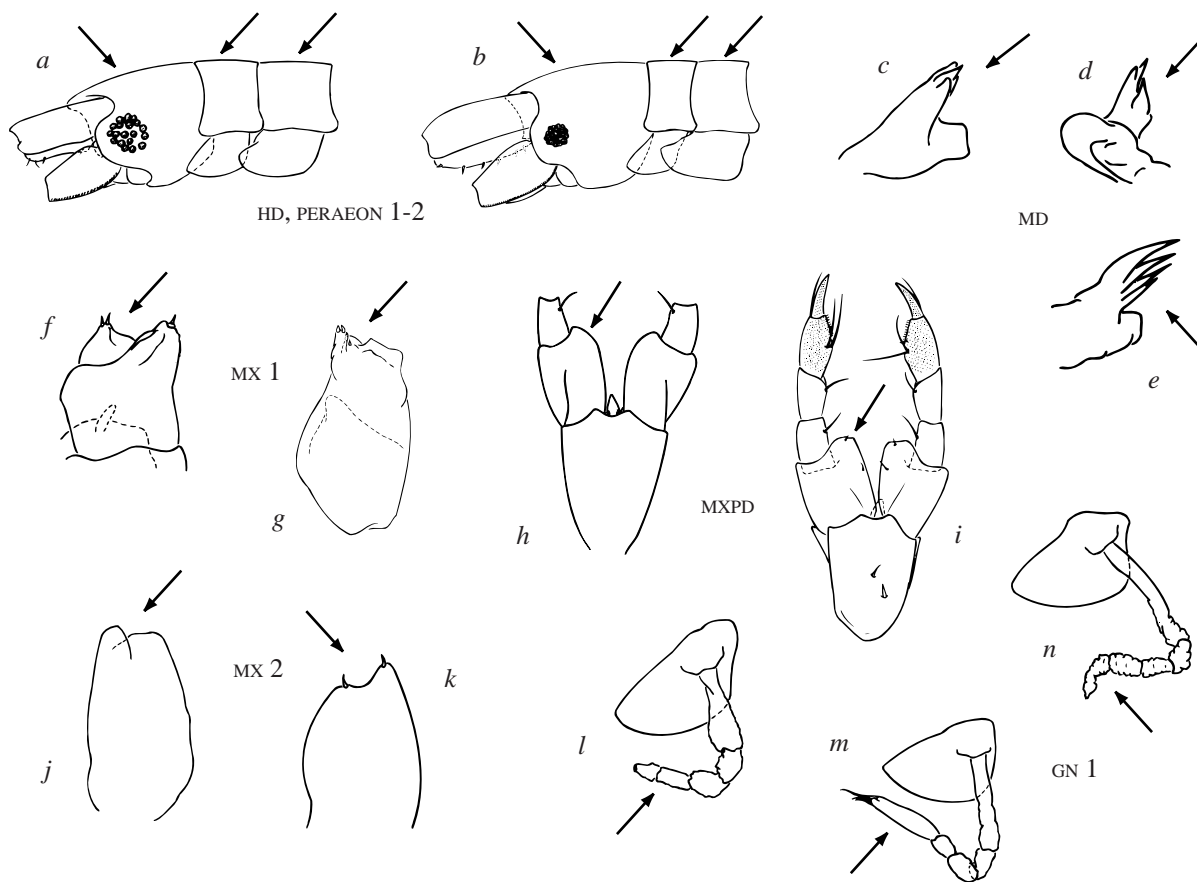


Figure 394.

2. < Interantennal plate with anteroventral angle extending far beyond anterodorsal angle; antenna 2, peduncle articles 3-5 lacking triangular spinules on ventrolateral margins; maxilliped, basal shell expanded to form ventral keel; gnathopod 2, palm bidentate; pleopods 1-3, inner ramus 3-articulate; urosome segment 1 elongate; uropod 1, rami subequal in length, inner ramus not expanded proximally, margins subparallel, tip subacute, with dorsal indentation; uropod 3, inner ramus lanceolate, margins evenly tapering distally; telson linguiform, flat dorsally, tip emarginate *Colomastix halichondriae*

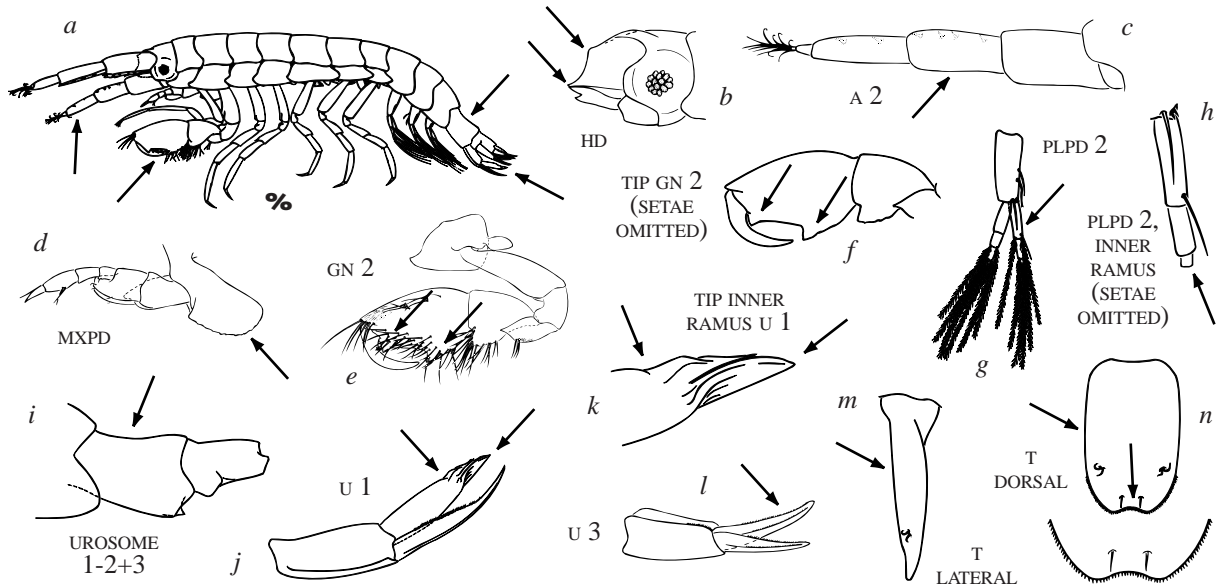


Figure 395.

- < Interantennal plate with anterodorsal and anteroventral angles extending forward subequally; antenna 2, peduncle articles 3-5 with triangular spinules on ventrolateral margins; maxilliped, basal shell not expanded to form ventral keel; gnathopod 2, palm tridentate; pleopods 1-3, inner ramus 4-articulate; urosome segment 1 not elongate; uropod 1, outer ramus at most one half length of inner, inner ramus expanded proximally, margins converging distally, tip minutely bifurcate, without dorsal indentation; uropod 3, inner ramus broadly expanded proximally, medial margin sigmoid, abruptly tapering distally; telson subovate, slightly concave dorsally, tip minutely trilobed *Colomastix ircinia*

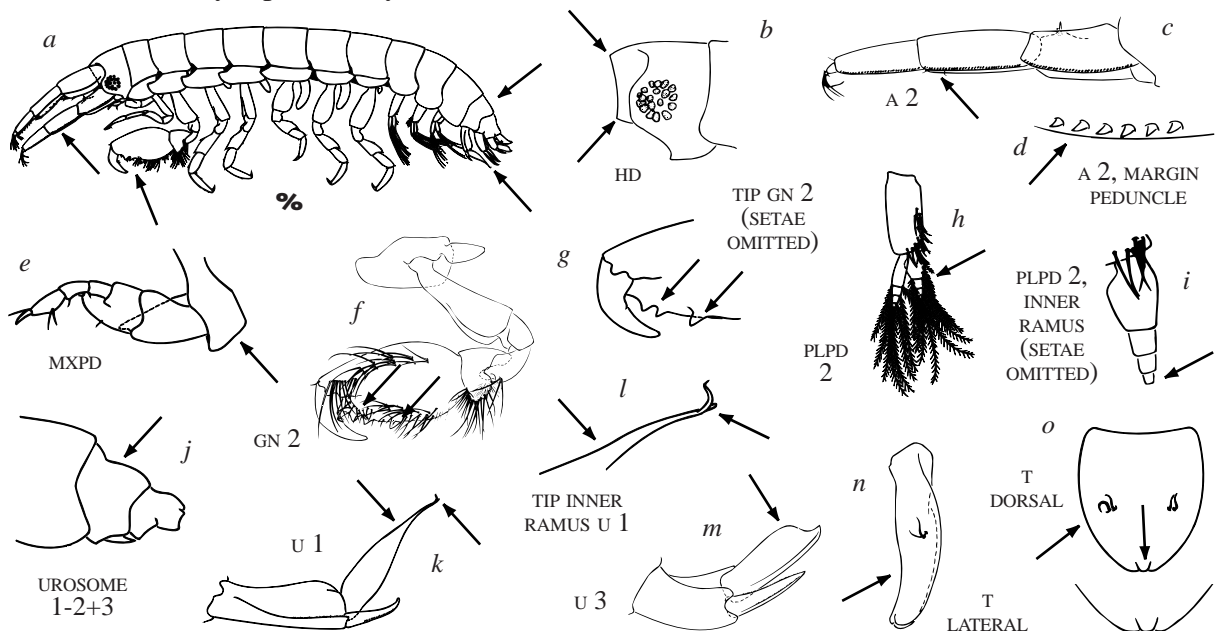


Figure 396.

3. < Uropod 1, inner ramus with subterminal dorsal notch, tip rounded, slightly to strongly bulbous..... 4

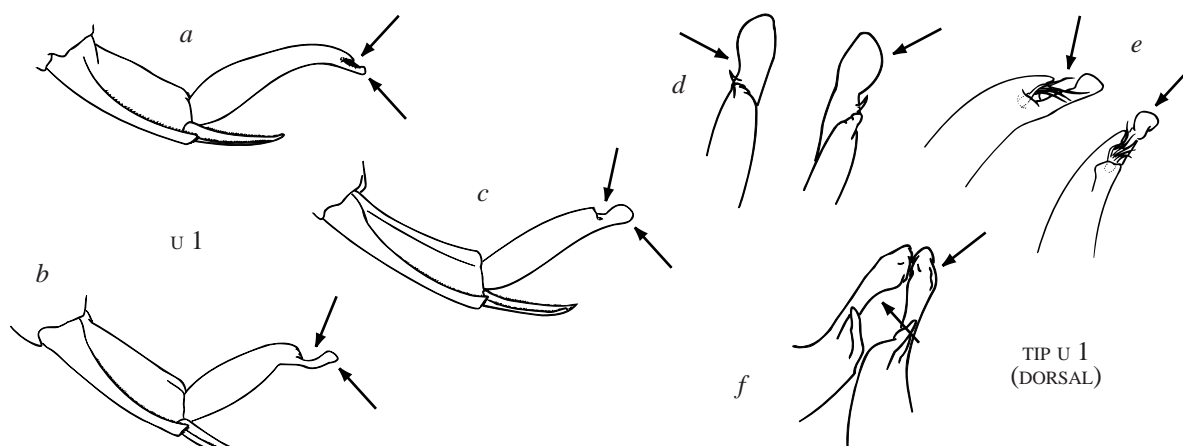


Figure 397.

- < Uropod 1, inner ramus without subterminal dorsal notch, tip strongly or minutely bifurcate . 6

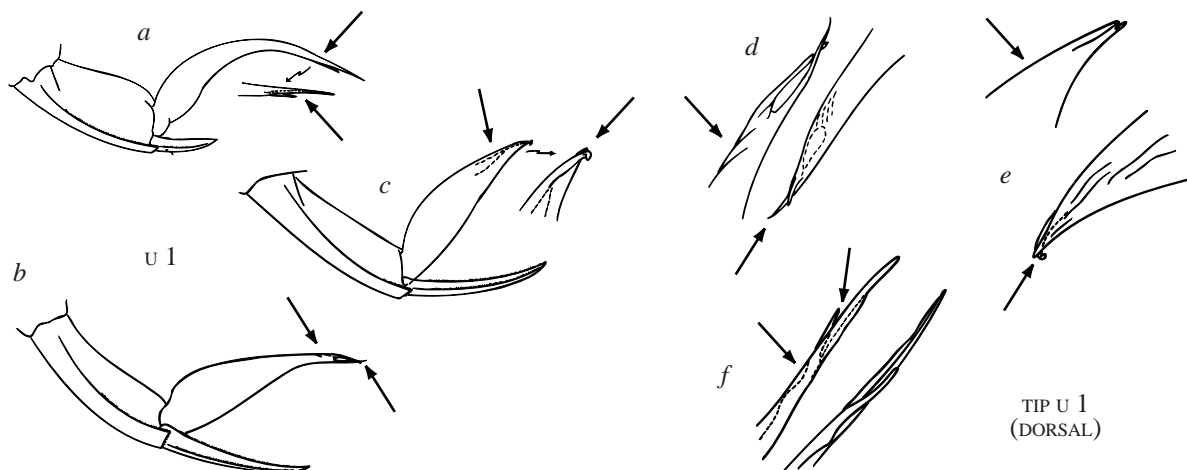


Figure 398.

4. < Gnathopod 2, palm deeply excavate, with long thumb-like process at palmar angle, dactyl with large central process on posterior margin; pereopods 3-7, propodus without spines on flexor margin; coxal plates 6-7 narrowly produced posteriorly, ventral margin strongly constricted in posterior one third; uropod 1, inner ramus with ventral margin nearly straight
 *Colomastix gibbosa*

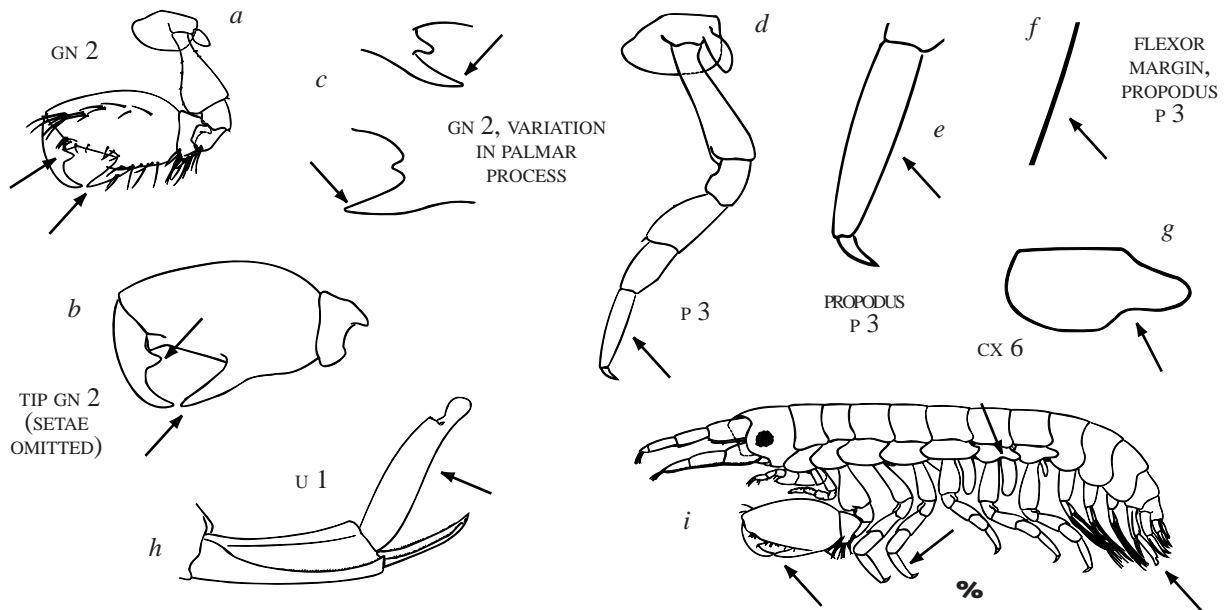


Figure 399.

- < Gnathopod 2, palm not deeply excavate, with 3 subequal triangular processes, dactyl without large central process on posterior margin; pereopods 3-7, propodus with spines on flexor margin; coxal plates 6-7 not narrowly produced posteriorly, ventral margin not strongly constricted in posterior one third; uropod 1, inner ramus with ventral margin concave or angled sharply downward distally 5

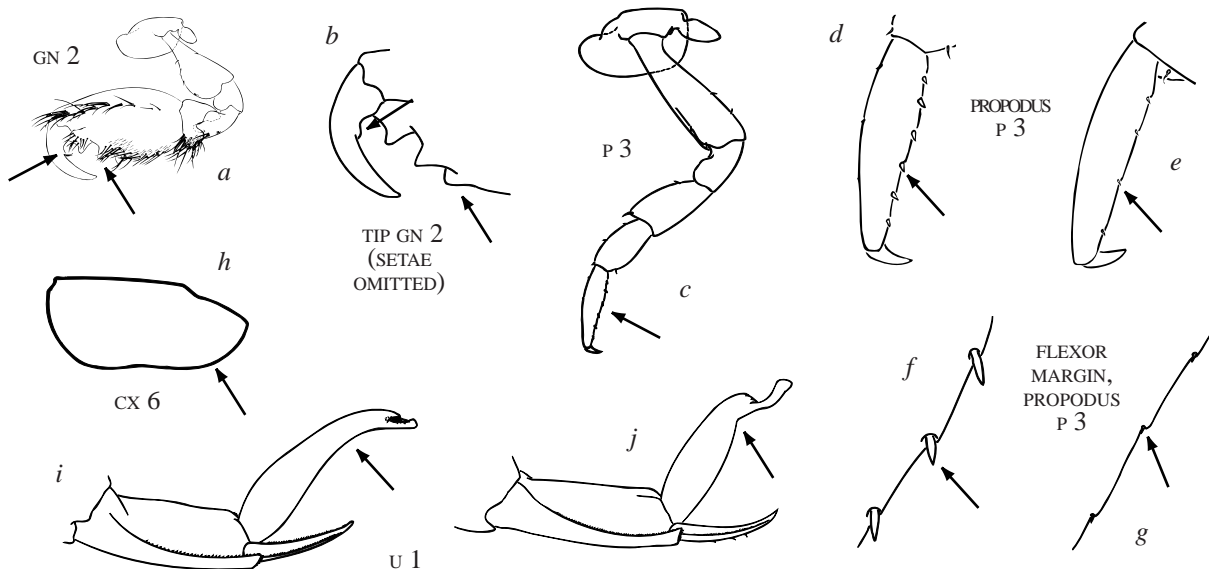


Figure 400.

5. < Rostrum subacute; interantennal plate with anterodorsal angle projecting beyond anterior margin as a small process; antenna 1, peduncle articles 1-2 with spines on ventromedial margin unequal in size, distalmost spine largest; pereopods 3-7, propodus with small, poorly developed spines on flexor margin; uropod 1, inner ramus with compound seta inserted into subterminal dorsal notch, ventral margin smoothly concave *Colomastix bousfieldi*

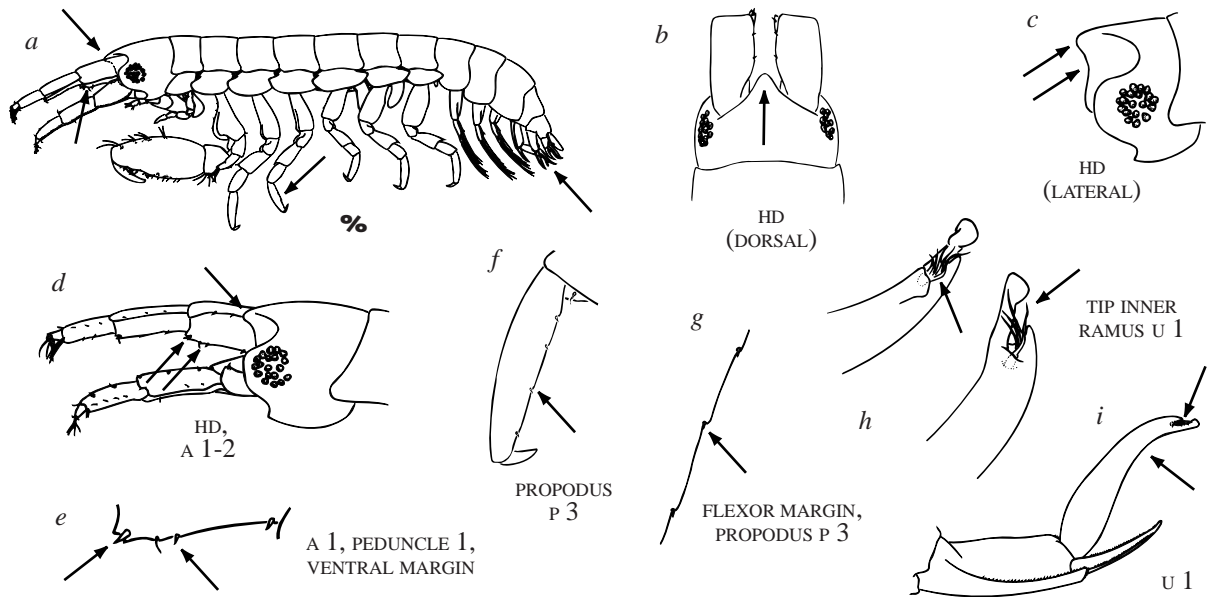


Figure 401.

- < Rostrum acute; interantennal plate with anterodorsal angle not projecting beyond anterior margin as a small process; antenna 1, peduncle articles 1-2 with spines on ventromedial margin subequal in size; pereopods 3-7, propodus with well-developed spines on flexor margin; uropod 1, inner ramus without compound seta inserted into subterminal dorsal notch, ventral margin angled sharply downward distally *Colomastix heardi*

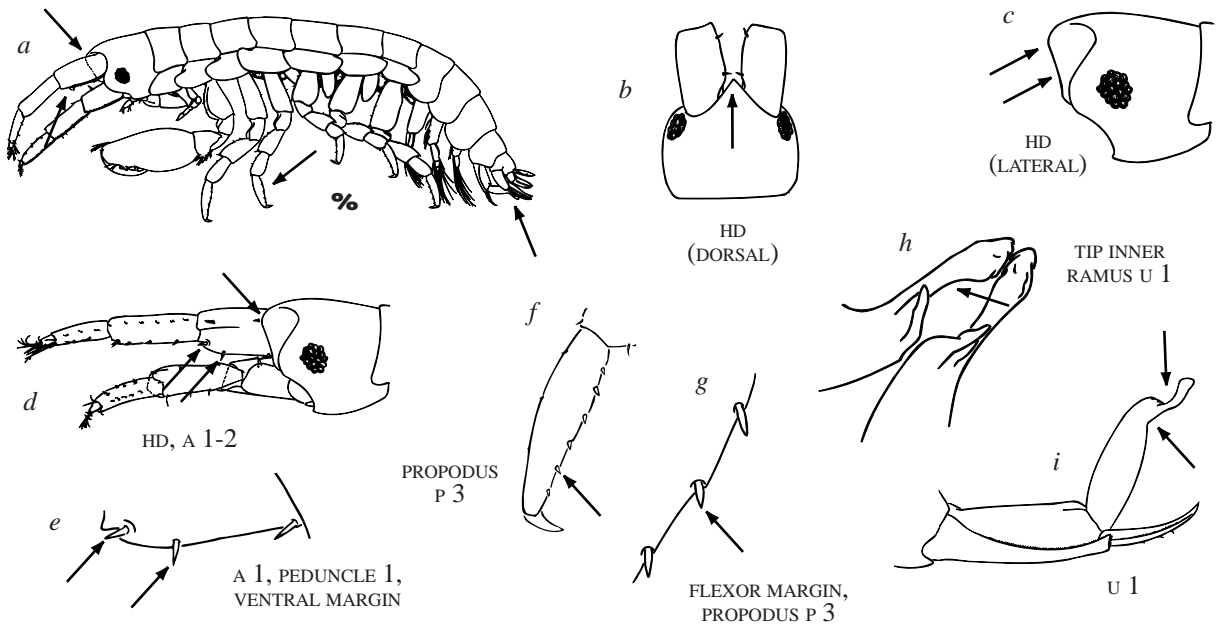


Figure 402.

6. <Rostrum rounded; antenna 1, peduncle article 1 with 2 small spines on dorsomedial margin; antenna 2, peduncle article 3 with well-developed distomedial process; uropod 1, outer ramus one fourth length of inner, inner ramus falcate, ventral margin deeply concave, tip strongly bifurcate, dorsal branch of bifurcation 3-4 times length of ventral; uropod 2, tips of rami extending well beyond those of uropod 3; telson margins entire, tip not upturned.....
 *Colomastix falcirama*

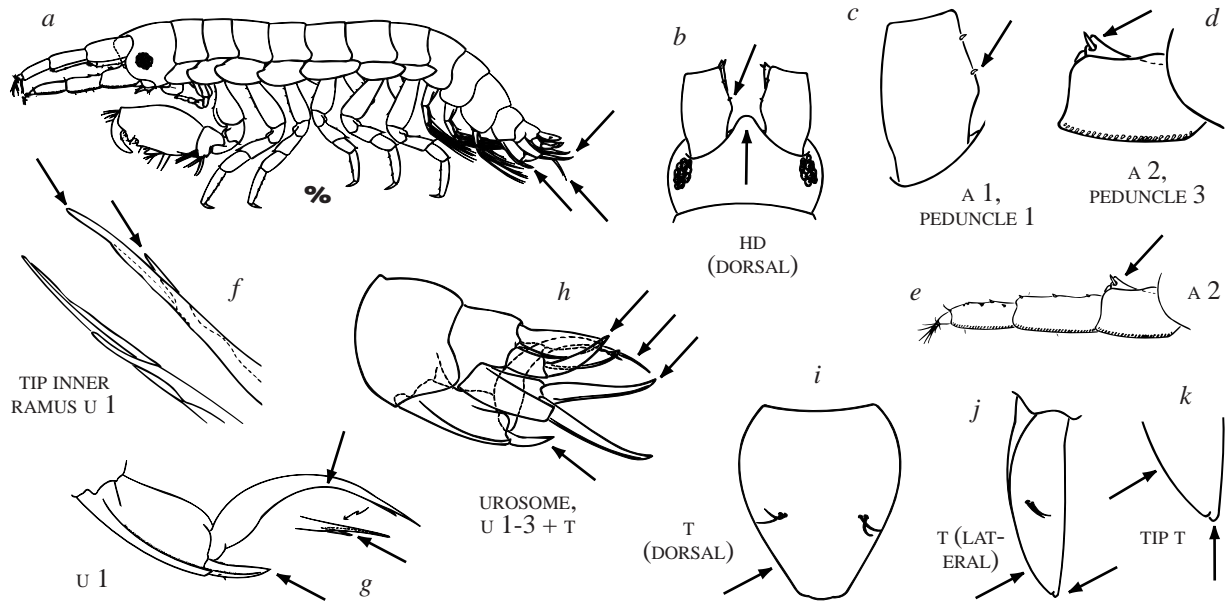


Figure 403.

- < Rostrum acute; antenna 1, peduncle article 1 with 4-5 large spines on dorsomedial margin; antenna 2, peduncle article 3 with distomedial process weak or lacking; uropod 1, outer ramus more than one half length of inner, inner ramus not falcate, ventral margin straight to slightly concave, tip minutely bifurcate, branches of bifurcation subequal or slightly unequal; uropod 2, tips of rami extending subequally with those of uropod 3; telson margins castellate distally, tip slightly upturned 7

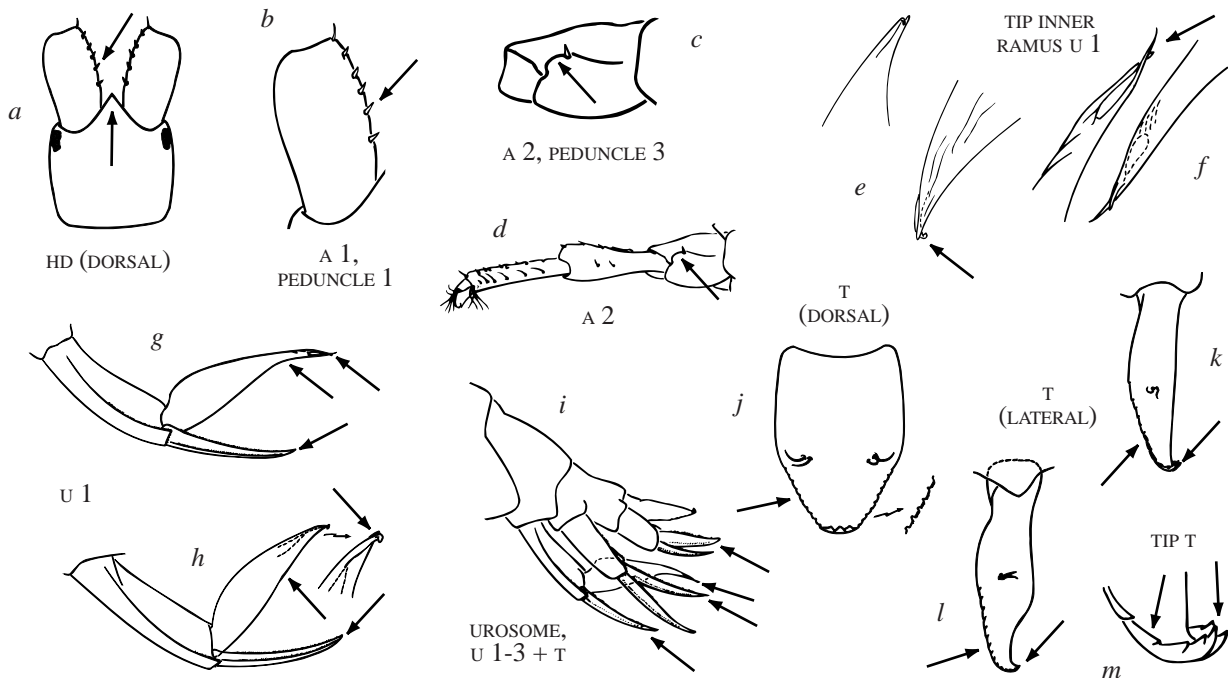


Figure 404.

7. < Interantennal plate with anterodorsal and anteroventral angles extending forward subequally; peraeopods 3-7, propodus with spines restricted to proximal two thirds of flexor margin; uropod 1, inner ramus lacking subterminal lateral concavity, tip with one branch of bifurcation hooked; telson convex dorsally, tip bidentate *Colomastix janiceae*

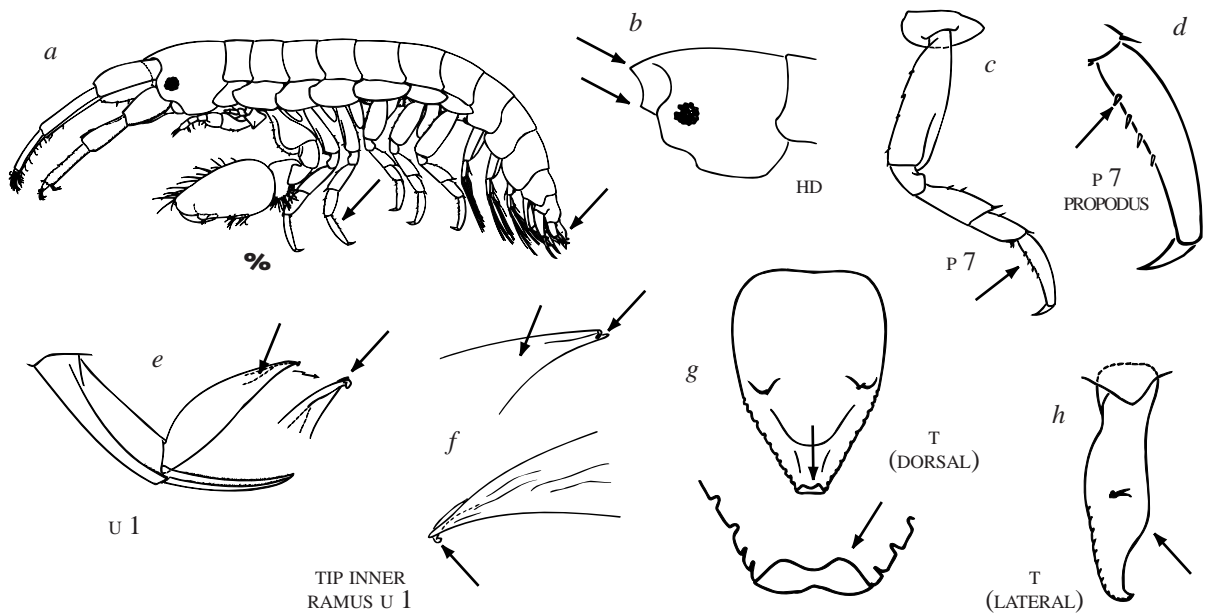


Figure 405.

- < Interantennal plate with anteroventral angle extending slightly beyond anterodorsal angle; peraeopods 3-7, propodus with spines inserted along entire length of flexor margin; uropod 1, inner ramus with subterminal lateral concavity, tip with both branches of bifurcation straight; telson flat dorsally, tip tridentate *Colomastix tridentata*

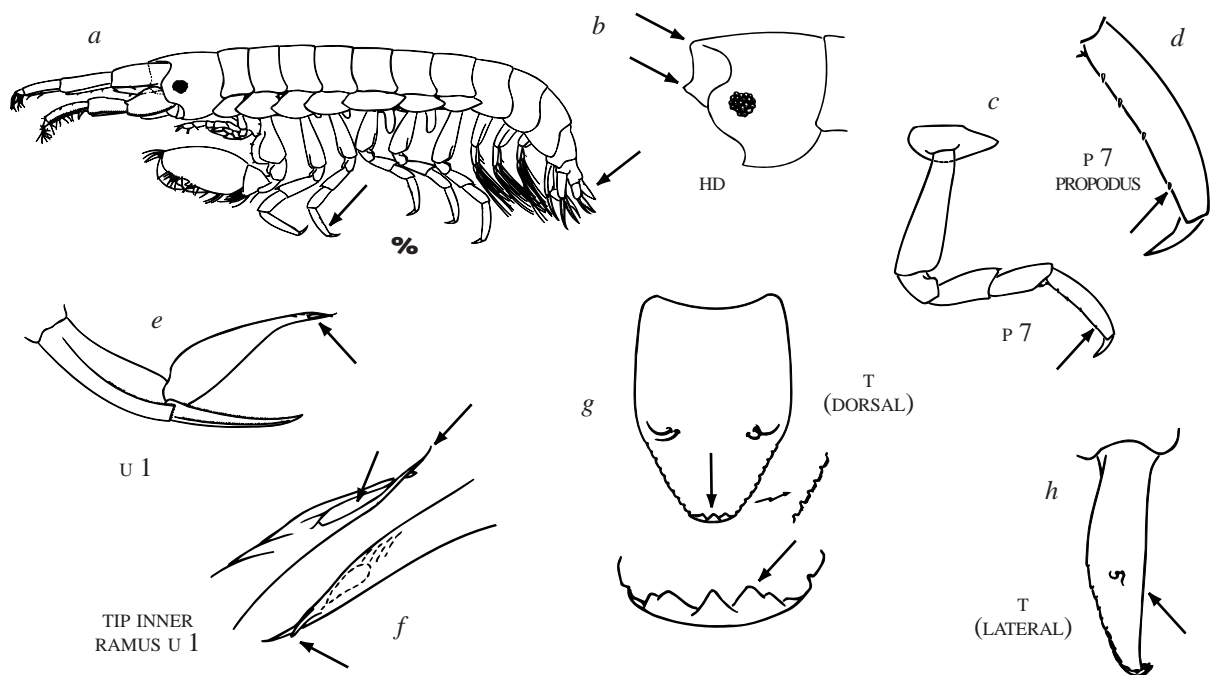


Figure 406.

KEY TO FLORIDA SPECIES OF *COLOMASTIX* - FEMALES

1. < Uropod 3, inner ramus shorter than outer, wedge-shaped, ventral margin densely setose 2

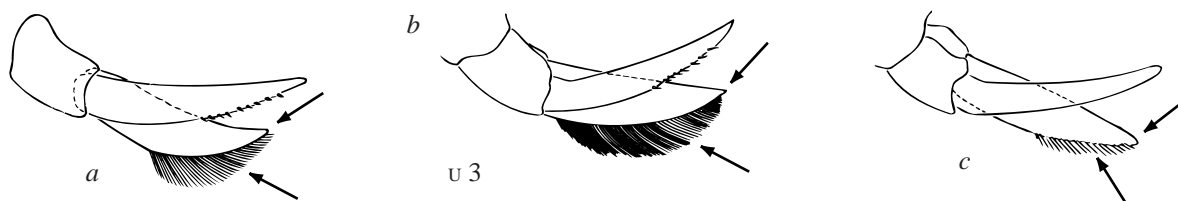


Figure 407.

- < Uropod 3, inner ramus subequal to or longer than outer, lanceolate or expanded medially at base, ventral margin lacking setae 4

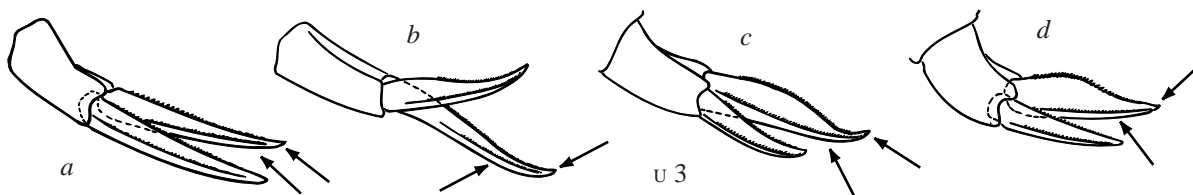


Figure 408.

2. < Rostrum acute; interantennal plate, anteroventral angle acute in ventral view; antenna 1, peduncle article 1 with subequal ventromedial spines; antenna 2, peduncle article 3 without process adjacent to distomedial spine *Colomastix heardi*

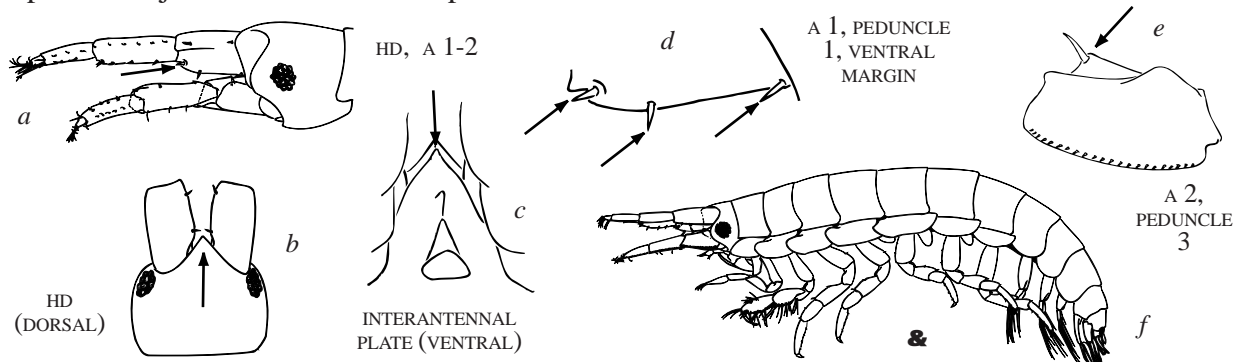


Figure 409.

- < Rostrum rounded or subacute; interantennal plate, anteroventral angle broadly rounded in ventral view; antenna 1, peduncle article 1 with unequal ventromedial spines, distalmost spine largest; antenna 2, peduncle article 3 with process adjacent to distomedial spine 3

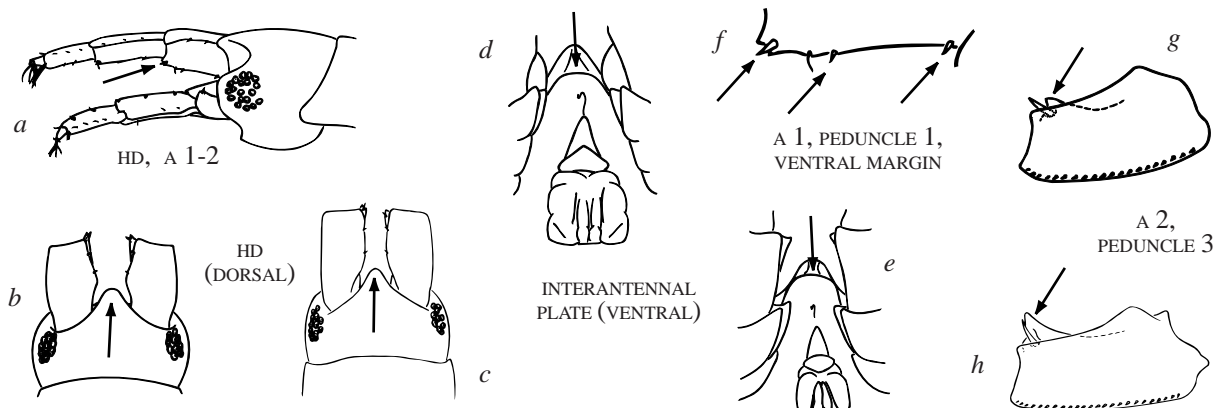


Figure 410.

3. < Rostrum subacute; interantennal plate with anterodorsal angle projecting slightly beyond anteroventral angle; antenna 2, peduncle article 3 with distomedial process shorter than adjacent spine; pereopods 3-7, flexor margin of propodus with 3-4 small, poorly developed spines *Colomastix bousfieldi*

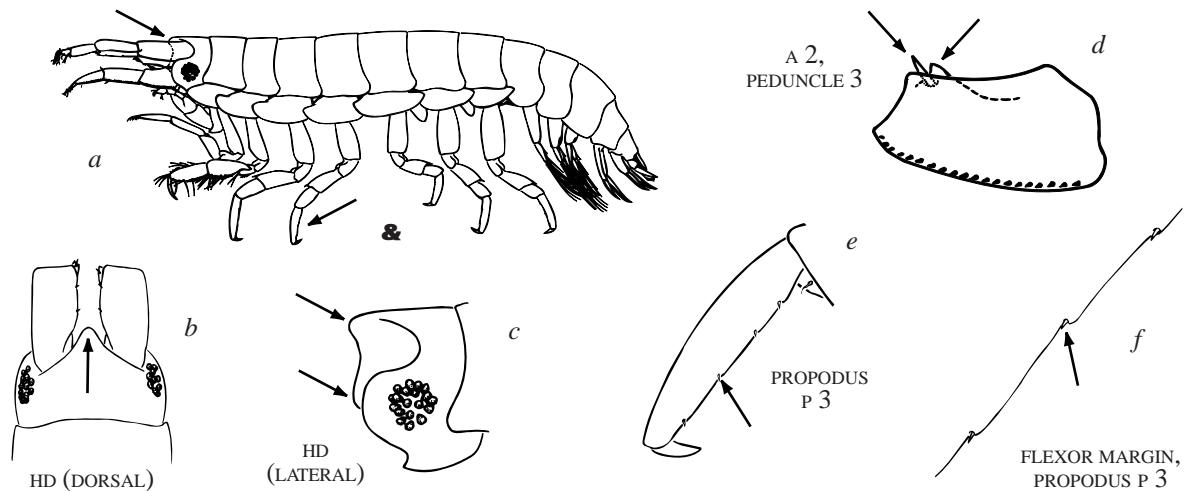


Figure 411.

- < Rostrum rounded; interantennal plate with anterodorsal and anteroventral angles projecting forward subequally; antenna 2, peduncle article 3 with distomedial process subequal in length to adjacent spine; pereopods 3-7, flexor margin of propodus with 3-5 well-developed spines *Colomastix falcirama*

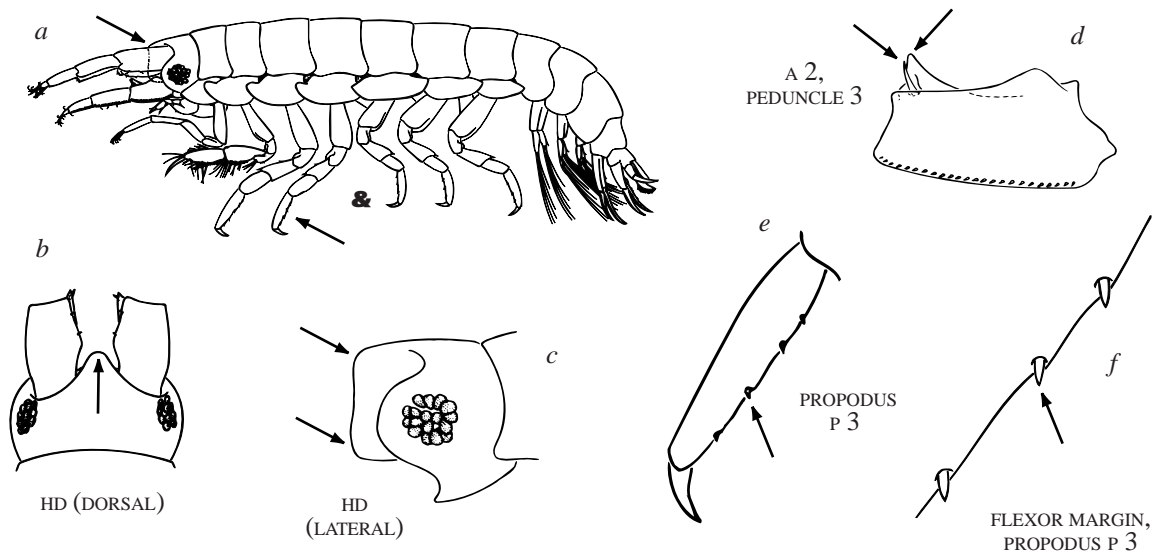


Figure 412.

4. < Interantennal plate with anteroventral angle projecting far beyond anterodorsal angle; maxilliped, basal shell expanded to form ventral keel; gnathopod 2, insertion of dactyl subterminal; peraeopod articles elongate, slender; peraeopods 3-7, propodus usually with single, centrally placed spine on flexor margin (if more than 1 spine present, then central spine largest); pleopods 1-3, inner ramus 3-articulate; urosome segment 1 elongate; telson linguiform
 *Colomastix halichondriae*

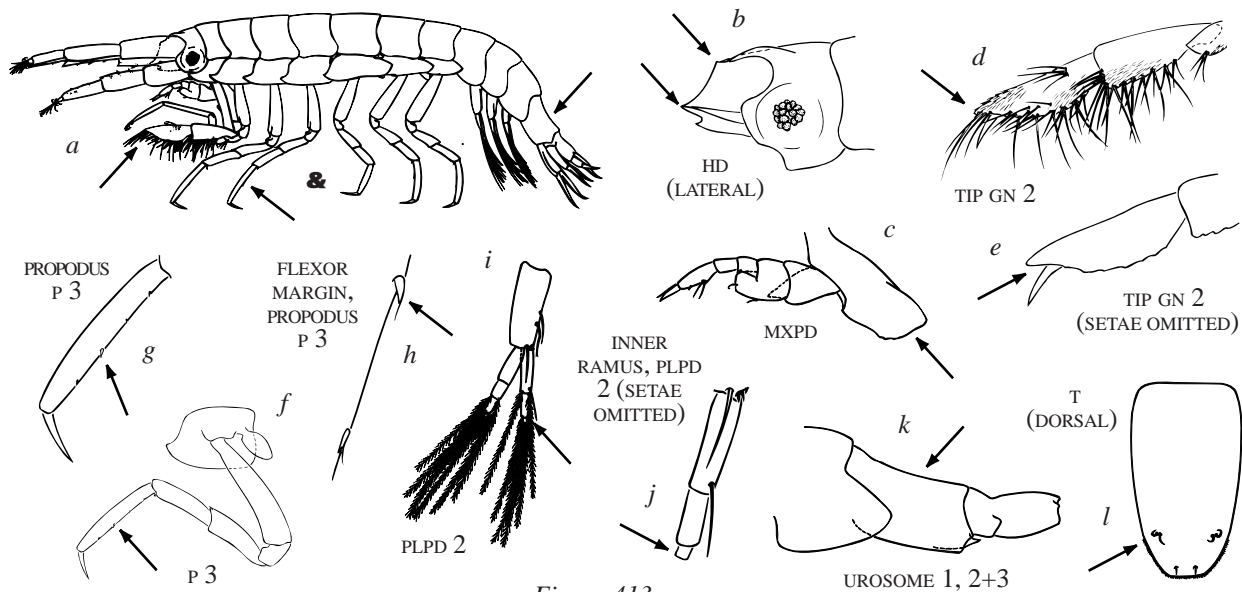


Figure 413.

- < Interantennal plate with anteroventral angle not projecting far beyond anterodorsal angle (may project slightly); maxilliped, basal shell not expanded to form ventral keel; gnathopod 2, insertion of dactyl terminal; peraeopod articles not elongate; peraeopods 3-7, propodus without or with more than 1 spine on flexor margin (if present, spines similar in size); pleopods 1-3, inner ramus 4-articulate; urosome segment 1 not elongate; telson subtriangular 5

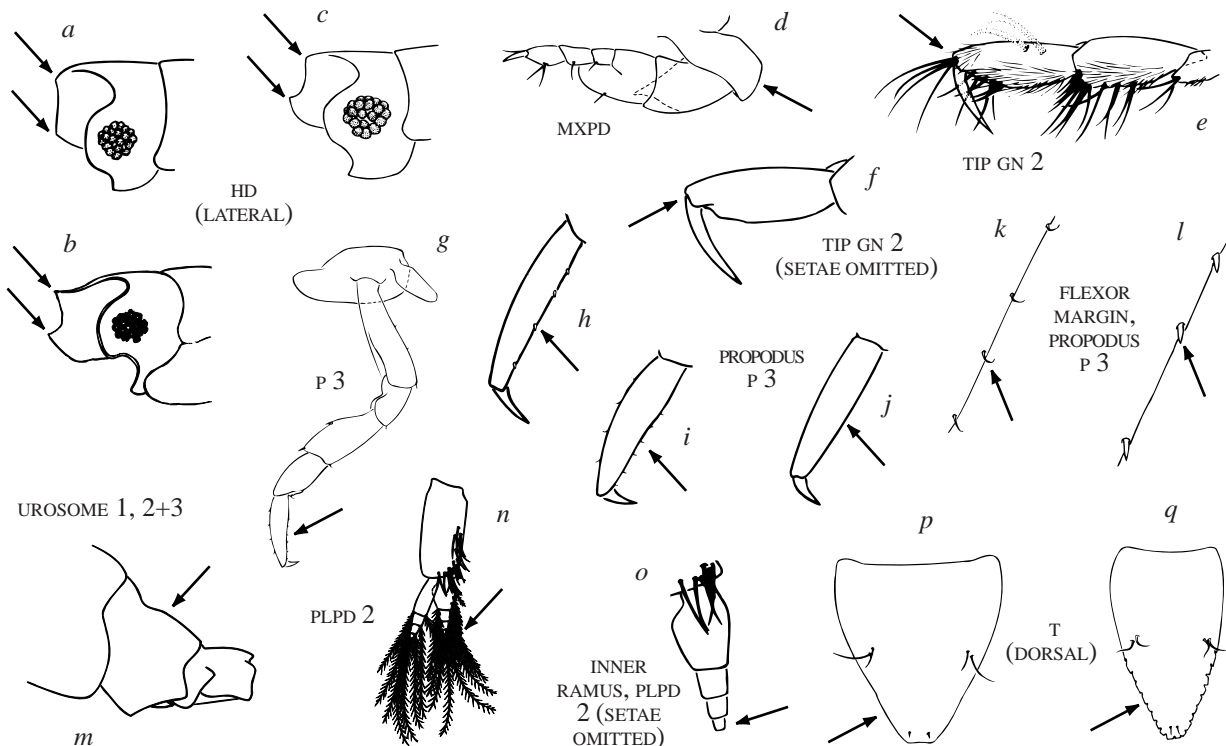


Figure 414.

5. < Antenna 1, peduncle article 1 with 2-3 spines on dorsomedial margin; antenna 2, peduncle articles 3-4 lacking slight dorsal serration; interantennal plate, ventrolateral margins entire; pereopods 3-7, flexor margin of propodus without spines (setae may be present); telson margins not castellate distally 6

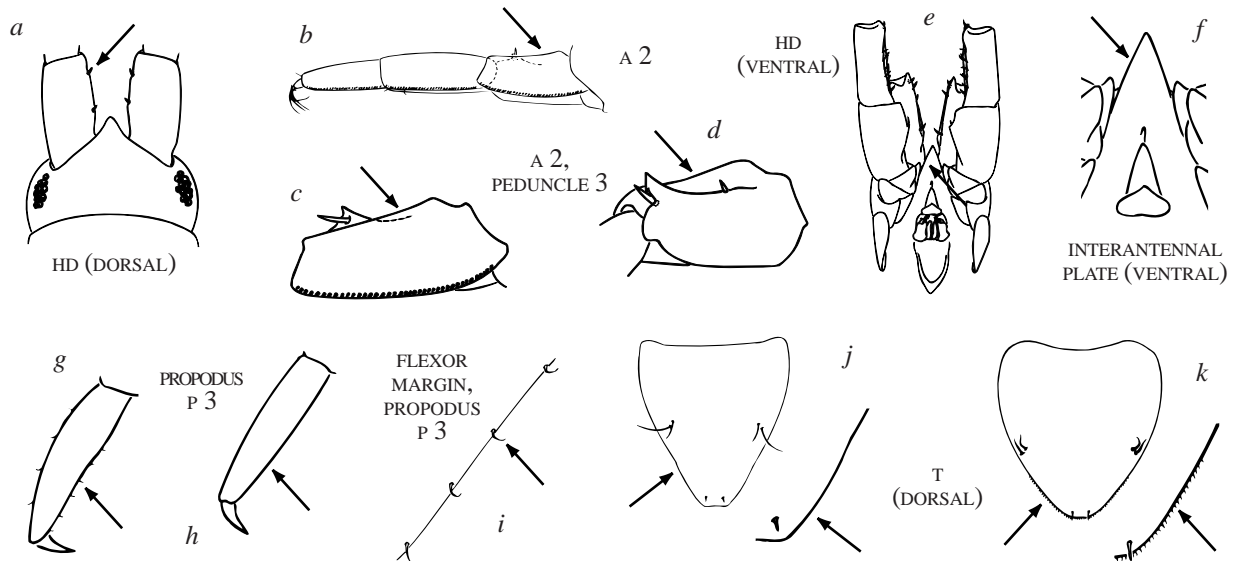


Figure 415.

- < Antenna 1, peduncle article 1 with 4-5 (occasionally 3) spines on dorsomedial margin; antenna 2, peduncle articles 3-4 slightly serrate dorsally; interantennal plate, ventrolateral margins minutely serrate; pereopods 3-7, flexor margin of propodus with spines; telson margins castellate distally 7

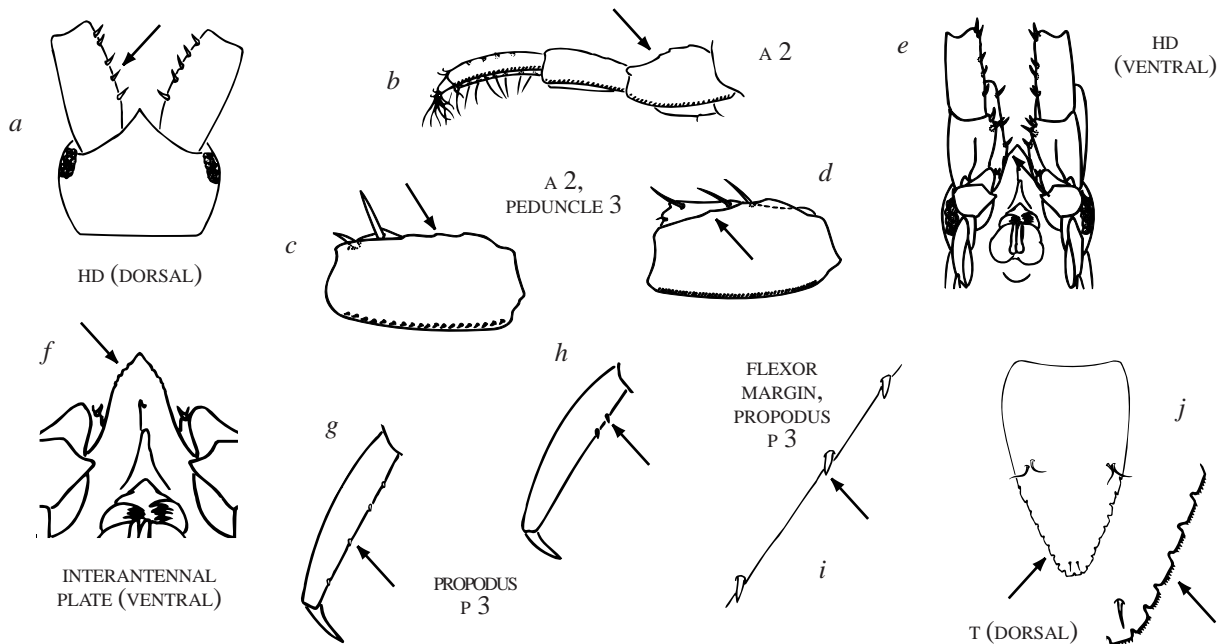


Figure 416.

6. < Rostrum subacute; antenna 2, peduncle article 3 with distomedial process subequal in length to adjacent spine; oostegite 2 narrowly subovate, one third longer than basis of gnathopod 2, tips of marginal setae curled; coxal plates 6-7, ventral margin constricted in posterior one third; uropod 3, rami subequal in length, inner ramus lanceolate, medial margin slightly concave, tapering gradually to acute tip; telson, tip subtruncate *Colomastix gibbosa*

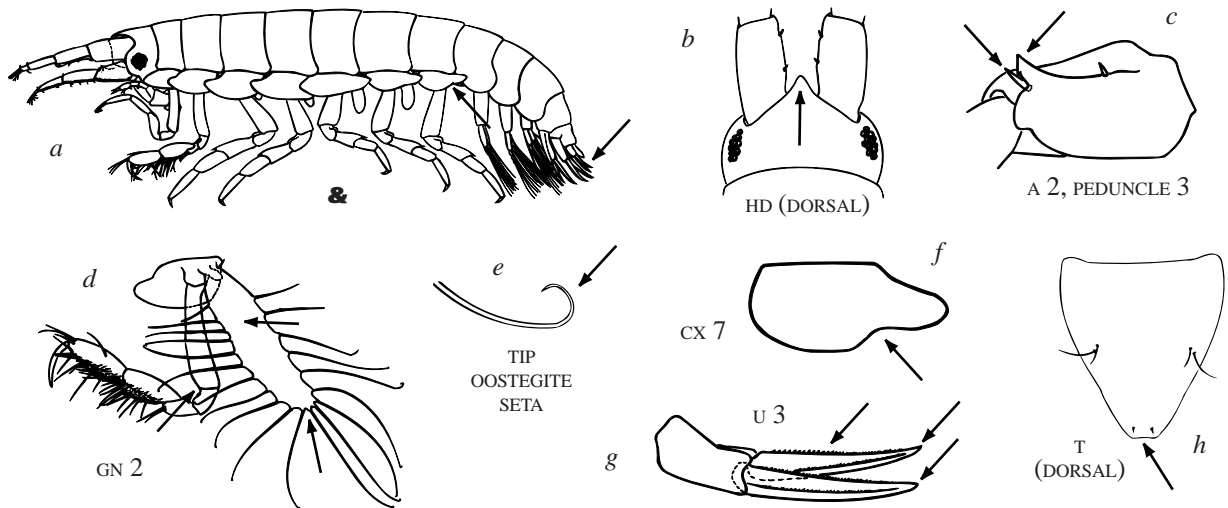


Figure 417.

- < Rostrum acute; antenna 2, peduncle article 3 with distomedial process one third to one half length of adjacent spine; oostegite 2 subovate, slightly shorter than basis of gnathopod 2, tips of marginal setae straight; coxal plates 6-7, ventral margin straight to slightly convex, not constricted in posterior one third; uropod 3, outer ramus slightly shorter than inner, inner ramus expanded proximally, medial margin sigmoid, tapering abruptly to acute tip; telson, tip rounded *Colomastix irciniae*

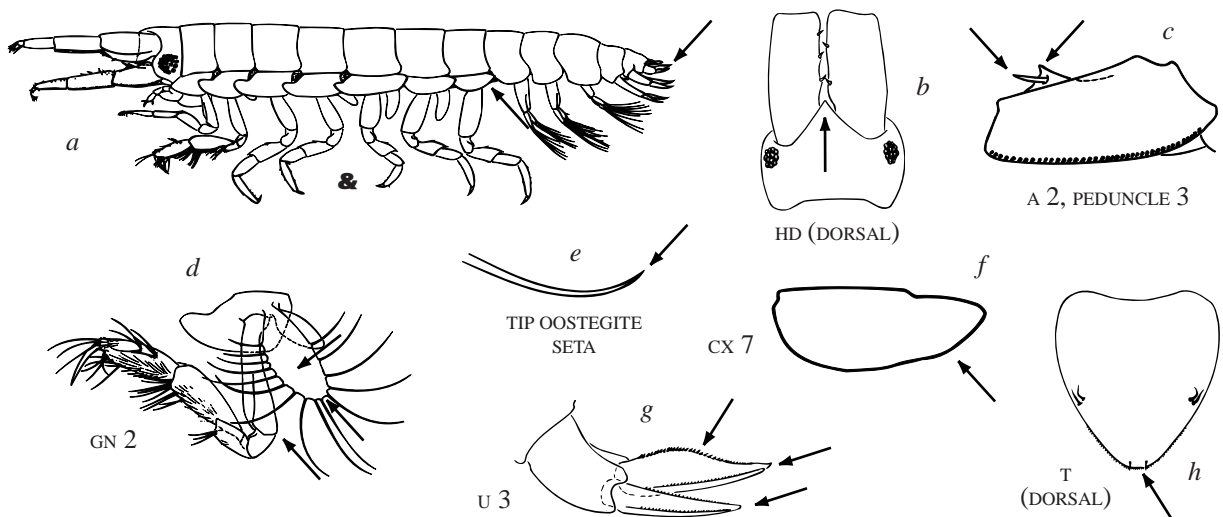


Figure 418.

7. < Antenna 2, peduncle article 3 with single distomedial spine, 0-4 (usually 2-4) long, slender spines on medial margin, distomedial process lacking; interantennal plate with anterodorsal and anteroventral angles projecting forward subequally; gnathopod 1, propodus with pectinate terminal setae; peraeopods 3-7, flexor margin of propodus with 2-5 spines in proximal two thirds; telson broadly subtriangular, convex dorsally *Colomastix janiceae*

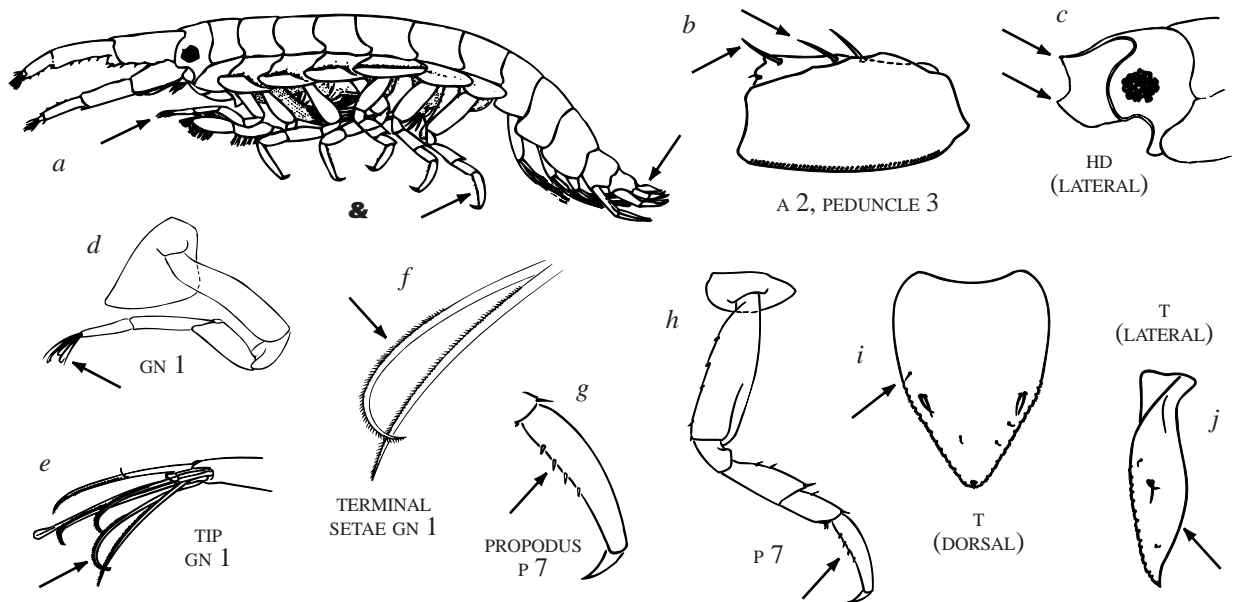


Figure 419.

- < Antenna 2, peduncle article 3 with 2 distomedial spines adjacent to small process, lacking spines on medial margin, distomedial process lacking; interantennal plate with anteroventral angle projecting slightly beyond anterodorsal angle; gnathopod 1, propodus with non-pectinate terminal setae (minute, very fine setae may be present); peraeopods 3-7, flexor margin of propodus with 3-4 spines evenly spaced along entire margin; telson narrowly subtriangular, nearly flat dorsally *Colomastix tridentata*

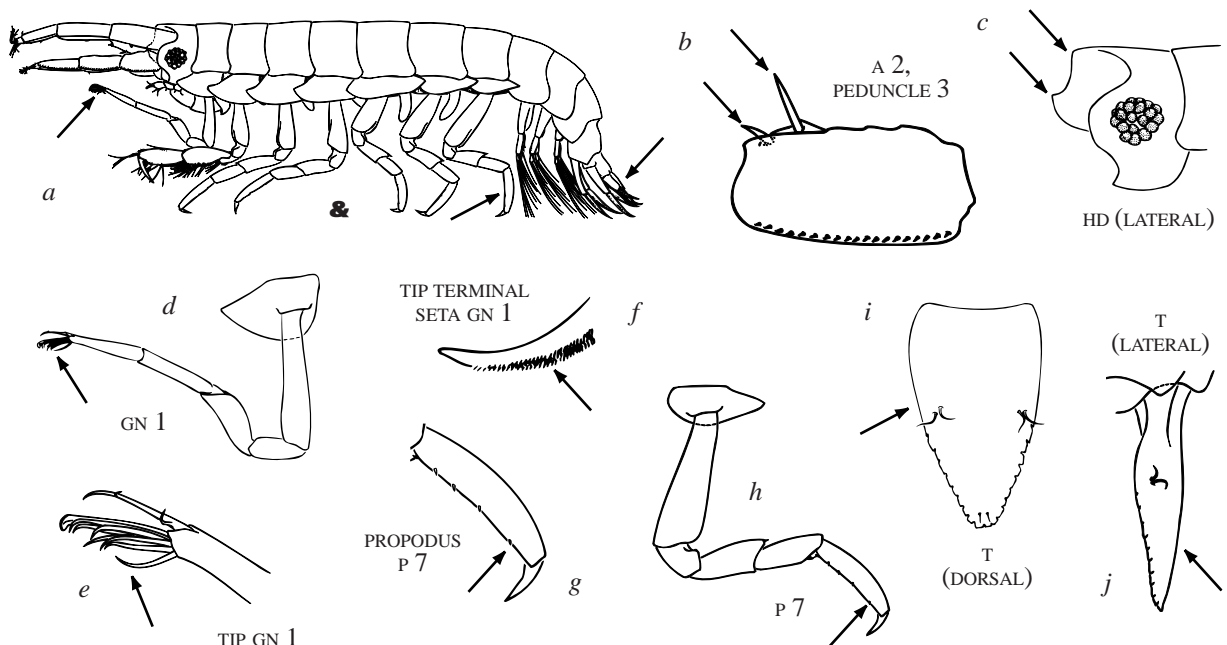


Figure 420.

***Colomastix bousfieldi* LeCroy, 1995**
(Figures 401, 411)

Colomastix pusilla: Pearse, 1912, p. 370, fig. 2 [in part]; not *Colomastix pusilla* Grube, 1861.
Colomastix bousfieldi LeCroy, 1995, pp. 18-25, figs. 4-7.

Regional diagnosis: Rostrum subacute; interantennal plate, anterodorsal angle projecting slightly beyond anteroventral angle, anteroventral angle rounded in ventral view, anterior margin slightly concave, ventral margin without tooth; antenna 1, peduncle article 1 with 2 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with row of small triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spine, that of female with single distomedial spine, distomedial process present, peduncle article 5 of male with ventromedial row of 3-4 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male greatly reduced; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male vestigial; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm tridentate, dactyl without posterior marginal process; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus with 3-4 small, poorly developed spines evenly spaced along entire flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus more than one-half length of outer ramus, not tapering distally, ventral margin smoothly concave, tip rounded, slightly bulbous, with compound seta inserted in subterminal dorsal notch, subterminal concavity absent; uropod 3 of female, inner ramus wedge-shaped, slightly shorter than outer ramus, ventral margin densely setose; telson flat to slightly convex dorsally, distolateral margins entire, tip subtruncate, telson of male subovate, that of female subtriangular.

Distribution: Eastern Yucatán; Texas; northeastern Gulf of Mexico; Central West Florida Shelf; Turks and Caicos Islands; Virgin Islands; Aruba (LeCroy, 1995); Grand Cayman Island; Florida Keys; Biscayne Bay (pers. obs.); Indian River Lagoon near Fort Pierce, Florida (Thiel, 2000).

Ecology: *Colomastix bousfieldi* occurs in sponges from hard bottom, coral reef and grassbed habitats (LeCroy, 1995), in sponges growing on mangrove roots (pers. obs.) and in sponges from shallow oyster reefs (Thiel, 2000). On the oyster reefs at Jack Island, Fort Pierce, Florida, this species inhabits the sponges *Halichondria melanadocia*, *Haliclona loosanoffi*, and *Haliclona permollis* (Thiel, 2000). It has been found at depths ranging from 0.5 to 172 m (LeCroy, 1995).

Remarks: *Colomastix bousfieldi* is a relatively small species, with adults ranging from 2 to 4 mm in length. Adult males are easily distinguished from those of all other species of *Colomastix* in the region except *C. gibbosa* and *C. heardi* by the bulbous tip and subterminal dorsal notch on the inner ramus of uropod 1. They differ from males of both of these species in the presence of a compound seta inserted into the subterminal dorsal notch and by the more slender, somewhat less bulbous tip of that appendage. In addition, the ventral margin of the inner ramus of uropod 1 is evenly convex in *C. bousfieldi* as opposed to nearly straight in *C. gibbosa* or angled sharply downwards in *C. heardi*. *Colomastix bousfieldi* males can be further distinguished from those of *C. gibbosa* by the tridentate palm and lack of a posterior marginal tooth on the dactyl of gnathopod 2 (deeply excavate palm and well-developed dactylar tooth in *C. gibbosa*).

Females and small subadult males are more difficult to distinguish, but can be separated from all other regional species of the genus except for *C. heardi* and *C. falcirama* by the wedge-shaped, ventrally setose inner ramus of uropod 3. *Colomastix bousfieldi* females differ from those of the latter two species by the presence of a distomedial process on antenna 2, peduncle article 3 that is shorter than the adjacent spine (process lacking in *C. heardi* and subequal to the adjacent spine in *C. falcirama*).

See LeCroy, 1995

***Colomastix falcirama* LeCroy, 1995**
(Figures 403, 412)

“*Colomastix pusilla*”: Heard and Perlmutter, 1977, p. 40 [in part]; not *Colomastix pusilla* Grube, 1861.
Colomastix falcirama LeCroy, 1995, pp. 46-53, figs. 21-24.

Regional Diagnosis: Rostrum rounded; interantennal plate, anterodorsal and anteroventral angles projecting subequally, anteroventral angle of male subacute in ventral view, that of female rounded in ventral view, anterior margin straight, ventral margin without tooth; antenna 1, peduncle article 1 with 2 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with row of small triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spine, that of female with single distomedial spine, distomedial process present, peduncle article 5 of male with ventromedial row of 5-6 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male greatly reduced; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male vestigial; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm tridentate, dactyl without posterior marginal process; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus with 2-5 well-developed spines evenly spaced along entire flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus 4 times length of outer ramus, strongly falcate, expanded proximally, tapering distally, tip slender, unequally bifurcate, bifurcations straight, subterminal concavity absent; uropod 3 of female, inner ramus wedge-shaped, slightly shorter than outer ramus, ventral margin densely setose; telson flat to slightly convex dorsally, that of female subtriangular, distolateral margins minutely pectinate, tip subtruncate, that of male subovate, distolateral margins entire, tip subtruncate, faintly trilobed.

Distribution: North central Gulf of Mexico; Florida Middle Ground; central West Florida Shelf; Florida Keys; Dry Tortugas; Caribbean Panamá; the Grenadines; British West Indies; Turks and Caicos Islands (LeCroy, 1995).

Ecology: *Colomastix falcirama* occurs in sponges from live-bottom and coral reef habitats and was found to be associated with a number of hosts in the Florida Middle Ground. These include the sponges *Agelas dispar*, *Spinosella vaginalis*, *Ircinia strobilina* and *Aplysina* sp., and the coral *Madracis decactis* (probably associated with sponges growing on the coral) (LeCroy, 1995). This species is found at depths of 1-98 m, generally occurring at shallower depths in more tropical areas (LeCroy, 1995).

Remarks: The morphology of uropod 1 in the adult male of *C. falcirama*, with its elongate, strongly falcate, distally slender and bifurcate inner ramus and very short outer ramus, serves to distinguish males of this species from all others in the area. Females and small subadult males differ from all other regional *Colomastix* species except *C. bousfieldi* and *C. heardi* by having a wedge-shaped, ventrally setose inner ramus of uropod 3. Differences between *C. falcirama* and *C. bousfieldi* females are presented in the **Remarks** section for the latter species; *C. falcirama* females differ from those of *C. heardi* in the rounded rostrum and ventral aspect of the anteroventral angle of the interantennal plate (both acute in *C. heardi*) and in the presence of a process adjacent to the distomedial spine on article 3 of antenna 2 (process absent in *C. heardi*). Adult size in this species ranges from 2.6 to 4.8 mm (LeCroy, 1995).

See LeCroy, 1995

***Colomastix gibbosa* LeCroy, 1995**
(Figures 399, 417)

Colomastix gibbosa LeCroy, 1995, pp. 53-61, figs. 25-28.

Regional diagnosis: Rostrum subacute; interantennal plate, anterodorsal and anteroventral angles projecting forward subequally, anteroventral angle acute in ventral view, anterior margin slightly concave, ventral margin without tooth; antenna 1, peduncle article 1 with 2 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with row of small triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spine, that of female with single distomedial spine, distomedial process present, peduncle article 5 of male with ventromedial row of 5-6 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male greatly reduced; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male vestigial; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm deeply excavate, with long, thumb-like process at palmar angle, dactyl with well-developed posterior marginal process; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus without spines or setae on flexor margin; coxae 6-7, ventral margin constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus one-third longer than outer ramus, not tapering distally, ventral margin nearly straight, tip rounded, bulbous, notched dorsally, without compound seta inserted in subterminal dorsal notch, subterminal concavity absent; uropod 3 of female, inner ramus lanceolate, subequal to outer ramus in length, ventral margin not densely setose; telson subtriangular, flat to slightly convex dorsally, distolateral margins entire, tip subtruncate.

Distribution: Florida Middle Ground; central West Florida Shelf; Dry Tortugas; St. Thomas, Virgin Islands (LeCroy, 1995).

Ecology: *Colomastix gibbosa* occurs in live-bottom and coral reef habitats and was found to be associated with the sponge *Geodia gibberosa* and the coral *Madracis decactis* in the Florida Middle Ground. However, members of the sponge genus *Ircinia* and several other unidentified sponge taxa representing potential hosts were growing on the *Geodia* and *Madracis* individuals collected and it is possible that *C. gibbosa* occurs within those taxa as well. Although the reported depth range for this species is 1-73 m, it is generally found in somewhat deeper waters (37-73 m) in the more northern parts of its range (Florida west coast), moving into shallower waters (1-5 m) further south (Dry Tortugas and Caribbean) (LeCroy, 1995).

Remarks: Gnathopod 2 of the adult male in this species is very distinctive; no other regional species of *Colomastix* has a deeply excavate palm with a large, elongate process or “thumb” at the palmar angle. In addition, the posterior marginal process on the dactyl is much larger than that found in any other Florida species, with the possible exception of *C. janiceae*. Adult males, as well as subadult males and females, can also be distinguished from all other *Colomastix* species in the area by the morphology of coxa 6-7, in which the ventral margin is constricted in the posterior one third (ventral margin straight to slightly convex, unconstricted in other species). *Colomastix gibbosa* is a relatively small species, ranging from 2.5 to 4.6 mm in length (LeCroy, 1995).

See LeCroy, 1995

***Colomastix halichondriae* Bousfield, 1973**
(Figures 395, 413)

Colomastix pusilla: Pearse, 1912, p. 370, fig. 2 [in part]; not *Colomastix pusilla* Grube, 1861.
Colomastix halichondriae Bousfield, 1973, p. 140, pl. XVIII, fig. 2.

Regional diagnosis: Rostrum acute; interantennal plate, anteroventral angle projecting far beyond anterodorsal angle, acute in ventral view, anterior margin concave, ventral margin with single tooth; antenna 1, peduncle article 1 with 2-4 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 lacking triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spines, that of female with 2 distomedial spines, distomedial process lacking, peduncle article 5 of male with ventromedial row of 6-7 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male unreduced, similar to those of female; maxilliped, basal shell expanded to form ventral keel; gnathopod 1 of male elongate, simple; gnathopod 2 of male, basis slightly expanded distally, propodus enlarged, palm defined by proximal process with second, usually larger process near dactylar articulation, dactyl without posterior marginal process; gnathopod 2 of female, insertion of dactyl subterminal; peraeon segments 5-6 of male, ventral margin with strong, posteriorly directed keel-like process; peraeopods 3-7, propodus with single, centrally placed spine on flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, outer ramus 4-articulate, inner ramus 3-articulate; urosome segment 1 elongate; uropod 1 of male, rami subequal in length, inner ramus not expanded proximally, margins subparallel, ventral margin nearly straight, tip with non-setose dorsal indentation, subterminal concavity absent; uropod 3 of female, rami lanceolate, outer ramus approximately three-fourths length of inner ramus, inner ramus, ventral margin not densely setose; telson linguiform, flat dorsally, distolateral margins minutely pectinate, tip subtruncate in female, emarginate in male.

Distribution: Texas (McKinney, 1977); west coast of Florida from the Florida Middle Ground to Cape Sable (LeCroy, 1995; pers. obs.); Dry Tortugas, Aruba (LeCroy, 1995); east coast of U.S. from Massachusetts to Georgia (Bousfield, 1973; Fox and Bynum, 1975; Heard and Perlmutter, 1977; Biernbaum, 1981; LeCroy, 1995) and the Indian River Lagoon system, Florida (Nelson, 1995).

Ecology: This widespread species has been reported from a number of host sponges, including *Haliclona permollis* and *Halichondria bowerbanki* (Bousfield, 1973); *Haliclona loosanoffi*, *Microciona prolifera* and *Lissodendoryx isodictyalis* (Biernbaum, 1981); and *Agelas dispar*, *Spinosella vaginalis* and *Geodia gibberosa* (LeCroy, 1995). It has also been found to be associated with the corals *Madracis decactis* and *Millepora alcicornis*, and with the thorny oyster, *Spondylus*; however, these hard substrates had sponges (*Ircinia*, *Agelas*, *Geodia* and several unidentified species) growing on them and the sponges may have been the actual hosts (LeCroy, 1995). *Colomastix halichondriae* has also been reported to occur in grassbed habitats (Nelson, 1995), probably inhabiting small sponges. It is found at depths of 1-73 m (LeCroy, 1995).

Remarks: *Colomastix halichondriae* is a distinctive species that is readily distinguished from all other regional species of the genus except for *C. denticornis*, a deeper water species not reported to date from depths less than 55 m (LeCroy, 1995). These two species differ from other Florida members of the genus in the strongly produced anteroventral angle of the interantennal plate; the lack of triangular spinules on the ventrolateral margins of antenna 2, peduncle articles 3-5; the presence of a ventral keel on the basal shell of the maxilliped; the subterminal insertion of the dactyl of gnathopod 2 in the female; the unequal number of articles on the inner and outer rami of the pleopods; the subequal rami of uropod 1 in the adult male (in *C. halichondriae*, male unknown for *C. denticornis*); the elongate urosome segment 1; and the linguiform telson. *Colomastix halichondriae* can be distinguished from *C. denticornis* by the lack of serrations on the inner margins of the antennae (strong serrations present in *C. denticornis* females).

Colomastix halichondriae is a relatively small species, with adults ranging in length from 2.0 to 3.5 mm (LeCroy, 1995). Living specimens are often a pale sandy color mottled with large, fairly regular blocks of dark brown across the body segments and coxae, and broad bands of dark brown circling

the peduncular articles of the antennae. The dark brown fades to a pale orange-brown in preserved material, often disappearing entirely in older specimens. This species was reported as *C. pusilla* (in part) by Pearse (1912, Figure 2, part) (see LeCroy, 1995 for discussion).

See Bousfield, 1973; Biernbaum, 1981; LeCroy, 1995.

***Colomastix heardi* LeCroy, 1995
(Figures 402, 409)**

Colomastix heardi LeCroy, 1995, pp. 69-78, figs. 35-38.

Regional diagnosis: Rostrum acute; interantennal plate, anterodorsal and anteroventral angles projecting forward subequally, anteroventral angle acute in ventral view, anterior margin straight to slightly concave, ventral margin without tooth; antenna 1, peduncle article 1 with 2-3 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with small triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spine, that of female with single distomedial spine, distomedial process lacking, peduncle article 5 of male with ventromedial row of 4-5 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male greatly reduced; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male vestigial; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm tridentate, dactyl with very small central process on posterior margin; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus with 3-6 well-developed spines evenly spaced along entire flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus twice length of outer ramus, ventral margin angled sharply down distally, tip rounded, bulbous, notched dorsally, without compound seta inserted in subterminal dorsal notch, subterminal concavity absent; uropod 3 of female, inner ramus wedge-shaped, slightly shorter than outer ramus, ventral margin densely setose; telson slightly convex dorsally, that of male subovate, lateral margins entire, tip subtruncate, that of female subtriangular, lateral margins minutely pectinate distally, tip subtruncate.

Distribution: Eastern Yucatán, Florida Middle Ground, central West Florida Shelf, Florida Keys, Georgia, South Carolina (LeCroy, 1995).

Ecology: This species is associated with a variety of sponges in live-bottom and coral reef habitats. These include *Agelas dispar*, *Ircinia felix*, *Aplysina fistularis*, *Geodia gibberosa*, *Spherospongia vesparium* and *Haliclona* sp. The coral *Madracis decactis* has also been found to be an associate; however, it is often encrusted by sponges (*Aiolochoxia crassa* and others) which probably represent the true hosts. *Colomastix heardi* is found at depths of 1-73 m (1m in the Yucatán, depths in other areas range from 10 to 73 m) (LeCroy, 1995).

Remarks: *Colomastix heardi* belongs to the group of species in which the male has a rounded or bulbous tip on the inner ramus of uropod 1. It differs from the two other regional species in this group (*C. bousfieldi* and *C. gibbosa*) by having the ventral margin of the inner ramus of uropod 1 angled sharply downward distally (margin smoothly concave in *C. bousfieldi*; nearly straight in *C. gibbosa*) and by the moderately slender bulbous tip of uropod 1, without a compound seta inserted in the subterminal dorsal notch (tip slender, compound seta present in *C. bousfieldi*; tip broad, compound seta lacking in *C. gibbosa*). Females and small subadult males can be distinguished from all regional species except *C. bousfieldi* and *C. falcirama* by the presence of a wedge-shaped inner ramus with a strongly setose ventral margin on uropod 3. However, both of the latter species have a subacute or rounded rostrum and a broadly rounded anteroventral angle of the interantennal plate when viewed ventrally, whereas *C. heardi* has an acute rostrum and the anteroventral angle on the interantennal plate is also acute in ventral view. Adult lengths in *C. heardi* range from 2.4 to 5.2 mm (LeCroy, 1995).

See LeCroy, 1995

***Colomastix ircinia* LeCroy, 1995**
(Figures 396, 418)

Colomastix pusilla: Pearse, 1932, pp. 119-121 [in part]; not *Colomastix pusilla* Grube, 1861.
Colomastix ircinia LeCroy, 1995, pp. 78-86, figs. 41-44.

Regional diagnosis: Rostrum acute; interantennal plate, anterodorsal and anteroventral angles projecting forward subequally, anteroventral angle acute in ventral view, anterior margin, straight to slightly concave, ventral margin without tooth; antenna 1, peduncle article 1 with 2-3 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with small triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spine, that of female with single distomedial spine and adjacent process, peduncle article 5 of male with ventromedial row of 19-20 closely set setae; mandible, maxilla 1-2 and outer plate of maxilliped of male unreduced, similar to those of female; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male elongate, simple; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm tridentate, dactyl without posterior marginal process; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus with 5-14 short, curled setae on flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus 2.5 times length of outer ramus, tapering distally, ventral margin slightly concave, tip slender, minutely bifurcate, one branch of bifurcation upturned, subterminal concavity absent; uropod 3 of female, inner ramus slightly longer than outer ramus, expanded proximally, tapering distally, ventral margin not densely setose; telson of male subovate, concave dorsally, lateral margins entire, tip trilobed, that of female subtriangular, slightly convex dorsally, lateral margins minutely pectinate distally, tip smoothly rounded.

Distribution: Florida Middle Ground (LeCroy, 1995); Bahia Honda, Florida Keys; Dry Tortugas, and Ensenada de Cajón, off Cabo San Antonio, Cuba (LeCroy, 1995); Pelican Shoals, Belize.

Ecology: This species occurs in live-bottom and coral reef habitats, almost exclusively in sponges of the genus *Ircinia* (*I. campana*, *I. felix* and other unidentified species in that genus). It has also occasionally been found to be associated with the coral *Madracis decactis*; however the specimens involved were overgrown with unidentified sponges which probably represented the true hosts (LeCroy, 1995). *Colomastix ircinia* is found at depths of 1 to 36 m..

Remarks: Both male and female *C. ircinia* can be recognized by the unique morphology of the inner ramus of uropod 3, which is especially evident in larger individuals. The inner ramus is expanded proximally and the inner margin is sigmoid, tapering abruptly distally to a short, subacute tip. The inner and outer margins are parallel proximally. In addition, gnathopod 1 of the adult male is unreduced and similar to that of the female. The only other nearshore species of *Colomastix* in the region to have an unreduced gnathopod 1 in the male is *C. halichondriae*, which is easily separated from *C. ircinia* by its elongate urosome segments (segments not elongate in *C. ircinia*), ventral keel on the basal shell of maxilliped (keel lacking in *C. ircinia*), 2 palmar processes on gnathopod 2 (3 processes in *C. ircinia*), presence of ventral keel-like processes on peraeon segments 5-7 (processes lacking in *C. ircinia*), linguiform telson (subovate in *C. ircinia*), and relatively broad inner ramus of uropod 1, which is subequal in length to the outer ramus (inner ramus slender and strongly tapering distally, much longer than outer ramus in *C. ircinia*). There appears to be some variability in the morphology of the telson in *C. ircinia*, with specimens from Belize having a somewhat narrower tip than Gulf of Mexico specimens, especially in the male. The adult size in this species is quite variable, ranging from 2.5 to 8.4 mm.

See LeCroy, 1995.

***Colomastix janiceae* Heard and Perlmutter, 1977**
(Figures 405, 419)

Colomastix pusilla: Pearse, 1932, pp. 119-121 [in part]; not *Colomastix pusilla* Grube, 1861.
Colomastix janiceae Heard and Perlmutter, 1977, pp. 30-42, figs. 1-4.

Regional diagnosis: Rostrum acute; interantennal plate, anterodorsal and anteroventral margins projecting forward subequally, anteroventral angle acute in ventral view, anterior margin concave, ventral margin without tooth; antenna 1, peduncle article 1 with 3-5 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with small triangular spinules on ventrolateral margin, peduncle article 3 of male without elongate seta adjacent to distomedial spine, that of female with single distomedial spine, distomedial process lacking, peduncle article 5 of male with ventromedial row of 5-8 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male greatly reduced; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male vestigial; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm tridentate, dactyl with well-developed posterior marginal process; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus with 2-5 well-developed spines in proximal two-thirds of flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus 1.5 times length of outer ramus, tapering distally, ventral margin nearly straight, tip minutely bifurcate, one branch of bifurcation hooked, subterminal concavity absent; uropod 3 of female, inner ramus slightly longer than outer ramus, somewhat expanded proximally, tapering distally, ventral margin not densely setose; telson subtriangular, convex dorsally, lateral margins castellate distally, tip of male slightly upturned, minutely bidentate, that of female narrowly rounded.

Distribution: Caribbean coast of Colombia (Ortiz and Lemaitre, 1994); Yucatán, Texas (7 ½ Fathom Reef, Flower Gardens), Florida Middle Ground, central West Florida Shelf (LeCroy, 1995); Florida Keys (Heard and Perlmutter, 1977; LeCroy 1995); Dry Tortugas (Pearse, 1932; LeCroy, 1995); Georgia, and South Carolina (LeCroy, 1995).

Ecology: This widespread species occurs in a broad range of host sponges in live-bottom, reef and grassbed habitats, at depths ranging from 1 to 87 m. Hosts include *Agelas dispar*, *Aiolochoxia crassa*, *Aplysina fistularis*, *Callyspongia fallax*, *Geodia gibberosa*, *Ircinia campana*, *I. felix*, *I. strobilina*, *Spheciospongia vesparium*, and *Spinoseella vaginalis*. Additionally, it occurs in several undescribed sponge species belonging to the genera *Callyspongia*, *Haliclona* and *Ircinia*, as well as a number of unidentified species. It has also been reported in association with the corals *Madracis decactis* and *Millepora alcicornis*, probably inhabiting sponges growing on these “hosts” (LeCroy, 1995).

Remarks: This is one of the most common species of *Colomastix* present in Florida waters, as well as the one that attains the largest size. However, it is also one of the most variable species, both in terms of adult size, which ranges from 3.1 to 9.4 mm, and morphology, with adult males occurring in two forms. These two morphs, the slender morph described by Heard and Perlmutter (1977) and the robust morph, are both described in detail in LeCroy (1995). Color in live *C. janiceae* is ivory white, with no markings on the body or appendages and the eyes are generally red.

Colomastix janiceae belongs to the group of species in which the tip of uropod 1 in the male is tapering and minutely bifurcate. The only other nearshore Florida species in this group, and the species it most strongly resembles in other respects as well, is *C. tridentata*. Males of the two species can be distinguished by the spination of the flexor margin of the propodus in peraeopods 3-7 (spines along the entire margin in *C. tridentata*; spines in proximal 2/3 in *C. janiceae*), the structure of the tip of the inner ramus of uropod 1 (both branches of bifurcation straight, subterminal lateral concavity present in *C. tridentata*; one branch recurved, subterminal concavity absent in *C. janiceae*) and the morphology of the telson (dorsally flat, tip tridentate in *C. tridentata*; dorsally convex, tip

bidentate in *C. janiceae*). Females of these two species are also quite similar; however, *C. janiceae* differs from *C. tridentata* in the presence of a single small distomedial spine and the absence of a distomedial process on antenna 2, peduncle article 3 (2 spines and a small process present in *C. tridentata*), the presence of spines in the proximal 2/3 of the flexor margin of the propodus in peraeopods 3-7 (spines along entire margin in *C. tridentata*), and the dorsally convex, broadly subtriangular telson (dorsally flat and narrowly subtriangular in *C. tridentata*).

See Heard and Perlmutter, 1977; LeCroy, 1995.

***Colomastix tridentata* LeCroy, 1995**
(Figures 406, 420)

Colomastix tridentata LeCroy, 1995, pp. 97-106, figs. 53-56.

Regional diagnosis: Rostrum acute; interantennal plate, anteroventral angle projecting slightly beyond anterodorsal angle, acute in ventral view, anterior margin straight dorsally, concave ventrally, ventral margin without tooth; antenna 1, peduncle article 1 with 3-4 spines on dorsomedial margin; antenna 2, peduncle articles 3-5 with small triangular spinules on ventrolateral margin; peduncle article 3 of male with elongate seta adjacent to distomedial spine, that of female with 2 distomedial spines adjacent to small process, peduncle article 5 of male with ventromedial row of 7-8 widely spaced setae; mandible, maxilla 1-2 and outer plate of maxilliped of male greatly reduced; maxilliped, basal shell not expanded to form ventral keel; gnathopod 1 of male vestigial; gnathopod 2 of male, basis expanded distally, propodus enlarged, palm tridentate, dactyl with well-developed posterior marginal process; gnathopod 2 of female, insertion of dactyl terminal; peraeon segments 5-6 of male, ventral margin without keel-like processes; peraeopods 3-7, propodus with 3-4 well-developed spines evenly spaced along entire flexor margin; coxae 6-7, ventral margin not constricted in posterior one-third; pleopods 1-3, rami 4-articulate; urosome segment 1 not elongate; uropod 1 of male, inner ramus 1.5 times length of outer ramus, tapering distally, ventral margin slightly concave, tip minutely bifurcate, both branches of bifurcation straight, subterminal concavity present; uropod 3 of female, inner ramus lanceolate, slightly longer than outer ramus, ventral margin not densely setose; telson subtriangular, flat to slightly convex dorsally, lateral margins castellate distally, tip upturned, tridentate in male, flat, narrowly rounded in female.

Distribution: Yucatán, Texas (7 ½ Fathom Reef), Florida Middle Ground, central West Florida Shelf, Florida Keys, Dry Tortugas (LeCroy, 1995); Grand Cayman Island (pers. obs.); Tobago Island (Buccoo Reef), Turks and Caicos Islands (Pine Cay), Georgia and North Carolina (LeCroy, 1995).

Ecology: *Colomastix tridentata* occurs in sponges in live-bottom, coral reef and mangrove habitats at depths of 0.5 to 73 m (LeCroy, 1995; pers. obs.). Host species include *Callyspongia fallax*, several unidentified sponge species and a sponge tentatively identified as *Tedania* sp. growing on red mangrove prop roots on Grand Cayman Island. In addition, this *Colomastix* species has been found in association with the corals *Madracis decactis* *Millepora alcornis* and *Oculina diffusa*, probably as an inhabitant of the encrusting sponges *Aiolochoira crassa*, *Agelas dispar*, *Ircinia* sp., *Geodia gibberosa* and several additional unidentified species (LeCroy, 1995).

Remarks: *Colomastix tridentata* is very common in Florida waters and closely resembles *C. janiceae*, another common species. Characters distinguishing these two species are presented in the **Remarks** section for *C. janiceae*. In addition to morphological characters, the two species differ in pigmentation patterns and these can sometimes be used to help distinguish between them in live or freshly preserved material. As mentioned previously, *C. janiceae* is generally white with red eyes, whereas *C. tridentata* exhibits a mottled pattern and the eyes are yellow or pinkish yellow. The background color of the body and appendages is pale cream and the markings are rose pink, ranging from very dark and distinct in some specimens to very faint in others. They are arranged in rows of large patches running along the dorsal midline and sides of the head, peraeon, urosome segments and coxae, and in bands on the antennal peduncular articles and first flagellar articles. There are no markings on the gnathopods, peraeopods, pleopods, uropods or telson. *C. tridentata* is a relatively small species (2.4-5.9 mm) compared to *C. janiceae* (3.1-9.4 mm), although there is some overlap in size (LeCroy, 1995).

See LeCroy, 1995.

Family Corophiidae Leach, 1814

Regional diagnosis: Antenna 1, accessory flagellum absent; head not globular; rostrum small and straight or absent; antenna 2 stout, subequal to or longer than antenna 1; mandible, molar present, palp 2-articulate (rarely 3-articulate), articles slender; maxilliped, palp article 4 normally developed; coxae 1-4 non-overlapping, shallow, subequal in depth; gnathopods 1-2 subequal in size, dissimilar; gnathopod 1 subchelate; gnathopod 2 simple, ischium not elongate, less than twice as long as wide, dactyl with 0-3 strong teeth on flexor margin; pleon segment 3 without dorsal teeth or processes; urosome segments 1-3 usually fused (occasionally separate, if separate, then urosome 1 not elongate); uropod 2, peduncle not broadly expanded, subequal to rami in length; uropod 3 uniramous, very short, not extending beyond uropods 1-2, ramus broadly rounded, paddle-like; telson entire.

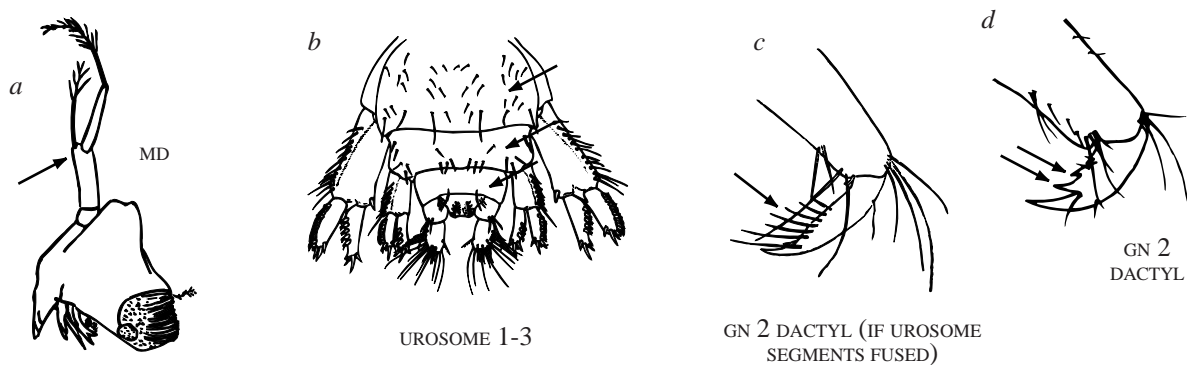
Florida genera: *Americorophium*, *Apocorophium*, *Laticorophium*, *Monocorophium*

Remarks: *Crassikorophium bonelli* (H. Milne Edwards, 1830) has been reported from Florida by Nelson (1995, as *Corophium bonelli*) and by Camp (1998); however, this is a bipolar, cold-water, rocky coast species (Shoemaker, 1947; Bousfield, 1973; Bousfield and Hoover, 1997) and it seems unlikely that it occurs in Florida waters. The material on which these records are based may instead refer to *Monocorophium acherusicum* (Costa, 1851), a very widespread species which closely resembles *C. bonelli* in some of the antennal and uropod characters normally used to identify these species. This may also be the case for the single report of *Crassikorophium crassicorne*, another arctic and subarctic species (Bousfield, 1973; Bousfield and Hoover, 1997), from the Escambia River in Florida (Wurtz and Romback, 1955). Female *C. bonelli* (the male is unknown) can be distinguished from female *M. acherusicum* by the length of the dactyl of gnathopod 2 relative to the length of the palm. In the former species, the dactyl does not extend beyond the palmar angle, whereas in the latter species, it extends well beyond the palmar angle. *Crassikorophium crassicorne* differs from both *C. bonelli* and *M. acherusicum* in the broadly expanded, heavily spinose articles 3-4 of antenna 2 in the female (not broadly expanded, moderately spinose in the other two species), the elongate article 5 of gnathopod 2 (not elongate in the other two species) and the narrowly ovate rami of uropod 3 (broadly rounded in the other two species).

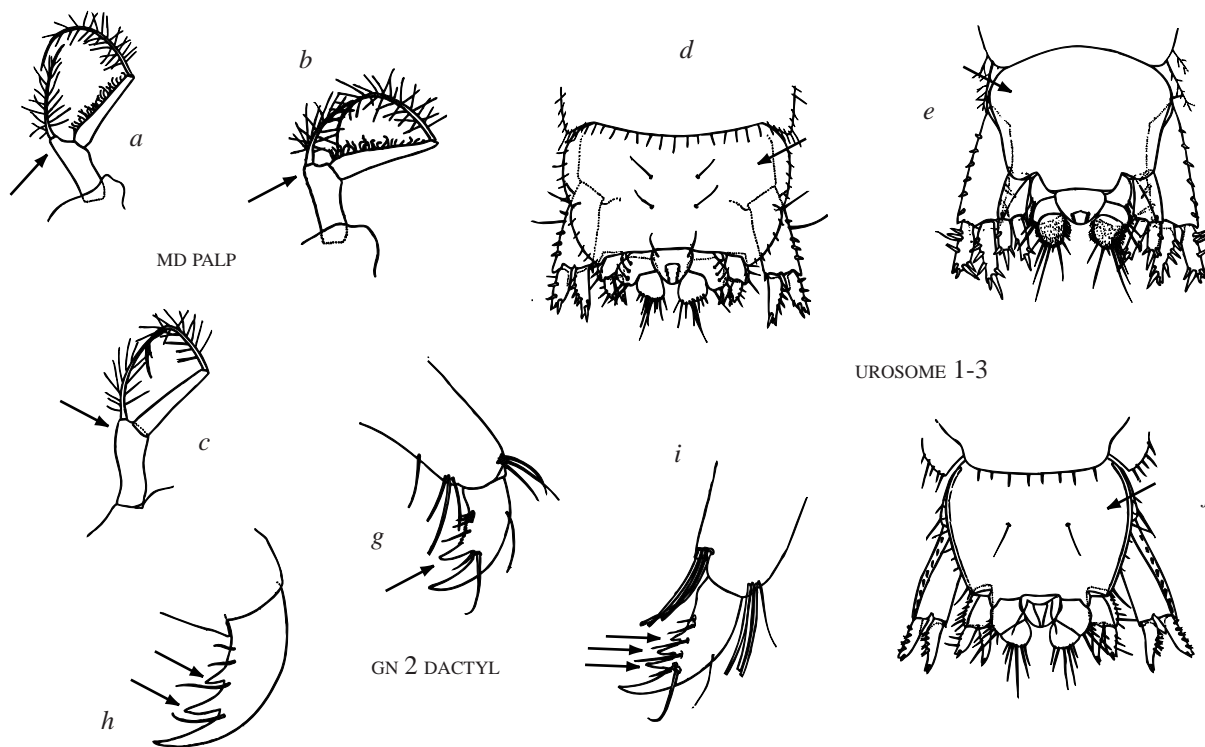
In general, corophiids are tube-dwelling fouling species and are thus easily transported great distances, either synanthropically via the growth on ship bottoms or naturally via drifting debris. Because of this, a number of species are now virtually cosmopolitan, at least within their range of environmental tolerance, and it is often difficult to determine their original distributions. An additional problem affecting the accuracy of the known distributions for these taxa lies in the fact that they are superficially quite similar to one another and many misidentifications exist in the literature (see the synonymies presented by Crawford [1937], for example).

KEY TO FLORIDA GENERA OF COROPHIIDAE

1. < Mandible, penultimate article of palp not expanded or produced distally; urosome segments 1-3 usually separate, if fused, then gnathopod 2, dactyl without teeth on flexor margin
 *Americorophium*



- < Mandible, penultimate article of palp expanded or produced distally; urosome segments 1-3 fused; gnathopod 2, dactyl with 1-3 teeth on flexor margin 2



2. < Fused urosome segments without lateral marginal ridge; uropod 1 inserted laterally or ventrolaterally *Monocorophium*

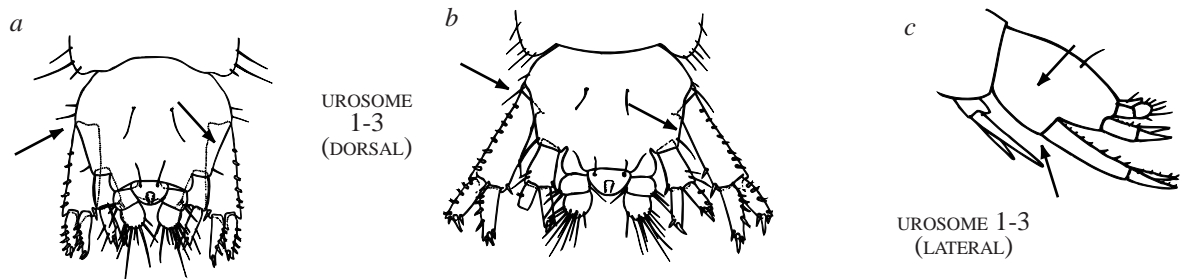


Figure 423.

- < Fused urosome segments with distinct lateral marginal ridge; uropod 1 inserted ventrally 3

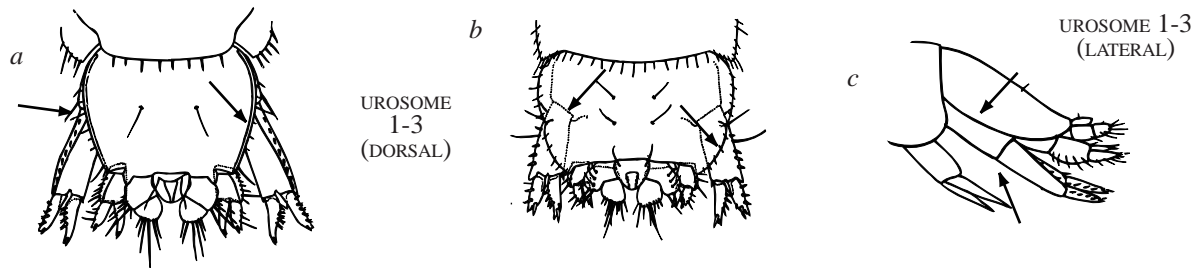


Figure 424.

3. < Gnathopod 2, dactyl with 1 tooth on flexor margin; lateral marginal ridge of urosome with median notch *Laticorophium*

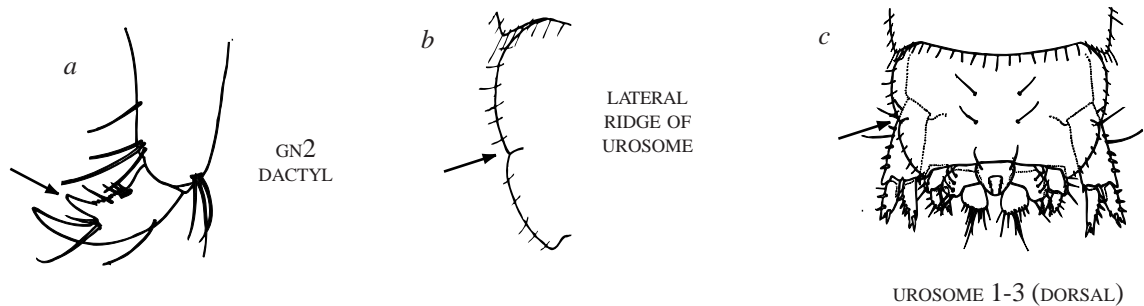


Figure 425.

- < Gnathopod 2, dactyl with 2-3 teeth on flexor margin; lateral marginal ridge of urosome entire, without median notch *Apocorophium*

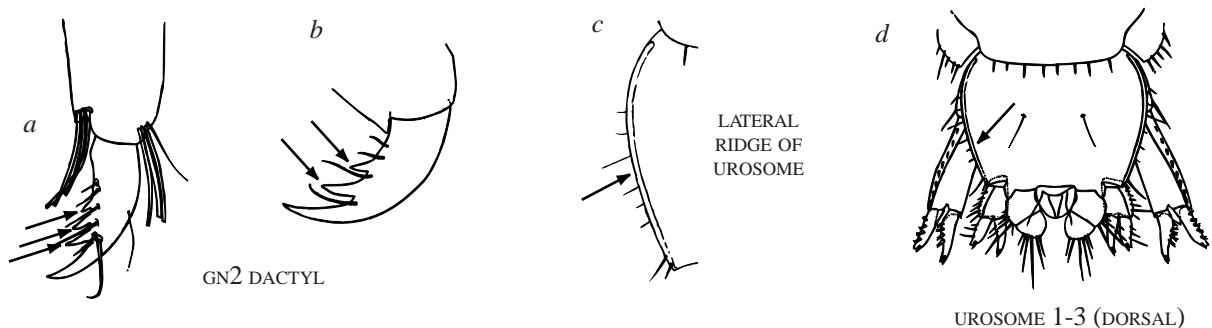


Figure 426.

Genus *Americorophium* Bousfield and Hoover, 1997

Regional diagnosis: Mandible, penultimate article of palp not expanded or produced distally; gnathopod 2, dactyl without teeth or with 2-3 teeth on flexor margin; urosome segments 1-3 usually separate (fused in *A. ellisi*), without lateral marginal ridge; uropod 1 inserted laterally or ventrolaterally.

Florida species: *A. aquafusum*, *A. ellisi*, *Americorophium* sp. A

KEY TO FLORIDA SPECIES OF *AMERICOROPHIUM*

1. < Antenna 1, peduncle article 1 of male with 2 strong processes on ventral margin, that of female with 2 spines on ventral margin; antenna 2 of male, peduncle articles 4-6 without long setae on ventral margin, article 4 with medially directed process at midpoint of ventromedial margin; gnathopod 2, dactyl without teeth on flexor margin; urosome segments 1-3 fused
..... *Americorophium ellisi*

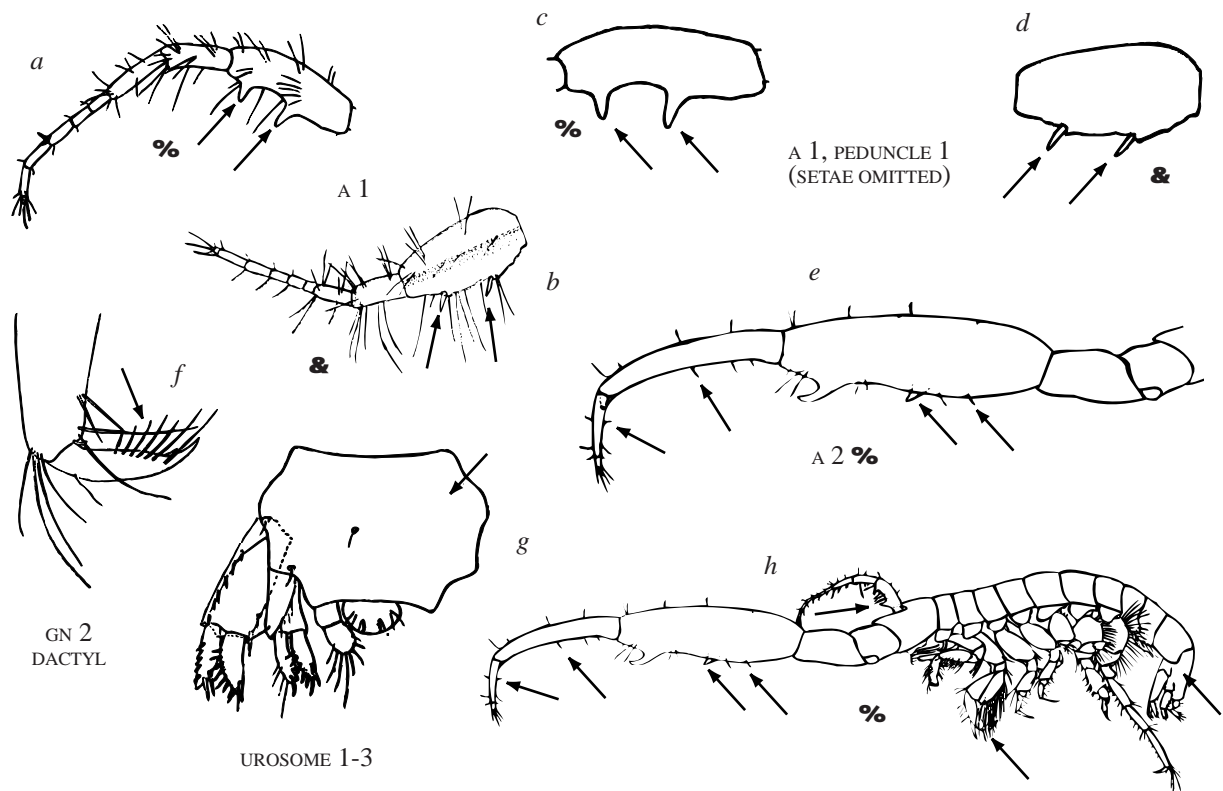


Figure 427.

< Antenna 1, peduncle article 1 of male with 0-1 processes on ventral margin, that of female with 1 or 3 spines on ventral margin; antenna 2 of male, peduncle articles 4-6 with long setae on ventral margin, article 4 without process at midpoint of ventromedial margin; gnathopod 2, dactyl with 2-3 teeth on flexor margin; urosome segments 1-3 separate

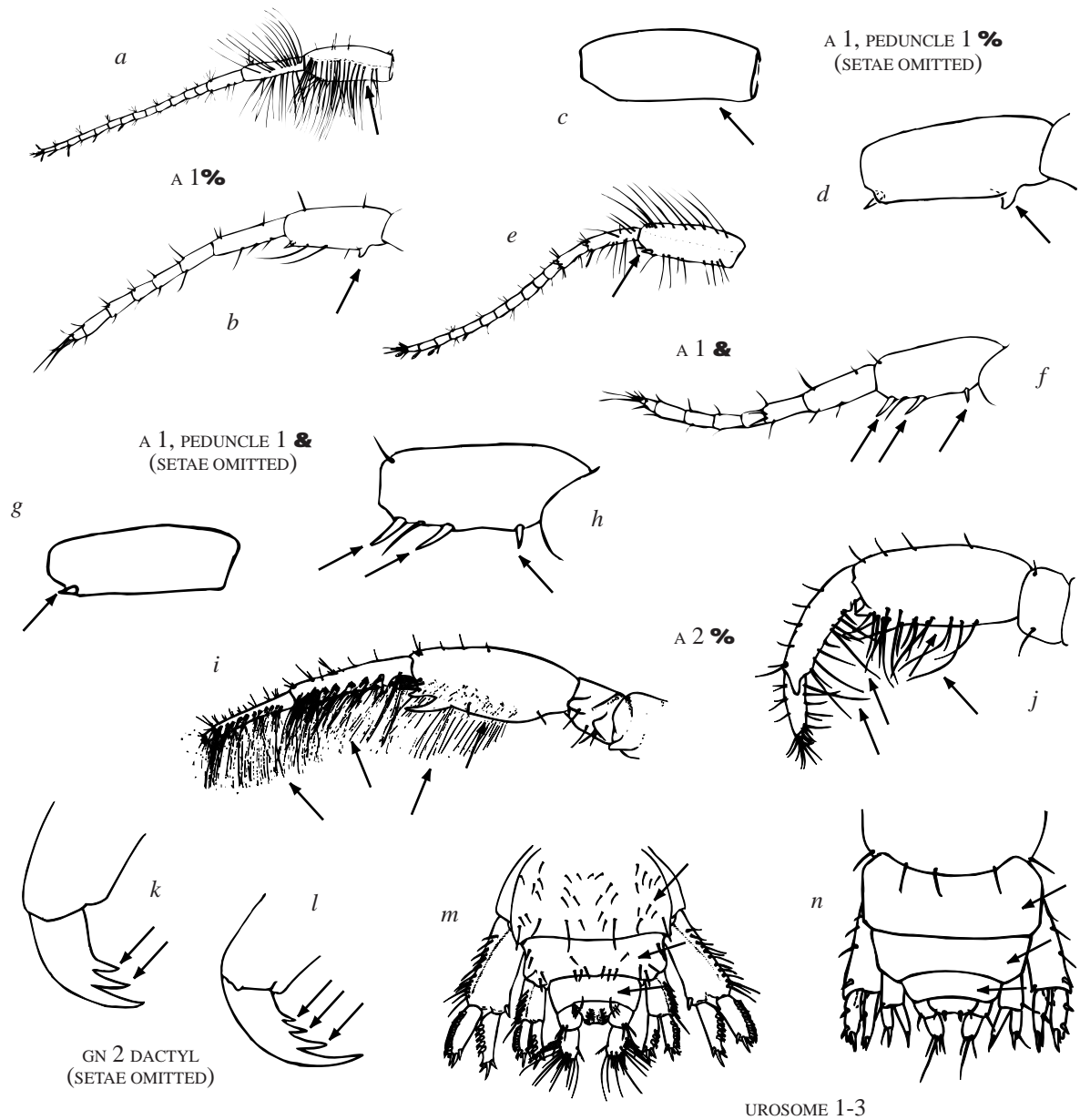


Figure 428.

2. < Rostrum of male weak or absent; antennae 1-2, peduncular articles densely setose; antenna 1, peduncle article 1 of male without proximal ventromedial process, that of female with 1 distal spine on ventral margin, without spines on dorsomedial margin; antenna 2, peduncle article 4 of female similar to that of male, with distoventral double-toothed process, lacking strong spines on ventral margin; uropod 1, peduncle with 10-15 long setae on outer margin, outer ramus with 10-15 spines on outer margin; relatively large species, body length 4-7 mm*Americorophium aquafuscum*

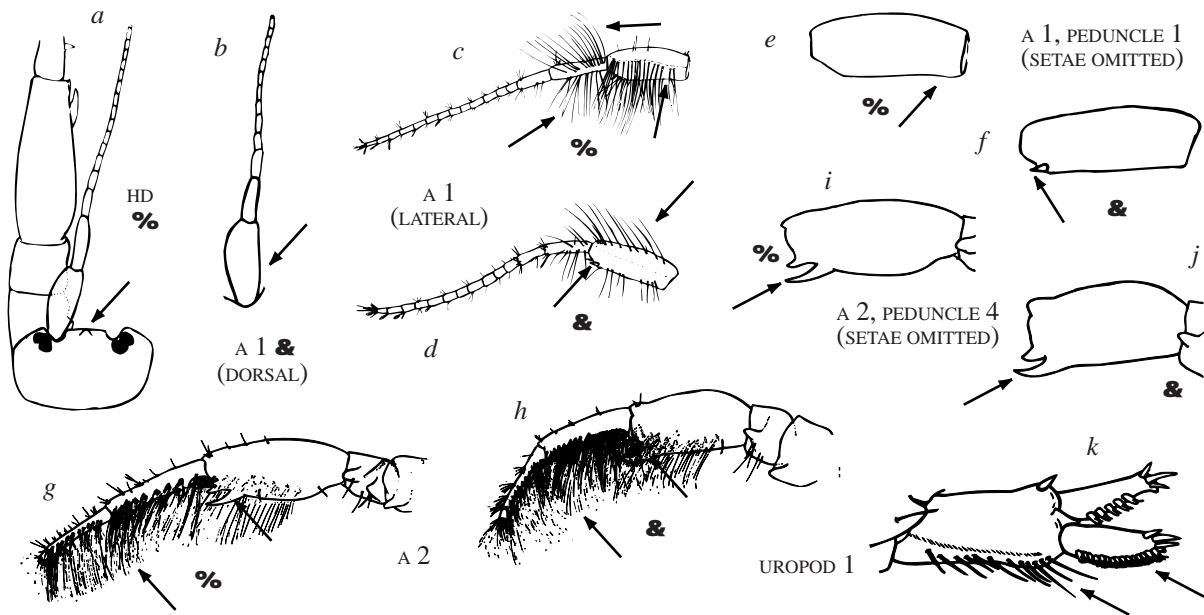


Figure 429.

- < Rostrum of male distinct; antennae 1-2, peduncular articles sparsely setose; antenna 1, peduncle article 1 of male with 1 proximal ventromedial process, that of female with 3 spines on ventral margin, with 2 proximal spines on dorsomedial margin; antenna 2, peduncle article 4 of female different from that of male, without distoventral double-toothed process, with 3 strong spines on ventral margin; uropod 1, peduncle with 1-3 spines or short setae on outer margin, outer ramus with 1-2 spines on outer margin; relatively small species, body length 1-2 mm*Americorophium* sp. A

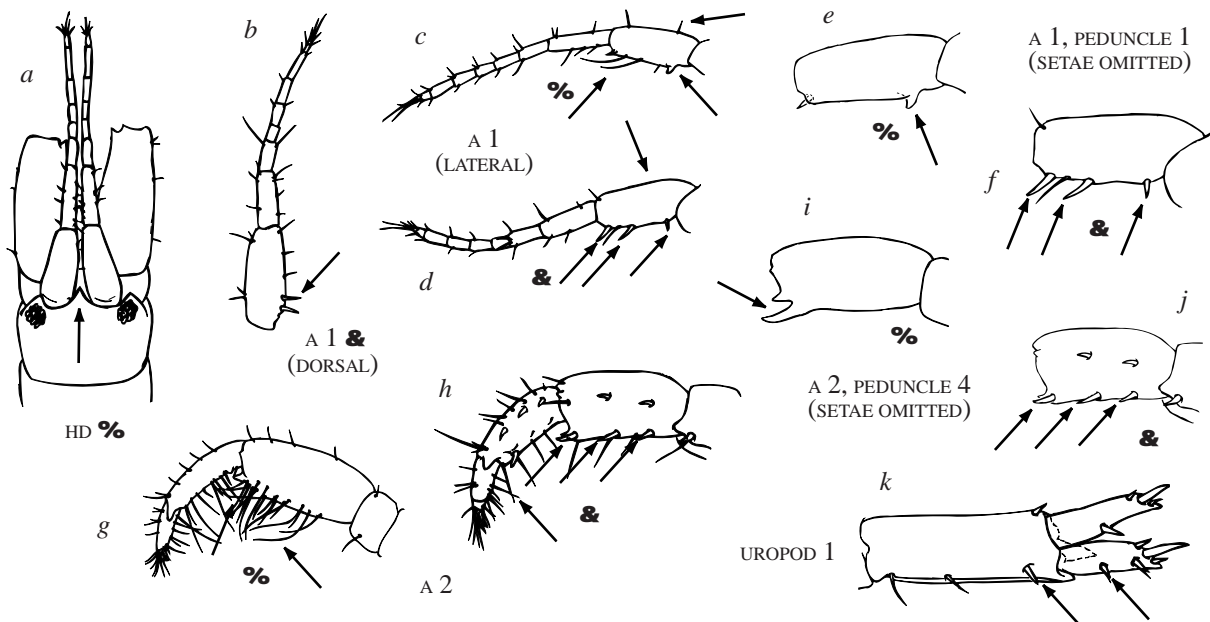


Figure 430.

***Americorophium aquafuscum* (Heard and Sikora, 1972)**
(Figure 429)

Corophium aquafuscum Heard and Sikora, 1972, pp. 467-475, figs. 1-2.
Americorophium aquafuscum: Bousfield and Hoover, 1997, pp. 90, 92.

Regional diagnosis: Rostrum of male weak or absent; antennae 1-2, peduncular articles densely setose; antenna 1, peduncle article 1 of male without proximal ventromedial process, that of female with 1 distal spine on ventral margin, without spines on dorsomedial margin; antenna 2 of male, peduncle articles 4-6 with long setae on ventral margin, article 4 without process at midpoint of ventromedial margin; antenna 2 of female, peduncle article 4 similar to that of male, with distoventral double-toothed process, lacking strong spines on ventral margin; gnathopod 2, dactyl with 2-3 teeth on flexor margin; urosome segments 1-3 separate; uropod 1, peduncle with 10-15 long setae on outer margin, outer ramus with 10-15 spines on outer margin.

Distribution: Nanticoke River, Maryland, Pamunkey and York Rivers, Virginia, Riceboro Creek, Georgia (Heard and Sikora, 1972); St. Marys River, on the border of Georgia and Florida (R.W. Heard, pers. com.).

Ecology: This species occurs in freshwater or very low salinity tidal creeks, where it inhabits the muddy intertidal zone under marsh vegetation, woody debris or rocks (Heard and Sikora, 1972).

Remarks: *Americorophium aquafuscum* is easily distinguished from other regional corophiid species by the relatively large number of spines on the outer margin of the outer ramus of uropod 1 (10-15 spines present in *A. aquafuscum*; usually no more than 5 in other species) and by the long setae present on the outer margin of the peduncle of uropod 1 (spines and occasionally short setae present in other species). It is a moderately large species, ranging from 4 to 7 mm in length.

See Heard and Sikora, 1972 (as *Corophium aquafuscum*).

***Americorophium ellisi* (Shoemaker, 1943)**
(Figure 427)

Corophium ellisi Shoemaker, 1943, pp. 3-6, fig. 1.

Americorophium ellisi: Bousfield and Hoover, 1997, pp. 90, 92.

Regional Diagnosis: Rostrum of male distinct; antennae 1-2, peduncular articles sparsely setose; antenna 1, peduncle article 1 of male with 2 strong processes on ventral margin, that of female with 2 spines on ventral margin, without spines on dorsomedial margin; antenna 2 of male, peduncle articles 4-6 without long setae on ventral margin, article 4 with medially directed process at midpoint of ventromedial margin; antenna 2 of female, peduncle article 4 different from that of male, without distoventral double-toothed process, with 2 moderately strong spines on ventromedial margin; gnathopod 2, dactyl without teeth on flexor margin; urosome segments 1-3 fused; uropod 1, peduncle with 5-6 spines on outer margin, outer ramus with 4-5 spines on outer margin.

Distribution: East coast of Florida from the Indian River Lagoon (Stoner, 1983; Nelson, 1995); west coast of Florida from Sarasota Bay and Lemon Bay (Shoemaker, 1943; 1947); St. Petersburg; Withlacoochee Bay; St. Marks River estuary.

Ecology: *Americorophium ellisi* occurs in seagrass beds (*Thalassia*, *Syringodium*, *Halodule*), among algae, and on sand/mud bottoms (Stoner, 1983; Nelson, 1995) at depths of 1-7 m and at moderately high salinities (18-32 ppt).

Remarks: This species differs from all other known Florida corophiid species in the lack of teeth on the flexor margin of the dactyl of gnathopod 2 and in the presence of 2 strong processes on the ventral margin of antenna 1, peduncle article 1 in the adult male. In addition, antenna 2 is very elongate in adult males, becoming greater than or equal to body length in large individuals. This elongation is not as evident in smaller specimens, however. *Americorophium ellisi* is a relatively large species, ranging from 5 to 7 mm in body length.

See Shoemaker, 1943, 1947 (as *Corophium ellisi*).

***Americorophium* sp. A**
(Figure 430)

Regional diagnosis: Rostrum of male distinct; antennae 1-2, peduncular articles sparsely setose; antenna 1, peduncle article 1 of male with 1 proximal ventromedial process, that of female with 1 distal spine on ventral margin, with 2 proximal spines on dorsomedial margin; antenna 2 of male, peduncle articles 4-6 with long setae on ventral margin, article 4 without process at midpoint of ventromedial margin; antenna 2 of female, peduncle article 4 different from that of male, without distoventral double-toothed process, with 3 strong spines on ventral margin; gnathopod 2, dactyl with 2-3 teeth on flexor margin; urosome segments 1-3 separate; uropod 1, peduncle with 1-3 spines or short setae on outer margin, outer ramus with 1-2 spines on outer margin.

Distribution: West coast of Florida from Chokoloskee Bay (Ten Thousand Islands) and Chassahowitzka Bay.

Ecology: This species occurs on shallow (1-2 m) sand bottoms with oyster shell present.

Remarks: *Americorophium* sp. A is a small (1-2 mm), uncommon species, although its apparent rarity may be a sampling artifact rather than a representation of its actual distribution. It is one of only two corophiid species in Florida waters with separate urosome segments; the other is *Americorophium aquafuscum*, from which it can immediately be distinguished by the more sparsely setose antennae, the presence of only 1-2 spines on the outer margin of the outer ramus of uropod 1 (10-15 in *A. aquafuscum*), the lack of long setae on the outer margin of the peduncle of uropod 1 (long setae present in *A. aquafuscum*) and its small size (1-2 mm compared to 5-7 mm for *A. aquafuscum*).

Genus *Apocorophium* Bousfield and Hoover, 1997

Regional diagnosis: Mandible, penultimate article of palp expanded or produced distally; gnathopod 2, dactyl with 2-3 teeth on flexor margin; urosome segments 1-3 fused, with distinct lateral marginal ridge, lateral marginal ridge without median notch; uropod 1 inserted ventrally.

Florida species: *A. acutum*, *A. lacustre*, *A. louisianum*, *A. simile*

KEY TO FLORIDA SPECIES OF *APOCOROPHIUM*

1. < Antenna 1 of male, peduncle article 1 with acute, anteriorly directed proximal process on ventromedial margin, peduncle articles 1-2 without long setae on ventral margin; antenna 2 of male, peduncle article 2 with strong, inwardly curved distal process on ventromedial margin, peduncle articles 5-6 without long setae on ventral margin; antenna 2 of female, peduncle articles slender, peduncle article 4 with weak spine present at distoventral angle
*Apocorophium louisianum*

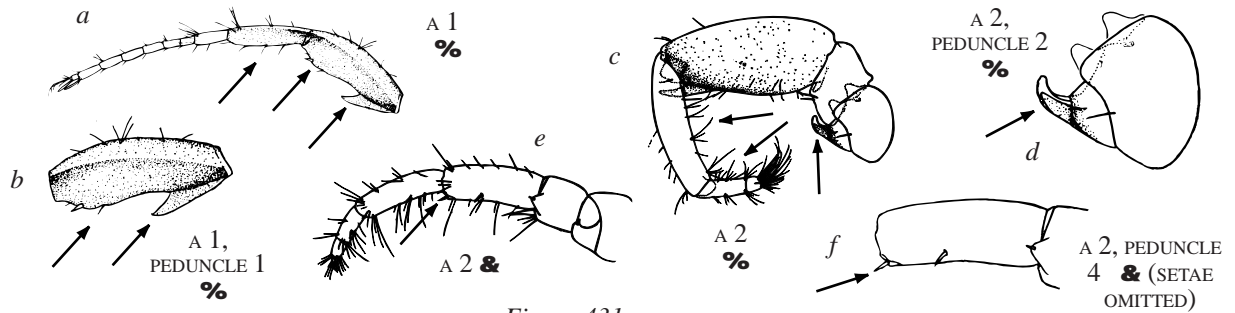


Figure 431.

- < Antenna 1 of male, peduncle article 1 without proximal process on ventromedial margin, peduncle articles 1-2 with long setae on ventral margin; antenna 2 of male, peduncle article 2 without strong, inwardly curved distal process on ventromedial margin (small process may be present), peduncle articles 5-6 with long setae on ventral margin; antenna 2 of female, peduncle articles moderately stout, peduncle article 4 without spine at distoventral angle (may have process or subdistal spine) 2

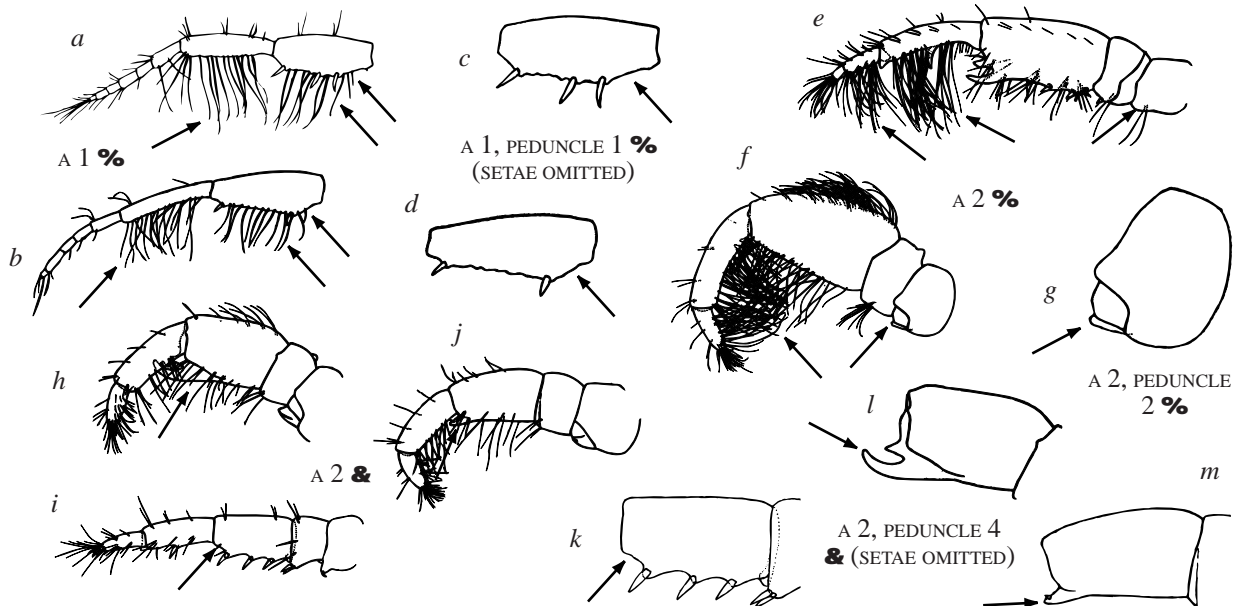


Figure 432.

2. < Antenna 1, peduncle article 1 with 3-4 spines on ventral margin, 1-2 proximal spines on dorsomedial margin; antenna 2 of male, peduncle article 4 with 2-3 spines on ventromedial margin; antenna 2 of female, peduncle article 4 without distoventral process, ventral margin with 3 strong spines, article 5 with 1 spine at midpoint of ventral margin
*Apocorophium acutum*

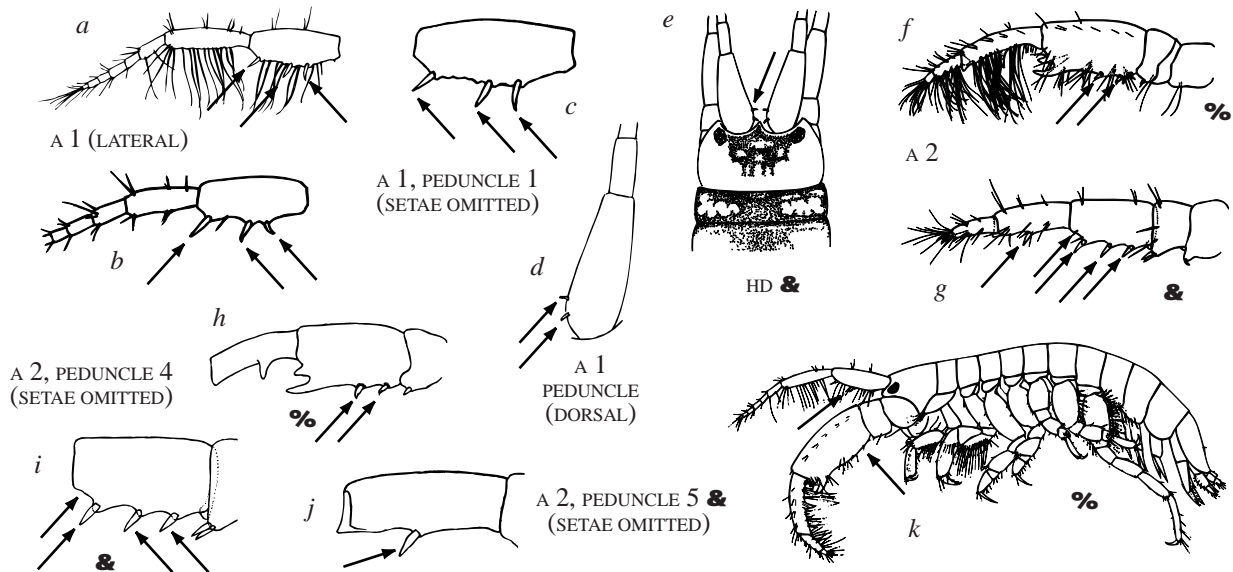


Figure 433.

- < Antenna 1, peduncle article 1 with 1-2 spines on ventral margin, without spines on dorsomedial margin; antenna 2 of male, peduncle article 4 without spines on ventromedial margin (tubercle may occasionally be present); antenna 2 of female, peduncle article 4 with distoventral process, ventral margin with 0-1 weak spine at midpoint, article 5 without spines on ventral margin (small process may be present) 3

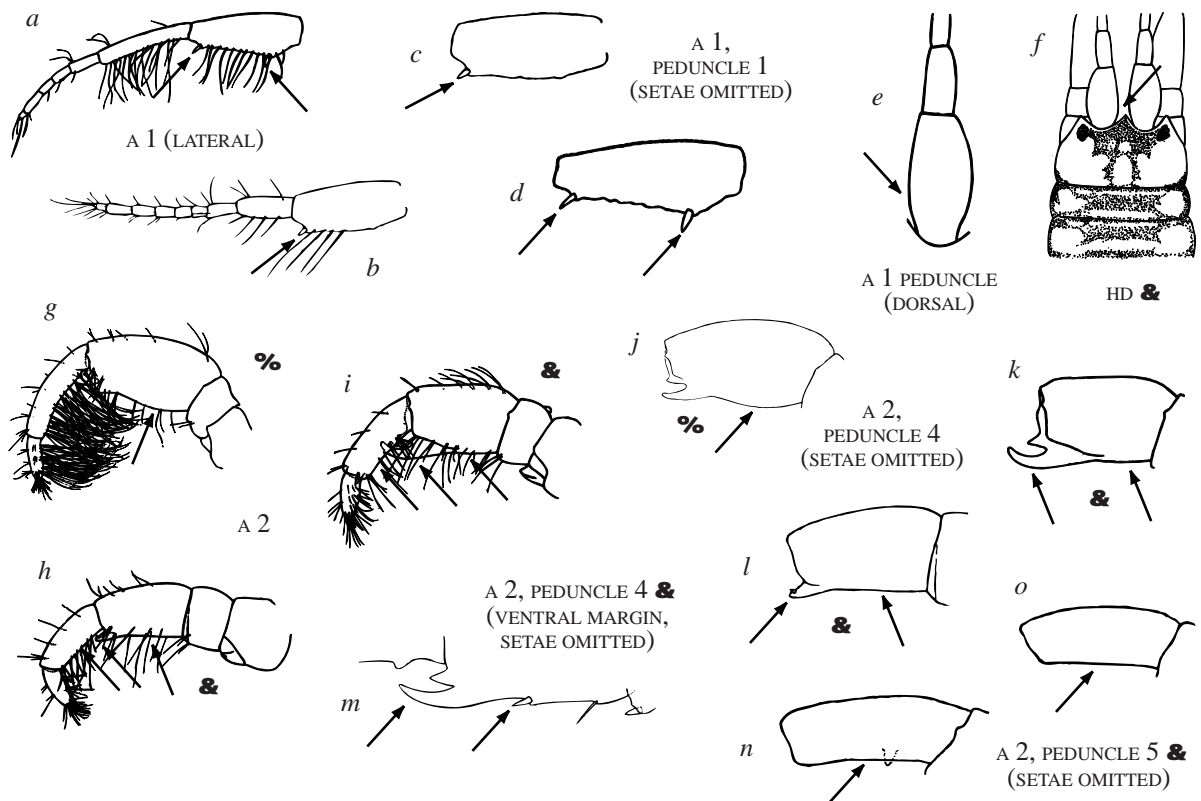


Figure 434.

3. < Antenna 1, peduncle article 1 with 1 distal spine on ventral margin, that of male with long setae on dorsomedial margin; gnathopod 1, dactyl not extending beyond palmar angle when closed*Apocorophium lacustre*

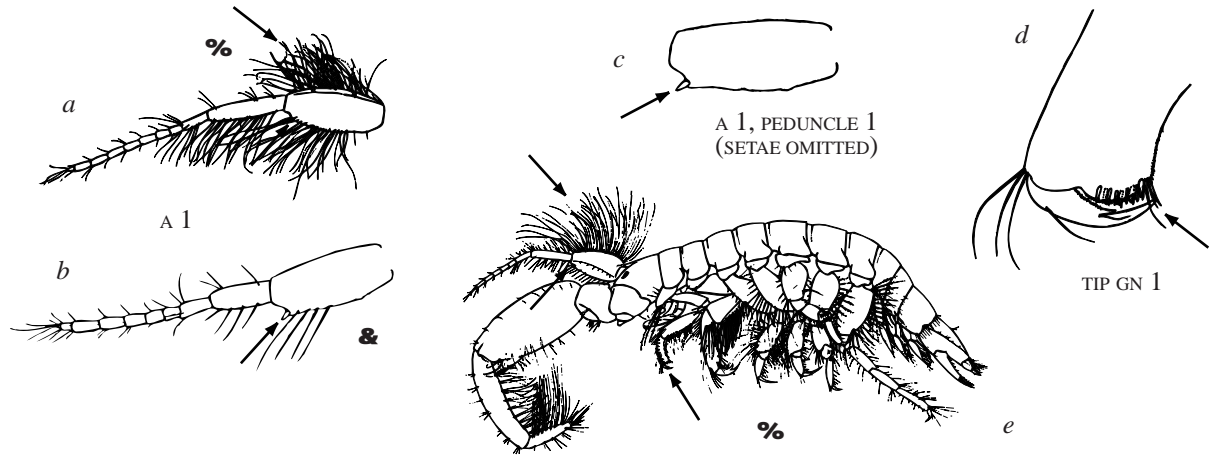


Figure 435.

- < Antenna 1, peduncle article 1 with 1 proximal and 1 distal spine on ventral margin, that of male without long setae on dorsomedial margin; gnathopod 1, dactyl extending well beyond palmar angle when closed*Apocorophium simile*

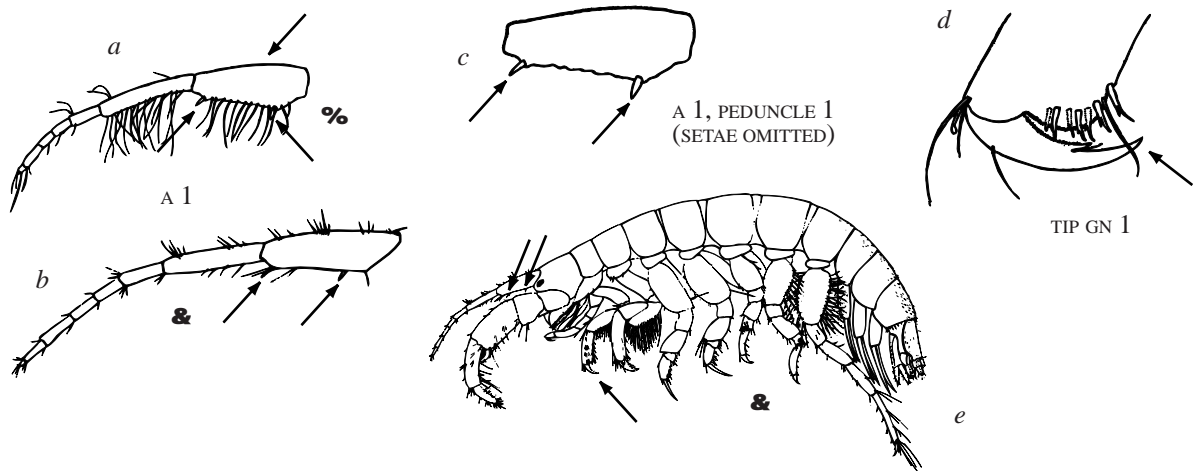


Figure 436.

***Apocorophium acutum* (Chevreux, 1908)**
(Figure 433)

Corophium acutum Chevreux, 1908, p. 75, fig. 6.

Corophium cf *acutum*: Rakocinski et al., 1996, p. 350.

Apocorophium acutum: Bousfield and Hoover, 1997, pp. 123, 125, fig. 35.

Regional diagnosis: Antenna 1, peduncle article 1 with 3-4 spines on ventral margin, 1-2 proximal spines on dorsomedial margin, that of male without proximal process on ventromedial margin, without long setae on dorsomedial margin, peduncle articles 1-2 of male with long setae on ventral margin; antenna 2 of male, peduncle article 2 without strong, inwardly curved distal process on ventromedial margin, article 4 with 2-3 spines on ventromedial margin, articles 5-6 with long setae on ventral margin; antenna 2 of female, peduncle articles moderately stout, peduncle article 4 without distoventral process, without spine at distoventral angle, ventral margin with 3 strong spines, article 5 with 1 spine at midpoint of ventral margin; gnathopod 1, dactyl extending well beyond palmar angle.

Distribution: Nearly cosmopolitan in warm temperate and tropical regions (Bousfield, 1973; Lincoln, 1979); east coast of North America from Cape Cod, Massachusetts to Florida (Bousfield, 1973; Charvat et al., 1990; Nelson and Demetriades, 1992; Nelson, 1995); Perdido Key, Florida (Rakocinski et al., 1996).

Ecology: This species occurs in fouling growth on nearshore hard substrates such as rocks, buoys, rafts and pilings in channels, open surf and other high-current areas (Bousfield, 1973; Lincoln, 1979; Nelson, 1995), although it is occasionally found on sand or mud bottoms as well (Dickinson et al., 1980; Nelson, 1995). It has also been found on nearshore worm rock (*Phragmatopoma lapidosa*) reefs at Sebastian Inlet, Florida (Nelson and Demetriades, 1992). It occurs from the intertidal to depths of 5 m at moderate to high salinities (24-35 ppt).

Remarks: *Apocorophium acutum* is well documented from the Sebastian Inlet area of Florida (Charvat et al., 1990; Nelson and Demetriades, 1992; Nelson, 1995) and has also been found at Perdido Key on the northern Gulf coast (Rakocinski et al., 1996), but it has yet to be reported from southern Florida. It can be distinguished from the other species of *Apocorophium* in the region by the presence of 1-2 spines on the dorsomedial margin and 3-4 spines on the ventral margin of antenna 1, peduncle article 1 (dorsomedial spines absent, 1-2 spines on ventral margin in other species), by the presence of spines on the ventral margin of antenna 2, peduncle article 4 of the male (spines absent in other species) and by the presence of 3 strong spines on the ventral margin of that article in females (1 weak spine only in other species). *Apocorophium acutum* also closely resembles *Laticorophium baconi* in a number of characters (see **Remarks** section for the latter species for a comparison between the two). It is a small species, ranging from 2 to 3 mm in length.

See Shoemaker, 1934a, 1947 (as *Corophium acutum*); Crawford, 1937 (as *C. acutum*); Bousfield, 1973 (as *C. acutum*).

***Apocorophium lacustre* (Vanhöffen, 1911)**
(Figure 435)

Corophium lacustre Vanhöffen, 1911, p. 400, figs. 1-4.

Corophium cf lacustre: Rakocinski et al., 1996, p. 350.

Apocorophium lacustre: Bousfield and Hoover, 1997, pp. 123, 125.

Regional diagnosis: Antenna 1, peduncle article 1 with 1 distal spine on ventral margin, without spines on dorsomedial margin, that of male without proximal process on ventromedial margin, with long setae on dorsomedial margin, peduncle articles 1-2 of male with long setae on ventral margin; antenna 2 of male, peduncle article 2 without strong, inwardly curved distal process on ventromedial margin (small process may be present), article 4 without spines on ventromedial margin, articles 5-6 with long setae on ventral margin; antenna 2 of female, peduncle articles moderately stout, peduncle article 4 with distoventral process, without spine at distoventral angle, ventral margin with 0-1 weak spines at midpoint, article 5 without spines on ventral margin; gnathopod 1, dactyl not extending beyond palmar angle.

Distribution: Bay of Fundy, Canada to the Indian River Lagoon, Florida (Bousfield, 1973; Nelson, 1995); Ochlockonee River, Florida; Perdido Key, Florida (Rakocinski et al., 1996); East Pascagoula River, Escatawpa River and Ocean Springs, Mississippi; Lake Ponchartrain, Louisiana (Abadie et al., 1998); Calcasieu Lake, Louisiana; Mississippi River at Vicksburg (E. DeWalt, pers. com.); western Europe (Crawford, 1937; Shoemaker, 1947; Bousfield, 1973; Lincoln, 1979).

Ecology: Although this species occurs in salinities of 25 ppt or less, it is most often found in waters at the lower end of that range, frequently ranging upstream in rivers into fully fresh water (Crawford, 1937; Shoemaker, 1947; Lincoln, 1979). It may be found on shallow sand or mud bottoms, on marshy banks, in ditches, attached to pilings, stumps and other hard substrates (Bousfield, 1973; Lincoln, 1979; Nelson, 1995), in seagrass beds (*Thalassia*, *Syringodium*, *Halodule*), on algae covered rocks and in mangroves and impoundments (Stoner, 1983; Nelson, 1995). *Apocorophium lacustre* occurs at depths ranging from just subtidal to 10m.

Remarks: *Apocorophium lacustre* females differ from those of all other Florida corophiids except *A. simile* by having the combination of a lateral ridge on the urosome and a distal process on antenna 2, peduncle article 4. They can be distinguished from female *A. simile* by the length of the dactyl of gnathopod 1 (not extending beyond the palmar angle in *A. lacustre*; extending well beyond the palmar angle in *A. simile*) and by the presence of 1 spine on the ventral margin of antenna 1, peduncle article 1 (2 spines in *A. simile*). Males can be distinguished by the combination of the presence of a lateral urosomal ridge; the presence of very long setae on the dorsomedial margin of antenna 1, peduncle article 1; 1 spine on the ventral margin of antenna 1, peduncle article 1; and the dactyl of gnathopod 1 not extending beyond the palmar angle. In subadult males, the setae on the peduncle articles of antenna 1, especially the long dorsomedial setae on article 1, are less well developed than in adults. Gulf coast material differs from Atlantic coast *A. lacustre* specimens in the stronger distal process on peduncle article 4 of antenna 2 in the female (more similar to that of the male) and this material is usually referred to as *A. cf lacustre* for this reason. Adult size ranges from 3 to 5 mm in this species.

See Shoemaker, 1934a, 1947 (as *Corophium lacustre*); Crawford, 1937 (as *Corophium lacustre*); Bousfield, 1973 (as *Corophium lacustre*); Heard, 1982 (as *Corophium lacustre*).

***Apocorophium louisianum* (Shoemaker, 1934)**
(Figure 431)

Corophium louisianum Shoemaker, 1934a, pp. 30-31.

Apocorophium louisianum: Bousfield and Hoover, 1997, pp. 123, 125.

Regional diagnosis: Antenna 1, peduncle article 1 of male with acute, anteriorly directed proximal process on ventromedial margin, with 1 distal spine on ventral margin, without spines or long setae on dorsomedial margin, that of female with 2 spines on ventral margin, 1 proximal spine on dorsomedial margin, peduncle articles 1-2 of male without long setae on ventral margin; antenna 2 of male, peduncle article 2 with strong, inwardly curved distal process on ventromedial margin, article 4 without spines on ventromedial margin, article 5-6 without long setae on ventral margin; antenna 2 of female, peduncle articles slender, peduncle article 4 without distoventral process, with 1 weak spine at distoventral angle, ventral margin with 1 weak spine at midpoint, article 5 without spines on ventral margin; gnathopod 1, dactyl not extending beyond palmar angle.

Distribution: Indian River Lagoon, Florida (Nelson, 1995); Gulf coast from South Florida to Texas (Shoemaker, 1947; Heard, 1982; Flint and Yount, 1983); Veracruz, Mexico (Ortiz and Winfield, 1995); Terminos Lagoon, Mexico (Ledoyer, 1986; Cházaro-Olvera et al., 2002); Yalahau Lagoon, Mexico (Oliva-Rivera and Jiminénez-Cueto, 1997).

Ecology: This species is tolerant of a wide range of salinities (1-30 ppt) and occurs in shallow (usually 1-2 m, but occasionally up to 15 m) subtidal waters in and along the edges of salt marshes. It builds tubes attached to wood, shell, leaves and submerged marsh grasses and occasionally occurs on sand or mud bottoms or in seagrass beds (Thomas, 1976; Heard, 1982; Sheridan and Livingston, 1983; Nelson, 1995).

Remarks: *Apocorophium louisianum* is a very common inhabitant of salt marshes along the Gulf coast. Males of this species are easily distinguished from other Florida species of *Apocorophium* by the acute proximal ventromedial process on antenna 1, peduncle 1 and by the strong inwardly curved distal process on antenna 2, peduncle article 2. Females have a relatively slender second antenna with a weak spine at the distoventral on article 2 (*A. lacustre* and *A. simile* have a process in this location, *A. acutum* lacks a distoventral spine, although it does have a strong subdistal spine on the ventral margin). Adult size ranges from 3 to 5 mm.

See Shoemaker, 1934a, 1947 (as *Corophium louisianum*); Heard, 1982 (as *Corophium louisianum*).

***Apocorophium simile* (Shoemaker, 1934)**
(Figure 436)

Corophium simile Shoemaker, 1934a, pp. 28-29.

Apocorophium simile: Bousfield and Hoover, 1997, pp. 123, 125.

Regional diagnosis: Antenna 1, peduncle article 1 with 1 proximal and 1 distal spine on ventral margin, without spines on dorsomedial margin; that of male without proximal process on ventromedial margin, without long setae on dorsomedial margin, peduncle articles 1-2 of male with long setae on ventral margin; antenna 2 of male, peduncle article 2 without strong, inwardly curved distal process on ventromedial margin, article 4 without spines on ventromedial margin, articles 5-6 with long setae on ventral margin; antenna 2 of female, peduncle articles moderately stout, peduncle article 4 with distoventral process, without spine at distoventral angle, ventral margin with 0-1 weak spines at midpoint, article 5 without spines on ventral margin; gnathopod 1, dactyl extending well beyond palmar angle.

Distribution: East coast of the U.S. from Cape Cod, Massachusetts to Florida (Bousfield, 1973); Indian River Lagoon, Florida (Nelson 1995); Florida Bay and Chokoloskee Bay (Ten Thousand Islands), Florida; Sarasota to Appalachicola, Florida (Shoemaker, 1934a, 1947); Galveston Bay and Freeport, Texas; Veracruz, Mexico (Winfield and Ortiz, 1996)

Ecology: This relatively uncommon species inhabits tubes attached to sponges, tunicates, oysters or pilings on sand and sandy mud bottoms at depths of 1 to 15 m (Shoemaker, 1934a; Crawford, 1937; Bousfield, 1973). It has also been reported from seagrass beds and algae (Nelson, 1995).

Remarks: *Apocorophium simile* is one of only three corophiid species in Florida waters in which the female has a distoventral process on antenna 2, peduncle article 4, similar to that of the male. It is readily distinguished from the first of these, *Americorophium aquafusum*, by the fused urosome segments and presence of a raised marginal ridge on the urosome (*A. aquafusum* has separate urosome segments and lacks a ridge). It is, however, quite similar to *Apocorophium lacustre*, from which it can be distinguished by the presence of 2 spines on the ventral margin of antenna 1, peduncle article 1 (1 spine in *A. lacustre*) and by the dactyl of gnathopod 1 extending well beyond the palmar angle (not extending beyond the palmar angle in *A. lacustre*). Adult sizes range from 3 to 5 mm.

See Shoemaker, 1934a, 1947 (as *Corophium simile*); Bousfield, 1973 (as *Corophium simile*).

Genus *Laticorophium* Bousfield and Hoover, 1997

Regional diagnosis: Mandible, penultimate article of palp expanded or produced distally; gnathopod 2, dactyl with 1 tooth on flexor margin; urosome segments 1-3 fused, with distinct lateral marginal ridge, lateral marginal ridge with median notch; uropod 1 inserted ventrally.

Florida species: *L. baconi*

Laticorophium baconi (Shoemaker, 1934)

(Figure 425)

Corophium baconi Shoemaker, 1934b, pp. 356-359, fig. 1.

Laticorophium baconi: Bousfield and Hoover, 1997, pp. 126-129, figs. 36-37.

Regional diagnosis: That of the genus.

Distribution: Murrells Inlet, South Carolina (Southeastern Regional Taxonomic Center, South Carolina Department of Natural Resources, unpublished record); Titusville and Hutchinson Island, Florida; southwestern Gulf of Mexico between Cape Sable and Cape Romano, St. Petersburg and St. Andrew Bay, Florida; Horn Island, Mississippi; Laguna Madre (McKinney, 1977) and Boca Chica Beach, Texas; Pacific coast from the Bering Sea to southern California, Costa Rica and Peru (Shoemaker, 1934b, 1949; Bousfield and Hoover, 1997); Hawaii (Barnard, 1970); South China Sea (Hirayama, 1990).

Ecology: This species occurs as a fouling organism on rock jetties (McKinney, 1977), seawalls, offshore platforms, buoys and other hard substrates, as well as in shallow, high salinity (>30 ppt) grassbed habitats, sand or mud bottoms (McKinney, 1977; Nelson, 1995) and, occasionally, in floating *Sargassum* mats. It occurs at depths of 0.3 to 9 m.

Remarks: *Laticorophium baconi* was originally described by Shoemaker (1934b) from the Bering Sea, southern California and Peru and is considered by Bousfield and Hoover (1997) to have been introduced into the South China Sea (Hong Kong). It is possible that it was introduced into the Gulf of Mexico and western Atlantic as well; there do not appear to be any records of its presence in these areas prior to McKinney's (1977) report of its occurrence in Laguna Madre, Texas, and it is easy to envision its transport through the Panama Canal on boat bottoms.

This species is immediately distinguishable from all other Florida corophiids by the presence of a median notch in the lateral ridge of the urosome. However, it does strongly resemble *Apocorophium acutum* in a number of other characters, including the presence of 2 proximal spines on the dorsomedial margin of antenna 1, peduncle article 1, the presence of spines on the ventral margin of antenna 2, peduncle article 4 of the male, the presence of a somewhat more well-developed ventromedial process on antenna 2, peduncle article 5 of the male than in other species, the presence of a distal process on that article, the presence of 3 strong spines on the ventral margin of antenna 2, peduncle article 4 of the female and the small, relatively stocky appearance. In addition to the median notch in the lateral ridge of the urosome, *L. baconi* differs from *A. acutum* in the more distal placement of the ventromedial process on antenna 2, peduncle article 5 of the male (more evident in large individuals), the more well-developed distal process on that article, the lack of a spine on the ventral margin of antenna 2, peduncle article 5 of the female (strong spine present in *A. acutum*), and the presence of only 1 tooth on the flexor margin of the dactyl of gnathopod 2 (2 teeth in *A. acutum*). Adult length ranges from 2-3.5 mm in this species.

See Shoemaker, 1934b (as *Corophium baconi*); McKinney, 1977 (as *Corophium* sp. A); Bousfield and Hoover, 1997.

Genus *Monocorophium* Bousfield and Hoover, 1997

Regional diagnosis: Mandible, penultimate article of palp expanded or produced distally; gnathopod 2, dactyl with 1-3 teeth on flexor margin; urosome segments 1-3 fused, without lateral marginal ridge; uropod 1 inserted laterally or ventrolaterally.

Florida species: *M. acherusicum*, *M. insidiosum*, *M. tuberculatum*, *Monocorophium* sp. A

KEY TO FLORIDA SPECIES OF *MONOCOROPHIUM*

1. < Antenna 1, peduncle article 1 of male with 1 small proximal spine on dorsomedial margin, with 3-4 spines on ventral margin, that of female with 1-2 spines on dorsomedial margin, peduncle articles 1-2 of both sexes without long setae on dorsomedial margin; gnathopod 2, dactyl with 1 process on flexor margin; uropod 3, ramus subovate, longer than wide; very small species, adult length 1-2 mm *Monocorophium* sp. A

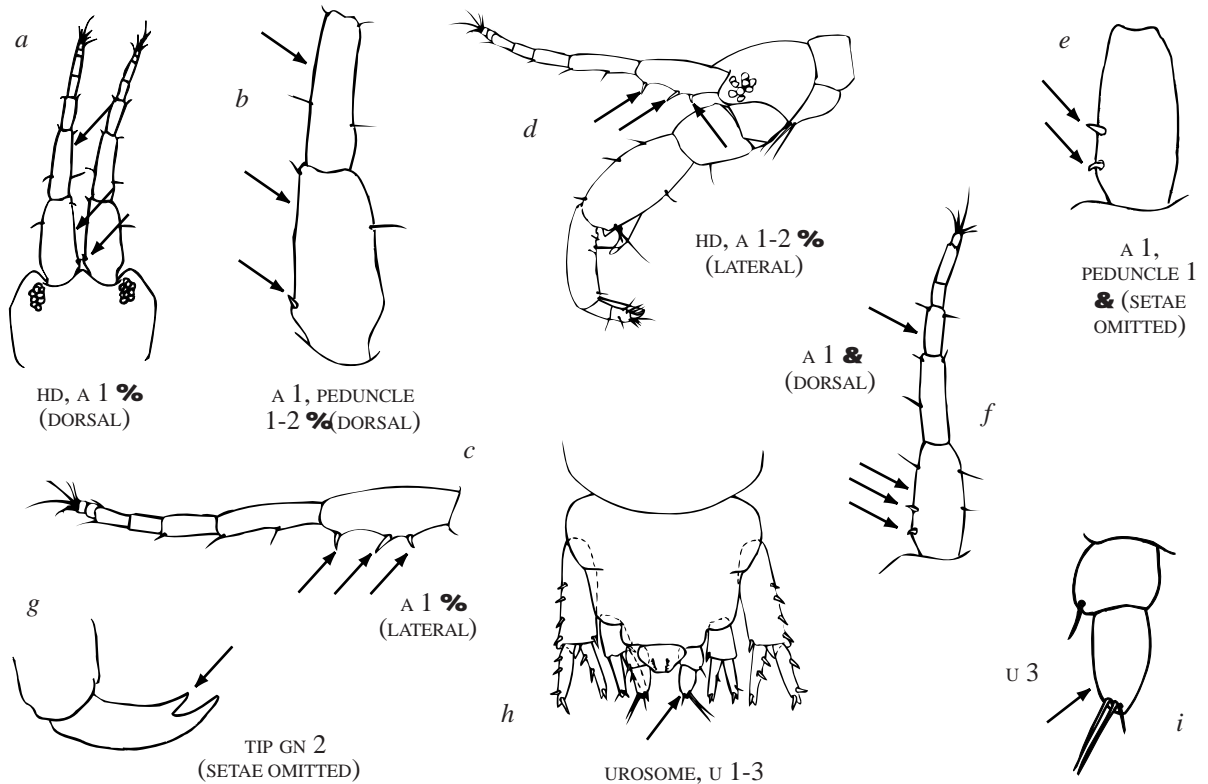


Figure 437.

< Antenna 1, peduncle article 1 of male without spines on dorsomedial margin, with 1-2 spines on ventral margin, that of female with 0 or 3-4 spines on dorsomedial margin, peduncle articles 1-2 of both sexes with long setae on dorsomedial margin (setae may be sparse); gnathopod 2, dactyl with 2-3 processes on flexor margin; uropod 3, ramus subcircular, approximately as long as wide; larger species, adult length 3-5 mm 2

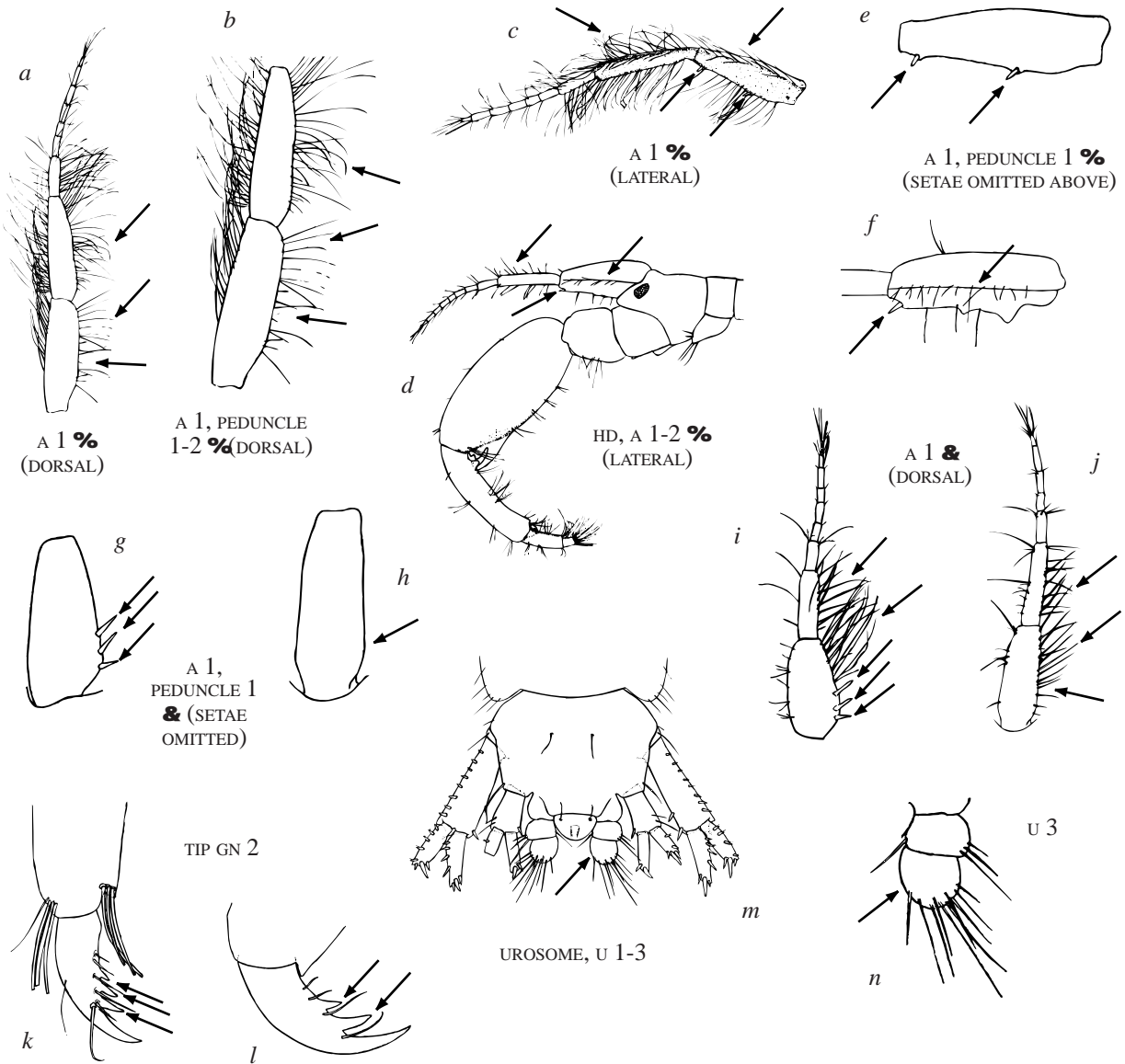


Figure 438.

2. < Rostrum of male elongate and slender; antenna 1, peduncle article 1 of male with short, blunt, proximal process on ventromedial margin; antenna 2, peduncle article 5 of male without proximal process on ventromedial margin (low swelling may be present); gnathopod 1, dactyl at most extending very slightly beyond palmar angle; gnathopod 2, dactyl with 3 processes on flexor margin; uropod 2, outer margin of inner ramus without spines or setae
 *Monocorophium insidiosum*

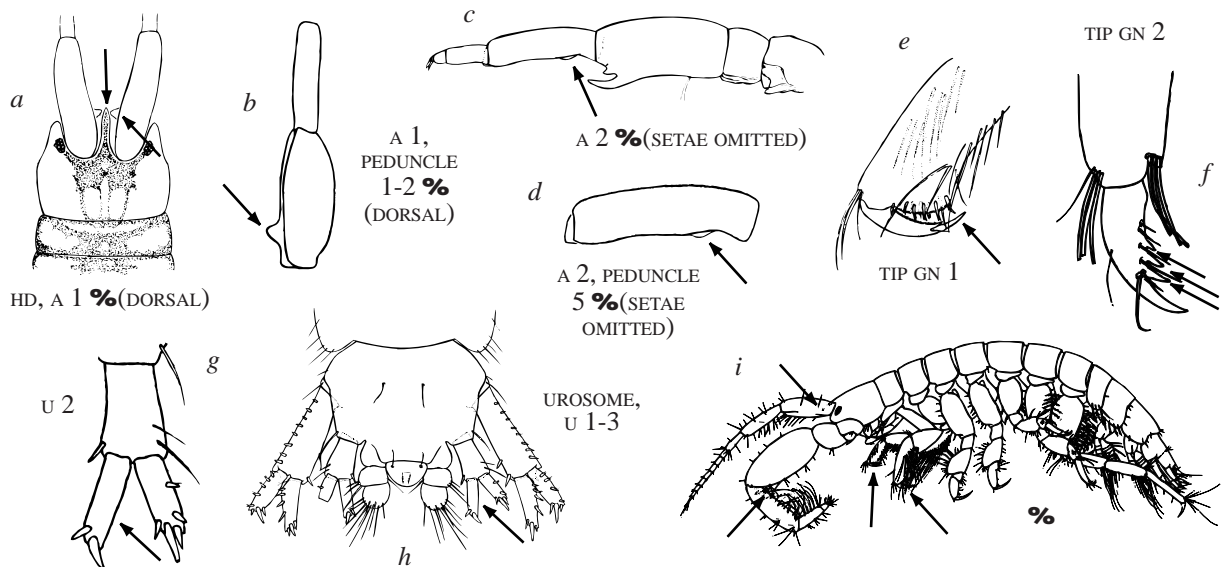


Figure 439.

- < Rostrum of male minute or short and broad; antenna 1, peduncle article 1 of male without process on ventromedial margin (ventral margin may be crenulate); antenna 2, peduncle article 5 of male with proximal process on ventromedial margin; gnathopod 1, dactyl extending well beyond palmar angle; gnathopod 2, dactyl with 2 processes on flexor margin; uropod 2, outer margin of inner ramus with spines or setae 3

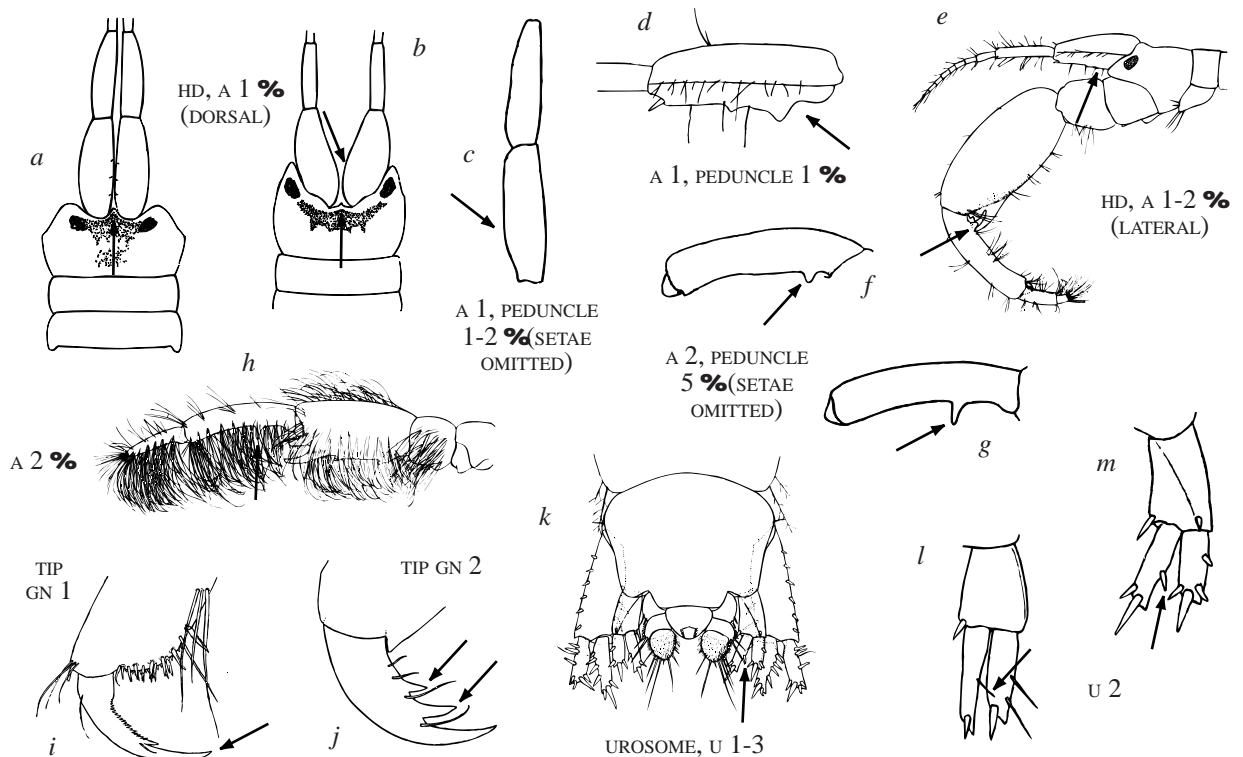


Figure 440.

3. < Rostrum of male minute, deeply recessed; antenna 1 of male, peduncle article 1 with 1 distal spine only on ventral margin; antenna 1 of female, peduncle article 1 with 3-4 strong spines on dorsomedial margin, 4-5 strong spines on ventral margin; antenna 2 of male, peduncle articles sparsely setose, peduncle article 4 without ventromedial processes or tubercles; antenna 2 of female, peduncle articles 3-5 with strong spines ($1/3 - 1/2$ width of article in length) on ventral margin; peraeopod 7 of male, carpus stout, length approximately twice width, with broad, low protuberance on anterior margin; uropod 1, peduncle with 2-4 spines on medial margin *Monocorophium acherusicum*

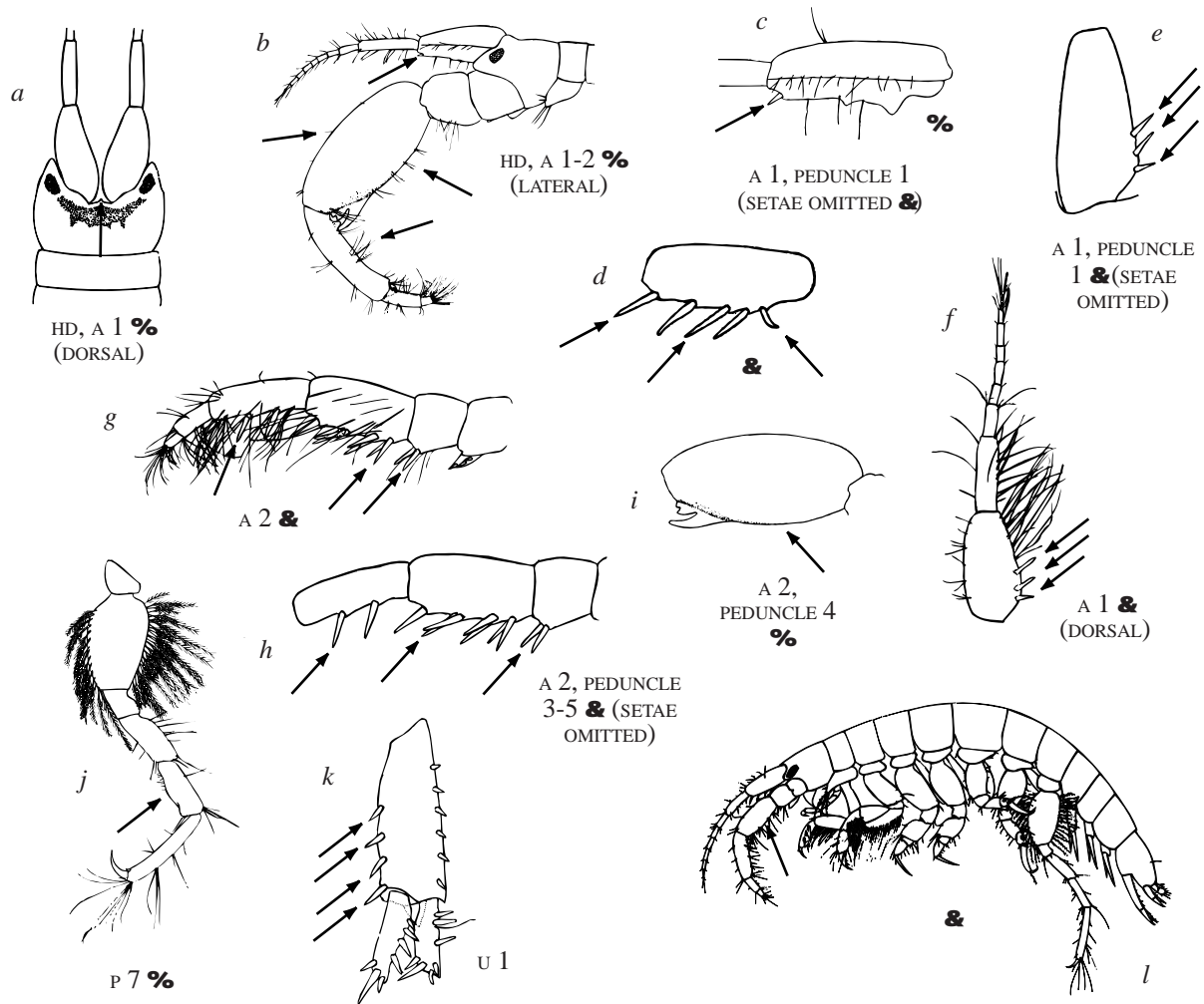


Figure 441.

< Rostrum of male short, broad, not deeply recessed; antenna 1 of male, peduncle article 1 with 1 proximal and 1 distal spine on ventral margin; antenna 1 of female, peduncle article 1 without spines on dorsomedial margin, with 1 proximal and 1 distal spine on ventral margin; antenna 2 of male, peduncle articles heavily setose, peduncle article 4 with 2 ventromedial processes or tubercles; antenna 2 of female, peduncle articles 3-4 with weak spines (1/4 width of article in length) on ventral margin, article 5 without spines on ventral margin; peraeopod 7 of male, carpus slender, length 4-5 times width, without protuberance on anterior margin; uropod 1, peduncle with 1 spine on distomedial margin *Monocorophium tuberculatum*

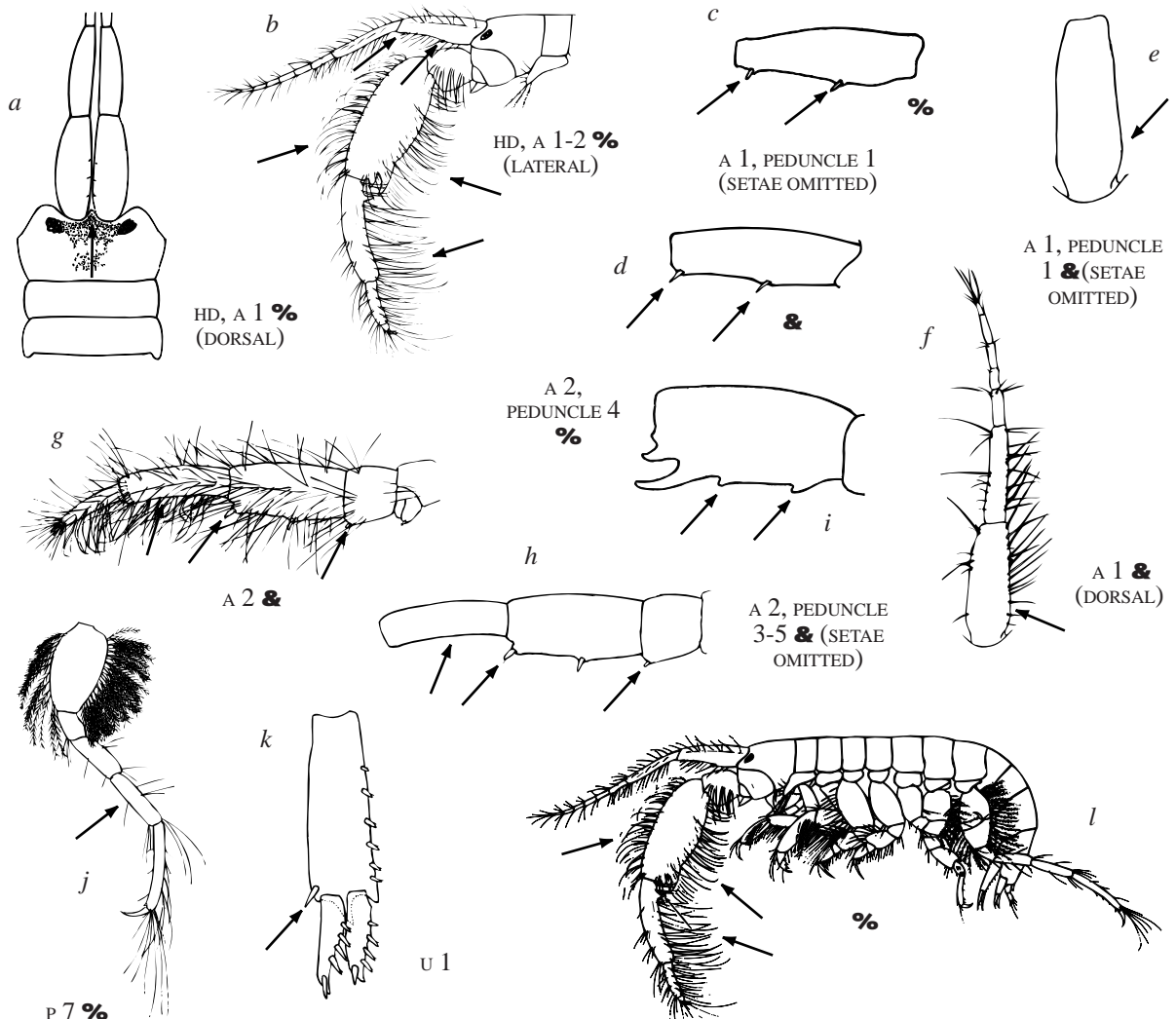


Figure 442.

***Monocorophium acherusicum* (Costa, 1851)**
(Figure 441)

Corophium acherusicum Costa, 1851, p. 232.

Monocorophium acherusicum: Bousfield and Hoover, 1997, pp. 117-119, fig. 30.

Regional diagnosis: Rostrum of male minute, deeply recessed; antenna 1, peduncle article 1 of male without spines on dorsomedial margin, with 1 distal spine on ventral margin, ventromedial margin without process, peduncle article 1 of female with 3-4 strong spines on dorsomedial margin, 4-5 strong spines on ventral margin, peduncle articles 1-2 of both sexes with long setae on dorsomedial margin (sparse in male); antenna 2 of male, peduncle articles sparsely setose, peduncle article 4 without ventromedial processes or tubercles, peduncle article 5 with proximal process on ventromedial margin; antenna 2 of female, peduncle articles 3-5 with strong spines ($1/3 - 1/2$ width of article in length) on ventral margin; gnathopod 1, dactyl extending well beyond palmar angle; gnathopod 2, dactyl with 2 processes on flexor margin; peraeopod 7 of male, carpus stout, length approximately twice width, with broad, low protuberance on anterior margin; uropod 1, peduncle with 2-4 spines on medial margin; uropod 2, outer margin of inner ramus with spines; uropod 3, ramus subcircular, approximately as long as wide.

Distribution: Virtually cosmopolitan in temperate and tropical waters (Bousfield, 1973; Lincoln, 1979). Western Atlantic distribution from Baffin Bay, Canada to Brazil (Shoemaker, 1947), including the Gulf of Mexico from Florida to Texas (McKinney, 1977; pers. obs.).

Ecology: *Monocorophium acherusicum* occurs in shallow (0-9 m), somewhat protected waters such as harbors, bays and estuaries at moderate salinities (Bousfield, 1973; McKinney, 1977; Lincoln, 1979). It is a fouling species, constructing tubes on algae, hydroids, tunicates, sponges, seagrasses, mussels and muddy shell bottoms (Lincoln, 1979; Myers, 1982; Hirayama, 1990; Nelson, 1995; Serejo, 1998), as well as on floating objects such as buoys, rafts and ships (Lincoln, 1979; Crawford, 1937).

Remarks: This common, often very abundant, species may be the most widespread temperate-tropical corophiid known (Bousfield and Hoover, 1997). Because it has been so widely distributed on ship bottoms, it is now very difficult to determine what its original distribution might have been, but Bousfield and Hoover (1997) suggest that it most probably originated in the eastern North Atlantic.

Monocorophium acherusicum males are unique among Florida corophiid species in having a minute, deeply recessed rostrum and a stout carpus with a low, broad protuberance on the anterior margin in peraeopod 7. Both sexes can be separated from other regional species of *Monocorophium* except *M. insidiosum* by the presence of 2-4 (usually 3-4) spines on the inner margin of the peduncle of uropod 1 (1-2 spines in *M. insidiosum*). In addition to the rostral character mentioned above (the rostrum is very long and slender in male *M. insidiosum*), it differs from *M. insidiosum* by having the dactyl of gnathopod 1 extending well beyond the palmar angle (extends no more than slightly beyond the palmar angle in *M. insidiosum*), the presence of 2 teeth on the flexor margin of gnathopod 2 (3 teeth in *M. insidiosum*) and in having spines on the outer margin of the inner ramus of uropod 2 (no spines or setae in *M. insidiosum*). Subadult males have 4 strong spines similar to those of the female on the ventral margin of antenna 1, peduncle article 1 and large adult males may have a crenulate ventral margin proximally on this article (see Shoemaker, 1947, Fig. 3). These crenulations, when present, are irregular and do not resemble the discrete, well-formed, ventromedially directed process found in *M. insidiosum*. Adult individuals of this species range from 3-5 mm in length.

See Shoemaker, 1934a, 1947 (as *Corophium acherusicum*); Crawford, 1937 (as *Corophium acherusicum*); Bousfield, 1973 (as *Corophium acherusicum*); Bousfield and Hoover, 1997.

***Monocorophium insidiosum* (Crawford, 1934)**
(Figure 439)

Corophium insidiosum Crawford, 1937, pp. 615-616, fig. 2, A-G

Monocorophium insidiosum: Bousfield and Hoover, 1997, pp. 111-114, figs. 26-27.

Regional diagnosis: Rostrum of male elongate and slender; antenna 1, peduncle article 1 of male without spines on dorsomedial margin, with 1 distal spine on ventral margin, ventromedial margin with short, blunt, proximal process, peduncle article 1 of female with 3 proximal spines on dorsomedial margin, 3 strong spines on ventral margin, peduncle articles 1-2 of both sexes with long setae on dorsomedial margin; antenna 2 of male, peduncle articles sparsely setose, peduncle article 4 without ventromedial processes or tubercles, peduncle article 5 without proximal process on ventromedial margin; antenna 2 of female, peduncle articles 3-5 with strong spines ($1/3 - 1/2$ width of article in length) on ventral margin; gnathopod 1, dactyl at most extending very slightly beyond palmar angle; gnathopod 2, dactyl with 3 processes on flexor margin; pereopod 7 of male, carpus moderately slender, length approximately 3 times width, without protuberance on anterior margin; uropod 1, peduncle with 1-2 spines on medial margin; uropod 2, outer margin of inner ramus without spines or setae; uropod 3, ramus subcircular, approximately as long as wide.

Distribution: East coast of North America from Chaleur Bay, Canada to Long Island Sound (Shoemaker, 1947; Bousfield, 1973); Delaware Bay (Watling and Maurer, 1972); Beaufort, North Carolina (Fox and Bynum, 1975); Charleston, South Carolina (Southeastern Regional Taxonomic Center, South Carolina Department of Marine Resources, unpublished record); Indian River Lagoon, Florida (Nelson, 1995); Cuba (Ortiz, 1978); Terminos Lagoon? and Tamaulipas, Mexico (Ledoyer, 1986; Cházaro-Olvera et al., 2002); Pacific coast from southern Vancouver Island, Canada to central California (Carlton, 1979; Bousfield and Hoover, 1997); Talcahuana, Chile (Shoemaker, 1947); Hawaii (Barnard, 1970); Hong Kong (Hirayama, 1990); Japan (Hirayama, 1984); European coasts from Denmark to the Mediterranean (Lincoln, 1979).

Ecology: *Monocorophium insidiosum* is a brackish water species, usually occurring at salinities less than 18 ppt, but sometimes found at higher salinities up to 33 ppt. It is found on sand or mud bottoms (Bousfield, 1973; Hirayama, 1990; Nelson, 1995), in grassbeds (*Thalassia*, *Halodule*, *Zostera*, *Ruppia*) (Crawford, 1937; Bousfield, 1973; Nelson, 1995; Cházaro-Olvera et al., 2002), on oysters, jetties and other hard substrates (Watling and Maurer, 1972; Bousfield, 1973), and among hydroids (Lincoln, 1979; Myers, 1982). It occurs in the lower intertidal and shallow subtidal to depths of 4 m.

Remarks: This species, although widespread elsewhere, does not appear to be common in Florida waters, although it is possible that it has on occasion been confused with *M. acherusicum* or *M. tuberculatum*, species which it resembles in many respects. Males are instantly recognizable by the very elongate, slender rostrum (rostrum minute in male *M. acherusicum*, short in male *M. tuberculatum*) and the short, blunt, proximal process on antenna 1, peduncle article 1 (process absent in *M. acherusicum* and *M. tuberculatum*). Females can be distinguished from those of the latter two species by the dactyl of gnathopod 1 barely extending beyond the palmar angle (extending well beyond the palmar angle in *M. acherusicum* and *M. tuberculatum*), the dactyl of gnathopod 2 with 3 teeth on the flexor margin (2 teeth in *M. acherusicum* and *M. tuberculatum*) and by the lack of spines or setae on the outer margin of the inner ramus of uropod 2 (spines present in *M. acherusicum*, setae or slender spines present in *M. tuberculatum*). In subadult males, the spination of the ventral margin of antenna 1, peduncle 1 may resemble that of the female, gradually losing spines until only 1 distal spine remains in adults. Adult *M. insidiosum* range from 3 to 5.5 mm in length.

See Shoemaker, 1934a, 1947 (as *Corophium insidiosum*); Crawford, 1937 (as *Corophium insidiosum*); Bousfield, 1973 (as *Corophium insidiosum*); Bousfield and Hoover, 1997.

***Monocorophium tuberculatum* (Shoemaker, 1934)**
(Figure 442)

Corophium tuberculatum Shoemaker, 1934a, p. 29.

Corophium cf tuberculatum: Rakocinski et al., 1996, p. 350.

Monocorophium tuberculatum: Bousfield and Hoover, 1997, pp. 111-112.

Regional diagnosis: Rostrum of male small, not deeply recessed; antenna 1, peduncle article 1 of both sexes without spines on dorsomedial margin, with 1 proximal and 1 distal spine on ventral margin, ventromedial margin of male without process, peduncle articles 1-2 of both sexes with long setae on dorsomedial margin; antenna 2 of male, peduncle articles heavily setose, peduncle article 4 with 2 ventromedial processes or tubercles, peduncle article 5 with proximal process on ventromedial margin; antenna 2 of female, peduncle articles 3-4 with weak spines (1/4 width of article in length) on ventral margin, article 5 without spines on ventral margin; gnathopod 1, dactyl extending well beyond palmar angle; gnathopod 2, dactyl with 2 processes on flexor margin; peraeopod 7 of male, carpus slender, length 4-5 times width, without protuberance on anterior margin; uropod 1, peduncle with 1 spine on distomedial margin; uropod 2, outer margin of inner ramus with setae or slender spines; uropod 3, ramus subcircular, approximately as long as wide.

Distribution: East coast of North America from the Bay of Fundy, Canada to Sebastian Inlet, Florida (Shoemaker, 1934a, 1947; Bousfield, 1973; Charvat et al., 1990); eastern Gulf of Mexico from Florida Bay to Chandeleur Sound, Louisiana (Shoemaker, 1947; Bousfield, 1973; Rakocinski et al., 1996; pers. obs.).

Ecology: This species lives in shallow (1-2 m) bays and estuaries or nearshore open beaches on sand or mud bottoms (Bousfield, 1973; Charvat et al., 1990; Rakocinski et al., 1996), and is occasionally found on oyster shells (Crawford, 1937). It has also been found on slightly deeper (8-16 m) protected and open coast shell, shelly sand, sand and silt-clay bottoms (Dickinson et al., 1980).

Remarks: Male *M. tuberculatum* are relatively distinctive because of their heavily setose peduncular articles on antenna 2. This character, in combination with the lack of a marginal ridge on the fused urosome segments, the presence of 2 spines on the ventral margin of antenna 1, peduncle article 1, the dactyl extending well beyond the palmar angle on gnathopod 1 and 2 teeth on the flexor margin of the dactyl of gnathopod 2 can be used to distinguish males of this species from those of all other Florida corophiids. Although antenna 2 of the female is not as setose as that of the male, females can be identified by the combination of the other characters mentioned above, plus the lack of spines on the dorsomedial margin of antenna 1, peduncle article 1. Although Bousfield's (1973) illustration of antenna 1 of the female in dorsal view (Plate LXVII f) indicates the presence of spines on the dorsomedial margin of peduncle article 1, there is no mention of these spines in the text or in Shoemaker's (1934a, 1947) description and illustrations of this species, and they are not present in Florida and Gulf of Mexico material.

There is a certain amount of developmental variation evident in *M. tuberculatum*, especially in males. For example, the tubercles on the ventromedial margin of antenna 2, peduncle article 4 of the male are much more well-developed in large individuals, becoming subacute, ventromedially directed processes in very large specimens. Well-developed males also occasionally lack the distalmost spine on the ventral margin of antenna 1, peduncle 1. This was seen especially in Florida Bay material and was reported by Shoemaker (1934a) for material from Chesapeake Bay and South Carolina. In addition, material from Florida Bay tends to be smaller than material from more northern locations and often lacks the setae on the outer margin of the inner ramus of uropod 2. The adult size for this species ranges from 2 to 4 mm.

See Shoemaker, 1934a, 1947 (as *Corophium tuberculatum*); Crawford, 1937 (as *Corophium tuberculatum*); Bousfield, 1973 (as *Corophium tuberculatum*).

***Monocorophium* sp. A**
(Figure 437)

Regional diagnosis: Rostrum of male small, not deeply recessed; antenna 1, peduncle article 1 with 3-4 strong spines on ventral margin, that of male with 1 small proximal spine on dorsomedial margin, ventromedial margin without process, peduncle article 1 of female with 1-2 spines on dorsomedial margin, peduncle articles 1-2 of both sexes without long setae on dorsomedial margin; antenna 2 of male, peduncle articles sparsely setose, peduncle article 4 with 1 ventromedial process or tubercle, peduncle article 5 with very small proximal process on ventromedial margin; antenna 2 of female, peduncle articles 3-5 with weak spines (1/4 width of article in length) on ventromedial margin; gnathopod 1, dactyl extending well beyond palmar angle; gnathopod 2, dactyl with 1 process on flexor margin; pereopod 7 of male, carpus moderately slender, length 3-4 times width, without protuberance on anterior margin; uropod 1, peduncle with 1 spine on distomedial margin; uropod 2, outer margin of inner ramus with 0-1 setae or slender spines; uropod 3, ramus subovate, longer than wide.

Distribution: Known only from Florida in Biscayne Bay; Florida Bay; the southeastern Gulf of Mexico between Cape Sable and Cape Romano; Apalachee Bay.

Ecology: *Monocorophium* sp. A occurs on sand or sandy mud bottoms mixed with shell hash at depths of 2 to 12 m.

Remarks: This tiny (1-2 mm) species has a distinctive color pattern when freshly preserved. In such material, the head and pleon are heavily pigmented and there is no pigmentation on the peraeon and urosome. It is one of only two Florida corophiid species that have a single tooth on the flexor margin of the dactyl in gnathopod 2 (other species have either 0 or 2-3 teeth). It can be readily distinguished from that second species, *Laticorophium baconi*, by the lack of a raised marginal ridge on the fused segments of the urosome (*L. baconi* has a raised marginal ridge with a median notch). There also appears to be some slight sexual dimorphism in the morphology of the ramus of uropod 3 in *Monocorophium* sp. A, with that of the female being somewhat broader than that of the male.

Family Cyproideidae Barnard, 1974

Regional diagnosis: Antenna 1 stout, flagellum subequal to or shorter than peduncle article 3; eyes present, well-developed, without 4 paired peripheral facets; peraeon segments 3-5 forming subtriangular lateral expansion above coxal plates; coxae 1-2 reduced, distinctly shorter than and mostly hidden by coxa 3; gnathopod 1 well-developed, with 7 articles; gnathopod 2 very slender, parachelate, article 3 not elongate, less than twice as long as wide; urosome segments 1-3 separate, segment 1 elongate, approximately 3 times length of segments 2 and 3 combined, with thin, lamellar dorsal crest.

Florida genera: *Hoplopheonoides*

Remarks: *Hoplopheonoides* is the only genus in the family Cyproideidae that is known from the Western Atlantic. Five other genera occur in the Eastern Atlantic and Mediterranean and the remaining 10 genera are Pacific. Members of this family are often considered to be commensals, occurring with such organisms as medusae and hydroids (Barnard and Karaman, 1991) or sponges (Ortiz et al., 2000). They may also be found in algae or among the rhizomes of *Posidonia oceanica*, a Mediterranean species of seagrass (Krapp-Schickel, 1982). Many of the genera in the family Cyproideidae were formerly placed in the Amphilochidae.

Genus *Hoplopheonoides* Shoemaker, 1956

Regional diagnosis: That of the family.

Florida species: *H. obesa*

Remarks: Until recently, the genus *Hoplopheonoides* was considered to be monotypic, with *H. obesa* from the Florida Keys and the Dry Tortugas representing the only known species. However, a second species, *H. shoemakeri*, based on a single specimen taken from the sponge *Callyspongia vaginalis*, was recently described from the north coast of Cuba by Ortiz et al. (2000). These two species are very similar and, in fact, several of the characters mentioned by Ortiz et al. (2000) as being diagnostic for *H. shoemakeri* (e.g. the presence of a gland cone on antenna 2; the reinforced anteroventral angle of coxa 4) are actually present in *H. obesa*, although they were not illustrated by Shoemaker (1956). Others appear to change developmentally, with many of those mentioned by Ortiz et al. (2000) for *H. shoemakeri* resembling the morphology of smaller individuals of *H. obesa* from the Florida Keys (e.g. more concave palmar margin of gnathopod 2; a more concave ventral margin of coxa 3; stouter bases of gnathopods 1-2; an anteriorly directed epimeron 3). Unlike *H. shoemakeri*, however, which has a uniarticulate flagellum on antenna 1, specimens of *H. obesa* from the Florida Keys all appear to have a 2-4 articulate flagellum similar to that described by Shoemaker (1956) for that species, although the lines of articulation between the articles are often difficult to see and the articles may be partially fused. In addition, the mandible in most of the Florida material has a 3-articulate palp similar to that illustrated for *H. shoemakeri* by Ortiz et al. (2000), although several specimens appear to be missing the palp. Shoemaker's (1956) description of *H. obesa* indicates that the palp is lacking in that species. Additional material, including a good developmental series of both species, as well as the type material, will need to be examined to clarify the relationship between *H. obesa* and *H. shoemakeri*. At this point, material from Florida should probably continue to be referred to as *H. obesa*.

***Hoplopheonoides obesa* Shoemaker, 1956**
(Volume 1, Figure 31)

Hoplopheonoides obesa Shoemaker, 1956, pp. 61-62, 64, fig. 1.

Regional diagnosis: That of the family.

Distribution: Offshore from Ft. Lauderdale Beach, Florida (Judy Robinson, pers. com.); Florida Keys (Thomas, 1993); Dry Tortugas (Shoemaker, 1956); Antigua, Barbados, St. Lucia, Belize (Thomas, 1993); southwestern Gulf of Mexico off Cape Sable, Florida.

Ecology: *Hoplopheonoides obesa* occurs in coral rubble, algal turf and coralline sand in reef flat, forereef and backreef habitats at depths of 1-6 m (Thomas, 1993; Shoemaker, 1956).

Remarks: This little amphipod is quite distinctive and is instantly recognizable by the wing-like lateral expansion of pereopod segments 3-5 and the thin, lamellar dorsal keel of urosome 1. The color of live *H. obesa* is a mottled green, brown and white, blending in with the background colors of the algal turf and coral rubble environments it inhabits (Thomas, 1993; Shoemaker, 1956). Adult size ranges from 2 to 2.5 mm.

See Shoemaker, 1956; Thomas, 1993.

Family Dexaminidae Leach, 1814

Regional diagnosis: Antennae 1-2, peduncle articles slender, flagellum well-developed; 1 pair of eyes present, well-developed, composed of many ommatidia; body laterally compressed; gnathopods 1-2 subchelate; pereopods 3-4, dactyl stout, short, much shorter than propodus; pereopod 7, basis distinctly shorter than remaining articles combined; urosome segments 2-3 fused; telson cleft.

Florida genera: *Dexaminella*, *Nototropis*, *Polycheria*

KEY TO FLORIDA GENERA OF DEXAMINIDAE

1. < Antennae 1-2, flagellum moderately setose; coxae 1-4, anteroventral angle subacute, strongly produced anteriorly; pereopods 3-7 parachelate, prehensile; pereopods 5-7 basis linear, unexpanded; epimeron 3, posteroventral angle subquadrate, without tooth; urosome without dorsal processes (weak carinae may be present) *Polycheria*

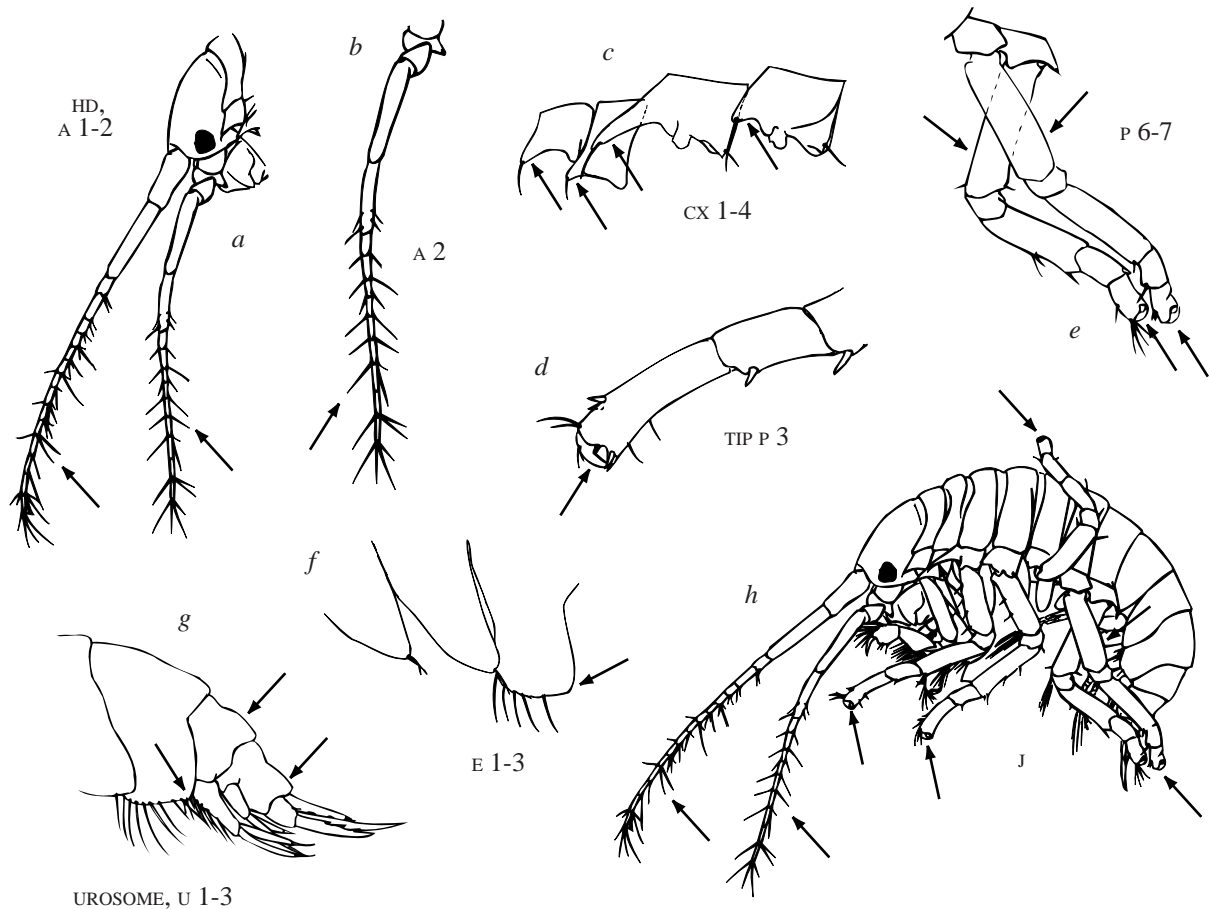


Figure 443.

< Antennae 1-2, flagellum weakly setose; coxae 1-4, anteroventral angle rounded or subquadrate, not produced anteriorly; peraeopods 3-7 simple, not prehensile; peraeopods 5-7, basis moderately to strongly expanded posteriorly; epimeron 3, posteroventral angle acute, with tooth; urosome with dorsal processes 2

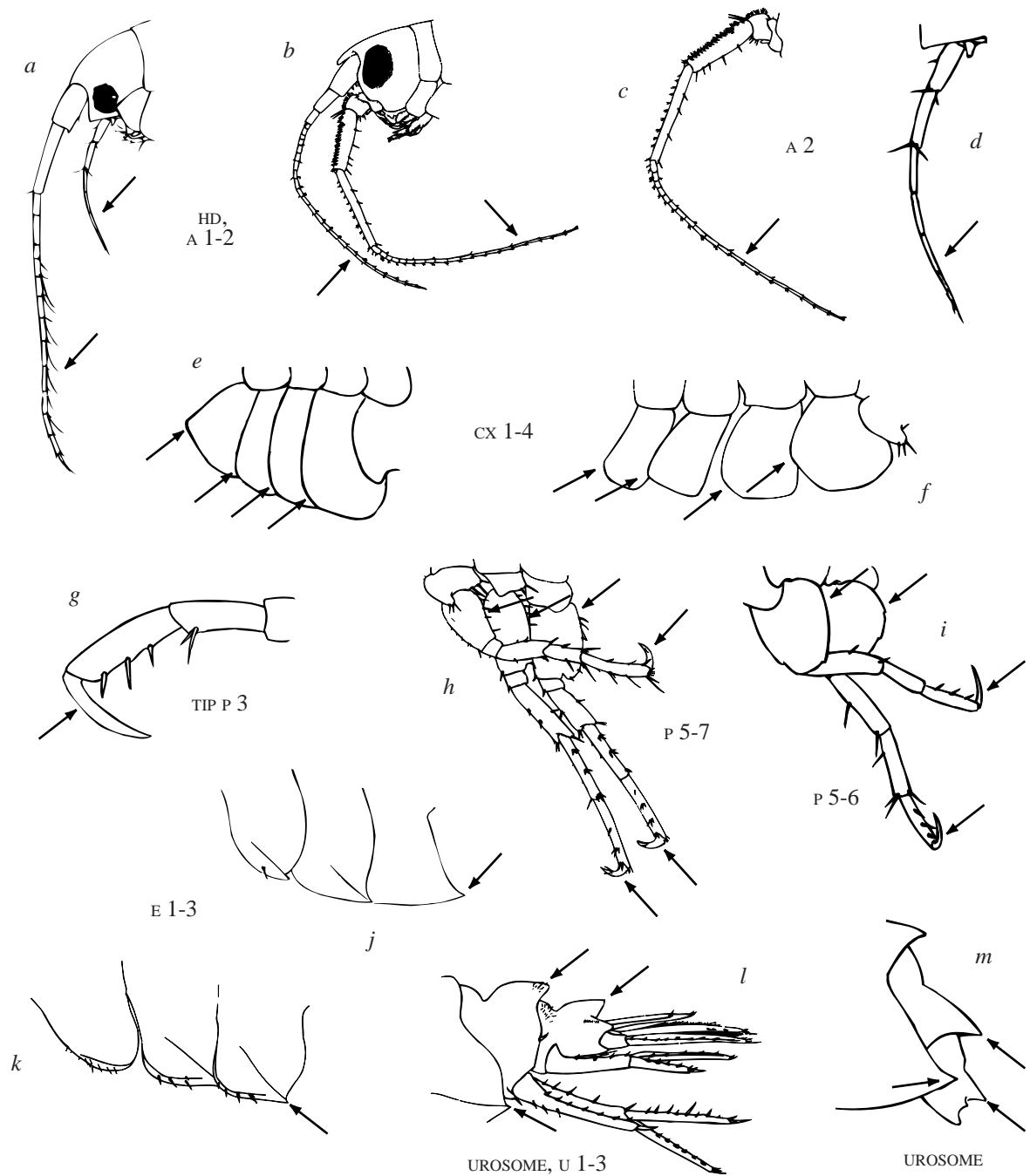


Figure 444.

2. < Antenna 1 shorter than antenna 2; head, ocular lobe weakly produced, subquadrate; mandible with well-developed palp; maxilliped, palp 4-articulate; pleon without dorsal processes; coxal gills 2-5 dendritic; peraeopods 5-6, basis moderately expanded; peraeopod 7, basis evenly expanded, not tapering distally; epimeron 3, posterior margin sinuous; telson lobes with terminal spine, distomedial margin entire *Nototropis*

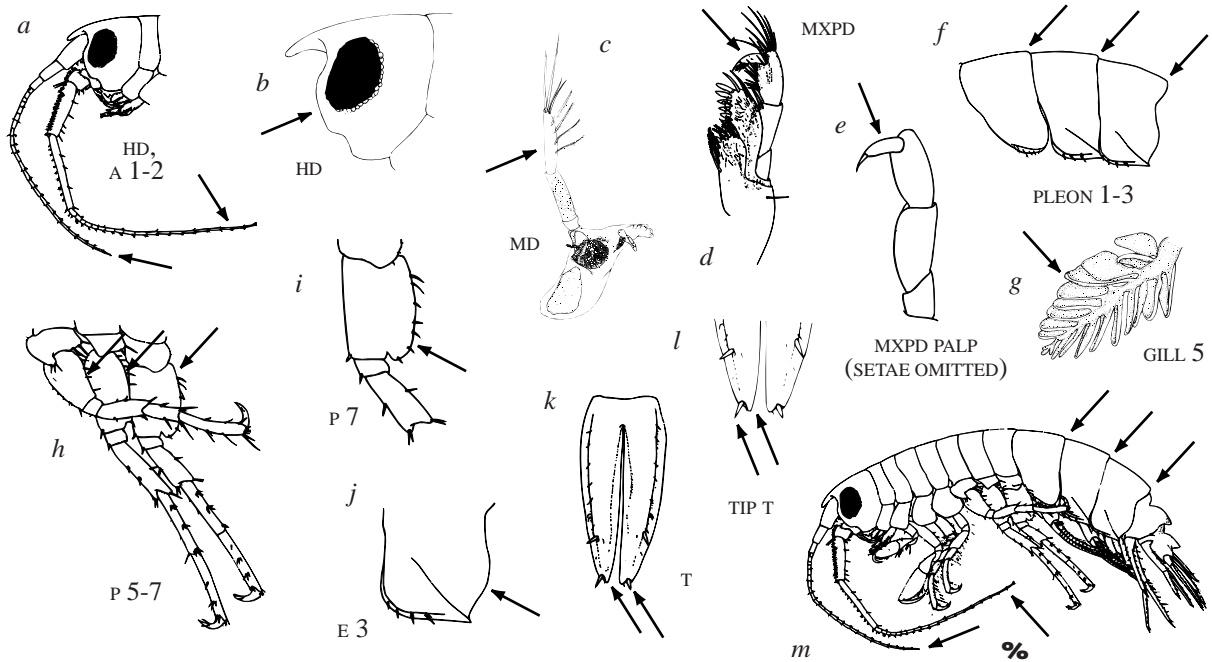


Figure 445.

- < Antenna 1 longer than antenna 2; head, ocular lobe acute anteriorly; mandible without palp; maxilliped, palp 3-articulate; pleon with dorsal processes; coxal gills 2-5 simple, sac-like; peraeopods 5-6, basis strongly expanded; peraeopod 7, basis expanded proximally, tapering distally; epimeron 3, posterior margin straight to slightly concave; telson lobes without terminal spine, distomedial margin serrate *Dexaminella*

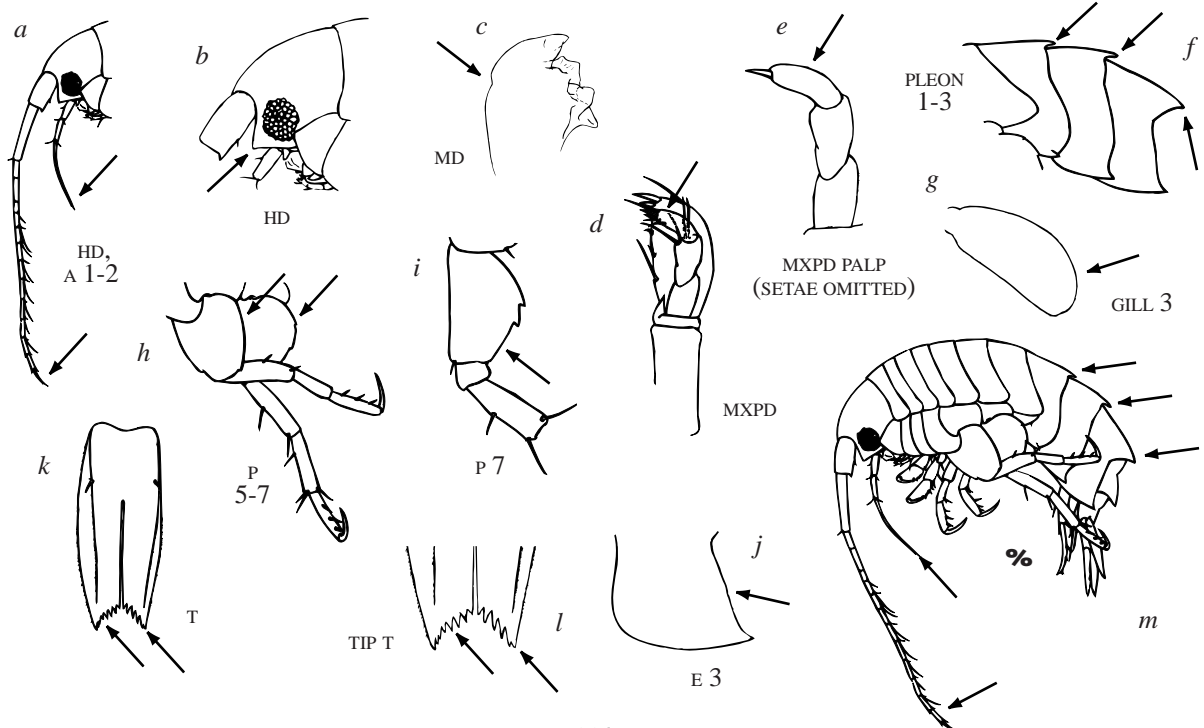


Figure 446.

Genus *Dexaminella* Schellenberg, 1928

Regional diagnosis: Antennae 1-2, flagellum weakly setose, antenna 1 longer than antenna 2; head, ocular lobe strongly produced, acute; mandible without palp; maxilliped, palp 3-articulate; pleon with dorsal processes; coxae 1-4, anteroventral angle rounded or subquadrate, not produced anteriorly; coxal gills 2-5 simple, sac-like; peraeopods 3-7 simple, not prehensile; peraeopods 5-6, basis strongly expanded posteriorly; peraeopod 7, basis expanded proximally, tapering distally; epimeron 3, posteroventral angle acute, with tooth, posterior margin straight to slightly concave; urosome with dorsal processes; telson lobes without terminal spine, distomedial margin serrate.

Florida species: *Dexaminella* sp. A

Remarks: The genus *Dexaminella* is currently comprised of 3 species known only from Madagascar and the Red Sea (Schellenberg, 1928; Ledoyer, 1982; Barnard and Karaman, 1991); it has not previously been reported from the western Atlantic. However, *Dexaminella* sp. A from the Florida Keys is very similar to these other known species, differing mainly in the more rounded eye, the morphology of the bases of peraeopods 5-7 and the spination of the telson. It differs from members of the genus *Dexamine*, which it resembles and which is known from the northeast coast of the United States (Bousfield, 1973; *Dexamine thea*), in the diagnostic presence of well-developed inner lobes on the lower lip. Other differences between *Dexaminella* sp. A and *Dexamine thea* include the very short antenna 2 (subequal to antenna 1 in *D. thea*), the proximally expanded and distally tapering basis of peraeopod 7 (very weakly expanded medially in *D. thea*), and the lack of distal spines coupled with the presence of distomedial serrations on the telson lobes (terminal spine plus 2 dorsolateral distal spine groups present, distomedial serrations absent in *D. thea*).

Dexaminella sp. A (Figure 446)

Regional diagnosis: That of the genus.

Distribution: Middle Florida Keys (Vaca Key, Pigeon Key).

Ecology: *Dexaminella* sp. A has been found on shallow (0.5-3 m) silty, muddy sand bottoms in the presence of soft corals and in night plankton tows above *Thalassia* seagrass flats.

Remarks: See **Remarks** for the genus. The size range for this species is 2 to 3 mm.

Genus *Nototropis* Costa, 1853

Regional diagnosis: Antennae 1-2, flagellum weakly setose, antenna 1 shorter than antenna 2; head, ocular lobe weakly produced, subquadrate; mandible with well-developed palp; maxilliped, palp 4-articulate; pleon without dorsal processes; coxae 1-4, anteroventral angle rounded or subquadrate, not produced anteriorly; coxal gills 2-5 dendritic; peraeopods 3-7 simple, not prehensile; peraeopods 5-6, basis moderately expanded posteriorly; peraeopod 7, basis evenly expanded, not tapering distally; epimeron 3, posteroventral angle acute, with tooth, posterior margin sinuous; urosome with dorsal processes; telson lobes with terminal spine, distomedial margin entire.

Florida species: *N. minikoi*, *N. urocarinatus*

Remarks: Two species of *Nototropis* have been reported to occur in Florida waters to date: *N. urocarinatus* from the northern (Rakocinski et al., 1993, 1996) and western (McKinney, 1980) Gulf of Mexico and *N. minikoi*, a nearly circumtropical and warm temperate species reported from the eastern Gulf of Mexico (Shoemaker, 1932) and the east coast of the United States (Bynum and Fox, 1977). However, no key to these taxa has been included herein because no consistent differences could be found to distinguish between them. Unfortunately, the description of *N. urocarinatus* by McKinney (1980) does not include a comparison between these two species and material of *N. minikoi* from the east coast of the United States appears to be identical to western Gulf of Mexico material of *N. urocarinatus*. Characters that appear to be useful based on the description by McKinney (1980) and specimens figured by Bynum and Fox (1977) from North Carolina (e.g. number of setae on the inner plate of maxilla 1; telson spination) were found to vary within each population when additional material was examined. It is possible that the two species should be synonymized as *N. minikoi*, as has been suggested by Ledoyer (1986). However, prior to such an act, northwestern Atlantic material of both species should be compared with Walker's (1905) type and/or material from the type locality in the Indian Ocean to establish that they are, in fact, the same as Walker's species.

This genus is currently placed in the family Atylidae by Bousfield and Kendall (1994), although other authors (Barnard and Karaman, 1991; Ruffo and Vader, 1998; Bellan-Santini, 1999; Martin and Davis, 2001) include the family Atylidae within the Dexaminidae. The latter placement is followed herein.

***Nototropis minikoi* (Walker, 1905)**
(Figure 445)

Paratylus minikoi Walker, 1905, p. 925, fig. 141.

Nototropis minikoi: Walker, 1916, p. 344.

Atylus minikoi: Sivaprakasam, 1968, p. 97, fig. 7.

Regional diagnosis: That of the genus (see **Remarks** for the genus *Nototropis*).

Distribution: Indo-Pacific and Atlantic in tropical and warm temperate waters; northwestern Atlantic distribution from Chesapeake Bay (Shoemaker, 1932); North Carolina (Shoemaker, 1932; Bynum and Fox, 1977); Cayo Mendoza, Cuba (Ortiz and Lalana, 1996); Cedar Key, Carrabelle and St. Andrew Bay, Florida (Shoemaker, 1932); Rio Soto la Marina, Tamaulipas and Camaronera Lagoon, Veracruz, Mexico (Cházaro-Olvera et al., 2002); Terminos Lagoon, Mexico (Ledoyer, 1986); Golfo de Morrosquillo, Colombia (Ortiz and Lemaitre, 1994); Golfo Triste, Venezuela (Lagarde, 1987).

Ecology: *Nototropis minikoi* is an epibenthic species, frequently rising up into the water column. It occurs over grassbeds (*Thalassia*, *Halodule*, *Ruppia*, macroalgae) (Ledoyer, 1986; Ortiz and Lemaitre, 1994; Cházaro-Olvera et al., 2002) and sand bottoms (Ortiz and Lemaitre, 1994; Cházaro-Olvera et al., 2002), as well as in offshore plankton tows (Shoemaker, 1932; Fox and Bynum, 1975). It is found at moderately high salinities (23–25 ppt) and at depths of 1 to 3 m.

Remarks: Except for possible differences in distribution, this species does not appear to be distinguishable from *N. urocarinatus* (see **Remarks** for the genus *Nototropis*). The majority of records for *N. minikoi* are from the east coast of the United States, the west coast of Florida and the Caribbean, whereas *N. urocarinatus* is, for the most part, reported from the western Gulf of Mexico. There are exceptions to these distribution patterns for both species, however, and the two may prove to be synonymous. Adult size for *N. minikoi* ranges from 4 to 7 mm.

See Shoemaker, 1932; Bynum and Fox, 1977 (as *Atylus* sp. cf. *minikoi*); Ledoyer, 1986 (as *Atylus minikoi*).

***Nototropis urocarinatus* (McKinney, 1980)**
(Figure 445)

Atylus urocarinatus McKinney, 1980, pp. 84–89, figs. 1–2.

Nototropis urocarinatus Bousfield and Kendall, 1994, p. 28.

Regional diagnosis: That of the genus (see **Remarks** for the genus *Nototropis*).

Distribution: Melbourne Beach, Florida (Charvat et al., 1990); Horn and Ship Islands, Mississippi; Corpus Christie Bay and Laguna Madre, Texas (McKinney, 1980); Riviera Beach and Boca Chica Beach, Texas; Lizardo Lagoon, Mexico (McKinney, 1980).

Ecology: *Nototropis urocarinatus* is an epibenthic species that is found on open or protected beaches over fine to medium sand bottoms, often mixed with some shell hash, and is usually associated with some type of vegetation or branching bryozoan. It occurs over *Thalassia* grassbeds (McKinney, 1980), in floating *Sargassum* mats or among the branches of *Zoobotryon verticillatum* (bryozoan) colonies. It occurs at moderate to high salinities (26–35 ppt) and at depths of 0.3 to 2 m.

Remarks: See the **Remarks** section for *N. minikoi*. Adult size in *N. urocarinatus* ranges from 5 to 7 mm.

See McKinney, 1980 (as *Atylus urocarinatus*).

Genus *Polycheria* Haswell, 1879

Regional diagnosis: Antennae 1-2, flagellum moderately setose, antenna 1 subequal to antenna 2 in length; head, ocular lobes unproduced, broadly rounded; mandible without palp; maxilliped, palp 4-articulate; pleon without dorsal processes; coxae 1-4, anteroventral angle subacute, strongly produced anteriorly; coxal gills 2-5 simple, sac-like or weakly pleated; peraeopods 3-7 parachelate, prehensile; peraeopods 5-7 basis linear, unexpanded; epimeron 3, posteroventral angle subquadrate, without tooth, posterior margin straight; urosome without dorsal processes; telson lobes with slightly subterminal spine, distomedial margin entire.

Florida species: *Polycheria* sp. A

Remarks: Although members of the genus *Polycheria* are fairly easy to recognize at the generic level, the taxonomy of the species within the genus is somewhat confused and there are probably a number of undescribed species in several different species complexes worldwide (Barnard and Karaman, 1991).

Polycheria sp. A (Figure 443)

Regional diagnosis: That of the genus.

Distribution: Offshore east of St. Catherines Island and Gray's Reef, east of Sapelo Island, Georgia, and offshore east of Jacksonville, Florida (Southeastern Regional Taxonomic Center [SERTC], South Carolina Department of Natural Resources [SCDNR], unpublished records); southeastern Gulf of Mexico near Cape Romano and the Ten Thousand Islands, Florida; St. Joe Bay, Florida.

Ecology: *Polycheria* sp. A is a commensal species that has been found to be associated with several different host taxa. Off the southeastern United States it occurs with the sponge *Haliclona oculata* and the gorgonian *Leptogorgia virgulata* (SERTC, SCDNR, unpublished records), while in St. Joe Bay, Florida it inhabits the colonial tunicate *Amaroucium* sp. It occurs in relatively high salinity waters at depths of 1 to 22 m.

Remarks: Although the genus *Polycheria* has been previously reported from the northwestern Atlantic (Shoemaker, 1935; Mason et al., 1994; Xacur Maiza, 1998), this material has rarely been identified to the species level and all records but one are for *Polycheria* sp. The single record for *Polycheria antarctica* (Shoemaker, 1935) from St. Thomas in the Virgin Islands seems unlikely to be valid as *P. antarctica* is, as the name suggests, a cold-water species. *Polycheria* sp. A differs from species in the *P. antarctica* complex reviewed by Holman and Watling (1983) in the possession of 7 rather than 9 terminal spines on the outer plate of maxilla 1 and in the relatively short maxillipedal palp, which is subequal to the outer plate in length (palp longer than outer plate in the *P. antarctica* complex). The terminal article of the maxillipedal palp is also relatively short and stout compared to that of *P. antarctica* complex species. It resembles the North American Pacific group of species, revised by Bousfield and Kendall (1994), in these characteristics, as well as in having the inner ramus shorter than the outer on uropod 2, the inner plate of maxilla 2 with few setae on the inner margin and apex and peraeopods 3-4 and 6-7 with article 5 shorter than article 6 (it is longer than article 6 in peraeopod 5). *Polycheira* sp. A seems to be closest to *P. carinata* and *P. mixillae* among the Northeast Pacific species, differing in the less spinose telson margins and the more anteroventrally produced coxae 1-2. *Polycheria* sp. A is probably new, but more careful comparisons with other known species will have to be made to determine its status with certainty.

Although available specimens of *Polycheria* sp. A were found to be associated with hosts belonging to three different phyla (Porifera, Cnidaria, Chordata) and although the areas where it has been found (Georgia and northeast Florida; Cape Romano, Florida; and St. Joe Bay, Florida) are fairly widely separated geographically, the material from these regions is very similar. However, it is possible that,

upon closer examination of a larger series of specimens than is currently available, there will prove to be a complex of species present in the western Atlantic region similar to those found in other areas. There does appear to be some variation in eye and body size; the eyes are generally somewhat larger in east coast specimens than in Gulf of Mexico specimens and the former reach a larger size. Also, as is usual for *Polycheria*, the eyes are larger in the males than in females and juveniles. Adult size for *Polycheria* sp. A ranges from 2 to 5 mm.

GLOSSARY

A1-2 - antennae 1-2.

Abdomen - the posterior six body segments, consisting of three anterior pleon segments and three posterior urosome segments.

Accessory claw - small curved subapical process on the extensor margin of the dactyl.

Accessory eye - small cluster of one to several ommatidia located adjacent to the primary eye.

Accessory flagellum - small secondary ramus of antenna 1, attached to the distomedial margin of peduncle article 3; may be vestigial or lacking, rarely as long as the primary flagellum.

Acuminate - produced into a sharp point; acute.

Acute - sharply pointed.

Antenna - one of two paired, multi-articulate appendages attached to the anterodorsal margin of the head, anterior to the mouthparts. In amphipods, these appendages are referred to as antenna 1 (anterior pair) and antenna 2 (posterior pair). In most other crustacean groups, however, the term antenna refers only to the second, or posterior, pair of these appendages, with the first being referred to as the antennule.

Antennal sinus - one of two emarginations of the anterior margin of the head, separated by the cephalic or ocular lobe, that allow the sideways rotation of the antennae. The superior antennal sinus lies at the base of antenna 1; the inferior antennal sinus lies at the base of antenna 2.

Anterior - front end; towards the front.

Anthropogenic - caused or generated by man.

Apical - at the apex, tip or distal end; terminal.

Article - individual unit or subdivision of an appendage.

Attenuate - very slender, weak.

Basis - article 2 of a gnathopod or peraeopod.

Basofacial spine - stout spine located on the proximolateral surface of the peduncle of uropod 1 in some amphipod groups.

Benthic - pertaining to the bed (bottom) of an ocean, lake, river or other body of water; inhabiting the bottom.

Beveled - diagonally truncated; oblique.

Biarticulate - composed of two articles.

Bifurcate - divided into two non-articulating branches; forked.

Biramous - having two articulating branches (rami).

Brood plate - see **oostegite**.

Brood pouch - see **marsupium**.

Buccal mass - conical, subquadrate or styliform bundle made up of closely appressed mouthparts, located on the ventral surface of the head.

Calceoli - small disk-like, rounded or oblong articulated sensory structures attached to the segments of the antennal peduncle and flagellum.

Carapace - cuticular layer attached to the posterior margin of the head and extending anteriorly and posteriorly, often covering the entire head and thorax; present in many crustaceans, but not found in amphipods.

Carinate - having at least one laterally compressed, acute ridge, carina, or keel; usually dorsal.

Carpal lobe - expansion or elongation of the posterior margin of the carpus, often extending distally along the posterior margin of the propodus.

Carpochelate - condition of a prehensile appendage, usually a gnathopod, in which it is formed by the closure of the dactylus (article 7) on a fixed projection of the carpus (article 5).

Carpus - article 5 of a gnathopod or peraeopod.

Castellate - lined with short, closely-set, distally truncate processes.

Castelloserrate - lined with short, closely-set blunt serrations or teeth.

Cephalic lobe - forward expansion of the anterolateral margin of the head between the bases of the peduncles of antennae 1-2; often bearing the eyes and referred to as the ocular lobe.

Chelate - condition of a prehensile appendage, usually a gnathopod, in which it is formed by the closure of the dactylus (article 7) on a subequal, parallel, fixed, distally directed subterminal projection of the propodus (article 6); pincer-like. Propodus usually linear.

Circumtropical - distributed throughout the tropics.

Clavate - club-shaped; broadened distally.

Cleft - split or divided; often used to describe a telson that is separated into two lobes by a narrow incision or gap.

Complexly subchelate - see **subchelate**.

Couplet - numbered section of a dichotomous key, consisting of a pair of contrasting descriptions.

Comb row - a row of short, stiff, straight or slightly curved setae resembling the teeth of a comb.

Comb setae - the setae making up a comb row.

Congener - belonging to the same genus.

Conspecific - belonging to the same species.

Cosmopolitan - having a worldwide distribution; ubiquitous.

Cotype - syntype; each specimen of a type series for which no holotype has been designated.

Coxa - article 1 of a gnathopod or peraeopod.

Coxal gill - a respiratory structure attached to the posteromedial surface of the coxa of gnathopod 2 and peraeopods 3-6 or 7.

Coxal plate - a flattened lateral expansion of the coxa of a peraeon appendage, often forming a shield for the gills and oostegites and providing a chamber through which the respiratory current can be drawn by the beating of the pleopods.

Crenulate - lined with small bumps, tubercles or rounded teeth.

Cryptic - hidden, camouflaged.

Cusp - small tooth or process.

CX1-7 - coxae 1-7.

Dactyl - terminal article of a gnathopod or peraeopod (article 7), or of the maxillipedal palp (article 3 or 4).

Dactylar hinge tooth - process on palmar margin of propodus adjacent to articulation with dactyl.

Dendritic - branching.

Dentate - toothed.

Dichotomous - divided into two parts; used to describe a taxonomic key made up of pairs of contrasting descriptions, each of which serves to divide the larger group of organisms being identified into two, mutually exclusive smaller groups.

Distal - located away from the body or point of attachment.

Domicolous - living in a nest, tube or other refuge (a domicile).

Dorsal - pertaining to the back; in amphipods refers to the upper or top surface or margin.

Emarginate - having a shallow marginal depression, slightly concave, hollowed out or indented.

Entire - complete; having a simple, smooth, unmodified margin; not cleft (telson), serrate, crenulate, or incised.

Epimeral plate - see **epimeron**.

Epimeron (epimera) - ventrolateral, laminar extension(s) of pleonal segments 1-3 enclosing the peduncles of the pleopods.

Estuarine - referring to shallow, often partially enclosed, coastal waters that have a variable salinity regime caused by the mixing of fresh and salt water; usually found adjacent to river mouths.

Euryhaline - referring to organisms that are tolerant of a wide range of salinities.

Excavate - having a deep marginal depression, strongly emarginate, deeply concave.

Extensor margin - the margin of an article on the side away from the direction of flexion (“on the outside of the bend”), the side on which the extensor muscles are located.

Facial - on a flat surface; not marginal.

Flagellum - the multiarticulate distal part of the antenna, exclusive of the peduncle; begins distal to peduncle article 3 for antenna 1 and distal to peduncle article 5 for antenna 2.

Falcate - strongly curved and tapering distally; sickle-shaped.

Flexor margin - the margin of an article on the side towards the direction of flexion (“on the inside of the bend”), the side on which the flexor muscles are located.

Foliaceous - broad and flat, leaf-like, often with marginal setae.

Geniculate - bent and fixed at a right angle, knee-like.

Globular - round, bulbous, globe-like.

GN1-2 - gnathopods 1-2.

Gnathopod - a paired uniramous appendage attached to one of the first 2 peraeon segments; usually subchelate or otherwise dissimilar to the remaining 5 paired peraeonal appendages (peraeopods).

HD - head.

Hyperadult - unusually large and well-developed adult individual.

Incisor - the distal, often toothed, cutting edge of the mandible.

Inquilinous - living within the burrow, nest, tube or domicile of another species; living within a host organism of another species without causing any harm to that host

Interantennal plate - anterior margin of the head expanded as a vertical plate extending forward between the right and left antennae and below the rostrum.

Ischium - article 3 of a gnathopod or peraeopod.

Labium - see **lower lip**.

Labrum - see **upper lip**.

Lacinia mobilis - small articulated plate located on the mandible at the base of the incisor, just distal to the spine row.

Laminar - thin, flat, plate-like.

Lanceolate - tapering distally to an acute or subacute tip; lance-shaped.

Lateral - outer; towards the outside.

Laterally compressed - flattened from side to side.

Linear - with parallel margins; slender, rod-shaped or subrectangular.

Linguiform - tongue-shaped.

LL - lower lip; labium.

Locking spine - large spine on the distal flexor margin of the peraeopod propodus.

Lower lip - a fleshy, bilobed plate located on the posterior margin of the mouth.

Mandible - one of the first, or most anterior, pair of articulated mouthparts, located on either side of the mouth; typically composed of a base or body, molar, incisor, spine row, lacinia mobilis and 3-articulate palp.

Marsupium - chamber for holding eggs or recently hatched juveniles; formed by overlapping oostegites and located ventrally, between the bases of the gnathopods and peraeopods; brood pouch.

Maxilla 1 - one of the second pair of articulated mouthparts; typically composed of a basal article, inner plate, outer plate, and 2-articulate palp.

Maxilla 2 - one of the third pair of articulated mouthparts, immediately posterior to maxilla 1; typically composed of a basal article, inner plate, and outer plate.

Maxilliped - most posterior pair of mouthparts, derived from the first thoracic segment which, in amphipods, is fused with the head; fused basally and typically composed of an inner plate, outer plate, and 4-articulate palp.

MD - mandible.

Medial - inner; towards the middle.

Median - central, on the mid-line or at the mid-point.

Merus - article 4 of a gnathopod or peraeopod.

Molar - medial process on the mandible, normally subcylindrical with a distally flattened grinding surface, but often reduced or modified.

Monotypic - describes a taxon containing only one taxon at the next lowest level in the taxonomic hierarchy (e.g. a family containing one genus; a genus containing one species).

Morphology - shape, form.

Mouthpart bundle - see **buccal mass**.

Multiarticulate - composed of many articles.

MX1-2 - maxillae 1-2.

MXPD - maxilliped.

Oblique - angled; not perpendicular to the vertical axis of the article.

Ocular lobe - see **cephalic lobe**.

Oligohaline - (1) referring to organisms that are only tolerant of low salinities; (2) referring to low salinity or brackish waters (0.5-3.0 ppt).

Ommatidia - individual facets of the subintegumentary compound eye.

Oostegite - thin, flat plate lined with setae, attached to the posteromedial margin of the coxa of gnathopod 2 and peraeopods 3-5 in females, just proximal to the coxal gill. In adult females, these plates interlock and overlap, forming the marsupium for holding eggs and newly hatched juveniles; in subadult females, they are more sac-like and lack setae.

Oostegite bud - sac-like developing oostegite found in subadult female amphipods.

Ovate - oval-shaped.

P1-7 - peraeopods 1-7.

Palm - portion of the posterior margin of the gnathopod upon which the dactyl closes for grasping. Usually delimited distally by the dactylar articulation and proximally by a change in the curvature of the margin or by the presence of spines or setae.

Palmar angle - proximal end of the palm where the curvature of the margin changes.

Palp - small, uniramous, articulated appendage found on the lateral margin of the mandible, maxilla 1, and maxilliped.

Parachelate - condition of a prehensile appendage, usually a gnathopod, occasionally a peraeopod, in which it is formed by the closure of the dactylus (article 7) on a very short, parallel or subparallel, fixed, distally directed, subterminal projection of the propodus (article 6); dactyl may overlap tip of projection. Propodus usually linear.

Peduncle - combined, typically robust, proximal or basal articles of the antennae, pleopods and uropods; 3-articulate in antenna 1, 5-articulate in antenna 2, 1-2 (usually 1)-articulate in the pleopods, 1-articulate in the uropods.

Pelagic - pertaining to the open water column of an ocean or lake; inhabiting the water column.

Penes - small, paired genital processes located on the ventral surface of the peraeon just medial to the coxa of peraeopod 7 in males, through which the sperm is released.

Peraeon - combined 7 free thoracic segments of the body, located immediately behind the head and bearing the gnathopods and peraeopods.

Peraeopod - a paired, uniramous thoracic appendage attached to each peraeon segment; typically 7-articulate. The anterior 2 pairs, called gnathopods, are usually modified and morphologically distinct from the posterior 5 pairs.

Pleon - combined anterior 3 abdominal segments, located just posterior to the peraeon, bearing the paired, biramous pleopods (occasionally used to refer to the entire 6 segments of the abdomen).

Pleopod - a paired, biramous appendage attached to each pleon segment; typically composed of a uniarticulate basal peduncle and marginally setose, multiarticulate rami. Used in swimming and in the creation of water currents for respiration.

PLPD1-3 - pleopods 1-3.

Plumose - feather-like; lined with very fine microsetae.

Polytypic - describes a taxon containing more than one taxon at the next lowest level in the taxonomic hierarchy (e.g. a family containing more than one genus; a genus containing more than one species).

Posterior - back end; towards the rear.

Ppt - parts per thousand.

Produced - narrowly expanded.

Propodus - article 6 of a gnathopod or peraeopod.

Proximal - located close to the body or point of attachment.

Pyriform - broadest at the base; pear-shaped.

Raker row - see **spine row**.

Ramus (rami) - branch(es) of an appendage.

Recurved - curved back on itself.

Reniform - kidney-shaped.

Rostrum - forward projection of the anterodorsal margin of the head between the peduncles of antenna 1.

Segment - individual unit or subdivision of the body.

Sensu lato - in the broad sense (Latin); usually used to refer to a taxon as it was defined before a revision restricted its definition (e.g. *Amphilochus sensu lato*).

Sensu stricto - in the strict or narrow sense (Latin); usually used to refer to a taxon as it is defined after a revision has restricted its definition (e.g. *Amphilochus sensu stricto*).

Serrate - with a series of saw-like teeth or sharp processes.

Seta - bristle or hair; a slender, flexible chitinous extension of the cuticle, articulated with the surface of the body or appendage.

Setose - having setae.

Sexually dimorphic - having a different form or appearance in males and females.

Sibling species - two or more closely related, often sympatric, species that are morphologically indistinguishable, but are reproductively isolated.

Simple - condition of a prehensile appendage, usually a gnathopod, in which none of the articles are expanded to meet the dactylus (article 7) when closed (articles usually linear).

Sinuuous - s-shaped, with both convex and concave portions.

Spine - a stout, inflexible seta.

Spine row (mandibular) - row of small spinules located on the mandible between the base of the incisor and the molar.

Spinose - having spines.

Splayed - flared or extended laterally.

Spur - a sharp process.

Sternal processes - processes located mid-ventrally on pereon segments 1-7.

Stridulating ridges - small ridges usually found in rows on the ventral margins of the coxae and the lateral or anterior margins of the gnathopod or pereopod bases. These ridges function in sound production when two opposing rows are rubbed together.

Styliform - very slender, elongate and sharply pointed at the tip.

Subacute - nearly acute.

Subapical - nearly at the apex or tip.

Subchelate - condition of a prehensile appendage, usually a gnathopod, occasionally a pereopod or palp, in which it is formed by the closure of the dactylus (article 7) on the oblique or transverse (non-parallel) expanded distal margin (palm) of the propodus (article 6). The term *complexly subchelate* is sometimes used to refer to a prehensile appendage formed by the closure of the dactylus on a non-parallel fixed process of any article other than the propodus (eg. carpochele, merochele).

Subconical - nearly conical.

Subcylindrical - nearly cylindrical.

Subequal - nearly equal.

Submarginal - nearly on the margin.

Subovate - nearly oval.

Subquadrate - nearly square.

Subrectangular - nearly rectangular.

Subround - nearly round.

Sympatric - occurring in the same geographic area.

Synanthropic - with man; pertains to organisms that are transported by man to other regions or those that live in or near human dwellings.

Systematics - the study of the evolutionary relationships among organisms.

T - telson.

Taxonomy - the identification and classification of organisms.

Telson - a small flap attached to the posterior margin of urosome segment 3, just above the anus; may be cleft, entire, laminar, fleshy, emarginate or otherwise modified, but always present in amphipods.

Terminal - at the tip or distal end.

Terminal adult - an individual with fully adult morphology.

Tooth - an acute, non-articulated process.

Transverse - perpendicular to the long axis of an article.

Triturative - having a ridged surface used for grinding or crushing.

Truncate - with distal margin transverse, quadrate, cut-off.

U1-3 - uropods 1-3.

UL - upper lip; labrum.

Uniarticulate - composed of one article.

Uniramous - having one branch (ramus).

Upper lip - a fleshy plate or lobe located on the anterior margin of the mouth; distal margin may be entire, incised or emarginate, usually minutely setose or pilose.

Uropod - a paired, typically biramous, appendage attached to each urosome segment; usually composed of a peduncle and 2 uniarticulate rami, but may be uniramous, without rami or completely absent.

Urosome - combined posterior 3 abdominal segments (sometimes referred to as pleon segments 4-6), located just posterior to the pleon and bearing the paired, typically biramous uropods and the telson.

Ventral - pertaining to the abdomen; in amphipods refers to the lower or bottom surface or margin.

Vestigial - very reduced, degenerate, poorly developed.

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APPENDIX I: FIGURE SOURCES

The illustrations used in this document were obtained from a variety of sources and include both published figures and original drawings. In many cases, the illustrations have been modified from the original, to better illustrate the character being described. Sources for all illustrations are listed below and published sources are cited in full in the Literature Cited section. Illustrations that have been noticeably changed from the original are listed as being “modified from” the original source, while those that have not been changed (other than by removing labels or adjusting positioning) are referred to as being “from” the original source. Permission has been obtained for the use of those illustrations obtained from copyrighted publications and this copyrighted material is credited as follows:

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Figure 385a-f from Shoemaker, 1926 (*a-c* from Figure 3; *d* modified from Figure 3; *e-f* from Figures 1 and 4, respectively); *g* modified from Bousfield, 1973, Plate XIII 2.

Figure 386a-f, h-i, k from Shoemaker, 1926 (*a, i* from Figure 15; *b, f* modified from Figure 14; *c-d* modified from Figure 15; *e* modified from Figure 16; *h, k* from Figures 16 and 14, respectively); *g, j, l* from Ortiz, 1991 (*g, l* modified from Figure 16; *j* from Figure 19).

Figure 387a-c from Ortiz, 1991 (*a* from Figure 18; *b-c* modified from Figure 16).

Figure 388a-d from Shoemaker, 1926 (*a* from Figure 15; *b* from Figure 16; *c* modified from Figure 14; *d* from Figure 14); *e* from Ortiz, 1991, Figure 6.

Figure 389a-c from Shoemaker, 1926 (*a* modified from Figure 15; *b-c* from Figure 14).

Figure 390a-b from Shoemaker, 1926 (*a* modified from Figure 16; *b* from Figure 16); *c* from Ortiz, 1991, Figure 6.

Figure 391a, e-h from Barnard, 1950 (*a, f, h* from Plate 33; *e* from Plate 32; *g* modified from Plate 32); *b* modified from Lincoln, 1979; *c-d, i* from Bousfield, 1973 (*c-d* modified from Plate LXIX 1; *i* from Plate LXIX 1).

Figure 392a-g from Thomas, 1979 (*a, d* modified from Figure 1; *b-c* from Figure 1; *e* from Figure 3; *f-g* from Figure 4); *h* modified from Ortiz, 1976, Figure 1.

Figure 393a-g from LeCroy, 1995 (*a-b* modified from Figures 30 and 41, respectively; *c, e* from Figure 42; *d, f* from Figure 31; *g* from Figure 32).

Figure 394a-m from LeCroy, 1995 (*a-b* modified from Figures 4 and 47, respectively; *c-d, l-n* from Figures 22, 36, 48, 23 and 27, respectively; *e-f, i, k* from Figure 54; *g-h, j* from Figure 36).

Figure 395a-n from LeCroy, 1995 (*a-b* modified from Figures 30 and 31, respectively; *c-d* from Figure 31; *e-f* from Figure 32; *g, i-m* from Figure 33; *h, n* modified from Figure 33).

Figure 396a-o from LeCroy, 1995 (*a-b* modified from Figures 41 and 42 respectively; *c-e* from Figure 42; *f-g* from Figure 43; *h, k-n* from Figure 44; *i-j, o* modified from Figure 44).

Figure 397a-f from LeCroy, 1995 (*a, e* from Figure 7; *b, f* from Figure 37; *c-d* from Figure 28).

Figure 398a-f from LeCroy, 1995 (*a, f* from Figure 24; *b, d* from Figure 56; *c, e* from Figure 49).

Figure 399a-i from LeCroy, 1995 (*a, c-d* from Figure 27; *b, e-g* modified from Figure 27; *h* from Figure 28; *i* modified from Figure 25).

Figure 400a-j from LeCroy, 1995 (*a-c, f* from Figure 37; *d, h* modified from Figure 37; *e* modified from Figure 6; *g, i, j* from Figures 6-7 and 38, respectively).

Figure 401a-i from LeCroy, 1995 (*a, e-f* modified from Figures 4-6, respectively; *b-d* from Figure 5; *g* from Figure 6; *h-i* from Figure 7).

Figure 402a-i from LeCroy, 1995 (*a, e-f* modified from Figures 35-37, respectively; *b-d* from Figure 36; *g* from Figure 37; *h-i* from Figure 38).

Figure 403a-k from LeCroy, 1995 (*a, k* modified from Figures 21 and 24, respectively; *b, e* from Figure 22; *c-d* modified from Figure 22; *f-j* from Figure 24).

Figure 404a-m from LeCroy, 1995 (*a-d* modified from Figure 48; *e, h, l* from Figure 49; *f-g* from Figure 56; *i* modified from Figure 53; *j-k, m* from Figure 56).

Figure 405a-h from LeCroy, 1995 (*a-b* modified from Figures 47-48, respectively; *c, e-f, h* from Figure 49; *d, g* modified from Figure 49).

Figure 406a-h from LeCroy, 1995 (*a-b* modified from Figures 53-54, respectively; *c, e-f, h* from Figure 55; *d, g* modified from Figure 55).

Figure 407a-c from LeCroy, 1995 (*a* from Figure 7; *b-c* from Figure 38).

Figure 408 a-d from LeCroy, 1995, Figures 28, 33, 49 and 44, respectively.

Figure 409a-b, d-f from LeCroy, 1995 (*a-b* from Figure 36; *d-e* modified from Figure 36; *f* modified from Figure 35); *c* from LeCroy, unpublished drawing.

Figure 410a-h from LeCroy, 1995 (*a, c-d* from Figure 5; *b, e* from Figure 22; *f-g* modified from Figure 5; *h* modified from Figure 22).

Figure 411a-f from LeCroy, 1995 (*a, d-e* modified from Figures 4-6, respectively; *b-c* from Figure 5; *f* from Figure 6).

Figure 412a-f from LeCroy, 1995 (*a, d-e* modified from Figures 21-23; *b-c* from Figure 22; *f* from Figure 23).

Figure 413a-l from LeCroy, 1995 (*a-b, j* modified from Figures 30-31 and 33, respectively; *c* from Figure 31; *d, g* modified from Figure 32; *e-f, h* from Figure 32; *i, k-l* from Figure 33).

Figure 414a, c-q from LeCroy, 1995 (*a, i-j, o* modified from Figures 25, 43, 27 and 44, respectively; *c-d* from Figure 54; *e, h* modified from Figure 55; *f, l* from Figure 55; *g, k* from Figure 43; *m, q* modified from Figure 56; *n, p* from Figures 44 and 28, respectively); *b* modified from Heard and Perlmutter, 1977, Figure 4.

Figure 415a-k from LeCroy, 1995 (*a, g-h, j-k* modified from Figures 26, 43, 27-28 and 44, respectively; *b, e* from Figure 42; *c, f* modified from Figure 42; *d, i* from Figures 26 and 43, respectively).

Figure 416a-j from LeCroy, 1995 (*a* from Figure 48; *b* from Figure 54; *c, e-f* modified from Figure 54; *d* modified from Figure 48; *g* modified from Figure 55; *h* modified from Figure 49; *i* from Figure 55; *j* modified from Figure 56).

Figure 417a-h from LeCroy, 1995 (*a* modified from Figure 25; *b* modified from Figure 26; *c* from Figure 26; *d-e* from Figure 27; *f* modified from Figure 27; *g-h* from Figure 28).

Figure 418a-h from LeCroy, 1995 (*a, f* modified from Figures 41 and 43, respectively; *b-c* modified from Figure 42; *d-e* from Figure 43; *g-h* from Figure 44).

Figure 419a, c from Heard and Perlmutter, 1977 (*a, c* modified from Figures 1 and 4, respectively); *b, d-j* from LeCroy, 1995 (*b* modified from Figure 48; *d-f* from Figure 48; *g, i* modified from Figure 49; *h, j* from Figure 49).

Figure 420a-j from LeCroy, 1995 (*a, c, g, i* modified from Figures 53, 54, 55 and 56, respectively; *b, j* from Figures 54 and 56, respectively; *d-f, h* from Figure 55).

Figure 421a, c from Shoemaker, 1943 (*a* modified from Figure 1; *c* from Figure 1); *b, d* modified from Heard and Sikora, 1972, Figure 2.

Figure 422a, d, g from Shoemaker, 1934b, Figure 1; *b-c, e-f, h-i* from Shoemaker, 1947 (*b-c, f, i* from Figures 3, 11, 10 and 7, respectively; *e, h* from Figure 2).

Figure 423a-b from Shoemaker, 1947, Figures 5 and 6, respectively; *c* modified from Bousfield, 1973, Plate LXII 2.

Figure 424a from Shoemaker, 1947, Figure 10; *b* from Shoemaker, 1934b, Figure 1; *c* modified from Bousfield, 1973, Plate LXIV 2.

Figure 425a-c from Shoemaker, 1934b (*a, c* from Figure 1; *b* modified from Figure 1).

Figure 426a-d from Shoemaker, 1947 (*a-c* from Figures 7, 2 and 10, respectively; *d* modified from Figure 10).

Figure 427a-h from Shoemaker, 1943 (*a-b, f-g* from Figure 1; *c-e, h* modified from Figure 1).

Figure 428a, c, e, g, i, l-m from Heard and Sikora, 1972 (*a, e, i* from Figure 1; *c, g, l* modified from Figure 1; *m* modified from Figure 2); *b, d, f, h, j-k, n* from LeCroy, unpublished drawings.

Figure 429a-k from Heard and Sikora, 1972 (*a-b, k* modified from Figure 2; *c-d, g-h* from Figure 1; *e-f, i-j* modified from Figure 1).

Figure 430a-k from LeCroy, unpublished drawings.

Figure 431a-f from Shoemaker, 1947 (*a, c, e* from Figure 11; *b, d, f* modified from Figure 11).

Figure 432a-m from Shoemaker, 1947 (*a, e, i* from Figure 9; *b, f, h* from Figure 12; *c, k* modified from Figure 9; *d, g, l* modified from Figure 12; *j* from Figure 10; *m* modified from Figure 10).

Figure 433a-c, f-j from Shoemaker, 1947 (*a-b, f-h* from Figure 9; *c, i-j* modified from Figure 9); *d-e, k* from Bousfield, 1973 (*d-e* modified from Plate LXVII; *k* modified from Plate LXIV 2).

Figure 434a-d, g-o from Shoemaker, 1947 (*a, i, m* from Figure 12; *b, h* from Figure 10; *c, g, j, l, o* modified from Figure 10; *d, k, n* modified from Figure 12); *e-f* modified from Bousfield, 1973, Plate LXVII.

Figure 435a-d from Shoemaker, 1947 (*a-b, d* from Figure 10; *c* modified from Figure 10); *e* modified from Bousfield, 1973, Plate LXIV 1.

Figure 436a, c-d from Shoemaker, 1947 (*a, d* from Figure 12; *c* modified from Figure 12); *b, e* modified from Bousfield, 1973, Plate LXV 1.

Figure 437a-i from LeCroy, unpublished drawings.

Figure 438a-g, i, k-n from Shoemaker, 1947 (*a, c* from Figure 5; *b, e* modified from Figure 5; *d, g, n* modified from Figures 2, 3 and 6, respectively; *f, i* from Figure 3; *k-m* from Figures 7, 2 and 6, respectively); *h, j* from LeCroy, unpublished drawings.

Figure 439a, i modified from Bousfield, 1973, Plates LXVI and LXIII 1, respectively; *b-h* from Shoemaker, 1947 (*b, h* from Figure 6; *c, e-f* from Figure 7; *d, g* modified from Figures 7 and 6, respectively).

Figure 440a-b modified from Bousfield, 1973, Plate LXVI; *c-m* from Shoemaker, 1947 (*c, g, l* modified from Figure 5; *d* from Figure 3; *e-f, m* modified from Figure 2; *h-i* from Figure 5; *j-k* from Figure 2).

Figure 441a, l modified from Bousfield, 1973, Plates LXVI and LXII 2, respectively; *b-k* from Shoemaker, 1947 (*b, i, k* modified from Figure 2; *c, f-g* from Figure 3; *d-e, h* modified from Figure 3; *j* from Figure 2).

Figure 442a-b, d, l from Bousfield, 1973 (*a* modified from Plate LXVI; *b, d, l* modified from Plate LXIII 2); *c, g-k* from Shoemaker, 1947 (*c* modified from Figure 5; *g, j* from Figure 5; *h-i, k* modified from Figure 5); *e-f* from LeCroy, unpublished drawings.

Figure 443a-h from LeCroy, unpublished drawings.

Figure 444a, d-e, g, i-j, m from LeCroy, unpublished drawings; *b-c, f, h, k-l* modified from McKinney, 1980, Figure 1.

Figure 445a-m from McKinney, 1980 (*a-b, f, h-j, l-m* modified from Figure 1; *c-d, g* from Figure 2; *e* modified from Figure 2; *k* from Figure 1).

Figure 446a-m from LeCroy, unpublished drawings.

APPENDIX II: REVISED CLASSIFICATION OF THE COROPHIIDEA

In a recent publication, Myers and Lowry (2003) present a revised higher level classification of the corophiidean amphipods based upon a phylogenetic analysis of the infraorders Corophiida and Caprellida, originally placed in the suborder Corophiidea Leach, 1814 by Barnard and Karaman (1983). Although the classification of Barnard and Karaman (1983) did not gain general acceptance at the time, the analysis of Myers and Lowry (2003) supports the retention of the suborder Corophiidea as a monophyletic group containing the infraorders Corophiida and Caprellida and also results in the realignment of a number of taxa formerly placed in the suborder Gammaridea. In addition, several new families are erected and the placement of many genera within other previously recognized families is changed. The classification of the suborders Hyperiidea and Ingolfiellidea is not considered in their revision and remains unchanged.

Although the new classification affects many of the taxa presented in this guide, it is not followed herein for two reasons. The first is that it is not practical to reorganize the format of the guide in midstream and keys designed for the system of classification currently in use (e.g. the family key in Volume 1) will no longer function properly under that of Myers and Lowry (2003). The second is that, although the proposed classification has had a favorable reception, it is too early to determine whether or not it will be generally accepted. However, the new higher level classification is presented below (Table 1) and a table indicating how the proposed changes affect the taxa covered in this guide is also included (Table 2).

Table 1. Suprafamilial corophiidean classification of Myers and Lowry (2003).

Suborder Hyperiidea
Suborder Ingolfiellidea
Suborder Gammaridea
Suborder Corophiidea
Infraorder Corophiida
Superfamily Aoroidea
Family Aoridae Stebbing, 1899
Family Unciolidae Myers and Lowry, 2003
Superfamily Cheluroidea
Family Cheluridae Allman, 1847
Superfamily Chevalioidea
Family Chevaliidae Myers and Lowry, 2003
Superfamily Corophioidea
Family Ampithoidae Boeck, 1871
Family Corophiidae Leach, 1814
Infraorder Caprellida
Superfamily Aetiopedesoidea
Family Aetiopedesidae Myers and Lowry, 2003
Family Paragammaropsidae Myers and Lowry, 2003
Superfamily Caprelloidea
Family Caprellidae Leach, 1814
Family Caprogammaridae Kudrjaschov and Vassilenko, 1966
Family Cyamidae Rafinesque, 1815
Family Dulichiidae Dana, 1849
Family Podoceridae Leach, 1814

Superfamily Isaeoidea

Family Isaeidae Dana, 1852

Superfamily Microtopoidea

Family Microtopidae Myers and Lowry, 2003

Superfamily Neomegamphoidea

Family Neomegamphopidae Myers, 1981

Family Priscomilitariidae Hirayama, 1988

Superfamily Photoidea

Family Ischyroceridae Stebbing, 1899

Family Kamakidae Myers and Lowry, 2003

Family Photidae Boeck, 1871

Superfamily Rakirooidea

Family Rakiroidae Myers and Lowry, 2003

Table 2. Family level classification of Florida corophiidean genera.

Corophiidean family level classification used in this guide		Revised corophiidean family level classification based on Myers and Lowry (2003)	
Family	Regional Genera	Family	Regional Genera
Ampithoidae	<i>Ampithoe</i> <i>Cymadusa</i> <i>Peramphithoe</i> <i>Sunamphitoe</i>	Ampithoidae	<i>Ampithoe</i> <i>Cymadusa</i> <i>Peramphithoe</i> <i>Sunamphitoe</i>
Aoridae	<i>Bemlos</i> <i>Globosolembos</i> <i>Grandidierella</i> <i>Lembos</i> <i>Leptocheirus</i> <i>Paramicrodeutopus</i> <i>Pedicrophium</i> <i>Plesiolembos</i> <i>Rudilemboides</i> <i>Unciola</i>	Aoridae	<i>Bemlos</i> <i>Globosolembos</i> <i>Grandidierella</i> <i>Lembos</i> <i>Paramicrodeutopus</i> <i>Plesiolembos</i>
		Corophiidae	<i>Leptocheirus</i>
		Unciolidae	<i>Pedicrophium</i> <i>Rudilemboides</i> <i>Unciola</i>
Cheluridae	<i>Chelura</i> <i>Tropichelura</i>	Cheluridae	<i>Chelura</i> <i>Tropichelura</i>
Corophiidae	<i>Americorophium</i> <i>Apocorophium</i> <i>Laticorophium</i> <i>Monocorophium</i>	Corophiidae	<i>Americorophium</i> <i>Apocorophium</i> <i>Laticorophium</i> <i>Monocorophium</i>
Isaeidae	<i>Audulla</i> <i>Chevalia</i> <i>Gammaropsis</i> <i>Microprotopus</i> <i>Photis</i>	Chevaliidae	<i>Chevalia</i>
		Microprotopidae	<i>Microprotopus</i>
		Photidae	<i>Audulla</i> <i>Gammaropsis</i> <i>Photis</i>
Ischyroceridae	<i>Carriboecetes</i> <i>Cerapus</i> <i>Erichthonius</i> <i>Jassa</i>	Ischyroceridae	<i>Carriboecetes</i> <i>Cerapus</i> <i>Erichthonius</i> <i>Jassa</i>
Neomegamphopidae	<i>Konatopus</i> <i>Neomegamphopus</i> <i>Varohios</i>	Neomegamphopidae	<i>Konatopus</i> <i>Neomegamphopus</i> <i>Varohios</i>
Podoceridae	<i>Podocerus</i>	Podoceridae	<i>Podocerus</i>