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GUIDE TO SHALLOW-WATER MYSIDS FROM FLORIDA

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CONTENTS

Introduction

In almost any gathering of ecologists or environmental biologists, the conversation eventually turns to problems in systematics, usually the lack of comprehensive identification guides to many of the more important groups. With the increasing use of biotic indices, such as species diversity or others utilizing information theory, specific identification becomes increasingly important. This is particularly true when such indices become components of the regulations governing pollution of our aquatic resources. In theory specific identification is not required for a biological index if the species can be accurately separated. However, in practice such attempts often prove to be somewhat less than satisfactory. This problem is best exemplified by the studies of haustoriid amphipods conducted by Dr. E. L. Bousfield (1965). Before these studies about six species of haustoriids were thought to occur along the New England coast. By the time Dr. Bousfield had finished, these six species had been expanded to ten genera and 20 species.

During the past few years the taxonomy of many small,

but important, groups of macroinvertebrates commonly encountered in ecological studies has received increasing attention. Unfortunately, these investigations are scattered in numerous short papers often devoted to a single species or genus. When longer, more comprehensive, studies are published, they frequently lack adequate keys and involve such detail that the non-specialist has difficulty in following the descriptions. Such has been the case with the Mysidacea.

In this study we have drawn heavily from other authors in an effort to allow easy identification based on relatively gross morphological features. Articles used include: Bacescu (1961, 1968a, and 1968b), Banner (1953), Bowman (1957, 1964), Brattegard (1969, 1970), Molenock (1969), and Tattersall (1951). In this paper we hope to provide the first of a series of such guides to marine invertebrates, which are specifically intended for environmental biologists.

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Biological Considerations

The Mysidacea, “oppossum shrimp”, are small shrimp-like crustaceans which are active swimmers, ranging from fresh water to the ocean abyss. There are two suborders, the Lophogastrida, which are generally oceanic demersal or planktonic forms, and Mysida, which include the species discussed herein. While they are not obligate benthonauts, mysids usually shoal over the bottom in shallow water, and during daylight hours may hide on the substrate or beneath a submerged obstacle such as a dead sea shell. During this time they are commonly taken in benthic samples. Some species range from shallow bays to deep water well off the continental shelf. In deeper waters these mysids are usually functional members of the plankton community. However, the shallow-water (l0 m or less) species considered here may legitimately be included with the benthos.

Mysids are typical pericarideans having nineteen somites with one pair of appendages originating on each segment (Figure 1). Basic morphology includes the head (five somites), thorax (eight somites), abdomen (six somites), and telson. Usually the head and thorax are

considered as a unit, the cephalathorax, which is partially covered in the mysids by the carapace. In the Mysida the carapace is usually short, and one or more of the posterior thoracic somites are exposed. The carapace is dorsally attached to only the anterior thoracic segments, and the posterior margin is free. The anterodorsal margin of the carapace is usually produced forward between eyes into a rostral plate.

The first and second appendages are the antennules and antennae, respectively. The antennule has three-segmented peduncle and two flagella (Figure 1D). The antenna includes a flagellum and a small scale that is armed with long, plumose setae, which have been omitted from the present illustrations (Figure 1E). The third appendages are the mandibles, which are followed by two pairs of maxillae. The maxilliped is actually a modified thoracic appendage, although it is usually included with the mouth parts. The thoracic appendages, two through seven, are the pereopods or true legs. They are biramus, with the exopods directed outward and upward, functioning as natatory organs;(Figure 1C). The endopods function as the “walking legs”, and the first and second pair may be subchelate. In the mature female there are two or three pairs of oostegites, and in some Mysida there may be up to seven pairs. These form the “brood” pouch in which

fertilized eggs develop into fully formed juveniles, hence the term, “oppossum shrimp”.

Abdominal appendages include five pairs of pleopods and the uropods. In female Mysida, pleopods are reduced and not natatory, but in the males pleopods are either fully developed, or one or more pairs may be modified as copulatory appendages. The uropods are lamellar and together with the telson form a fan-like structure used in rapid swimming. In most of the Mysida and all the species in this study, a statocyst is positioned on the proximal third of the uropod endopod.

The scope of this study is largely restricted to adults or near adults. However, in most ecological studies large numbers of juveniles as well as adults must be identified. To partially rectify this problem, we have illustrated some of the more critical differences in Mysidopsis bigelowi (Figure 2). Generally, appendages tend to be proportionally shorter and spinal counts tend to be reduced. In M. bigelowi lateral margins of the adult telson have 10 - 13 spines, a 3.4 mm juvenile has 7 spines, and a 1.8 mm juvenile has none. Adults have 4 or 5 spines near the statocyst on the uropod endopod, the 3.4 mm juvenile has 2, and the 1.8 mm juvenile has one. In our experience such variations due to immaturity can be translated to other species. Of course, the best method of

handling juveniles is to establish a series of instars for each species in the reference collections.

Specimen Preparation

While the key and brief diagnoses deal only with gross morphological features, some dissection will probably be necessary. To facilitate the identification process, the following steps are suggested:

1. Observe the specimen from the dorsal side; note size and shape of rostral plate, size and configuration of lobes on posterodorsal region of carapace, if present; check for presence of scale on posterior margin of fifth abdominal segment.

2. Using fine dissecting needle or very fine forceps, remove antennule, antenna, uropod and telson.

3. Prepare glycerol mounts of appendages for inspection under a compound microscope. After examination is complete, appendages can be removed from the slide and placed in a small (1/4 dram) vial for future reference. The glycerine mount can be retained for days and even weeks if stored in a dust-free horizontal tray.

Glossary

Antennule: first of the paired appendages, usually with 3 segmented base and 2 multiarticulate flagella.

Antennal scale: outer article of the second pair of appendages, usually dorsoventrally flattened, blade-like.

Carapace: a chitinous structure covering the head and most of the thorax dorsally and laterally.

Chordate: heart-shaped.

Denticle: immovable spine or tooth.

Emarginate: indented or concave; notched margin or apex.

Endopod: inner or median ramus in a biramus appendage.

Exopod: outer or lateral ramus in a biramus appendage.

Interocular: between the eyes or eyestalks.

Lamellar: leaf-shaped.

Linguiform: tongue-shaped.

Mandible: third pair of appendages used in grinding and mastication of food.

Maxilla: the fourth and fifth pairs of appendages, used in directing foodstuff to the mandibles.

Maxilliped: the first pair of thoracic appendages, modified to work with the maxillae in directing food to the mandible.

Natatory: adapted for swimming.

Oostegites: outgrowth from the thoracic coxae which overlap to form the marsupium or brood pouch.

Peduncle: the basal segment or segments of an appendage; usually applied when an appendage is divided into 2 distinct parts, such as peduncle and flagellum of an antenna.

Pereopod: the 2nd through 8th thoracic appendages, walking legs.

Pleopod: the first five abdominal appendages, may be natatory, reduced, or modified as copulatory organs.

Rami: branches of an appendage.

Rostral plate: an anterodorsal production of the carapace into a horizontal plate often extending over the eyestalks.

Rostrum: an anterodorsal production of the carapace into a horizontal plate in the mysids, or a laterally compressed blade in many decapod shrimp.

Somite: a body segment.

Statocyst: structure on the endopod of the uropod of mysids, presumably functioning as an equilibrium organ.

Subchelate: modification of a thoracic leg into a grasping organ by the articulation of the terminal segment against the penultimate segment.

Telson: terminal somite or appendage of the abdomen.

Key to Adults

1. Telson entire, chordate, lateral margins naked, length equal to width at base; rostral plate produced anteriorly into truncate plate covering bases of eyestalks; interocular margin straight (Fig. 5F-I) ..... Amathimysis gibba

   Telson entire or cleft, not chordate; lateral margins with one or more spines, length greater than width at base; rostral plate rounded or triangular, if truncate, interocular margin concave 2

2. Exopod of uropod with 1 or more spines on outer margin; antennal scale outer margin naked, outer distal corner defined by a small tooth (Fig. 3B) 3

   Exopod of uropod with setae but no spines on outer margin; antennal scale setose along outer margin; distal margin rounded (Fig. 6C) 7

3. Telson entire; uropod exopod 2 segmented (Fig. 3D) ..... Siriella chierchiae

   Telson cleft; uropod exopod 1 segmented 4

4. Uropod exopod shorter than endopod and telson; rostrum truncate, interocular margin concave (Fig. 3E).. ..... Anchialina typica

   Uropod exopod longer than endopod and telson; rostrum produced into triangle 5

5. Dorsal scale on posterior margin of fifth abdominal somite; outer margin ofuropod exopod with 18 - 20 spines (Pig. 4A-G) ..... Bowmaniella dissimilis

   Dorsal scale lacking; outer margin of uropod exopod with 16 or fewer spines 6

6. Rostral plate forming obtuse triangle; posterior dorsal lobes of carapacereflected; endopod of uropod with 3 spines on inner margin (Fig. 5A-E)..... ..... Bowmaniella mexicanus

   Rostral plate forming acute triangle; posterior dorsal lobes of carapace small, not reflected; endopod of uropod with 3 - 4 spines on inner margin and 5 - 7 smaller, submarginal spines (Fig. 4H-K)..... ..... Bowmaniella portoricensis

7. Telson cleft, cleft margins with denticles (immovable spines) 8

   Telson entire, emarginate or cleft, if cleft, then margin lacking denticles 12

8. Rostrum produced into broad obtuse triangle; antennal scale 2.5 - 3 times longer than wide; cleft margins concave to straight 9

   Rostrum produced into small subtriangle or rounded plate; antennal scale 4 - 4.5 times longer than wide; cleft margins convex 11

9. Antennal scale one segmented; cleft about 1/2 total length of telson; both rami of uropod longer than telson (Fig. 6A-D) ..... Heteromysis floridensis

   Antennal scale with long basal segment and small terminal segment; cleft less than 1/2 total length of telson; one or both rami of uropod equal to or shorter than telson 10

10. Lateral margin of telson with ll spines, inner margin of uropod endopod with 17 - 19 spines (Fig. 6E-H) ..... Heteromysis formosa

Lateral margin of telson with 6 spines; inner margin of uropod endopod with . single spine (Fig. 7A-D) ..... Heteromysis nouveli

11. Carapace anterior margin with subtriangular rostrum; uropod endopod withoutspines on inner margin; telson cleft armed with about 20 denticles (Fig. 8A-D). ..... Taphromysis louisianae

Carapace anterior margin broadly rounded; uropod endopod with single spine midway along inner margin; telson cleft with 7 - 11 denticles (Fig. 7E-H).. ..... Taphromysis bowmani

12. Antennal scale long and thin, 11 times longer than wide; telson 2.5 times longer than width at base, apex round with about 30 short blunt spines; antennular peduncle segment one 1.5 times as long as segments 2 and 3 combined (Fig. 8E-H) . Brasilomysis castroi

These characters not combined 13

13. Endopod of uropods without spines along inner margin; telson apex with short . blunt spines (Fig. 9A-E) 14

Endopod of uropods with one or more spines along inner margin or near .. statocyst; telson apex round or emarginate, lacking short, blunt spines 16

14. Telson cleft, distal margin armed with 32 - 52 short, flattened spines; antennal scale 9 - 11 times longer than wide (Fig. lOA-D) ..... Mysidium columbiae

Telson entire, antennal scale 4 - 5 times longer than wide 15

15. Telson apex slightly emarginate; lateral margin concave with 14 short spines on distal half, apex with about 18 short spines; antennular peduncle segment 1 longer than segments 2 and 3 combined, segment 3 twice as long as segment 2 (Fig. 9A-D) .....
..... Mysidium gracile

Telson apex truncate with rounded corners; lateral margins straight with continuous row of about 50 short spines around distal half; antennular peduncle segment 1 as long as segments 2 and 3 combined, segment 3 three times longer than segment 2 (Fig. 9E-H)...
..... Mysidium integrum

16. Telson distinctly emarginate; emargination defined by a pair of small,moveable spines and plumose setae (Fig. l0E-H) ..... Dioptromysis spinosa

    Telson entire or slightly emarginate; if emarginate, then lacking spines and plumose setae 17

17. Marginal spines restricted to distal third of telson; maxilla without exopodite (Fig. llA-D .... Metamysidopsis swifti

    Entire lateral margin of telson armed with spines; maxilla with exopodite 18

18. Antennal scale one segmented, 6 times longer than wide 19

    Antennal scale two segmented, no more than 4 times longer than wide 21

19. Endopod of uropod with 4 - 5 spines near statocyst; telson with 10 - 13 pairsof lateral spines and 2 - 3 pairs of stout, widely spaced spines on apex (Fig. 1, 2, 11E-G) ..... Mysidopsis bigelowi

Endopod of uropod with 1 - 3 spines near statocyst; telson with 10 - 22 pairsof lateral spines and 4 - 8 pairs of closely set spines on apex 20

20. Outer margin of antennal scale nearly straight; endopod of uropod with 1 - 3, usually 2, spines on ventral surface near statocyst; apical spines of telson . abruptly longer at mid-apex (Fig. 12A-D) ..... Mysidopsis bahia

Outer margin of antennal scale concave; endopod of uropod with single spine on ventral surface near statocyst; apical spines of telson gradually lengthening at mid-apex (Fig. 12E-H) .... Mysidopsis almyra

21. Telson slightly emarginate, each lobe with 2 strong spines; antennularpeduncle segment 1 equal in length to segment 3 (Fig. 13A-E) ..... Mysidopsis furca

Telson entire, antennular peduncle segment 1 longer than segment 3 22

22. Antennal scale about 2 times longer than wide; endopod of uropod with 8-9 spines along inner margin, mid-apical spinal pair 1.5 times longer than neighboring spines (Fig. 13F-I) ..... Mysidopsis eclipes

    Antennal scale 3 - 4 times longer than wide; endopod of uropod with more than 9 spines on inner margin, apical spines nearly equal in length 23

23. Lateral margin of telson concave, apical spines widely spaced; endopod of uropod with 18 - 28 unequal spines extending to apex (Fig. 14A-D) .....
    ..... Mysidopsis mortenseni

    Lateral margin of telson nearly straight, apical spines closely set; endopod of uropod with 10 - 20 unequal spines not extending to apex (Fig. 14EH)
    ..... Mysidopsis brattstroemi

ORDER MYSIDACEA

SUBORDER MYSIDA

FAMILY MYSIDAE

SUBFAMILY SIRIELLINAE

Siriella chierchia Coifmann, 1937

Figure 3A-D

Diagnosis: Carapace anterior margin produced into broad obtuse triangle. Antennule peduncle segment 1 as long or longer than segments 2 and 3 combined. Antennal scale about 3.3 times longer than broad, outer margin naked, outer distal corner produced into small tooth; terminal segment small, less than 0.1 total length. Exopod of uropod 2 segmented, longer than endopod and telson; endopod with row of spines on inner margin from statocyst to apex, spines unequal, groups of smaller spines interspersed between long, stout spines. Telson entire, lanceolate and narrow, 3.3 times longer than wide at base; distal portion of lateral margin with long spines separated by shorter ones. Length up to 10.2 mm

Remarks: This is essentially a tropical species, common only in the Keys.

SUBFAMILY GASTROSACCINAE

Anchialina typica (Kroyer, 1861)

Figure 3E-H

Diagnosis: Carapace anterior margin produced into broad plate, leading edge slightly emarginate. Antennal scale small, wide, about twice as long as broad; outer margin naked, small tooth at outer, distal corner; second segment about 0.07 of total length. Uropod exopod shorter than endopod, 0.8 times telson length, outer margin with 18 spines increasing in size distally; endopod nearly as long as telson, inner margin with 40 - 50 unequal spines, longer spines separated by short rows of smaller spines. Telson cleft, lateral margins with 25 - 35 slender spines increasing in length distally; each apical lobe with large spine; cleft depth 0.15 of telson length, margins convex with 16 - 20 denticles on each side. Length - males to 6 mm, females to 4.5 mm.

Remarks: Worldwide tropical - subtropical distribution - A. typica has been collected from the Florida Straits and Biscayne Bay.

Bowmaniella dissimilis (Coifmann), 1937)

Figure 4A-G

Diagnosis: Carapace anterior margin produced into

narrow triangular rostrum extending to cornea of eye; posterior dorsal lobes of carapace not reflected. Antennule peduncle segment 1 as long as 2 and 3 combined. Antennal scale 3.5 times as long as wide; outer margin naked, small tooth at outer, distal corner. Posterior margin of abdominal segment 5 with dorsal scale. Exopod of uropods longer than endopod and longer than telson, outer margin with row of 18 - 20 spines; endopod slightly longer than telson, 5 - 6 submarginal spines near inner edge. Telson cleft, length 2.5 times width at base, lateral margins straight, with 6 - 8 short spines, apical lobes with 2 long spines; cleft depth about 0.09 of total length, cleft margins convex, each side with 13 - 15 denticles. Length - males to 7.5 mm, females to 9.0 mm.

Remarks: B. dissimilis has been recorded from Delaware to Brazil. In Florida records include St. Andrew Bay, Tampa Bay, southern Florida and Indian River.

Bowmaniella portoricensis Bacescu, 1968

Figure 4H-K

Diagnosis: Carapace anterior margin produced into acute triangular rostrum extending to cornea of eyes; posterior dorsal lobes small, not reflected. Antennal

scale outer margin naked, small tooth at outer, distal corner. Abdominal somite 5 without dorsal scale. Exopod of uropod equal to endopod, 13 - 16 spines along outer margin; endopod with 5 - 7 spines on inner margin and 3 - 4 spines near statocyst. Lateral margin of telson with 4 - 7 spines, each apical lobe with pair of strong spines; depth of telson cleft 0.17 of total length; cleft margins convex, denticulate. Length - males to 9 mm, females to 11 mm.

Remarks: The original range included southeastern United States to northern Florida in deeper waters (30 - 80 m). However, Camp et al (1977) reported B. portoricensis from Hutchinson Island, Florida, in only 7 m depth.

Bowmaniella mexicanus (W. M. Tattersall, 1951)

Figure 5A-E

Diagnosis: Carapace anterior margin produced into obtuse triangular rostrum extending half length of eyestalks; posterodorsal lobes reflected. Antennal scale extending half length of segment 2 of antennular peduncle, length 4 times width; outer margin naked, small tooth at outer, distal corner. Fifth abdominal somite without dorsal scale. Uropod exopod slightly longer than endopod;

outer margin with 14 - 16 spines; endopod with 3 spines near inner margin. Telson cleft, narrow, lateral margins with 8 - 11 spines; each apical lobe with pair of stout spines; depth of cleft 0.11 total telson length, margins convex, denticulate. Length - to 7 mm.

Remarks: The type locality for B. mexicanus is Cape San Blas, Florida.

SUBFAMILY MYSINAE

Amathimysis gibba Brattegard, 1969

Figure 5F-I

Diagnosis: Carapace anterior margin produced into broad, truncate rostral plate extending forward over bases of eyestalks and antennules. Antennular peduncle segment 3 longer than segments 1 and 2 combined. Antennal scale outer margin naked, large tooth at outer distal corner. Uropod rami equal, 1.5 times telson length, setose along margins, lacking spines. Telson entire, chordate, length equal to greatest width; lateral margins naked, curving to narrow apex, 2 - 4 apical spines. Length - males to 3.8 mm, females to 3.4 mm.

Remarks: This species has been recorded from the Bahamas and southern Florida over sand bottoms and Thalassia beds.

Heteromysis floridensis Brattegard, 1969

Figure 6A-D

Diagnosis: Carapace anterior margin produced into broad, obtuse triangle, covering bases of eyestalks. Antennal scale small, wide, not extending to end of antennule peduncle; length 3 times width, setose along entire margin; one segmented. Exopod o£ uropod slightly longer than endopod, 1.25 times telson length; endopod distinctly longer than telson, inner margin with row of 19 stout spines extending from statocyst to apex. Telson deeply cleft, length 1.5 times width at base; proximal half of lateral margins naked, distal half with 6 pairs of stout spines, 2 additional pairs at apices of lobes; cleft deep, about 1/2 total telson length, cleft margins slightly concave, 9 denticles along proximal portion of margin. Length - 4.2 mm female only reported specimen.

Remarks: H. floridensis is known from a single specimen taken off Key Biscayne, Florida.

Heteromysis formosa S. I. Smith, 1873

Figure 6E-H

Diagnosis: Carapace anterior margin produced into broad triangular rostrum with rounded apex. Antennal scale

short, broad, 3 times as long as wide, entire margin setose, second segment 0.06 times total length. Exopod of uropod slightly longer than endopod and telson; inner margin of endopod armed with 17 - 19 evenly spaced spines. Telson cleft, each lateral margin with 11 spines on distal half, proximal half naked; cleft depth about 0.2 total telson length, each margin straight with 8 - 10 denticles; single, large spine on each apical lobe. Length - up to 10 mm.

Remarks: H. formosa is known from the Gulf of Mexico and both sides of the North Atlantic. It is considered a shallow water species, but is also found in deep water.

Heteromysis nouveli Brattegard, 1969

Figure 7A-D

Diagnosis: Carapace anterior margin produced into broad, obtuse triangle. Antennal scale broad, 2.5 times longer than wide, distal segment 0.07 times total length. Exopod of uropod slightly longer than endopod, equal to telson; endopod with single spine on inner margin near statocyst. Telson deeply cleft, 1.5 times longer than broad at base, lateral margin with 6 spines on distal half, each apical lobe with 2 unequal spines; cleft depth about 0.3 total length, margins concave, proximal half

with 9 denticles on each side. Length - immature female 3.0 mm.

Remarks: H. nouveli was described from a single specimen taken at Pigeon Key, Florida.

Taphromysis bowmani Bacescu, 1961

Figure 7E-H

Diagnosis: Carapace anterior margin rounded, slightly produced. Antennular peduncle segment one 3 times as long as second segment, 2 times longer than third, distal end of second segment extending slightly beyond eyes. Antennal scale broadly lanceolate, 4 times as long as wide; distal segment 0.1 times total length. Exopod of uropod broad, 1.5 times as long as endopod, 1.5 times as long as telson; endopod with small submarginal spine near inner margin at about mid-length. Telson truncate, cleft length 1.7 times width at base; lateral margins slightly concave, entire margin armed with 6 - 10 spines; cleft margins convex, with 7 - 11 denticles, single spine at apex of each lobe. Length - to 9 mm.

Remarks: Thus far, T. bowmani has been collected only from Florida at Wakulla River, New Port Richey, Weeki Wachee, Bayport, Bayou Southerland, Southwest and western Biscayne Bay.

Taphromysis louisianae Banner, 1953

Figure 8A-D

Diagnosis: Carapace anterior margin slightly produced into small, subtriangular rostrum. Antennular peduncle segment one 2.7 times as long as second, 2.0 times length o£ third. Antennal scale about 4.0 times as long as wide, entire margin setose; second segment 0.05 total length. Uropod exopod nearly 2 times as long as telson; endopod lacking spines on inner margin. Telson truncate, cleft; lateral margins concave with 10 -12 small spines; cleft margins convex with 20 small, immovable denticles. Length - females to 8.0 mm, males to 7.5 mm.

Remarks: This species was described from fresh waters of coastal Louisiana. Reports of T. louisianae from peninsular Florida probably should be referred to as T. bowmani; however, reports from the panhandle region were probably correct.

Brasilomysis castroi Bacescu, 1968

Figure 8E-H

Diagnosis: Carapace anterior margin produced into rounded, triangular rostrum extending well beyond eyestalk bases, lateral margins distinctly concave. Antennular

peduncle segment one 1.5 times as long as second and third combined, third segment 3 times as long as second. Antennal scale very long, thin, 11 times as long as wide, entire margin setose, distal segment 1/6 total length. Uropod exopod 1.2 times as long as endopod, 1.25 times as long as telson; endopod slightly longer than telson, narrow distally, inner margin without spines. Telson entire, long, about 2.5 times longer than wide at base; lateral margin with single spine near base, followed by naked space, then about 30 short, blunt spines to apex; spines form continuous row around apex; apical spines heavier and blunter. Length to 9 mm.

Remarks: B. castroi has been reported from Brazil and southwestern Florida. This is apparently an estuarine species most commonly found in sub-oceanic salinities of the lower estuary.

Mysidium gracile (Dana, 1852)

Figure 9A-D

Diagnosis: Carapace anterior margin produced into broad, obtuse triangle, apex not extending beyond bases of eyestalks. Antennule peduncle segment 1 longer than remaining 2 combined, third segment 2 times longer than second. Antennal scale lanceolate, 4 - 5 times as long as

wide, entire margin setose; distal segment 0.17 times total length. Exopod of uropod 1.5 times as long as endopod, twice as long as telson; endopod 1.3 times as long as telson, setose all around, lacking spines along inner margin; both rami slender. Telson entire, truncate, slightly emarginate at apex, length 1.7 times width of base; lateral margins concave, naked on proximal half; distal half with 14 short spines, apex with 16 - 20 short spines. Length - males to 5 mm, females to 5.8 mm.

Remarks: Distribution ranges from the Florida Keys to Brazil. M. gracile apparently prefers coral reefs, where it shoals over or near the reef structure.

Mysidium integrum W. M. Tattersall 1951

Figure 9E-H

Diagnosis: Carapace anterior margin produced into broad, obtuse triangle, apex barely covering bases of eyestalks. Antennule peduncle segment l as long as 2 and 3 combined; second segment 1/3 as long as 3. Antennal scale lanceolate, 5 times as long as wide, distal segment 0.14 times total length. Uropod rami long, slender; exopod 1.3 times as long as endopod, twice as long as telson; endopod 1.5 times longer than telson, no spines along inner

margin. Telson entire, truncate, length 1.7 times width of base; lateral margins straight; proximal half of telson naked, distal half with about 50 short, closely-set spines in continuous row around apex; apex margin straight, with rounded corners. Length up to 7 mm.

Remarks: This species ranges from the Bahamas, through the Gulf of Mexico, to the Caribbean. It was reported in 2 - 5 m depth over sandy bottoms and reef tops.

Mysidium columbiae (Zimmer, 1915)

Figure 10A-D

Diagnosis: Carapace anterodorsal margin produced into broad, obtusely triangular rostrum extending to base of eyestalks, lateral margins slightly concave. Antennular peduncle segment 1 as long as, or longer than, segments 2 and 3 combined; third segment 2.5 times longer than second. Antennal scale very long, slender, 9 - 11 times long as wide; setose all around; second segment 0.09 - 0.1 times as long as total length. Exopod of uropod long, narrow, 1.5 times as long as endopod, 2 times longer than telson; endopod 1.3 times longer than telson, without spines along inner margin. Telson truncate, cleft, 1.5

times as long as wide at base; proximal lateral margin concave, entire distal margin armed with 32 - 52 short, flattened spines; apical lobes broadly rounded; cleft about 0.2 of total length, margins convex. Length up to 7 mm.

Remarks: M. columbiae ranges from the Florida Keys through the Caribbean. It is commonly found in shallow water near mangroves over sandy bottoms.

Dioptromysis spinosa Brattegard, 1969

Figure 10E-H

Diagnosis: Carapace anterior margin produced into short, triangular rostral plate, apex rounded, Antennular peduncle segment 1 over 2 times longer than segment 2, equal to segment 3. Antennal scale lanceolate, 4.7 times as long as wide; distal segment short, about 0.1 times total length. Uropod exopod 1.3 - 1.5 times longer than endopod, over 2 times longer than telson; endopod 1.5 times as long as telson, with row of 13 - 20 stout submarginal spines along inner edge; spinal row originating along middle of statocyst. Telson about 1.25 times width at base; lateral margins concave and armed with 7 - 9 stout spines; apex distinctly emarginate;

apical lobes each with two pairs of long stout spines; emargination with pair of short spines and pair of submarginal, plumose setae. Length - males to 6 mm, females to 5.2 mm.

Remarks: D. spinosa is currently known from the Bahamas and south Florida. Habitat is reported to be 1 - 10 m on sandy bottoms.

Metamysidopsis swifti Bacescu, 1969

Figure llA-D

Diagnosis: Carapace anterior margin broadly subtriangular rostral plate, only partially concealing eyestalk bases. Antennular peduncle segment 1 slightly longer than segment 3, 2.5 times longer than segment 2. Antennal scale narrow, lanceolate, about 5 times as long as broad. Maxilla without exopodite. Exopod of uropod 1.3 times as long as endopod, 1.7 times as long as telson; endopod 1.3 times longer than telson, row of 12 - 17 submarginal spines near inner edge. Telson entire, apex rounded, proximal 2/3 of lateral margins naked, 11 - 15 short spines along distal lateral margins and apex, midapical pair longer than spines on either side. Length up to 7 mm.

Remarks: M. swifti is recorded from St. Andrew Bay and Cape Haze, Florida.

Mysidopsis bigelowi W. M. Tattersall, 1926

Figures 1, 2, 11E-G

Diagnosis: Carapace anterior margin produced into broad subtriangular rostrum, slightly covering eyestalk bases. Antennular peduncle segment 1 almost as long as 3, second segment 0.5 as long as 3. Antennal scale long, straight, 6 times as long as broad, setose all around. Uropod exopod 1.5 times as long as endopod, 2 times as long as telson; endopod 1.5 times as long as telson, with row of 4 - 5 spines on ventral surface near statocyst. Telson entire, length 1.5 times width of base; lateral margin with 10 - 13 spines; apex with 2 - 3 pairs of stout spines, two midapical pairs stronger than outer pair. Length to 7.5 mm.

Remarks: This species ranges from Massachusetts to the Gulf of Mexico.

Mysidopsis bahia Molenock, 1969

Figure 12A-D

Diagnosis: Anterior margin of carapace broadly rounded, produced into short, subtriangular rostrum not covering bases of eyestalks. Antennule peduncle segment 1 slightly longer than segment 3. Antennal scale 6 times longer than wide, setose around entire margin, nearly

straight; second segment lacking. Exopod of uropod 1.4 times as long as endopod, 1.7 times as long as telson; endopod 1.2 times as long as telson, 1 - 3 slender spines on ventral surface near statocyst. Telson entire, 1.5 times as long as broad at base; 10 - 22 short lateral spines; 4 - 6 pairs of abruptly longer spines apically. Length to 9.8 mm.

Remarks: This species appears to be restricted to the Gulf of Mexico. It is common over grass beds of estuaries and coastal areas.

Mysidopsis almyra Bowman, 1964

Figure 12E-H

Diagnosis: Carapace anterior margin rounded, not extending over base of eyestalks. Antennule peduncle segment 1 longer than segment 3. Antennal scale lanceolate, curved outward, about 6 times longer than wide; second segment lacking. Exopod of uropod 1.4 times as long as endopod, 1.75 times as long as telson; endopod 1.3 times as long as telson, with single spine on ventral surface near statocyst. Telson entire, linguiform, length 1.5 times width at base; 13 - 20 lateral spines gradually increasing in length distally; apex with 6 - 8 pairs of spines. Length to over 6 mm.

Remarks: This species has been recorded from Louisiana to Florida. While M. almyra appears to prefer salinities of 20 o/oo or below, M. bahia is usually found in salinities greater than 20 o/oo. Separating the two species may be difficult. The most reliable characters are number o£ spines on the endopod of the uropod and the shape of the antennal scale. M. almyra never have more than one spine near the statocyst, and only juvenile M. bahia have less than two. The outer margin of the antennal scale is distinctly concave in M. almyra but nearly straight in M. bahia. While the salinity ranges overlap, these mysids rarely occur sympatricly. Identification of juveniles would greatly facilitated by identification of an adult from the same collection.

Mysidopsis furca Bowman, 1957

Figure 13A-E

Diagnosis: Carapace anterior margin produced into blunt, broadly rounded rostrum, extending over eyestalks. Antennule peduncle segments 1 and 3 equal in length. Antennal scale lanceolate, 4 times as long as broad, entire margin setose; distal segment 0.1 times as long as entire scale. Exopod of uropod 1.2 times as long as

endopod, 1.5 times as long as telson; endopod slightly longer than telson, inner margin with 20 - 30 spines. Telson, male: length 1.3 times width at base; 12 - 14 lateral spines; apex slightly emarginate; each lobe with pair of stout spines. Female: telson slightly longer than broad at base, narrowing distally; 9 - 11 lateral spines; apex slightly emarginate with pair of stout spines. Length to 6 mm.

Remarks: This species is found from South Carolina to southern Florida.

Mysidopsis eclipes Brattegard, 1969

Figure 13F-I

Diagnosis: Carapace anterior margin produced into triangular rostral plate extending 1/3 along first antennule peduncle segment. Antennule peduncle segment 1 as long as segments 2 and 3 combined. Antennal scale lanceolate, 2.2 times long as broad, entire margin setose. Uropod exopod 1.2 times longer than endopod; endopod slightly longer than telson, inner margin with row of 8 - 9 regularly spaced spines. Telson entire, length 1.5 times width at base; lateral margin with 17 - 22 regular, short spines; apex with pair of larger spines, at least 1.5 times longer than adjacent spines. Length to 3.5 mm.

Remarks: Thus far, this species has been reported only from southern Florida associated with Thalassia.

Mysidopsis mortenseni W. M. Tattersall, 1951

Figure 14A-D

Diagnosis: Carapace anterior margin produced into short, triangular rostrum, extending slightly beyond proximal end of antennular peduncle. Antennular peduncle segment 1 slightly longer than segments 2 and 3 combined. Antennal scale 3.5 - 4 times as long as wide, second segment .09 times total scale length. Uropod exopod 1.25 times as long as endopod, 1.4 times as long as telson; endopod slightly longer than telson, inner margin with 18 - 28 long, unequal spines. Telson with 15 20 pairs of short, somewhat blunt spines; terminal pair somewhat longer than neighboring spines. Length to 4.0 mm.

Remarks: Known only from the Bahamas and southern Florida, this species has been collected off seagrasses on sandy bottoms.

Mysidopsis brattstroemi Brattegard, 1969

Figure 14E-H

Diagnosis: Carapace produced into triangular rostral plate extending slightly beyond articulation of antennular

peduncle. Antennular peduncle segment 1 as long as segments 2 and 3 combined. Antennal scale 3 - 3.5 times as long as wide, setose along entire margin. Exopod of uropod 1.3 times as long as endopod; endopod slightly longer than telson, with 10 - 20 spines along inner margin. Telson entire, apex rounded; lateral margins with 10 - 24 pairs of spines, terminal pair not significantly longer than adjacent spines. Length males to 4.5 mm, females to 5.6 mm.

Remarks: M. brattstroemi has been reported from the Bahamas and south Florida. While it has been collected over algae and seagrass, it was more abundant over pure sand bottoms.

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FIGURES

Figure 1. *Mysidopsis bigelowi*:

A. Lateral view

B. Cephalothorax, dorsal view

C. Pereopod 7

D. Left antennule

E. Left antenna

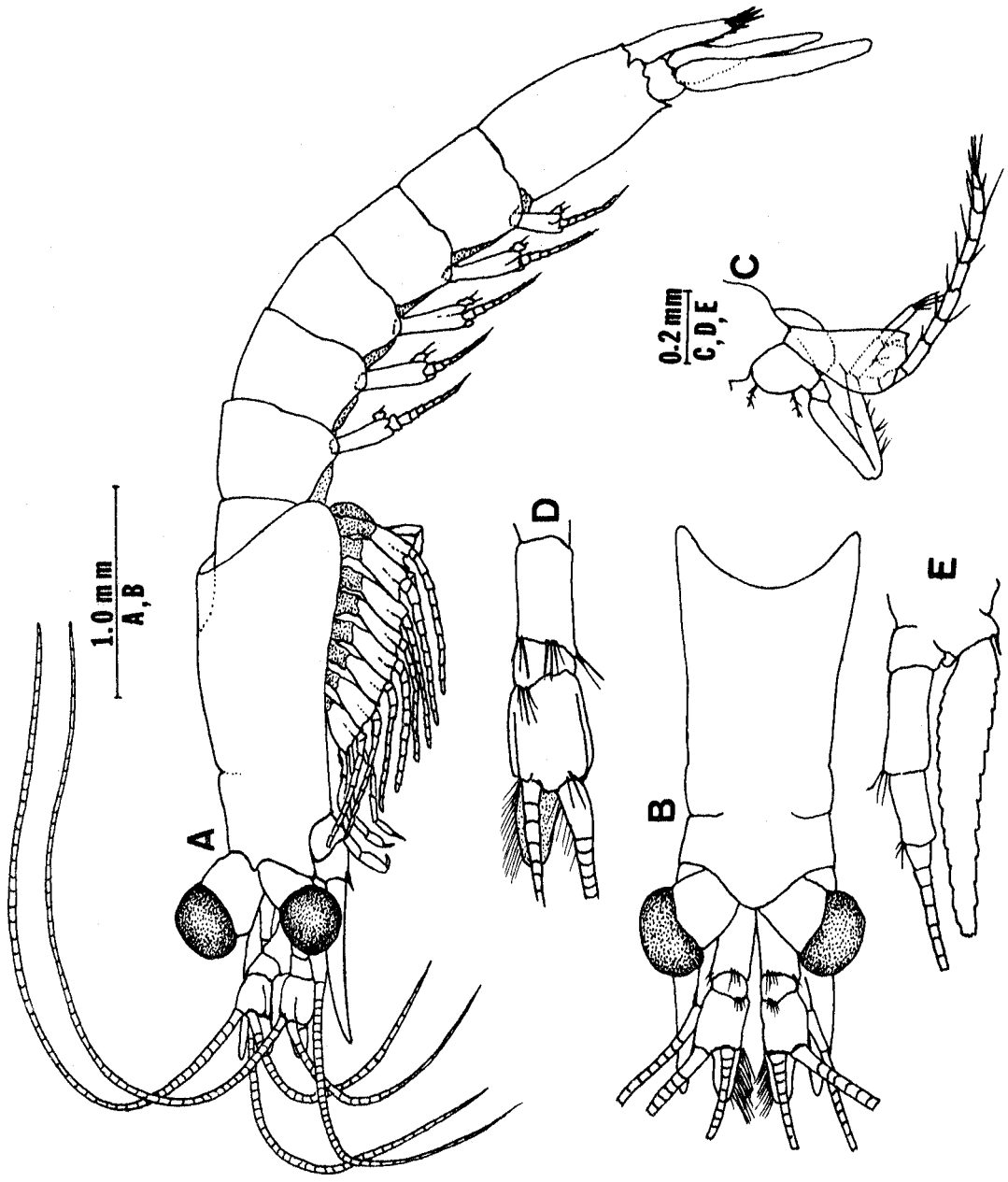

Fig. 1

Figure 2. Mysidopsis bigelowi: 5.0 mm male:

A. Telson

B. Uropod

C. Antennal scale

5.5 mm female:

D. Telson

E. Uropod

F. Antennal scale

3.4 mm juvenile:

G. Telson

H. Uropod

I. Antennal scale

1.8 mm juvenile:

J. Telson

K. Uropod

L. Antennal scale

Fig. 2

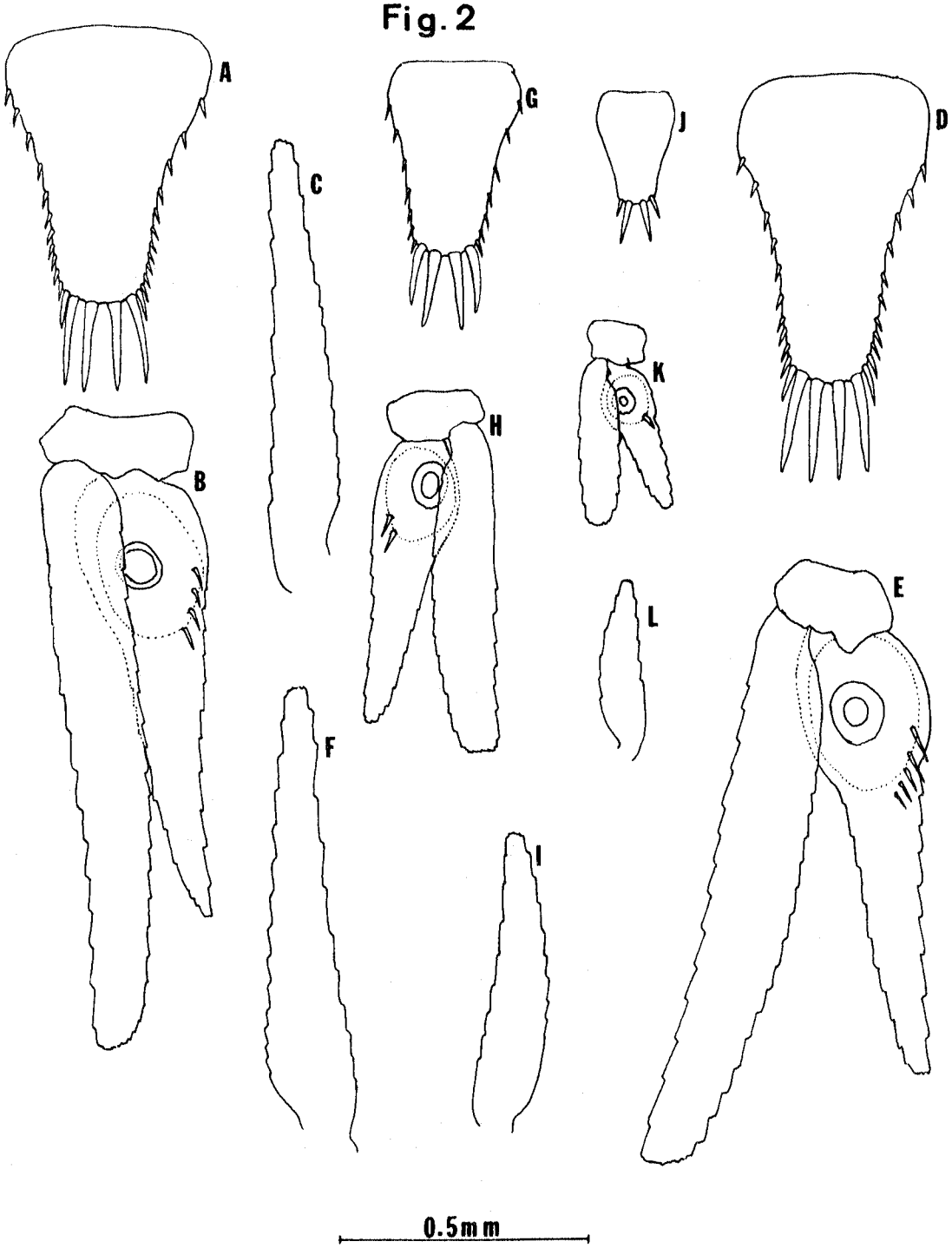

Figure 3. Siriella chierchiae:

A. Rostral plate

B. Antennal scale

C. Telson

D. Uropod

Anchialina typica:

E. Rostral plate

F, Antennal scale

G. Uropod

H. Telson

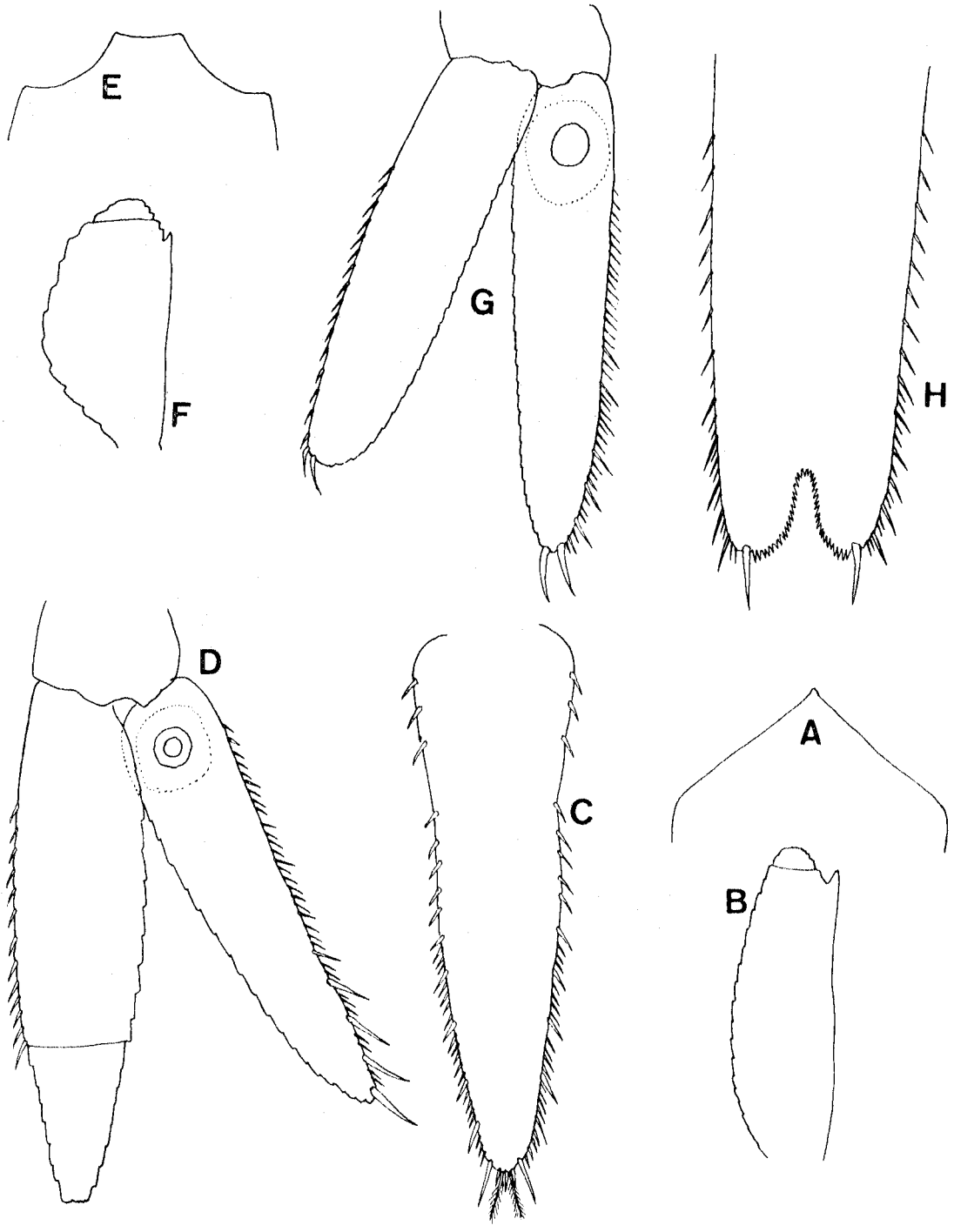

Fig. 3

Figure 4. Bowmaniella dissimilis:

A. Uropod

B. Telson

C. Rostral plate

D. Antennal scale

E. Posterodorsal margin of carapace

F. Lateral view of posterior margin of 5th abdominal somite

G. Dorsal view of posterior margin of 5th abdominal somite

Bowmaniella portoricensis:

H. Uropod

I. Telson

J. Rostral plate

K. Antennal scale

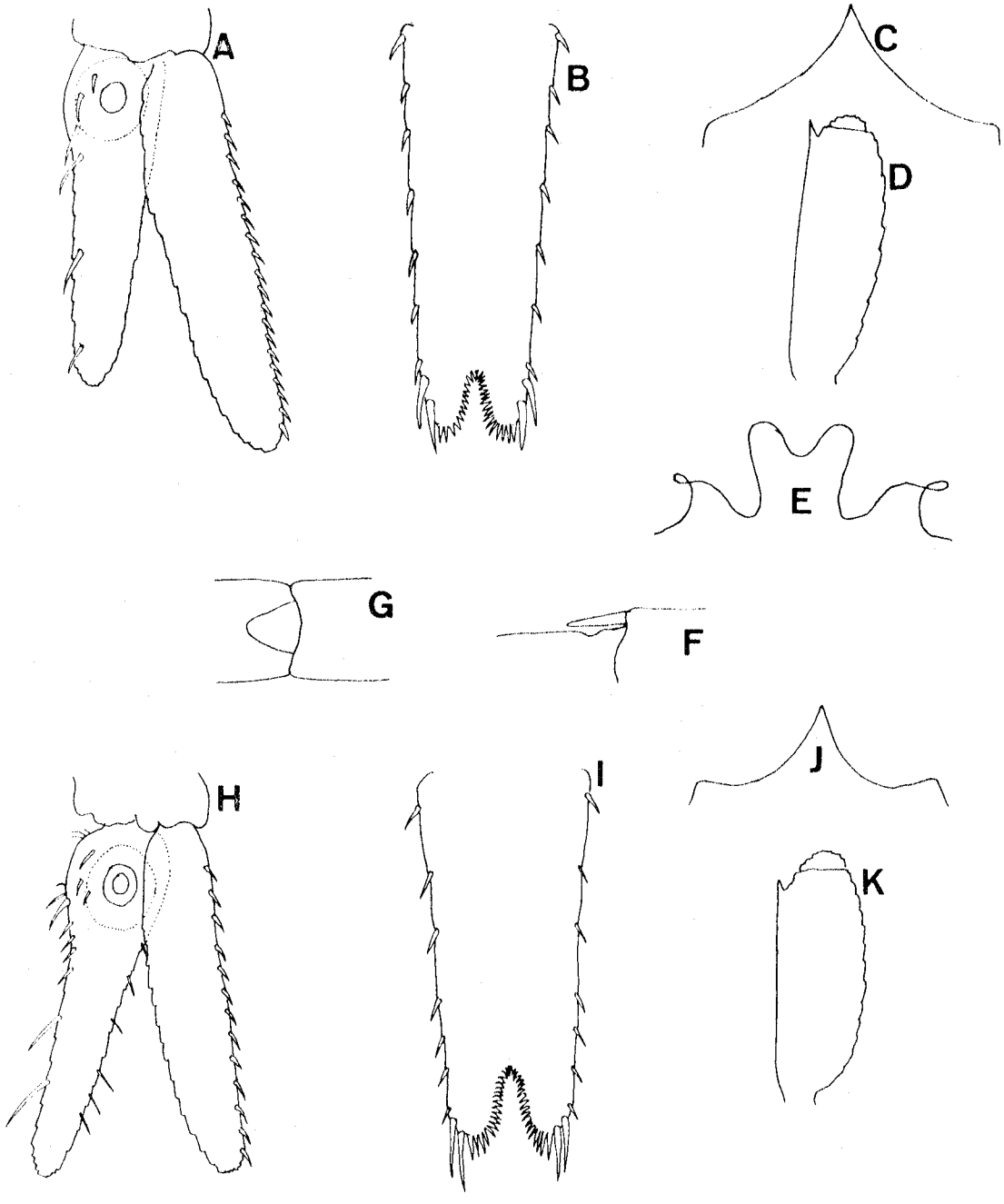

Fig. 4

Figure 5. Bowmaniella mexicanus:

A. Uropod

B. Telson

C. Rostral plate

D. Posterodorsal margin of carapace

E. Antennal scale

Amathimysis gibba:

F. Telson

G. Uropod

H. Rostral plate

I, Antennal scale

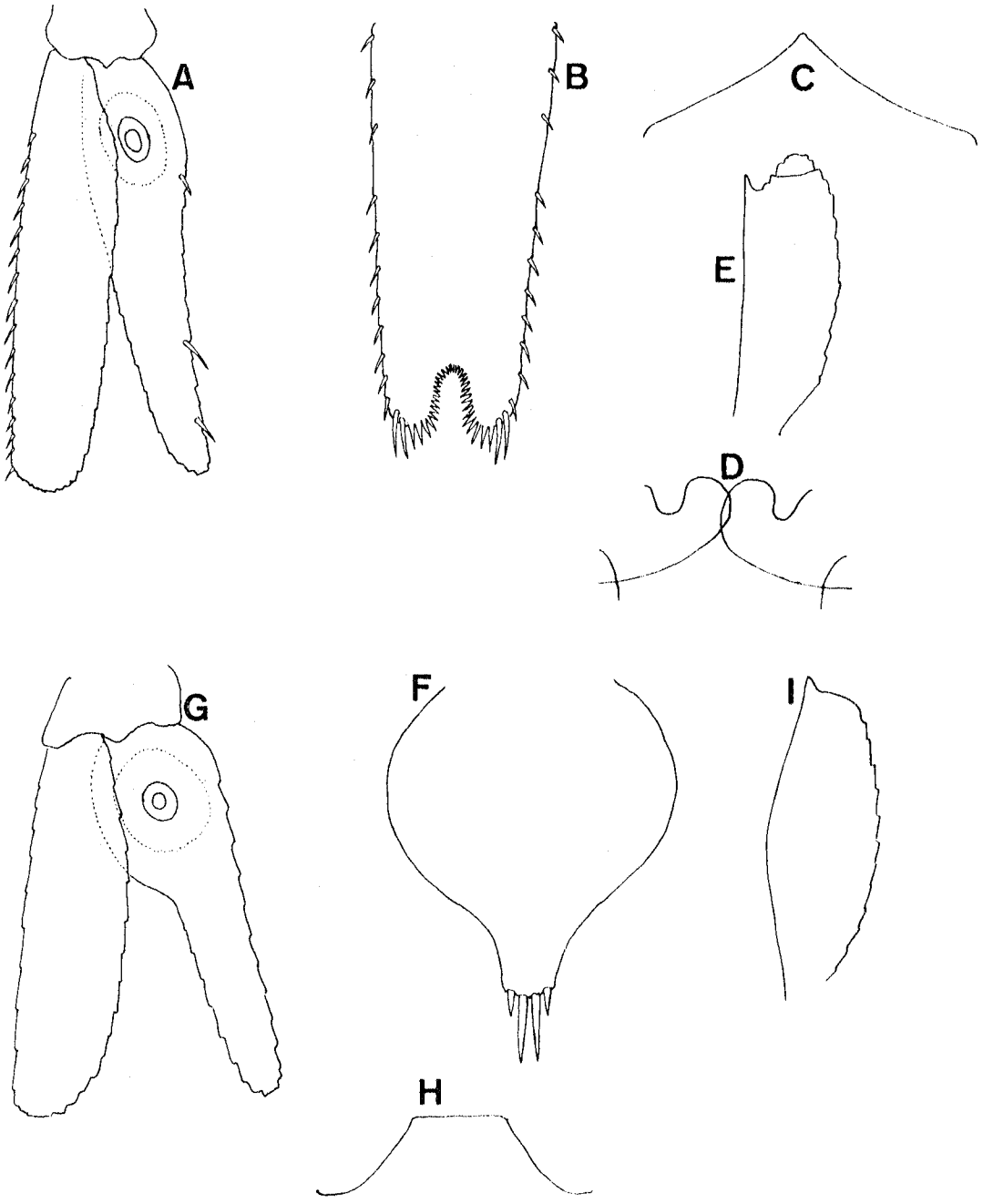

Fig. 5

Figure 6. *Heteromysis floridensis*:

A. Telson

B. Uropod

C. Antennal scale

D. Rostral plate

Heteromysis formosa:

E. Rostral plate

F. Telson

G. Uropod

H. Antennal scale

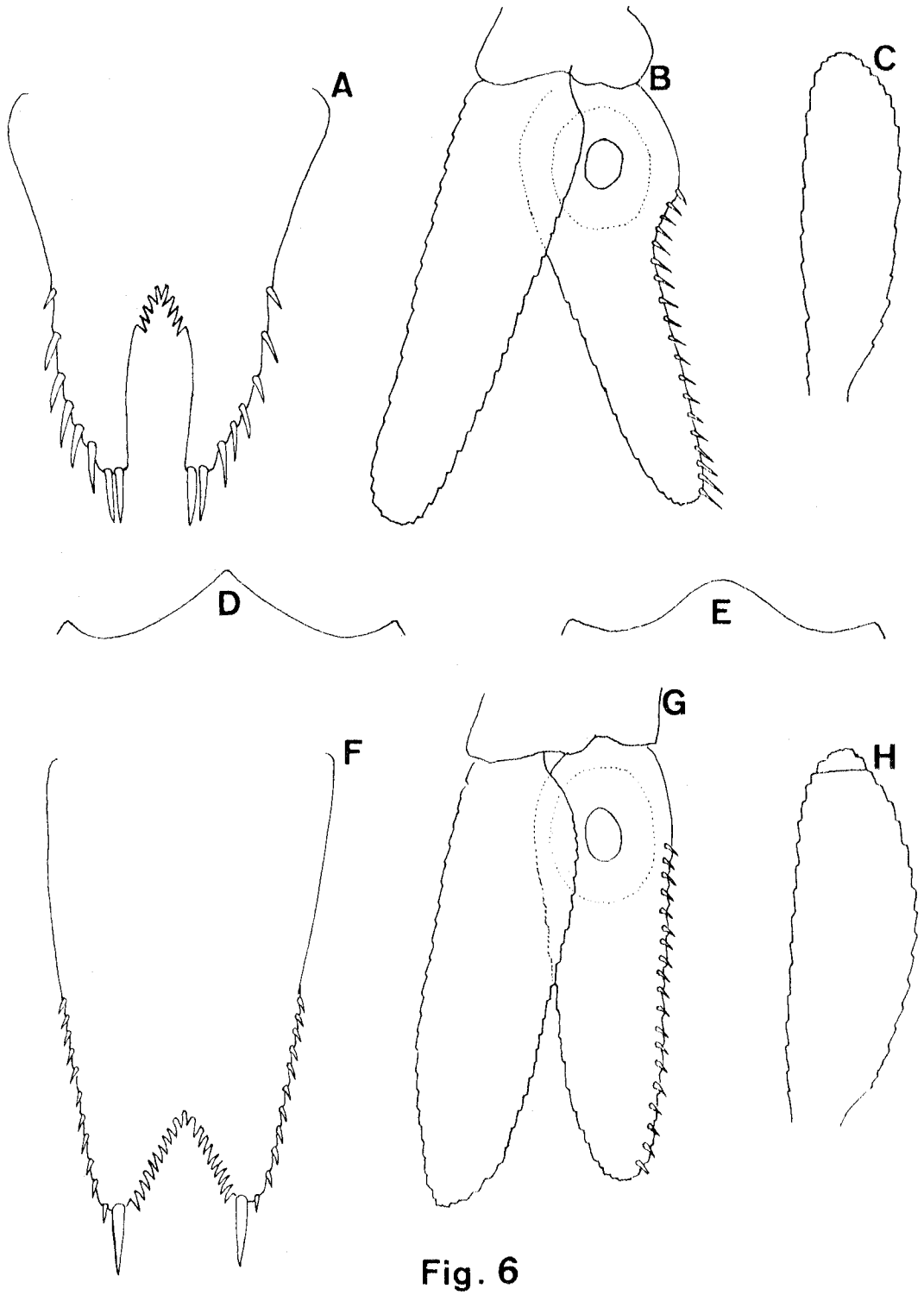

Fig. 6

Figure 7. *Heteromysis nouveli*:

A. Uropod

B. Telson

C. Antennal scale

D. Rostral plate

Taphromysis bowmani:

E. Rostral plate

F. Uropod

G. Telson

H. Antennal scale

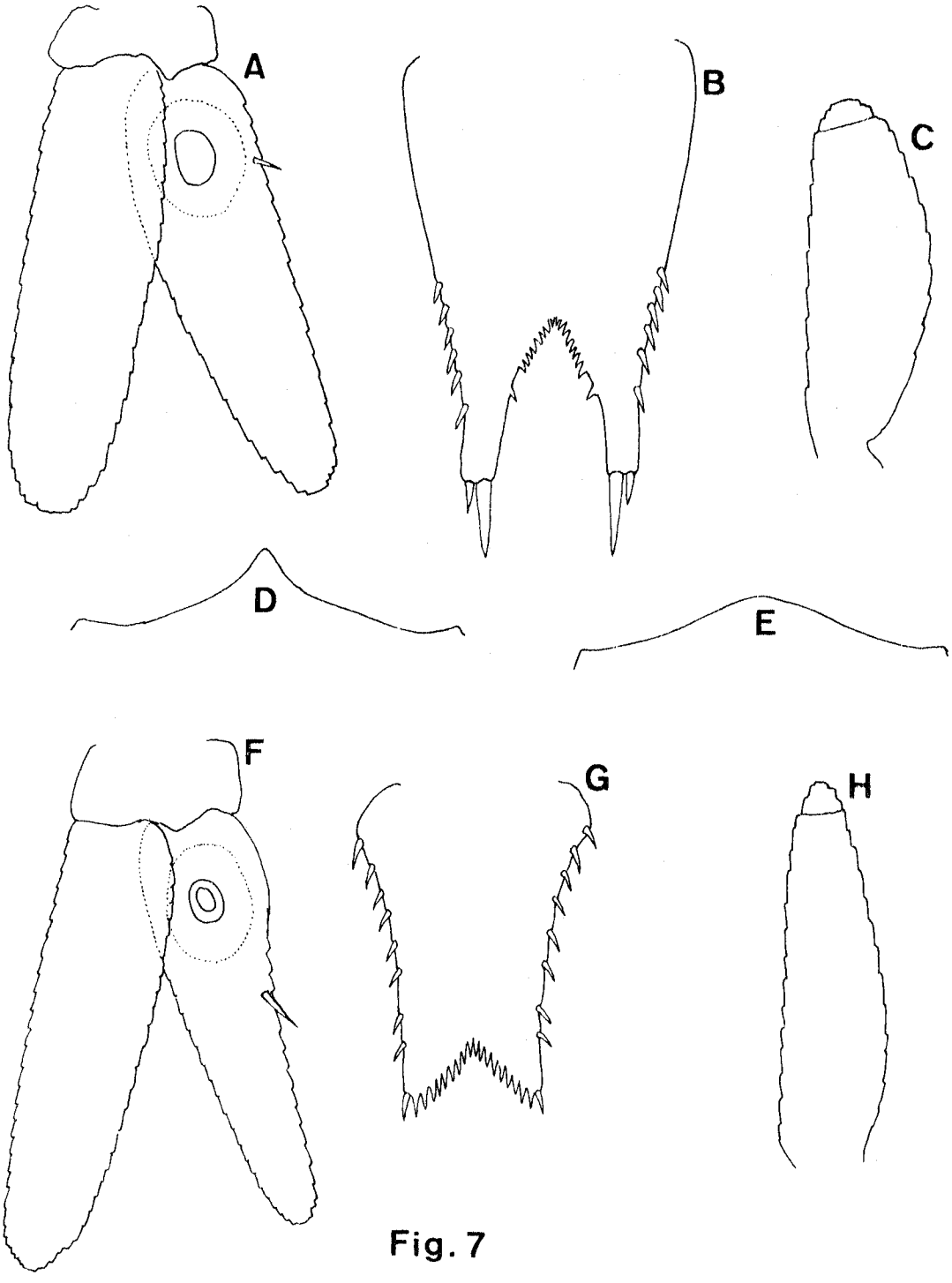

Fig. 7

Figure 8. *Taphromysis louisianae*:

A. Uropod

B. Telson

C. Antennal scale

D. Rostral plate

Brasilomysis castroi:

E. Rostral plate

F. Uropod

G. Telson

H. Antennal scale

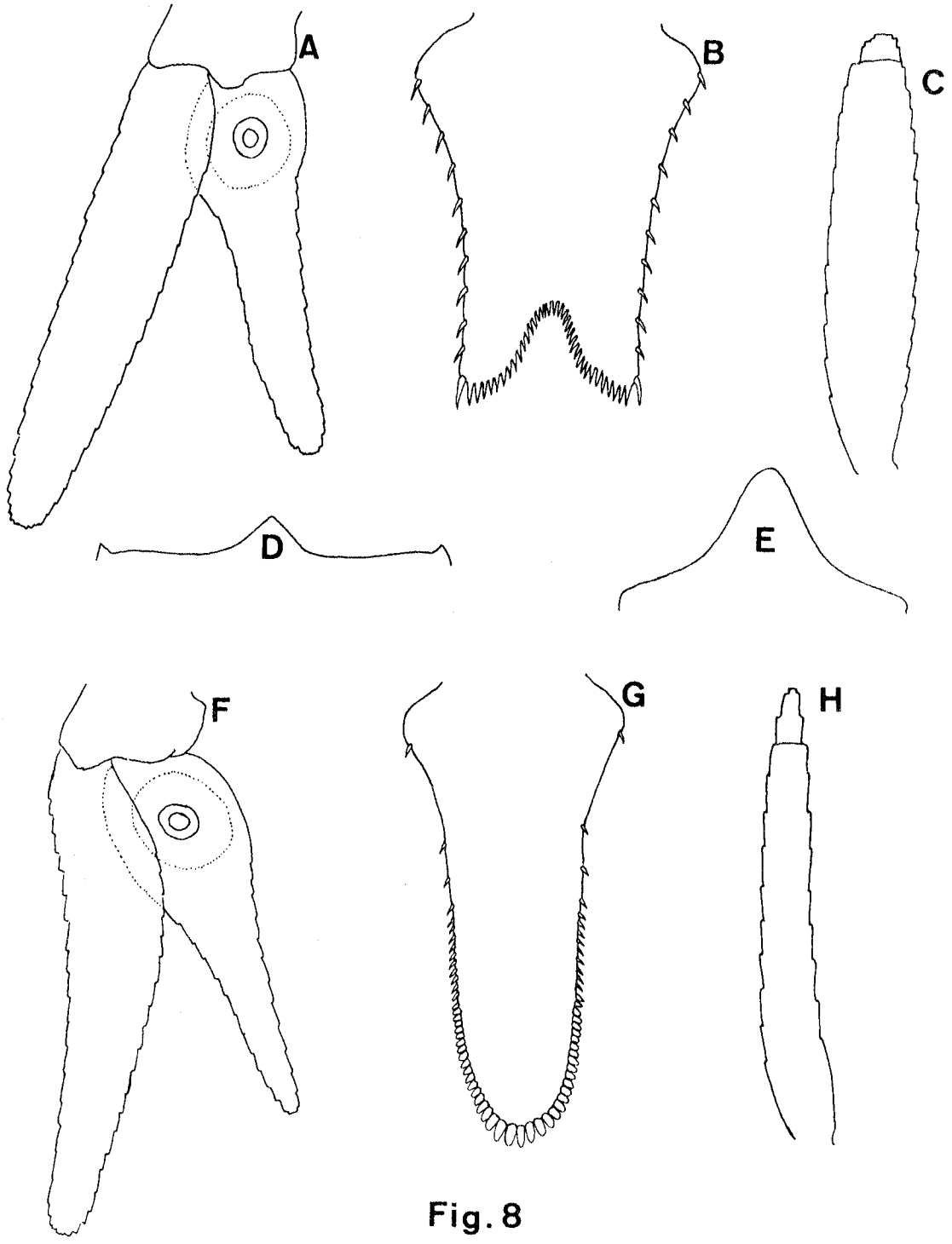

Fig. 8

Figure 9. *Mysidium gracile*:

A. Telson

B. Uropod

C. Rostral plate

D. Antennal scale

Mysidium integrum:

E. Telson

F. Uropod

G. Rostral plate

H. Antennal scale

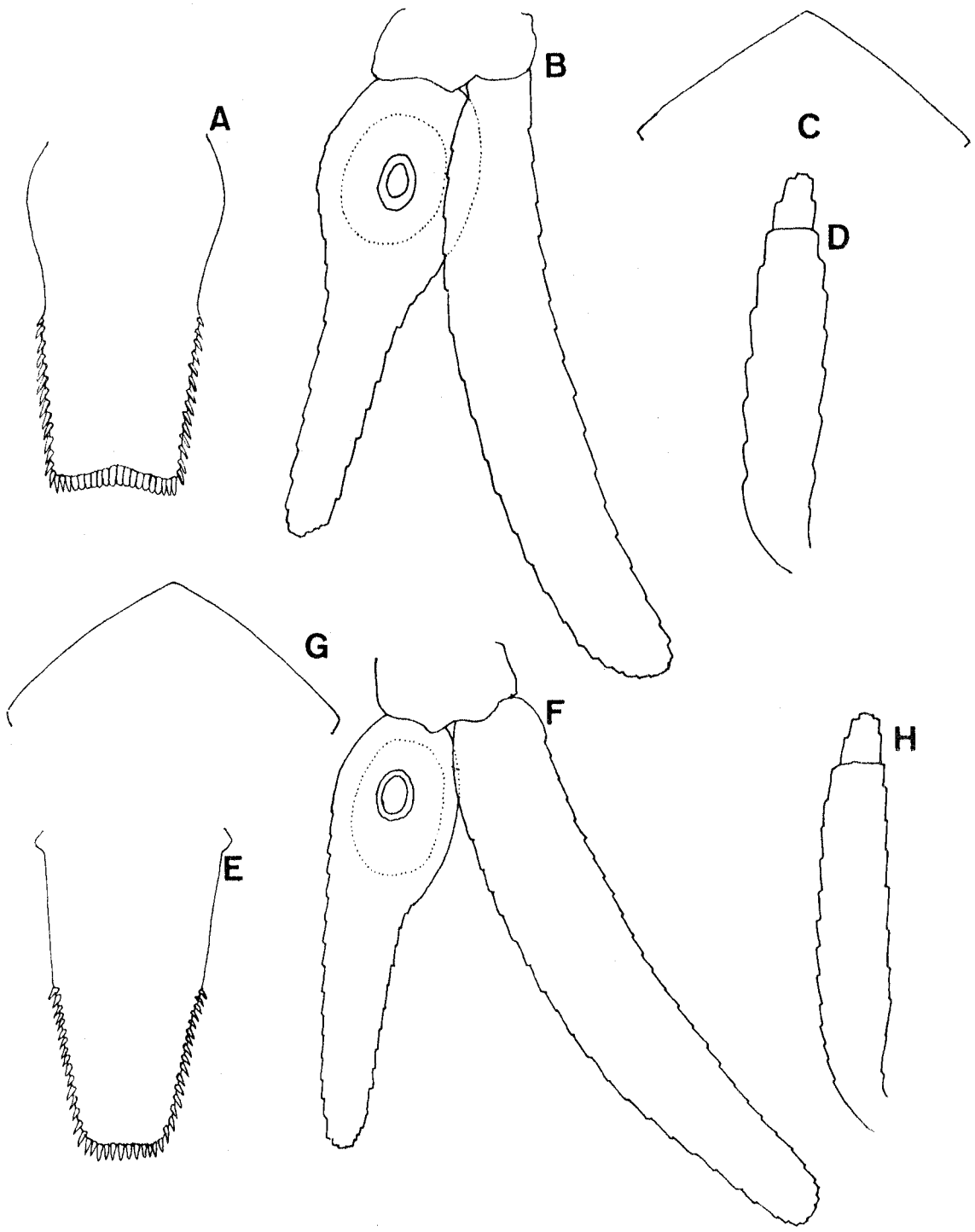

Fig. 9

Figure 10. *Mysidium columbiae*:

A. Telson

B. Uropod

C. Antennal scale

D. Rostral plate

Dioptromysis spinosa:

E. Telson

F. Uropod

G. Antennal scale

H. Rostral plate

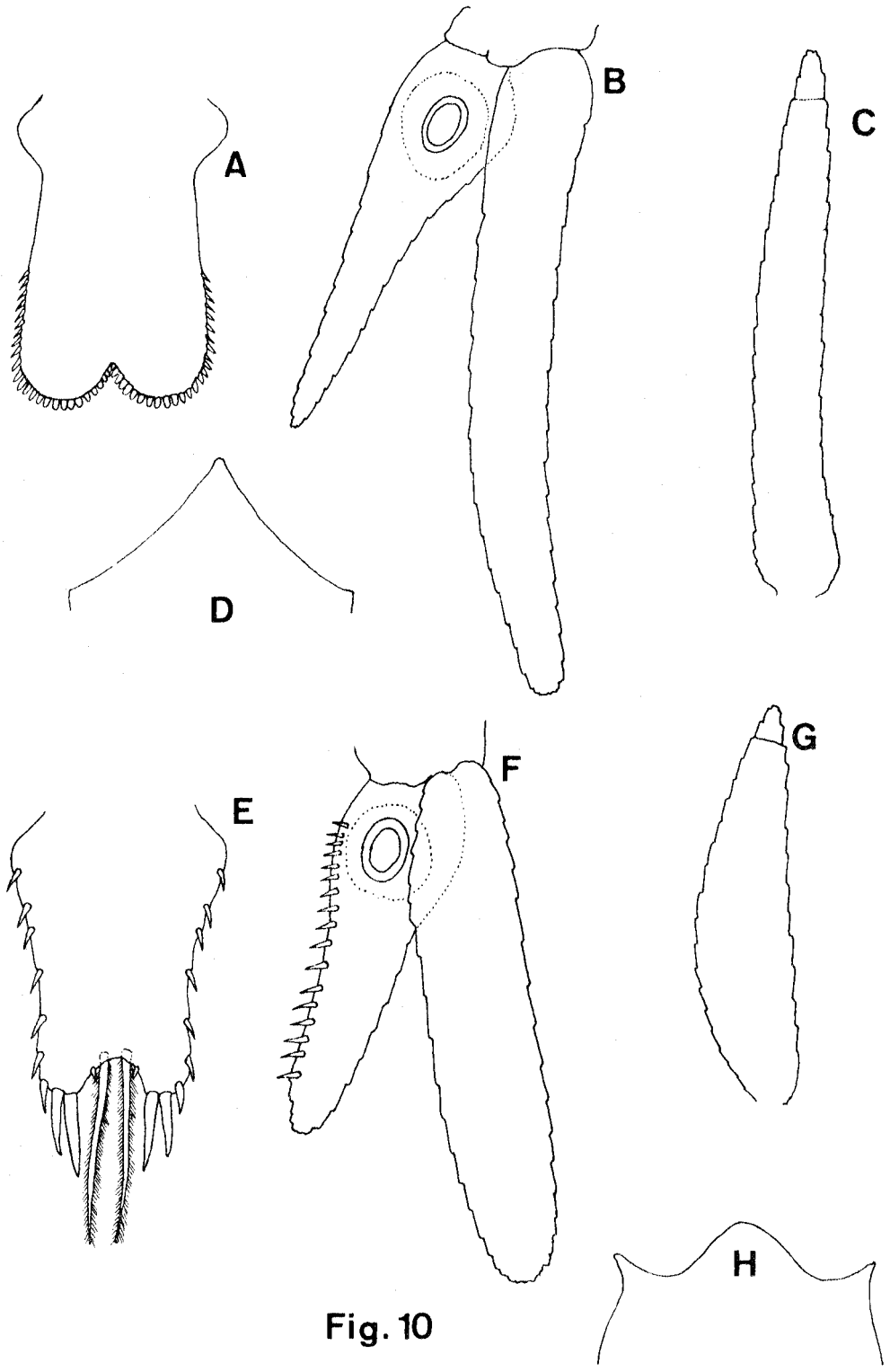

Fig. 10

Figure 11. Metamysidopsis swifti:

A. Uropod

B. Telson

C. Antennal scale

D. Rostral plate

Mysidopsis bigelowi:

E. Uropod

F. Telson

G. Antennal scale

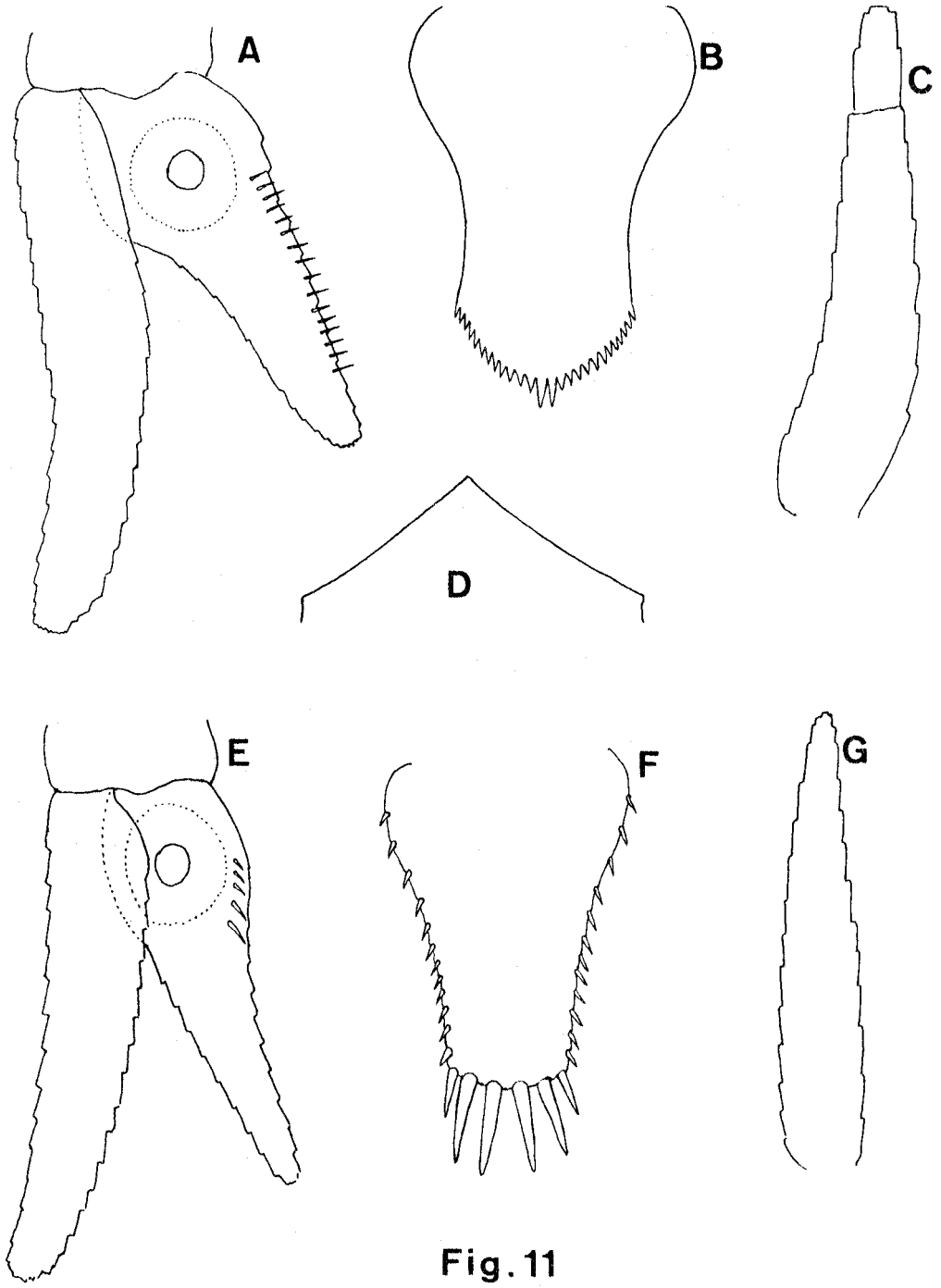

Fig. 11

Figure 12. Mysidopsis bahia:

A. Uropod

B. Telson

C. Antennal scale

D. Rostral plate

Mysidopsis almyra:

E. Uropod

F. Telson

G. Antennal scale

H. Rostral plate

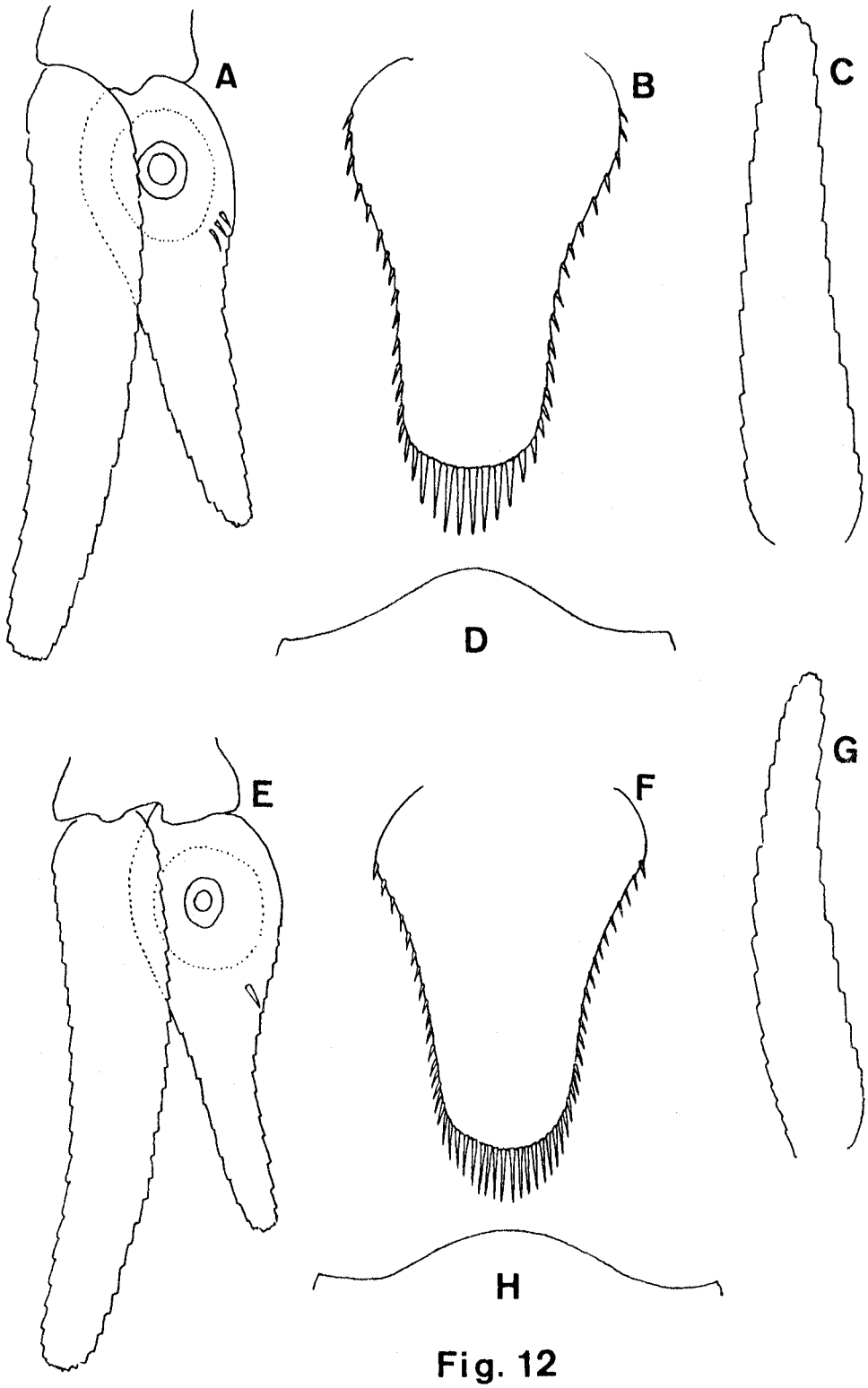

Fig. 12

Figure 13. Mysidopsis furca:

A. Telson, male

B. Uropod

C. Antennal scale

D. Rostral plate

E. Telson apex, female

Mysidopsis eclipes:

F. Telson

G. Uropod

H. Antennal scale

I. Rostral plate

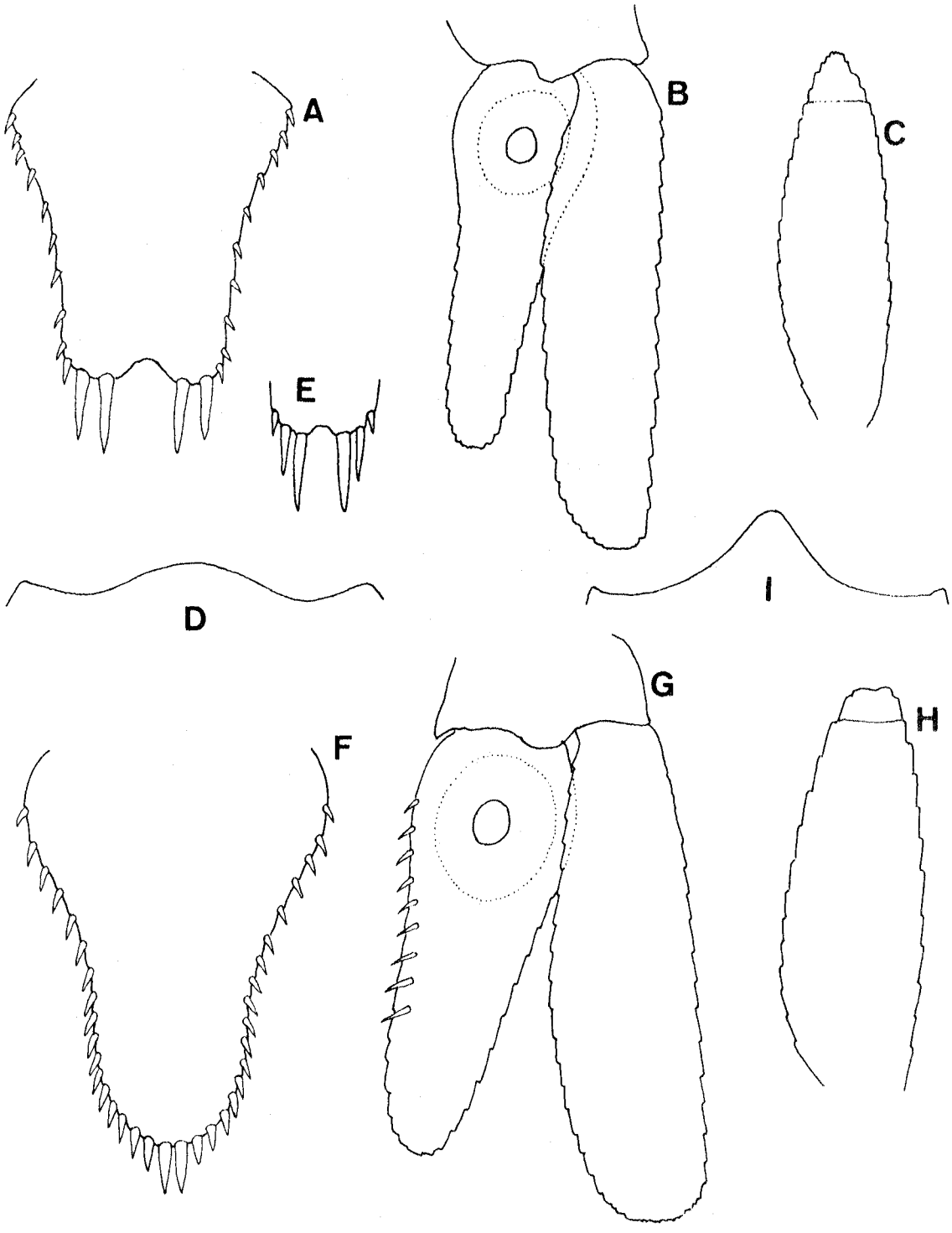

Fig. 13

Figure 14. Mysidopsis mortenseni:

A. Telson

B. Uropod

C. Antennal scale

D. Rostral plate

Mysidopsis brattstroemi:

E. Rostral plate

F. Telson

G. Uropod

H. Antennal scale

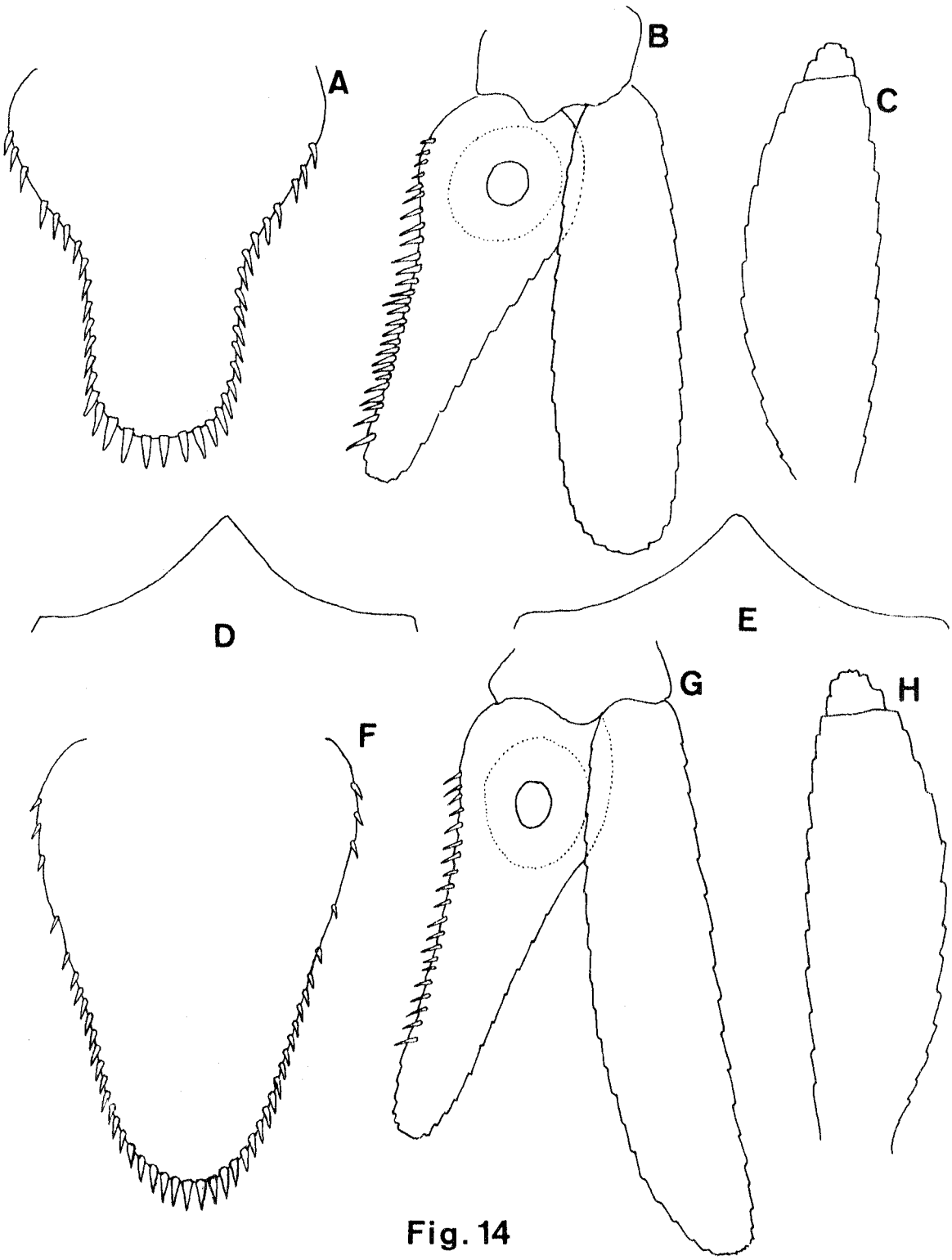

Fig. 14

Index to Species