Abdominal somite 1 with dorsolateral setal-row of four setae. Abdominal somite 2 with transverse setal-row of ten setae. Abdominal somites 3-5 with transverse setal-rows of five-six setae. Abdominal somite 6 without marginal setal-row along edge of pleuron, oblique setal-row of about six setae, and transverse setal-row of about three+three setae in two groups. All abdominal somites with groups of long setae dorsally.

Eyestalks slightly flattened, cornea distolateral.

Antenna 1 with elongate waisted article 1, about half as long as cephalothorax; articles 2 and 3 subequal, each about one-third length of article 1. Antenna 2 with distinct articulating acicle, about 0.3 length of article 2; article 4 reaching beyond article 2 of antenna 1; article 5 short.

Maxilliped 1 epipod as in *M. leura*. Maxilliped 2 exopod minute; epipod reduced. Maxilliped 3 ischium with obsolete crista dentata; merus with mesial tooth; carpus-dactylus longer than ischium-merus, widest point of carpus 0.3 carpal length; exopod with flagellum reaching to middle of merus; epipod narrow, with rudimentary podobranch.

Chelipeds equal; ischium with weak lower tooth; merus with weak tooth on convex lower margin, upper margin strongly convex; carpus unarmed; propodus swollen proximally and tapering; fixed finger 0.3 length of propodus, its cutting edge with obsolete teeth, curved apically; dactylus curved apically, equal to fixed finger.

Pereopod 2 essentially as in *M. leura* but with three spiniform setae on fixed finger, four on dactylus.

Pereopods 3-4 unknown.

Pleopod 1 of female of two short articles. Pleopod 1 of male unknown. Pleopod 2 without marginal lamellae; appendix interna 4 times as long as wide. Pleopods 3-5 with five, four, five lamellae respectively proximolaterally on endopod; appendix interna narrower than on pleopod 2; exopod without lamellae.

Uropodal endopod broadly ovate, 1.4 times as long as wide, with minute apical tooth and small medial lobe; exopod 1.6 times as long as wide, with short spiniform setae laterally and distally. Telson about as long as wide, distally tapering to rounded apex.

Branchial formula (r = rudimentary; f = filamentous):

Thoracomere	1	2	3	4	5	6	7	8
Epipod	1	1	1	1	1	1	1	-
Podobranch	-	-	f	f	f	f	-	-
Arthrobranch	-	1	1+r	2	2	2	2	-

REMARKS

The species is similar to *M. novaecaledoniae* and *M. lepta* in the paucity of lamellae on the pleopods but differs slightly in this regard and in proportions of limbs.

Michelea lamellosa Kensley *et* Heard, 1991

Michelea lamellosa Kensley *et* Heard, 1991: 496, 519-522, figs 16, 17.

DISTRIBUTION. — Jamaica; 24 m depth.

REMARKS

The species was described in detail by its authors and is notable for the reduction in number and size of branchiae. It is one of few micheleid species with two long setae on the maxilla 2 scaphognathite.

Michelea lepta (Sakai, 1987)

Callianidea lepta Sakai, 1987: 300-302, fig. 3.

Michelea lepta. – Kensley & Heard 1991: 519.

DISTRIBUTION. — Okinawa, Japan; intertidal.

REMARKS

M. lepta is without lamellae on the pleopodal exopods and is therefore similar to *M. hortus* from Western Australia. The latter has even fewer lamellae and differs in the shape of telson and uropods. No material of *M. lepta* has been seen by me.

Michelea leura (Poore *et* Griffin, 1979) (Figs 17-19)

Callianidea leura Poore *et* Griffin, 1979: 281-284, figs 40, 41 (in part). – Sakai 1984: 104.

Michelea leura. – Kensley & Heard 1991: 519.

MATERIAL EXAMINED. — **Australia.** Queensland,

Masthead Island, Capricorn Group (23°25'S - 151°55'E), AM P25294 (holotype, ovigerous ♀, cl. 6.0 mm, tl. 25.8 mm). — Queensland, low water under dead coral blocks, Junes Reef flat, Heron Island, Capricorn Group (23°25'S - 151°55'E), 23.IX.1976, MNHN Th-642 (juvenile ♀, cl. 4.0 mm, tl. 14.8 mm).

DESCRIPTION OF HOLOTYPE

Cephalothorax 0.25 total length, about 1.4 times as deep as wide; rostrum flat, slightly depressed distally, as long as broad at base, less than half as long as eyestalks; cervical groove weakly defined, reaching 0.6 length of cephalothorax; dorso-posterior margin narrowly produced to rounded lobe, separated from posterolateral margins which are ridged and setose; longitudinal setal-row level with lateral margin of eyestalk, of seven setae; marginal setal-row of nine setae at base of eyestalk; lateral setal-row of six setae.

Abdominal somite 1 narrower than second, with anterolateral lobes overlying posterolateral margins of cephalothorax; pleuron weakly rounded;

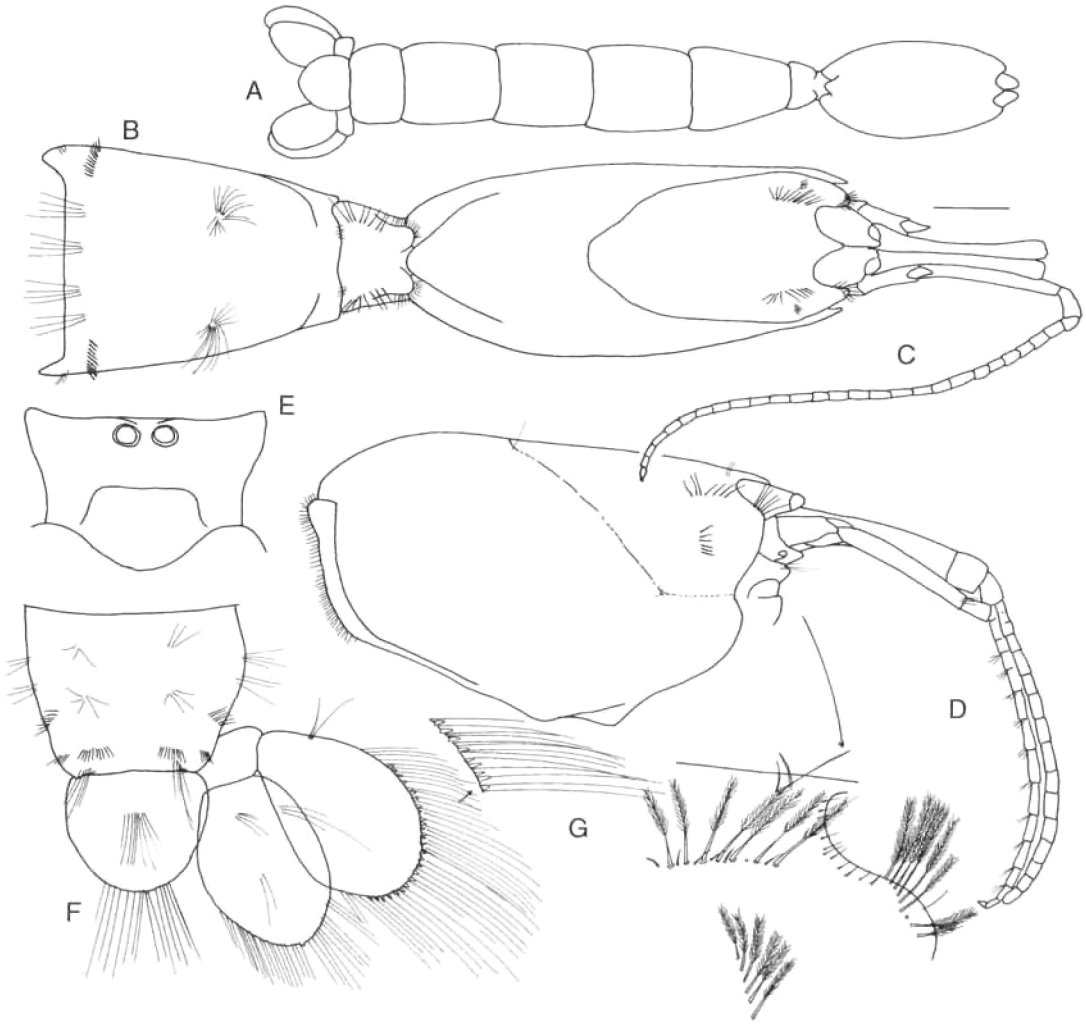

FIG. 17. — *Michelea leura* (Poore *et* Griffin, 1979). **A**, habitus sketch; **B**, cephalothorax and abdominal somites 1 and 2; **C**, cephalothorax; **D**, detail of anterolateral setal-rows; **E**, ventral view of abdominal somite 1; **F**, abdominal somite 6, telson and uropod; **G**, setae on margin of uropodal exopod. All figures from holotype.

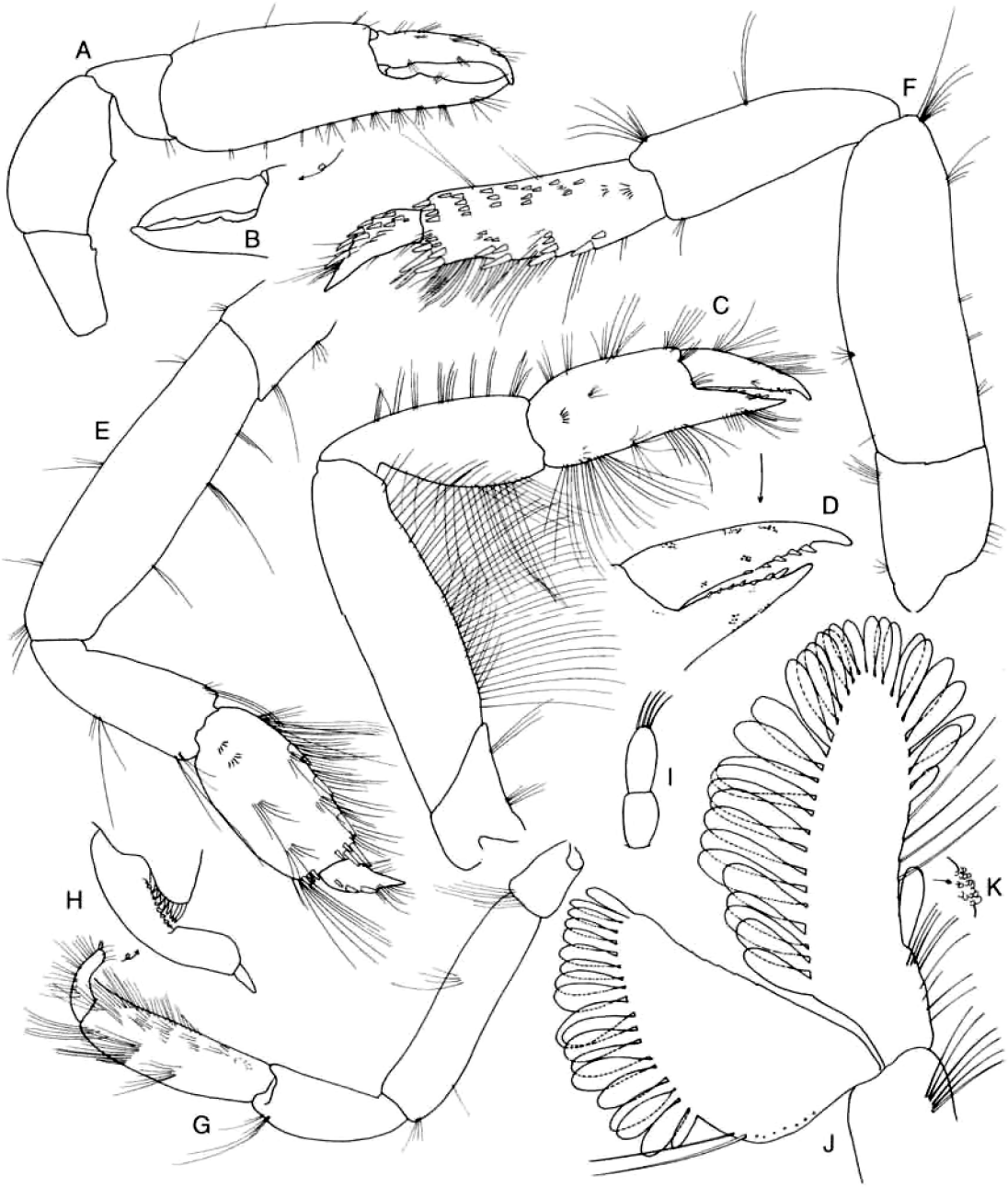

FIG. 18. — *Michelea leura* (Poore *et* Griffin, 1979). **A**, left cheliped and **B**, details of fingers; **C**, right pereopod 2; **D**, fingers of left pereopod 2; **E**, left pereopod 3; **F**, left pereopod 4; **G**, right pereopod 5; **H**, details of fingers; **I**, ♀ pleopod 1; **J**, ♀ pleopod 2; **K**, detail of appendix interna. All figures from holotype.

dorsolateral setal-rows of eight setae. Abdominal somite 2 2.7 times as long as first, pleuron weakly overlapping first somite; transverse setal-row of ten setae. Abdominal somite 6 with marginal setal-row along edge of pleuron, oblique setal-row of about eight setae, and transverse setal-row of about four+ten setae in two groups. All abdominal somites with groups of long setae dorsally.
Eyestalks slightly flattened, cornea distolateral.
Antenna 1 with elongate waisted article 1, almost half as long as cephalothorax; articles 2 and 3 subequal, each about 0.2 length of article 1; flagella each of about fifteen articles, longer than peduncle. Antenna 2 with distinct articulating acicle, about half length of article 2; article 4 reaching just beyond article 1 of antenna 1; article 5 short; flagellum almost twice as long as peduncle.
Mandible incisor process with smooth cutting edge, excavate on right, broadly acute on left (see Fig. 19C). Maxilla 2 endopod tapering; scaphognathite with one long posteriorly-directed seta.
Maxilliped 1 with endopod 0.3 length of basal endite, exopod longer than endite, epipod lobes narrow, proximal lobe longer. Maxilliped 2 exopod minute; epipod well-developed. Maxilliped 3 ischium with obsolete crista dentata of eleven blunt teeth; merus with mesial tooth; ischium-merus with dense mesial rows of long setae; carpus-dactylus longer than ischium-merus, widest point of carpus 0.3 carpal length; exopod with flagellum reaching to base of merus; epipod narrow, bent, with filamentous podobranch.
Chelipeds equal; ischium with weak lower tooth; merus with weak tooth on slightly convex lower margin, upper margin strongly convex, especially proximally; carpus unarmed; propodus swollen proximally and tapering; fixed finger 0.4 length of propodus, its cutting edge with two obsolete teeth on proximal half; dactylus cutting edge irregular, curved distally, equal to fixed finger.
Pereopod 2 merus-propodus with lower marginal rows of long setae; carpus 0.6 length of merus; propodus little longer than carpus with setal-row of five short setae; fixed finger cutting edge with seven well-spaced spiniform setae; dactylus longer than fixed finger, with five spiniform setae on distal half of cutting edge, tip curved.
Pereopod 3 propodus twice as long as wide, with four spiniform setae on lower margin, two clusters of three spiniform setae distally on mesial face, and two transverse setal-rows of four and five setae; dactylus with three spiniform setae on upper-mesial margin.
Pereopod 4 propodus 2.8 times as long as wide, four-six weakly aligned transverse rows of spiniform setae on mesial face, concentrated near margins and strongest on lower margin and distally, and two transverse setal-rows of five and three setae; dactylus with about eleven spiniform setae in weak rows on upper-mesial margin.
Pereopod 5 weakly chelate; dactylus with nine short spiniform setae closing on eight longer spiniform setae, with a strong apical spiniform seta.
Pleopods 1 of female nearly midventral, 2-articled. Pleopod 2 endopod with thirty-one marginal lamellae along distal third on mesial margin, distally and laterally; appendix interna 3 times as long as wide; exopod twice as long as wide, inner margin straight, lateral margin convex, nineteen lamellae distolaterally. Pleopods 3-5 essentially similar to pleopod 2.
Uropodal endopod ovate, 1.2 times as long as wide, with a minute distal tooth; exopod ovate, 1.6 times as long as wide, with marginal short spiniform setae distally. Telson length 0.8 times width, proximally parallel-sided, distally semicircular.

Branchial formula (r = rudimentary):

Thoracomere	1	2	3	4	5	6	7	8
Epipod	1	1	1	1	r	r	r	-
Podobranch	-	-	f	f	f	f	-	-
Arthrobranch	-	-	1	2	2	2	2	-

Epipods broader anteriorly than posteriorly; podobranchs filamentous (f).

Colour
White. Abdomen, telson and uropodal endopod translucent with red lateral edges. Cornea dark brown. Red spot on distal end of peduncle of antenna 2 and on maxillipedal carpus. Intestine yellow (from notes made by A. J. Bruce on Th.-642).

REMARKS
There are several fundamental differences between the holotype and the paratype of this spe-

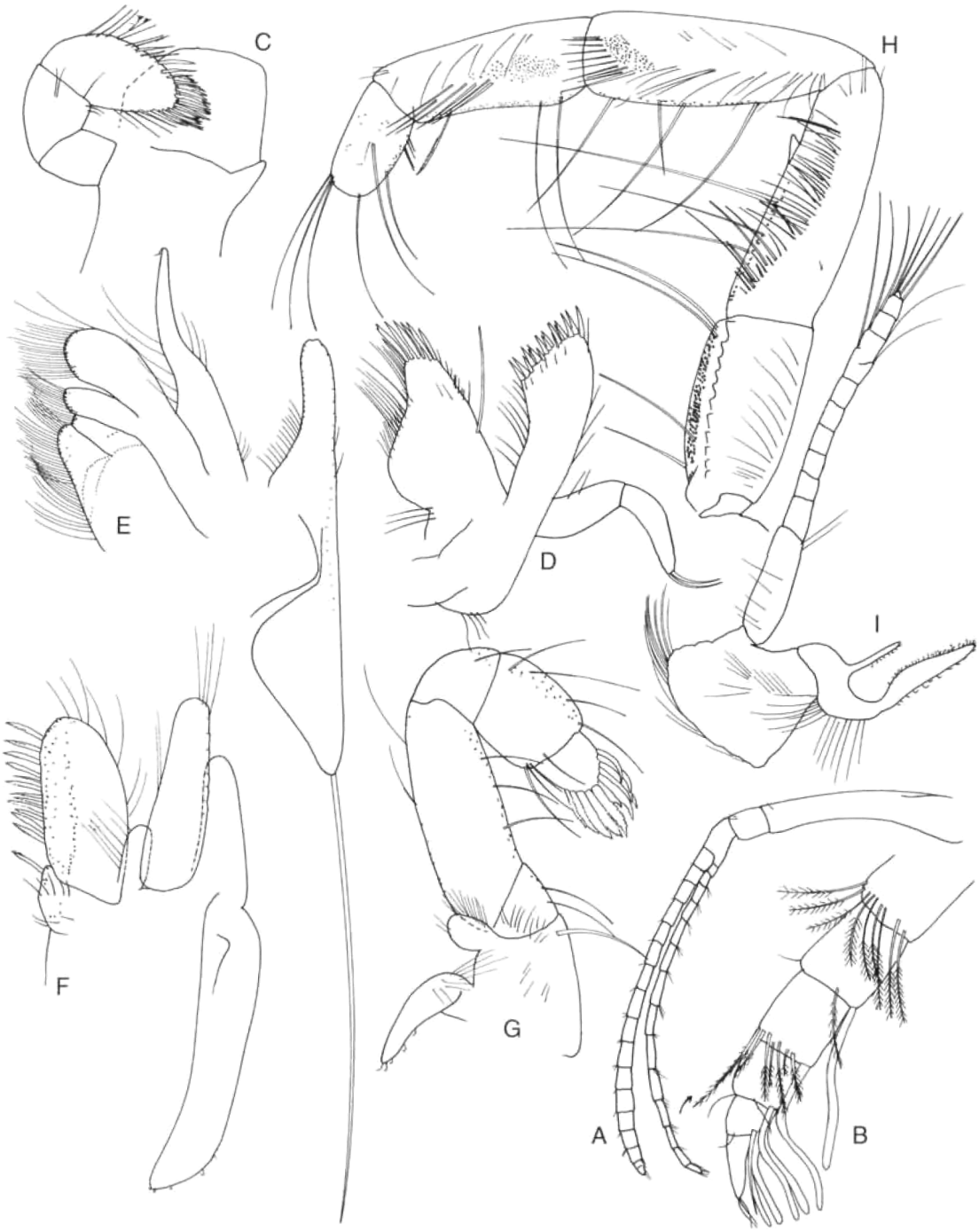

FIG. 19. — *Michelea leura* (Poore *et* Griffin, 1979). **A**, antenna 1 and **B**, detail of tip of flagellum; **C**, right mandible; **D**, maxilla 1; **E**, maxilla 2; **F**, maxilliped 1; **G**, maxilliped 2; **H**, maxilliped 3; **I**, basis, exopod, epipod and podobranch of maxilliped 3. All figures from holotype.

cies which are now considered to belong to two species. A third specimen from the Capricorn Group, southern Great Barrier Reef, near the type locality, resembles the holotype and is assigned to *M. leura*. Another, from the northern Great Barrier Reef, is more similar to the paratype which also comes from this region and the two are described as a new species, *M. paraleura*. Body proportions of the new species are different, abdominal somite 2 is proportionally longer (about 4 times as long as abdominal somite 1, *cf.* 2.7 times in the holotype). More importantly, both uropodal rami are rimmed with rows of closely-set spiniform setae of which some are blade-like as, for example, in *M. microphylla*.

This species is illustrated in the greatest detail in this contribution but the male is unknown. It is most easily recognised by the combination of numerous pleopodal lamellae and relatively short telson.

Michelea microphylla n.sp.
(Figs 20, 21)

MATERIAL EXAMINED. — **Australia.** Victoria, Western Port, Crib Point (38°19.92'S - 145°13.95'E), Marine Studies Group, February 1972, sand/gravel, 19 m, grab (stn CPBS 52N), NMV J1263 (holotype, juvenile ♂, cl. 4.0 mm, tl. 12.8 mm).

ETYMOLOGY. — From *micros*, small and *phyllos*, leaf (Gk), alluding to the small gills.

DISTRIBUTION. — Victoria, Australia; 19 m depth.

DESCRIPTION

Cephalothorax 0.3 total length; rostrum flat, narrowly acute distally, about two-thirds as long as eyestalks; cervical groove weakly defined posteriorly only, reaching 0.55 length of cephalothorax; longitudinal setal-row level with lateral margin of eyestalk, of five setae; marginal setal-row of five setae at base of eyestalk; lateral setal-row of five setae.

Abdominal somite 1 with dorsolateral setal-rows of six setae. Abdominal somites 2-5 each with transverse setal-row of about nine setae. Abdominal somite 6 without marginal setal-row along edge of pleuron, oblique setal-row of about six setae, and transverse setal-row of about five + four setae in two groups. All abdominal somites with groups of long setae dorsally.

Eyestalks slightly flattened, cornea vestigial.

Antenna 1 with long waisted article 1, about one-third as long as cephalothorax; articles 2 and 3 subequal, each about 0.3 length of article 1. Antenna 2 with distinct articulating acicle, about half length of article 2; article 4 reaching to end of peduncle of antenna 1; article 5 short.

Maxilliped 1 epipod lobes narrow, proximal lobe shorter. Maxilliped 2 exopod minute; epipod reduced. Maxilliped 3 ischium with obsolete crista dentata of seven blunt teeth; merus without mesial tooth; ischium-merus with sparse mesial rows of long setae; carpus-dactylus longer than ischium-merus, widest point of carpus 0.3 carpal length; exopod with flagellum reaching to base of merus; epipod narrow, without podobranch.

Chelipeds equal; ischium with weak lower tooth; merus with weak tooth on slightly convex lower margin, upper margin convex; carpus unarmed; propodus swollen proximally and tapering; fixed finger 0.4 length of propodus, its cutting edge almost straight; dactylus curved evenly, equal to fixed finger.

Pereopod 2 essentially as in *M. leura* but dactylus with five spiniform setae on distal half of cutting edge.

Pereopod 3 propodus 1.7 times as long as wide, with three spiniform setae on lower margin, one spiniform seta distally on mesial face, and transverse setal-row of four setae; dactylus with spiniform seta on upper-mesial margin.

Pereopod 4 propodus 2.4 times as long as wide, two spiniform setae on lower margin, one distally on mesial face, setal-row of two setae; dactylus with two spiniform setae on upper-mesial margin.

Pereopod 5 weakly chelate; dactylus with four short spiniform setae closing on four spiniform setae.

Pleopods 1 of female minute. Pleopod 2 endopod with about twenty marginal lamellae distally and laterally; appendix interna 6 times as long as wide; exopod with about twenty lamellae distolaterally. Pleopods 3-5 essentially similar to pleopod 2.

Uropodal endopod ovate, 1.6 times as long as wide, with marginal row of seven long blade-like

setae; exopod ovate, 1.5 times as long as wide, with lateral row of spiniform setae becoming longer and blade-like distally and mesially. Telson about as long as wide, distally tapering to rounded apex.

Branchial formula (r = rudimentary):

Thoracomere	1	2	3	4	5	6	7	8
Epipod	r	r	r	r	r	r	-	-
Podobranch	-	-	-	-	-	-	-	-
Arthrobranch	-	-	2r	2r	2r	2r	2r	-

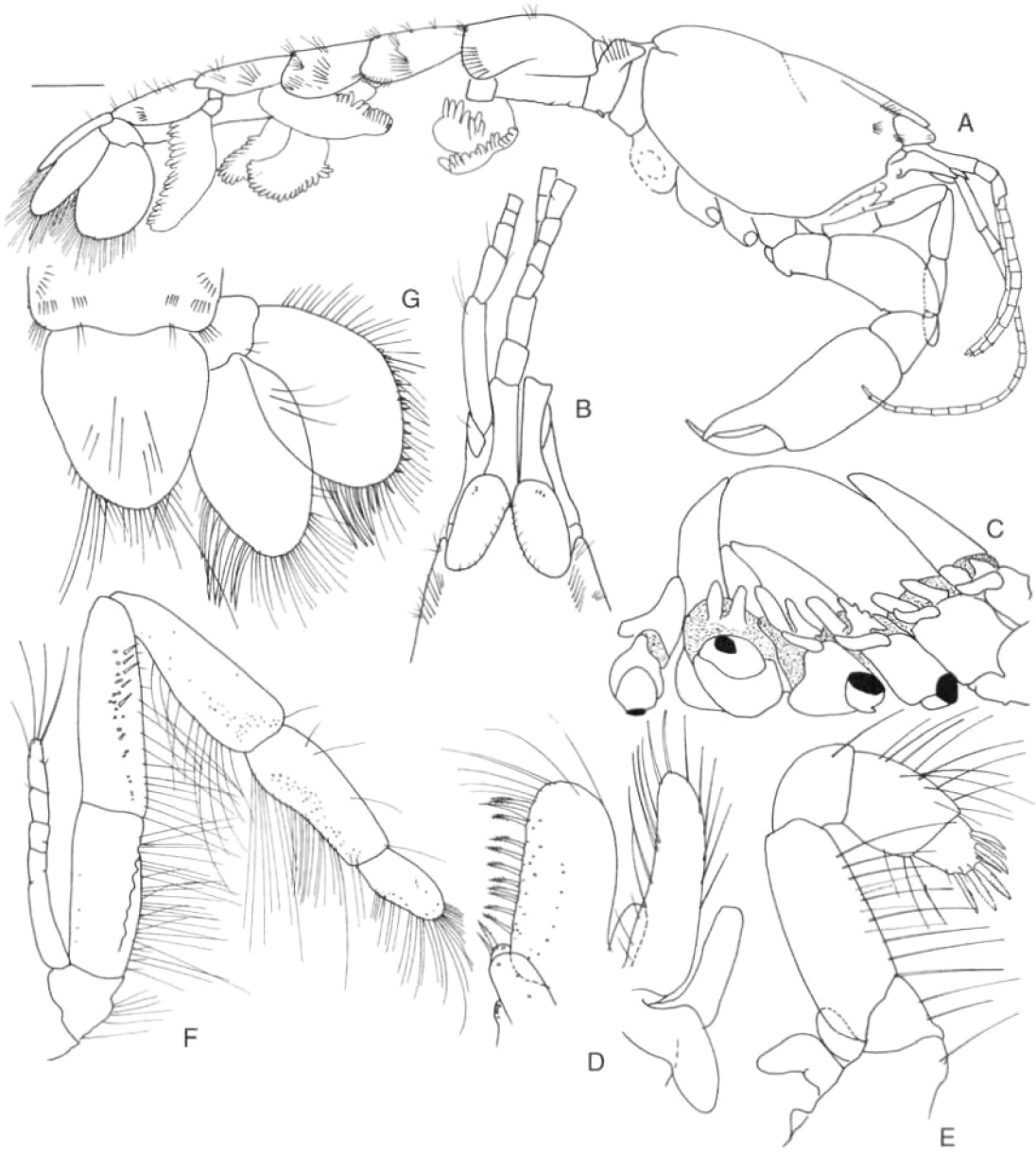

FIG. 20. — *Michelea microphylla* n.sp. **A**, habitus; **B**, anterior cephalothorax; **C**, right side of thorax (carapace removed) to show coxae of maxilliped 3 and pereopods 1-5, epipods and arthrobranchs; **D**, maxilliped 1; **E**, maxilliped 2; **F**, maxilliped 3; **G**, abdominal somite 6, telson and uropod. All figures from holotype.

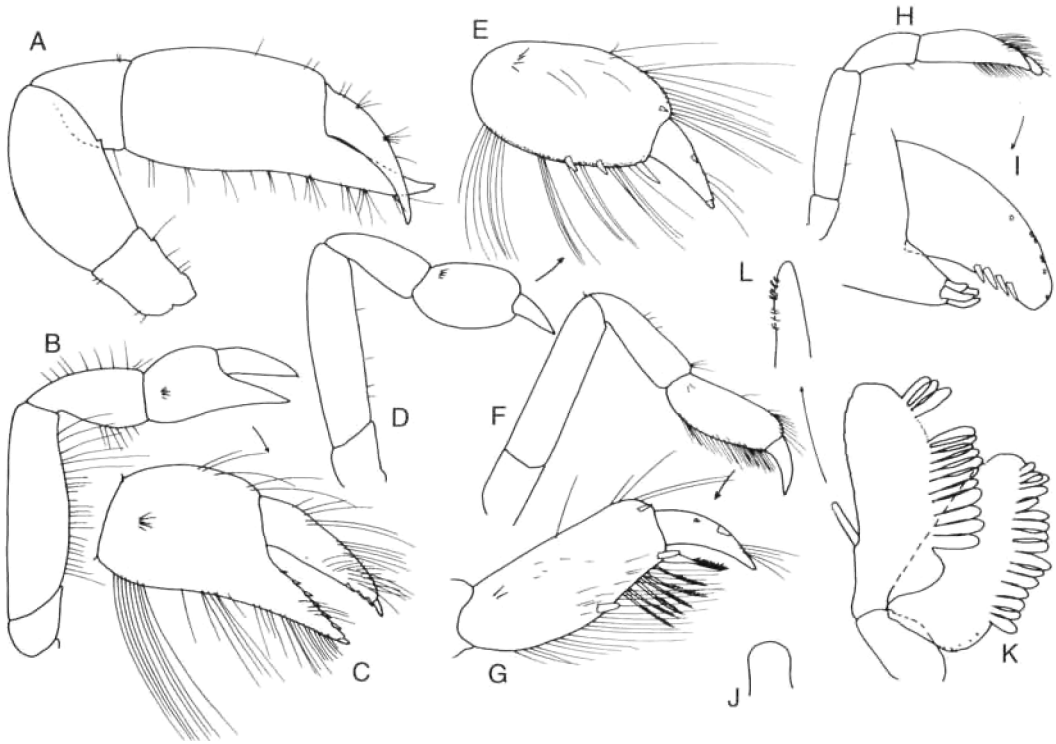

FIG. 21. — *Michelea microphylla* n.sp. **A**, left cheliped; **B**, right pereopod 2 and **C**, propodus and dactylus; **D**, right pereopod 3; **E**, propodus and dactylus; **F**, right pereopod 4; **G**, propodus and dactylus; **H**, right pereopod 5; **I**, fingers; **J**, juvenile ♂ pleopod 1; **K**, pleopod 2. All figures from holotype.

REMARKS

This species is known from a single specimen in very poor condition. It is characterised by the rudimentary epipods and arthrobranchs and the absence of podobranchs. Gills are also reduced in *M. lamellosa* Kensley *et* Heard from Jamaica but that species has only three epipods and a single rudimentary arthrobranch on thoracomere 7.

It is the only species in the family from truly temperate waters; *M. hortus* from south-western Australia is from a similar latitude but is from a region with greater influence of tropical fauna.

Michelea novaecaledoniae n.sp.
(Fig. 22)

MATERIAL EXAMINED. — **New Caledonia.** Ile Ouen, baie de Prony (22°24'S - 166°50'E), 37 m, B. Richer de Forges (ORSTOM, stn 114), MNHN Th-1215 (holotype, ♀, cl. 5.7 mm, tl. 23.5 mm). — Île Ouen, baie de Prony (22°30'S - 166°47'E), 52 m, B. Richer de Forges (ORSTOM, stn 128), MNHN Th-1214 (paratype, ♀, cl. 5.4 mm, tl. 24.0 mm).

ETYMOLOGY. — For New Caledonia, type locality.

DISTRIBUTION. — New Caledonia, baie de Prony; 37-52 m depth.

DESCRIPTION

Cephalothorax 0.24 total length; rostrum flat, about 0.4 length of eyestalks; cervical groove weakly defined, reaching 0.55 length of cephalothorax; longitudinal setal-row level with lateral margin of eyestalk, of five setae; marginal setal-row of six setae at base of eyestalk; lateral setal-row of six setae.

Abdominal somite 1 with dorsolateral setal-row of nine setae. Abdominal somite 2 with transverse setal-row of ten setae. Abdominal somites 3-5 with transverse setal-rows of five-six

setae. Abdominal somite 6 without marginal setal-row along edge of pleuron, oblique setal-row of about six setae, and transverse setal-row of about five+four setae in two groups. All abdominal somites with groups of long setae dorsally.

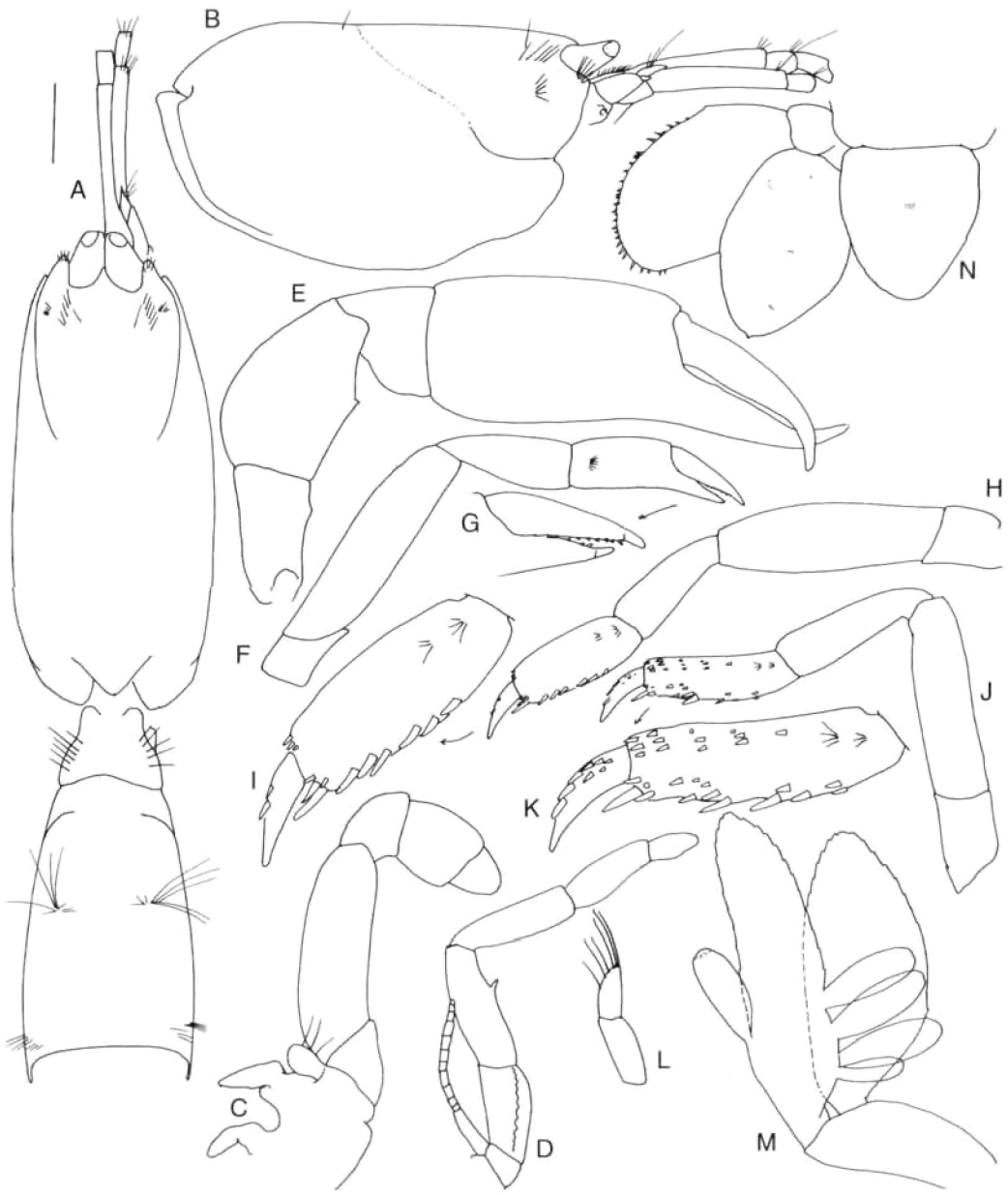

FIG. 22. — *Michelea novaecaledoniae* n.sp. **A**, cephalothorax and abdominal somites 1 and 2; **B**, cephalothorax; **C**, maxilliped 2; **D**, maxilliped 3; **E**, left cheliped; **F**, right pereopod 2; **G**, details of fingers; **H**, left pereopod 3; **I**, propodus and dactylus; **J**, left pereopod 4; **K**, propodus and dactylus; **L**, ♀ pleopod 1; **M**, ♀ pleopod 2; **N**, telson and uropod. All figures from holotype.

Eyestalks slightly flattened, cornea distolateral.
Antenna 1 with elongate waisted article 1, about half as long as cephalothorax; articles 2 and 3 subequal, each about one-sixth length of article 1.
Antenna 2 with distinct articulating acicle, about 0.7 length of article 2; article 4 reaching to end of article 2 of antenna 1; article 5 short.
Maxilliped 1 epipod as in *M. leura*. Maxilliped 2 exopod minute; epipod reduced. Maxilliped 3 ischium with obsolete crista dentata of ten blunt teeth; merus with mesial tooth; carpus-dactylus longer than ischium-merus, widest point of carpus 0.3 carpal length; exopod with flagellum reaching to middle of merus; epipod narrow, without podobranch.
Chelipeds equal; ischium with weak lower tooth; merus with weak tooth on convex lower margin, upper margin strongly convex; carpus unarmed; propodus swollen proximally and tapering; fixed finger 0.4 length of propodus, its cutting edge with obsolete teeth, curved apically; dactylus curved apically, equal to fixed finger.
Pereopod 2 essentially as in *M. leura*.
Pereopod 3 propodus 2.5 times as long as wide, with seven spiniform setae on lower margin, two clusters of three spiniform setae distally on mesial face, and two transverse setal-rows of four and three setae; dactylus with two spiniform setae on upper-mesial margin.
Pereopod 4 propodus 3.6 times as long as wide, weakly aligned transverse rows of spiniform setae on mesial face, concentrated near margins and strongest on lower margin and distally, and two transverse setal-rows each of three setae; dactylus with eight spiniform setae on upper-mesial margin.
Pleopod 1 of female of two short articles. Pleopod 1 of male unknown. Pleopod 2 endopod with four marginal lamellae proximolaterally; appendix interna 2.5 times as long as wide; exopod without lamellae. Pleopods 3-5 essentially similar to pleopod 2, with four, seven, six lamellae respectively.
Uropodal endopod broadly ovate, 1.4 times as long as wide, with minute apical tooth; exopod 1.3 times as long as wide, with blunt tooth on lateral margin and spiniform setae laterally and distally. Telson about as long as wide, distally tapering to rounded apex.

Branchial formula (r = rudimentary):

Thoracomere	1	2	3	4	5	6	7	8
Epipod	1	1	1	1	r	r	r	-
Podobranch	-	-	f	f	f	f	-	-
Arthrobranch	-	-	1	2	2	2	2	-

Epipods broader anteriorly than posteriorly; podobranchs filamentous (f).

REMARKS

The two specimens from New Caledonia are similar to *M. hortus* from south-western Australia in the reduction of pleopodal lamellae. *M. novaecaledoniae* has four lamellae on pleopod 2 and has two lateral setal-rows (*M. hortus* has no lamellae and one lateral setal-row).

Michelea paraleura n.sp.
(Figs 23, 24)

MATERIAL EXAMINED. — **Australia.** Queensland, Holbourne Island (19°42'S - 148°21'E), AM P5574 (holotype, ♀, cl. 6.2 mm, tl. 26.5 mm, paratype of *Callianidea leura* Poore *et* Griffin, 1979 = *Michelea leura*). — Queensland, Rib Reef (18°28'S -146°52'E), reef flat, 2 m, M. Riddle, May 1986, corer, NMV J22685 (paratype, ♂, cl. 3.3 mm, tl. 13.8 mm). — Northern Territory, W side of Oxley Island (11°00'S - 132°49'E), intertidal pools, G. C. B. Poore, 18.X.1982, NMV J27643 (1 specimen).

ETYMOLOGY. — From *para* and the specific name *leura*, to indicate the species' original confusion with *Michelea leura* (noun in apposition).

DISTRIBUTION. — Northern Great Barrier Reef and coral island of Northern Territory, Australia; intertidal to 2 m depth.

DESCRIPTION

Cephalothorax 0.24 total length; rostrum flat, about half length of eyestalks; cervical groove weakly defined, reaching 0.6 length of cephalothorax; longitudinal setal-row level with lateral margin of eyestalk, of thirteen setae; marginal setal-row of seven setae at base of eyestalk; lateral setal-rows of seven and four setae.
Abdominal somite 1 with dorsolateral setal-row of five setae. Abdominal somite 2 four times as long as first; with transverse setal-row of twelve setae. Abdominal somites 3-5 with transverse setal-rows of eight-ten setae. Abdominal somite 6

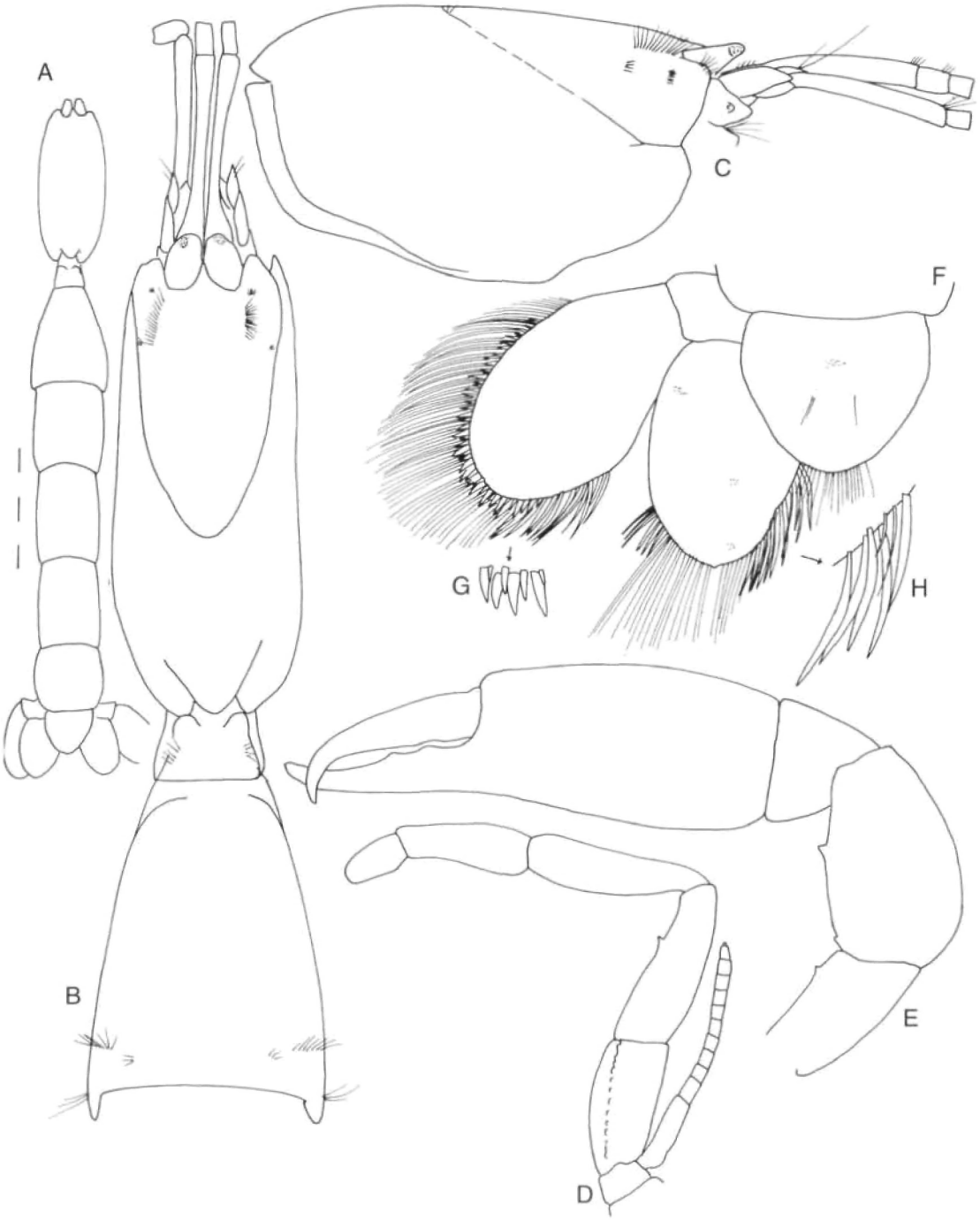

FIG. 23. — *Michelea paraleura* n.sp. **A**, habitus sketch; **B**, cephalothorax and abdominal somites 1 and 2; **C**, cephalothorax; **D**, maxilliped 3; **E**, right cheliped; **F**, telson and uropod; **G**, spiniform setae on margin of uropodal exopod; **H**, spiniform setae on margin of uropodal endopod. All figures from holotype.

without marginal setal-row along edge of pleuron, oblique setal-row of about twelve setae, and transverse setal-row of about ten setae. All abdominal somites with groups of long setae dorsally.
Eyestalks slightly flattened, cornea distal.
Antenna 1 with elongate waisted article 1, about half as long as cephalothorax; articles 2 and 3 subequal, each about one-sixth length of article 1. Antenna 2 with distinct articulating acicle, about 0.6 length of article 2; article 4 reaching to end of article 2 of antenna 1; article 5 short.
Maxilliped 1 epipod as in *M. leura*. Maxilliped 2 exopod minute; epipod reduced. Maxilliped 3 ischium with obsolete crista dentata of ten blunt teeth; merus with mesial tooth; carpus-dactylus longer than ischium-merus, widest point of carpus quarter carpal length; exopod with flagellum reaching beyond middle of merus; epipod narrow.
Chelipeds equal; ischium with weak lower tooth; merus with weak tooth on convex lower margin, upper margin strongly convex; carpus unarmed; propodus swollen proximally and tapering; fixed finger 0.4 length of propodus, its cutting edge with obsolete teeth, curved apically; dactylus curved apically, equal to fixed finger.
Pereopod 2 essentially as in *M. leura*.
Pereopod 3 propodus twice as long as wide, with four rows of one, two, two and five spiniform setae on lower-mesial margin, and two transverse setal-rows of five setae; dactylus with four spiniform setae on upper-mesial margin.
Pereopod 4 propodus 2.8 times as long as wide,

FIG. 24. — *Michelea paraleura* n.sp. **A**, right pereopod 2; **B**, details of fingers; **C**, right pereopod 3; **D**, right pereopod 4; **E**, ♂ pleopod 1; **F**, ♀ pleopod 2; **G**, ♂ appendices interna and masculina. Figures E, G, from NMV J22685; others from holotype.

five transverse rows of two-six spiniform setae on lower-mesial margin, two setal-rows of four setae; dactylus with six spiniform setae on upper-mesial margin.
Pleopod 1 of female of two short articles. Pleopod 1 of male with medial margin bearing hooks. Pleopod 2 endopod with seventy-seven marginal lamellae distally and laterally; male appendix interna 3 times as long as wide; appendix masculina twice as long as appendix interna; exopod with about twenty lateral lamellae. Pleopods 3-5 essentially similar to pleopod 2.
Uropodal endopod broadly ovate, 1.5 times as long as wide, with minute apical tooth, medial margin with numerous blade-like setae; exopod 1.6 times as long as wide, with numerous spiniform setae laterally and distally. Telson about 0.8 times as long as wide, distally tapering to rounded apex.

Branchial formula (r = rudimentary):

Thoracomere	1	2	3	4	5	6	7	8
Epipod	1	1	1	1	r	r	r	-
Podobranch	-	-	f	f	f	f	-	-
Arthrobranch	-	-	1	2	2	2	2	-

Epipods broader anteriorly than posteriorly; podobranchs filamentous (f).

REMARKS
Michelea paraleura is distinguished from *M. leura*, with which it was originally confused, in body proportions (longer abdominal somites relative to cephalothorax), longer telson, and spiniform and blade-like setae on the uropodal rami.

Michelea pillsburyi Kensley *et* Heard, 1991

Michelea pillsburyi Kensley *et* Heard, 1991: 497, 522-524, figs 18, 19.

DISTRIBUTION. — Caribbean coast of Panama; 28-59 m depth.

REMARKS
The species was well illustrated by the original authors and not re-examined.

Michelea vandoverae (Gore, 1987)

Callianidea vandoverae Gore, 1987: 186-194, figs 1-4.

Michelea vandoverae. – Kensley & Heard 1991: 496, 523-527, figs 20, 21.

MATERIAL EXAMINED. — **SW Caribbean Sea.** 10°00'N - 76°05'W, 146-162 m, 28.V.1964, Gulf and South Atlantic Fisheries Exploration, Bureau of Commercial Fisheries (RV *Oregon* stn 4904), USNM 273140 (1 specimen).

DISTRIBUTION. — Gulf of Mexico and Caribbean Sea; 37-162 m depth.

REMARKS
This species has already been well described and figured. It differs from all others in the genus in the possession of a pleurobranch and the 2-segmented nature of the pleopodal lamellae which attach to all margins of the rami.

Genus *Tethisea* Poore, 1994

Tethisea Poore, 1994: 99, 100.

TYPE SPECIES. — By original designation: *Tethisea indica* Poore, 1994.

DIAGNOSIS
Rostrum flat, well exceeding eyes, medially and laterally carinate and setose. Eyes not visible in dorsal view. Anterolateral cephalothorax with one vertical setal-row near cervical groove. Abdominal somites 1 and 2 with one lateral setal-row, abdominal somites 3-5 with none, abdominal somite 6 with two converging setal-rows; abdominal somites 3-5 with dense dorsal patches of plumose setae. Antenna 1 peduncle article 1 moderately elongate. Scaphocerite more than half length of antenna 2 peduncle article 4. Maxilliped 1 exopod with setose flagellum. Maxilliped 3 with crista dentata; merus with strong mesial row of setae; exopod very short. Pereopod 1 fixed finger with sharp curved tooth one-third way along; with thickened setae in gape. Pereopod 2 fixed finger with even contiguous spiniform setae; dactylus as long as fixed finger. Pereopods 3 and 4 without lateral spiniform setae on propodus and dactylus.

Pereopod 4 carpus without distal ridge on upper margin; propodus with one transverse setal-row. Pleopods 2-5 without marginal lamellae. Uropodal endopod with anterolateral margin convex, ending by curving to rounded posterior margin. Uropodal exopod anterolateral margin ending squarely, broader than endopod. Telson as broad as long, weakly constricted, distally truncate. Epipods with lamellate podobranchs well developed except on last. Arthrobranchs well developed. Pleurobranchs 5-7 present.

Branchial formula (r = rudimentary):

Thoracomere	1	2	3	4	5	6	7	8
Epipod	1	1	1	1	1	1	-	
Podobranch	-	-	r	1	1	1	-	-
Arthrobranch	-	-	2	2	2	2	2	-
Pleurobranch	-	-	-	-	1	1	1	-

COMPOSITION

T. indica Poore, 1994, *T. mindoro* n.sp.

REMARKS

Tethisea is most similar to *Marcusiaxius* and *Meticonaxius* in the possession of a rostrum and of pleurobranchs. The most obvious differences are the absence of setal-rows on abdominal somites 3-5, the presence of specialised thickened setae in the gape of pereopod 1, and the more ovate shape of the uropodal endopod. The genus is confined to two species in the Indian Ocean and tropical West Pacific.

Tethisea indica Poore, 1994
(Figs 25, 26)

Tethisea indica Poore, 1994: 100.

MATERIAL EXAMINED. — Type material.

DISTRIBUTION. — Mozambique, La Réunion, Indonesia, New Caledonia; 165-460 m depth.

DESCRIPTION

Cephalothorax 0.35 total length, about 1.2 times as deep as wide; rostrum triangular, slightly depressed distally, with dorsal setae along lateral carinae, 1.5 times as long as broad at base of eyes, lateral margins convex such that eyes are invisible from dorsal view, twice as long as eyestalks; lateral carinae extending on to cephalothorax, without medial carina; cervical groove weakly defined; dorsoposterior margin a convex medial lobe, separated from posterolateral margins; one setal-row of three setae only.

Abdominal somite 1 narrower than second, with anterolateral lobes overlying posterolateral margins of cephalothorax; pleuron with minute marginal spine; dorsolateral setal-row of seven setae. Abdominal somite 2 1.5 times as long as first, pleuron broadly overlapping first somite; transverse setal-row of about seven setae. Abdominal somites 3-5 without setal-rows. Abdominal somite 6 with marginal setal-row of about twenty setae diverging anteriorly from edge of pleuron, and transverse setal-row of about ten setae.

Eyestalks acute distally, cornea distal.

Antenna 1 with article 1 shorter than rostrum; articles 2 and 3 subequal, each about half length of article 1; flagella each of about ten articles, longer than peduncle. Antenna 2 with long acute articulating acicle, longer than article 2; article 4 reaching to middle of article 3 of antenna 1; article 5 short.

Mandible and maxillae as in *Meticonaxius*.

Maxilliped 1 with endopod 0.6 length of basal endite, exopod longer than endite, with a linear second article at right-angle to first, epipod lobes narrow, proximal lobe much longer. Maxilliped 2 exopod as long as endopodal ischium; epipod small. Maxilliped 3 ischium with strong crista dentata of eight blunt teeth; merus without mesial tooth; ischium-merus with dense mesial rows of long setae; carpus-dactylus longer than ischium-merus, widest point of carpus quarter carpal length; exopod minute.

Chelipeds equal; ischium with distal spine on lower margin; merus with two spines on lower margin, upper margin strongly convex; carpus unarmed; propodus swollen proximally and tapering; fixed finger 0.3 length of propodus, its cutting edge sinuous; gape wide, with six long spiniform setae laterally; dactylus cutting edge curved distally, opposing fixed finger.

Pereopod 2 merus-propodus with lower marginal rows of long setae; carpus half length of merus; propodus as long as carpus, with setal-row of three short setae; fixed finger cutting edge with

numerous contiguous spiniform setae; dactylus longer than fixed finger, straight.

Pereopod 3 propodus 1.3 times as long as wide, upper margin slightly convex, lower margin convex, one oblique setal-row of six setae; dactylus broad.

Pereopod 4 propodus twice as long as wide, one oblique setal-row of four setae; dactylus broad.

Pleopods 1 of male 2-articled, second article 3 times as long as wide, with medial lobe bearing about 9 minute hooks. Pleopods 1 of female 2-articled. Pleopod 2 of male with appendix interna one-third length of endopod; appendix masculina twice as long and broad as appendix interna; exopod twice as long as broad. Pleopod 2 of female endopod 3.5 times as long as wide; appendix interna 6 times as long as wide; exopod 2.5 times as long as wide, ovate. Pleopods 3-5 essentially similar to pleopod 2 of female.

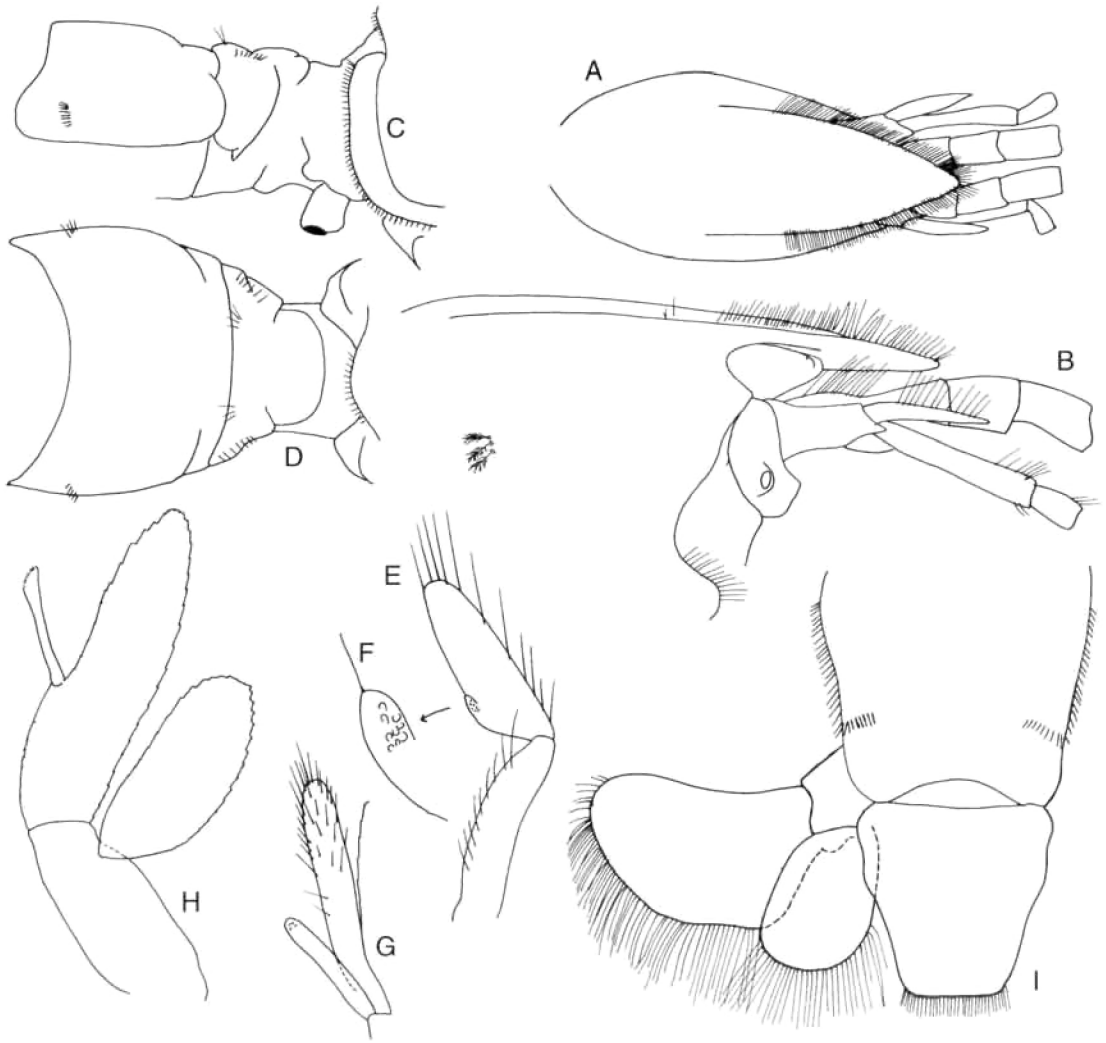

FIG. 25. — *Tethisea indica* Poore. **A**, **B**, anterior cephalothorax; **C**, **D**, posterior cephalothorax, abdominal somites 1 and 2; **E**, ♂ pleopod 1; **F**, detail of appendix interna; **G**, ♂ pleopod 2; **H**, ♀ pleopod 2; **I**, abdominal somite 6, telson and uropod. Figures E-G from MNHN Th-1219; C, D from MNHN Th-1216; others from holotype.

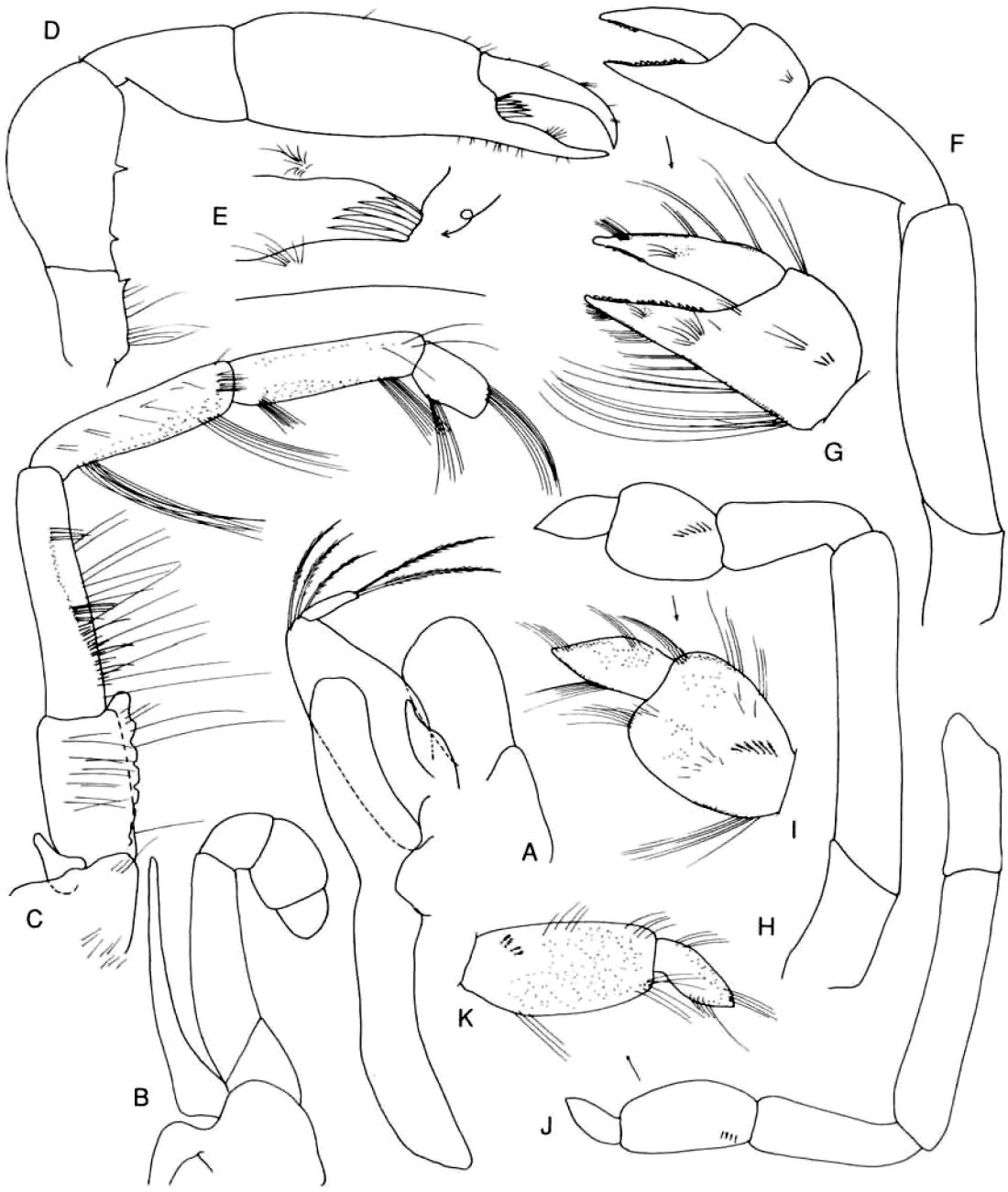

FIG. 26. — *Tethisea indica* Poore. **A**, maxilla 2; **B**, maxilliped 2; **C**, maxilliped 3; **D**, left cheliped; **E**, details of setae in gape of fingers; **F**, left pereopod 2; **G**, propodus and dactylus; **H**, left pereopod 3; **I**, propodus and dactylus; **J**, right pereopod 4; **K**, propodus and dactylus. All figures from holotype.

Uropodal endopod with anterior margin convex, ending by curving to rounded posterior margin, 1.3 times as long as wide; exopod with concave anterior margin, apically rounded, posterior margin broadly lobed, 1.7 times as long as wide. Telson as long as wide, tapering to rounded-truncate apex beyond constriction one-third way along.

REMARKS

Tethisea indica was briefly diagnosed on the basis of thirteen specimens by Poore (1994). The spe-

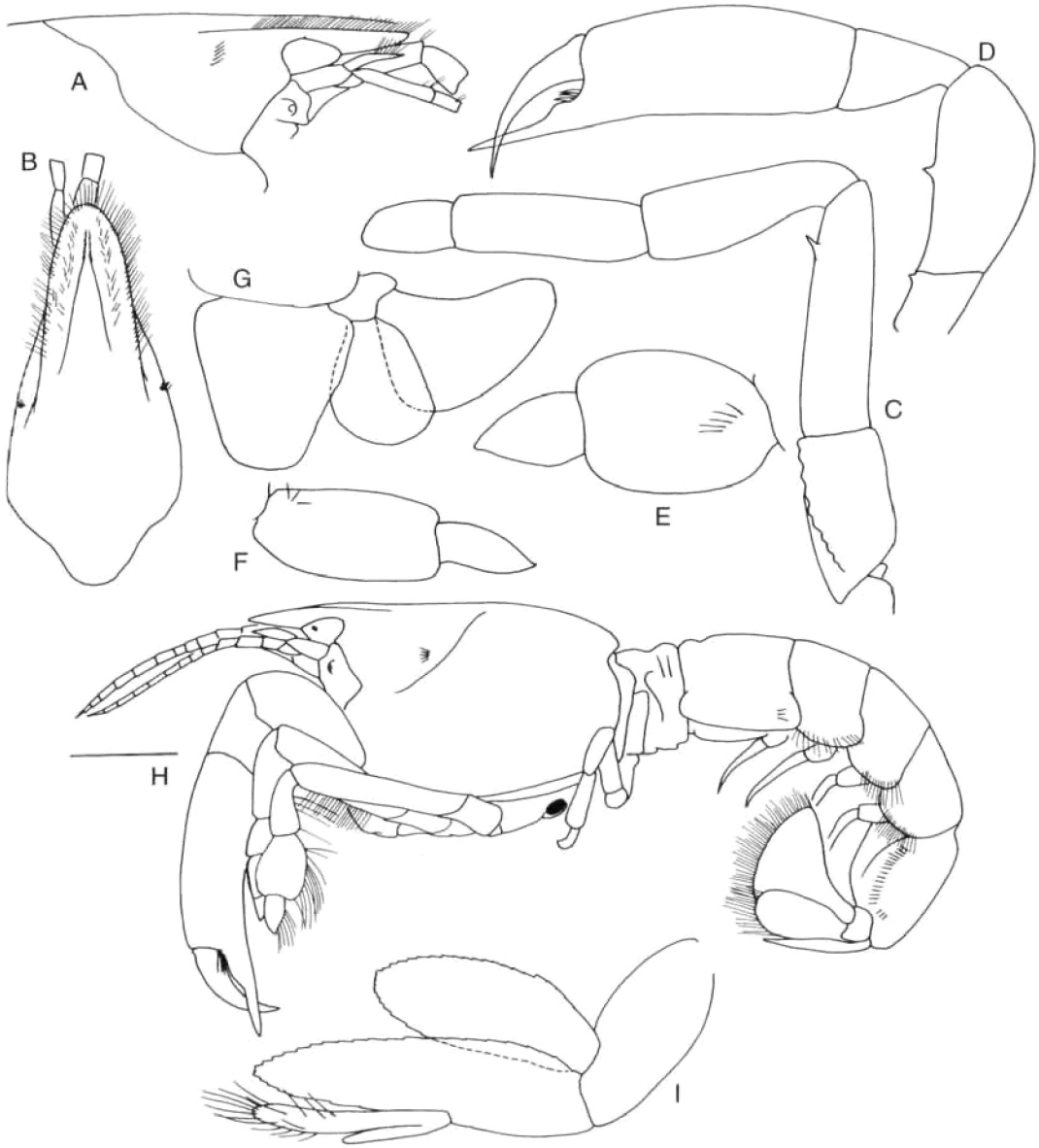

FIG. 27. — *Tethisea mindoro* n.sp. **A**, **B**, cephalothorax; **C**, maxilliped 3; **D**, right cheliped; **E**, propodus and dactylus of pereopod 3; **F**, propodus and dactylus of pereopod 4; **G**, telson and uropod; **H**, habitus; **I**, ♂ pleopod 2. Figures H, I from NMV J17915; others from holotype.

cies is distinguished from the only other in the genus by the acute rostrum and broader uropodal rami. The material comes from a wide geographic range in the Indo-West Pacific region, from eastern Africa to New Caledonia but there is little variation between the specimens.

Tethisea mindoro n.sp.
(Fig. 27)

MATERIAL EXAMINED. — **Philippines.** W of Mindoro (12°31.2'N - 120°39.3'E), 92-97 m, rectangular dredge, 3.VI.1985, (MUSORSTOM stn DR117), MNHN Th-1222 (holotype, ♀, cl. 5.1 mm).
Western Australia. North-west Shelf, between Port Hedland and Dampier (18°41'S – 118°39'E), 134 m, muddy sand, WHOI epibenthic sled, G. C. B. Poore and H. M. Lew Ton (R. V. *Soela*, stn NWA 21), 4.VI.1983, NMV J17915 (♂, cl. 5.0 mm), NMV J16607 (♀, cl. 7.1 mm), NMV J3648 (♂, cl. 3.6 mm), NMV J17216 (3 specimens, cl. 2.0-4.8 mm), MNHN Th-1304 (♂, cl. 3.7 mm; ♀, cl. 4.5 mm).

ETYMOLOGY. — For Mindoro, the type locality (noun in apposition).

DISTRIBUTION. — Philippines, north-western Australia; 92-134 m depth.

DIAGNOSIS
Rostrum rounded, 1.3 times as long as broad at base of eyes; posterior setal-row of five setae only. Maxilliped 3 merus with mesial tooth; exopod absent.
Cheliped merus with one spine on lower margin. Uropodal endopod with convex anterior margin, apically rounded, posterior margin broadly lobed, 1.3 times as long as wide; exopod with anterior margin deeply convex, ending by curving to rounded posterior margin, 1.5 times as long as greatest width. Telson as long as wide, tapering to rounded-truncate apex, constriction weak.

REMARKS
Tethisea mindoro differs from *T. indica* in the broader less acute rostrum, more tapering uropodal exopod, more evenly curved dactylus of pereopod 1, and very short exopod on maxilliped 2. The male pleopods 1 and 2 are little narrower than in *T. indica* but are of the same form. There seem no significant differences between the holotype from the Philippines and the collection of non-type specimens from north-western Australia.

Family THOMASSINIIDAE de Saint Laurent, 1979

Thomassiniinae de Saint Laurent, 1979: 1396. – de Saint Laurent & Le Loeuff 1979: 95. – Sakai 1992: 18.

Thomassiniidae. – Manning & Felder 1991: 765. – Poore 1994: 104.

Callianideidae. – Kensley & Heard 1991: 497, 498 (in part).

TYPE GENUS — *Thomassinia* de Saint Laurent, 1979.

DIAGNOSIS
Firm-bodied or soft thalassinidean shrimps. Rostrum absent or present only as sharp spine. Linea thalassinica lateral to eyestalks, complete or incomplete. Cephalothorax usually broad, ending posteriorly as a median convexity not separate from posterolateral margins of carapace. Without anterolateral lobes on abdominal somite 1, anterodorsal tergite weak; no thickening of posterolateral carapace margins. Thoracomere 7 sternite broad and visible between coxae as a flat plate. Coxa 4 flattened, immobile, without condyle with thoracomere 7. Abdominal somite 1 almost as long as abdominal somite 2 and with pleuron broadly rounded (rarely acute). Abdominal somite 2 pleuron not overlapping abdominal somite 1. Cephalothorax, rostrum, abdomen, telson and all limbs without armature. Anterior cephalothorax and at least abdominal somites 1 and 6, sometimes others, with weak lateral setal-rows; lateral surfaces of propodi of pereopods 2-4 sometimes with similar setal-rows. Antenna 1 peduncle article 1 as long as 2 and 3. Antenna 2 with scaphocerite minute, barely articulating. Mandibular incisor toothed anteriorly and posteriorly, symmetrical. Maxilla 2 scaphognathite with one long seta extending into branchial chamber. Maxilliped 3 pediform, sometimes specialised; exopod present or absent. Pereopods 1 unequal; merus ovate, with convex posterior margin; proximal part of propodus broad (about as long as wide); fingers shorter