

Marine isopod crustaceans from the St. Paul and Amsterdam Islands, southern Indian Ocean

by Brian KENSLEY

Abstract. — Nineteen species of isopods collected during the cruise MD. 50/Jasus of R/V "Marion Dufresne" in July 1986, are recorded from the waters around the St. Paul and Amsterdam Islands of the southern Indian Ocean, of which 13 are identified to species level. Included are eight species previously recorded from this region. One new genus, *Bathylana*, and three new species, *Bathylana apalpalis*, *Joeropsis sanctipauli* and *Metacirolana arnaudi*, are described. The asellote *Desmosoma longimana* (Vanhöffen) is recorded outside of the Antarctic region for the first time. The species of this collection reaffirm the presence of Antarctic, Subantarctic and southern African elements in the fauna.

Résumé. — Dix-neuf espèces d'isopodes ont été récoltées autour des îles Saint-Paul et Amsterdam, dans le sud de l'océan Indien lors de la campagne MD. 50/Jasus du « Marion Dufresne », en juillet 1986. Treize d'entre elles, dont huit déjà connues de la région, sont identifiées au niveau de l'espèce. Un nouveau genre, *Bathylana*, et trois nouvelles espèces, *Bathylana apalpalis*, *Joeropsis sanctipauli* et *Metacirolana arnaudi*, sont décrits. L'asellote *Desmosoma longimana* (Vanhöffen) est signalé pour la première fois en dehors de l'Antarctique. L'étude de cette collection confirme la présence d'éléments antarctiques, subantarctiques et sud-africains dans la faune de ces îles.

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Records of marine isopod crustaceans from the region of the St. Paul and Amsterdam Islands were summarized by KENSLEY (1976). Since then, few reports have appeared that have relevance for the Southern Indian Ocean : CARVACHO, 1977 (Kerguelen Island); KUSSAKIN and VASINA, 1980a, 1980b (Kerguelen and Crozet islands); KENSLEY, 1980 (Marion, Prince Edward, and Crozet islands).

In July and August of 1986, the French research vessel "Marion Dufresne" carried out a survey of the benthic and pelagic fauna of the area around the St. Paul and Amsterdam Islands, to a depth of about 2000 meters. The isopod crustaceans from this collection were submitted to the author for study, which resulted in the present report.

Holotypes, paratypes, and most of the material are deposited in the Muséum national d'Histoire naturelle, Paris (indicated by the abbreviation MNHN in the text); paratypes and some duplicates are housed in the United States National Museum of Natural History, Smithsonian Institution, Washington, D.C. (indicated by the abbreviation USNM in the text). Dimensions in the Material sections are for total lengths.

SPECIES LIST,
WITH STATION DATA FOR "MARION DUFRESNE" CRUISE 50

Arranged alphabetically by genus or family; the letters CP and DC prefixing sample numbers refer to the type of gear used to collect the specimens; CP = beam trawl, DC = Charcot dredge.

AEGIDAE

Sta 33, DC146, 38°38.4' S-77°32.9' E, 525-420 m, 1 juvenile.

Bathylana apalpalis n. sp.

Sta 13, DC64, 37°54.8' S-77°38.9' E, 1200-1000 m, 1 specimen.

Sta 29, DC137, 38°41.7' S-77°18.2' E, 1430-1340 m, 3 specimens.

Desmosoma longimana (Vanhöffen, 1914)

Sta 5, DC34, 37°40.3' S-77°30.5' E, 2200 m, 8 specimens.

Dynamenella dioxus Barnard, 1914

Sta 3, CP11, 37°46.3' S-77°32.6' E, 50 m, 14 specimens.

Haploniscus spp.

Sta 5, DC34, 37°40.3' S-77°30.5' E, 2200 m, 2 specimens.

ILYARACHNIDAE

Sta 5, DC34, 37°40.3' S-77°30.5' E, 2200 m, 4 damaged specimens.

Sta 18, DC79, 38°46.2' S-77°29.3' E, 315-375 m, 1 damaged specimen.

Sta 32, DC144, 38°39.3' S-77°34.8' E, 900-720 m, 2 damaged specimens.

ISCHNOMESIDAE

Sta 5, DC34, 37°40.3' S-77°30.5' E, 2200 m, 1 damaged specimen.

Janira capensis Barnard, 1914

Sta 3, DC8, 37°47.4' S-77°33.7' E, 75-50 m, 1 specimen.

Janiropsis palpalis Barnard, 1914

Sta 3, CP11, 37°46.3' S-77°32.6' E, 50 m, 1 specimen.

Sta 20, DC91, 38°47.7' S-77°27.1' E, 975 m, 1 specimen.

Sta 33, DC146, 38°38.4' S-77°32.9' E, 525-420 m, 1 specimen.

Jaeropsis beuroisi Kensley, 1975

Sta 3, CP11, 37°46.3' S-77°32.6' E, 50 m, 3 specimens.

Sta 3, DC8, 37°47.4' S-77°33.7' E, 75-50 m, 17 specimens.

Sta 7, DC44, 37°51.5' S-77°29.3' E, 90 m, 20 + specimens.

Sta 18, DC79, 38°46.2' S-77°29.3' E, 315-375 m, 2 specimens.

Sta 19, DC82, 38°42.8' S-77°28.3' E, 165 m, 5 specimens.

Sta 28, DC132, 38°45.0' S-77°21.8' E, 465 m, 1 specimen.

Joeropsis sanctipauli n. sp.

Sta 19, DC82, 38°42.8' S-77°28.3' E, 165 m, 2 specimens.

Sta 24, DC114, 39°00' S-77°46.4' E, 160 m, 2 specimens.

Metacirolana arnaudi n. sp.

Sta 2, CP7, 37°47.2' S-77°39.0' E, 1680-940 m, 2 specimens.

Sta 11, DC59, 37°51.0' S-77°36.7' E, 200-75 m, 2 specimens.

Sta 12, DC63, 37°53.0' S-77°37.2' E, 575-480 m, 1 specimen.

Sta 13, DC64, 37°54.8' S-77°38.9' E, 1200-1000 m, 2 specimens.

Sta 15, DC71, 37°54.8' S-77°31.9' E, 262-430 m, 3 specimens.

Sta 18, DC79, 38°46.2' S-77°29.3' E, 315-375 m, 2 specimens.

Sta 19, DC82, 38°42.8' S-77°28.3' E, 165 m, 55 specimens.

Sta 22, DC108, 38°48.8' S-77°35.7' E, 460-510 m, 5 specimens.

Sta 24, DC114, 39°00' S-77°46.4' E, 160 m, 18 specimens.

Sta 32, DC144, 38°39.3' S-77°34.8' E, 900-720 m, 2 specimens.

- Sta 33, DC146, 38°38.4' S-77°32.9' E, 525-420 m, 3 specimens.
Sta 34, DC150, 38°35.0' S-77°26.3' E, 925 m, 1 specimen.
Sta 35, DC157, 38°40.9' S-77°32.6' E, 135 m, 8 specimens.
Sta 36, DC167, 38°24.4' S-77°28.6' E, 1430-1600 m, 2 specimens.

MUNNIDAE

- Sta 32, DC 144, 38°39.3' S-77°34.8' E, 900-720 m, 1 damaged specimen.
Natatolana anophthalma (Kussakin and Vasina, 1982)
Sta 36, DC167, 38°24.4' S-77°28.6' E, 1430-1600 m, 2 specimens.
Panathura amstelodami Kensley, 1976
Sta 7, DC44, 37°51.1' S-77°29.3' E, 90 m, 1 specimen.
Santia cf. *hofsteni* (Nordenstam, 1933)
Sta 7, DC44, 37°51.5' S-77°29.3' E, 90 m, 1 damaged specimen.
Stenetrium crassimanus Barnard, 1914
Sta 3, DC8, 37°47.4' S-77°33.7' E, 75-50 m, 20 + specimens.
Sta 7, DC44, 37°51.5' S-77°29.3' E, 90 m, 20 + specimens.
Sta without number, DC 105, entrance of St. Paul lagoon, 3 m, 2 specimens.
Stylomus sp.
Sta 5, DC34, 37°40.3' S-77°30.5' E, 2200 m, 1 specimen.
Uromunna cf. *nana* (Nordenstam, 1933)
Sta 19, DC82, 38°42.8' S-77°28.3' E, 165 m, 1 specimen.
Sta 33, DC146, 38°38.4' S-77°32.9' E, 525-420 m, 1 specimen.

SYSTEMATIC DISCUSSION

Suborder ASELLOTA

Family DESMOSOMATIDAE

Desmosoma longimana (Vanhöffen, 1914)

(Figs. 1-2)

Eugerdia longimana Vanhöffen, 1914 : 559, fig. 87.

Desmosoma longimana : MENZIES, 1962 : 163; WOLFF, 1962 : 266.

PREVIOUS RECORDS. — Antarctica northwest of Gauss Station, 2735 m.

MATERIAL. — Sta 5, MNHN Is. 2770, 4 ♀ 3.9 mm, 4.3 mm, 4.5 mm, 5.2 mm; USNM 211480, 3 ♀, 4.0 mm, 4.1 mm, 5.1 mm.

DESCRIPTION

Integument glabrous; body widest at pereonites 2 and 3, thereafter tapering posteriorly. Cephalon with anterior margin between antennular bases evenly convex; small triangular lobe

external to antennal bases. Pereonite 1 with broadly convex lateral region. Anteriorly subacute coxae visible dorsally on pereonites 1-4; pereonite 5 roughly rectangular; pereonites 6 and 7 becoming shorter and narrower. Pleon almost 1.5 times longer than wide, with short, acute posterolateral spines; posterior margin between uropodal bases convex.

Antennular peduncle of 2 articles, basal article slightly less than half length of article 2; flagellum of 4 subequal articles, with single apical aethetasc. Distal antennae missing in all specimens.

Mandibular palp of 3 articles, article 2 longest, article 3 with 6 distal spines; incisor of 3 sclerotized cusps; lacinia mobilis with 3 cusps; spine row having 6 fringed spines; molar non-sclerotized, conical, with about 15 distal setae. Maxilla 1, inner ramus with 1 elongate and 2 shorter distal spines; outer ramus with 11 distal sclerotized spines. Maxilla 2, inner ramus with about 9 distal spines; lobes of outer ramus each bearing 3 elongate spines. Maxillipedal palp of 5 articles, articles 2 and 3 broad, latter with broadly rounded mesiodistal lobe, articles 4 and 5 less than half width of article 3, article 4 with rounded setose mesiodistal lobe; endite slightly more than half width of palp article 2, distal truncate margin bearing numerous short setae, mesial margin with 2 coupling hooks; epipod reaching distal margin of palp article 2, with rounded bulge on outer margin.

Pereopod 1 robust, basis equal to combined lengths of ischium, merus, carpus, and half of propodus together; merus short, with strong distal and 3 smaller setae on posterior margin; carpus widening distally, with short seta at midlength of posterior margin, posterodistal corner bearing 1 short seta plus single elongate robust spine equal in length to posterior margin of propodus; propodus tapering distally, posterior margin with single row of about 20 short spines; dactylus half length of propodus, distally with unguis and accessory spine not clearly articulated. Pereopod 2, basis with cluster of 5 posterodistal setae; ischium about one-third length of basis, with 4 setae on posterior margin; merus half length of ischium with several setae on posterior margin; carpus broad, with row of elongate setae on anterior margin, row of spines on posterior margin becoming longer distally, distalmost spine equal in length to posterior margin of propodus; propodus with row of setae on anterior margin, fewer setae on posterior margin; dactylus slender, slightly longer than propodus. Pereopods 3 and 4 similar to, but less robust than pereopod 2, 4 slightly smaller than 3, carpi with 2 or 3 posterodistal spines. Pereopods 5-7 similar, bases equal in length to ischium, merus, and carpus combined; carpi with setae on posterior margin increasing in length distally; propodi about three-fourths length of carpi, with elongate spine-setae on posterodistal margin, 4-5 sensory spines on anterior margin; dactyli about half length of propodi, with few distal setae and single slender terminal spine.

Operculum (pleopod 2) of female slightly wider than long, distal margin shallowly emarginate; pleopod 3, endopod distally broadened, with 3 distal plumose setae; exopod distally tapering, with single plumose seta.

Uropod with peduncle about half length of endopod, latter with several sensory and simple setae; exopod about one-sixth length of endopod, with single elongate simple distal seta.

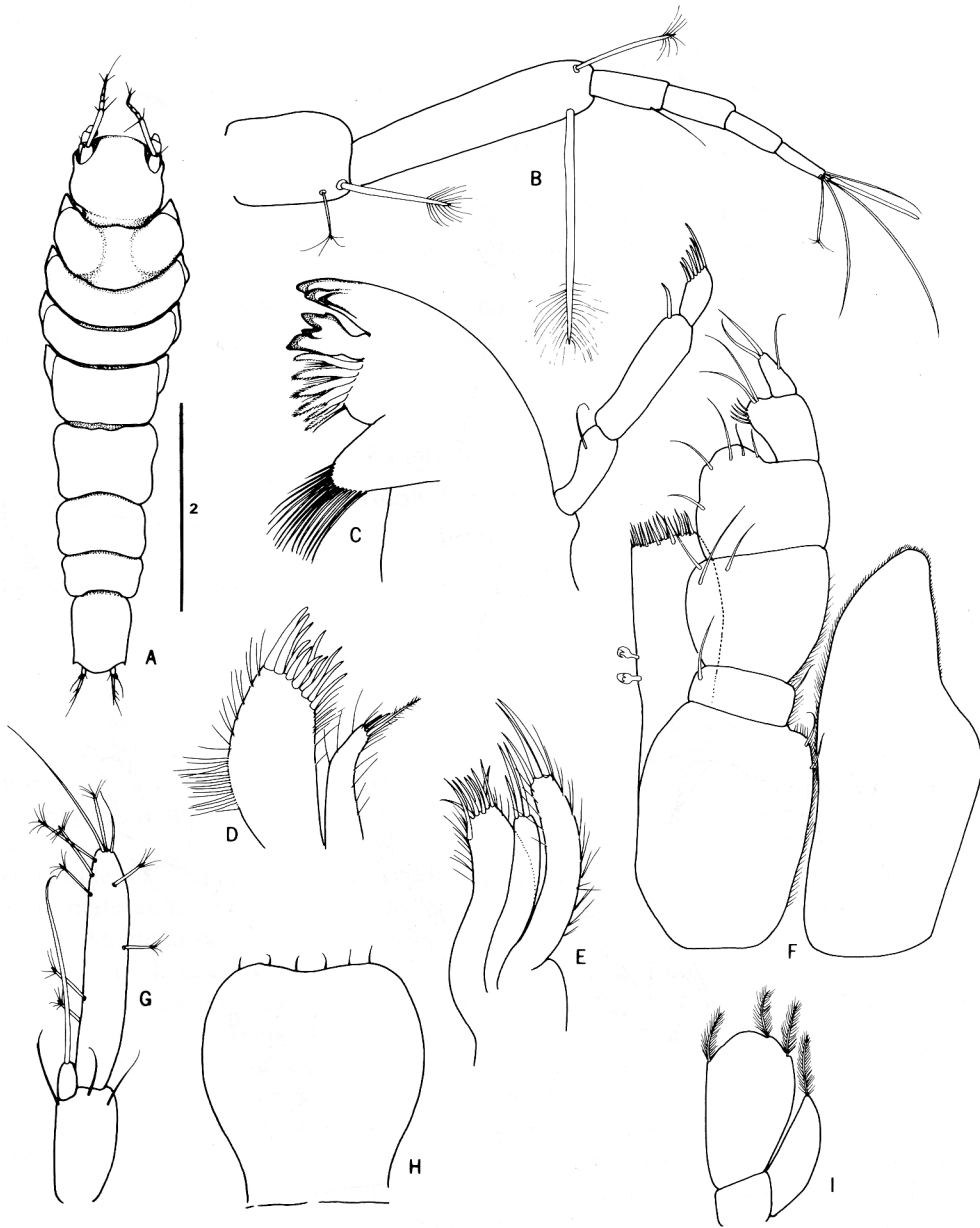


FIG. 1. — *Desmosoma longimana* (Vanhöffen, 1914) : A, habitus ; B, antenna 1 ; C, mandible ; D, maxilla 1 ; E, maxilla 2 ; F, maxilliped ; G, uropod ; H, ♀ operculum ; I, pleopod 3.



FIG. 2. — *Desmosoma longimana* (Vanhöffen, 1914) : A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, pereopod 6; G, pereopod 7.

REMARKS

Using HANSEN's key (1916) to the species of *Desmosoma*, one arrives at *D. laterale* G. O. SARS' a species recorded from the Davis Strait and the North Sea. SARS' species, however, lacks anteriorly acute coxae on pereonites 1-4, and possesses a uropodal exopod between one-third and one-half the length of the endopod. Using MENZIES' key (1962) to species of *Desmosoma*, one arrives at *D. longimanus* (Vanhöffen, 1914), a species recorded from 2735 meters at the Gauss Station just off the Antarctic continent. The only difference detected between VANHÖFFEN's description and figure and the present species is the presence of two setae on the posterior margin of the carpus of pereopod 1. These setae, however, could be overlooked if they were folded against the body of the article. The present subantarctic material is identified with the Antarctic *D. longimana* (5.4 mm total length) given the overall similarity in morphology and size.

Family JOEROPSIDAE

Joeropsis sanctipauli n. sp.

(Fig. 3)

MATERIAL. — Sta 24, holotype, MNHN Is. 2771, ♂ 2.0 mm; paratype, MNHN Is. 2772, ♀ 2.2 mm. — Sta 19, paratypes, USNM 211481, 2 ♂, 2.0 mm, 2.2 mm.

DESCRIPTION

Body about 3.5 times longer than wide, integument brittle. Cephalon with anterolateral angles subacute, rostrum evenly convex, eyes poorly pigmented. Pereon parallel-sided, pereonite 1 longest, with anterior region broadly convex dorsally. Pleon width subequal to median length, lateral margins with 5 or 6 teeth, posterior margin between uropodal bases convex.

Antennule of 8 articles, basal article equal in length to articles 2 and 3 together; antepenultimate and penultimate articles each with single aesthetascs, terminal article with 2 aesthetascs. Antennal peduncle of 5 articles, articles 4 and 5 relatively elongate; flagellum of 9 articles, basal article equal in length to rest of flagellum. Mandibular palp of 3 articles, article 2 longest, with 4 spines in distal half, article 3 with about 10 spines in distal half; incisor process of 5 cusps; spine row having 8 spines; molar slender, elongate, distally narrowly rounded. Maxilla 1, inner ramus with 3 slender terminal setae; outer ramus with 12 strongly dentate distal spines. Maxilla 2, inner ramus with 3 simple setae and several fine setules distally; both lobes of outer ramus bearing 4 elongate fringed setae. Maxillipedal endite broad, bearing 3 coupling hooks on mesial margin, distolateral margin weakly serrate, mesiodistally emarginate, with 4 stout flattened spines; palp of 5 articles, article 2 broadest and longest, with rounded mesiodistal lobe; article 3 also with mesiodistal lobe; article 4 elongate, slender; article 5 small, about one-sixth length of article 4; epipodite lanceolate. Pereopods similar, sparsely setose, with propodi and carpi elongate-cylindrical, dactylus with 2 terminal ungui. Operculum of female distally broadly rounded. Pleopod 1 of male, rami fused mesially for about three-fourths of length, laterodistal lobe triangular, acute, mesiodistal lobe broadly rounded and bearing about 10 marginal setae. Pleopod 2 in male with lateral margin of triangular protopod

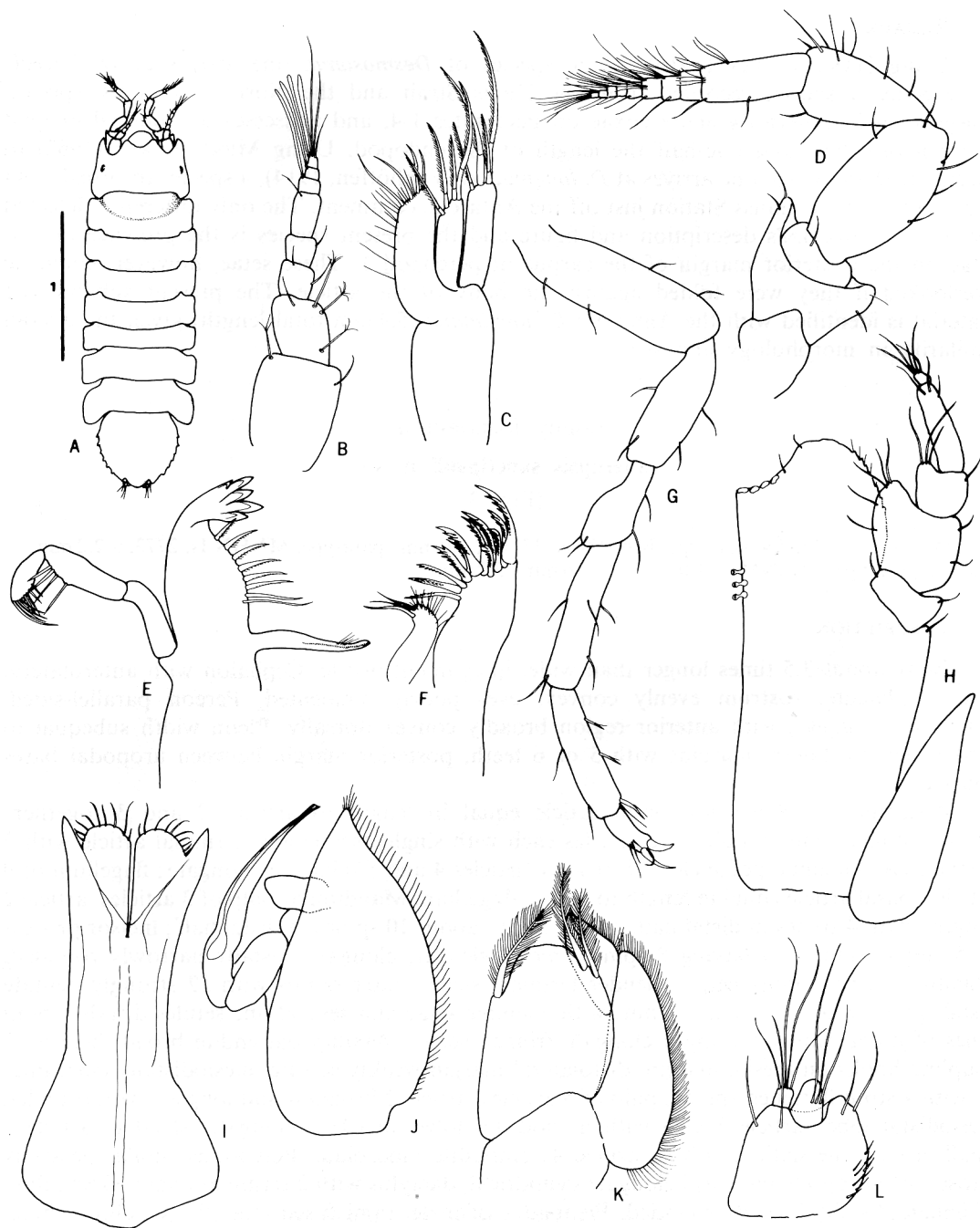


FIG. 3. — *Joeropsis sanctipauli* n. sp. : A, habitus; B, antenna 1; C, maxilla 2; D, antenna 2; E, mandible; F, maxilla 1; G, pereopod 1; H, maxilliped; I, ♂ pleopod 1; J, ♂ pleopod 2; K, ♂ pleopod 3; L, uropod.

setose; exopod a short blunt lobe : endopod with distal article produced, tapering, reaching level of protopod apex. Pleopod 3 with broad endopod bearing one plumose seta mesiodistally, 2 plumose setae laterodistally; exopod of 2 articles, distal article distally narrowed, articulating obliquely, lateral margins of both articles setose. Uropodal protopod lacking hook or spine, exopod about half length and width of endopod, both rami bearing elongate setae.

DEPTH DISTRIBUTION. — 160-165 m.

ETYMOLOGY. — The specific name is derived from the type locality, St. Paul Island.

REMARKS

Of the seven species of *Joeropsis* recorded from the southern or south-western Indian Ocean (see KENSLEY, 1975, 1984), only *J. waltervadi* Kensley, 1975, shows the combination of a pleon having dentate margins and a uropod lacking a protopodal spine or hook, as seen in the present species. These two species can be separated on several features : *J. waltervadi* has well pigmented eyes, a robust basal flagellar article of the antenna, the rostrum anteriorly slightly concave, the pleon wider than long, the mesiodistal lobe of pleopod 1 in the male acute-triangular, the distal article of the exopod of pleopod 3 relatively slender; *J. sanctipauli* has weakly pigmented eyes, a slender more cylindrical basal flagellar article of the antenna, an evenly convex rostrum, a pleon as wide as long, a broadly rounded mesiodistal lobe of pleopod 1 in the male, and a relatively broad distal article of the exopod of pleopod 3.

Suborder FLABELLIFERA

Family CIROLANIDAE

Metacirolana arnaudi n. sp.

(Figs. 4-5)

MATERIAL. — TYPES : Sta 33, holotype MNHN Is. 2773, ♂ 3.5 mm. — Sta 13, paratypes, MNHN Is. 2774, ♀ 5.6 mm, 1 juvenile. — Sta 19, paratypes, MNHN Is. 2777, 6 ♂ 3.0-3.1 mm, 3 ovigerous ♀ 3.3-3.8 mm, 42 juveniles. — Sta 35, paratypes, MNHN Is. 2778, 3 ovigerous ♀ 3.5 mm, 3.5 mm, 3.9 mm, 4 juveniles. — Sta 2, paratypes, USNM 211484, ovigerous ♀, 5.7 mm, 1 juvenile. — Sta 15, paratypes, USNM 211483, 2 ♂ 3.5-3.6 mm, 1 juvenile. — Sta 24, paratypes, USNM 211482, 3 ♂ 2.5 mm, 2.5 mm, 2.9 mm, 4 ovigerous ♀ 3.0 mm, 3.0 mm, 3.1 mm, 3.1 mm, 11 juveniles.

OTHER MATERIAL. — Sta 11, MNHN Is. 2779, 2 specimens. — Sta 12, MNHN Is. 2780, 1 specimen. — Sta 18, MNHN Is. 2781, 2 specimens. — Sta 22, MNHN Is. 2782, 5 specimens. — Sta 32, MNHN Is. 2783, 2 specimens. — Sta 33, MNHN Is. 2784, 2 specimens. — Sta 34, MNHN Is. 2785, 1 specimen. — Sta 36, MNHN 2786, 2 specimens.

DESCRIPTION

Male : body about 2.6 times longer than wide, widest at pereonites 5 and 6; most of dorsal integument bearing irregular mottling of red-brown pigmentation. Cephalon with

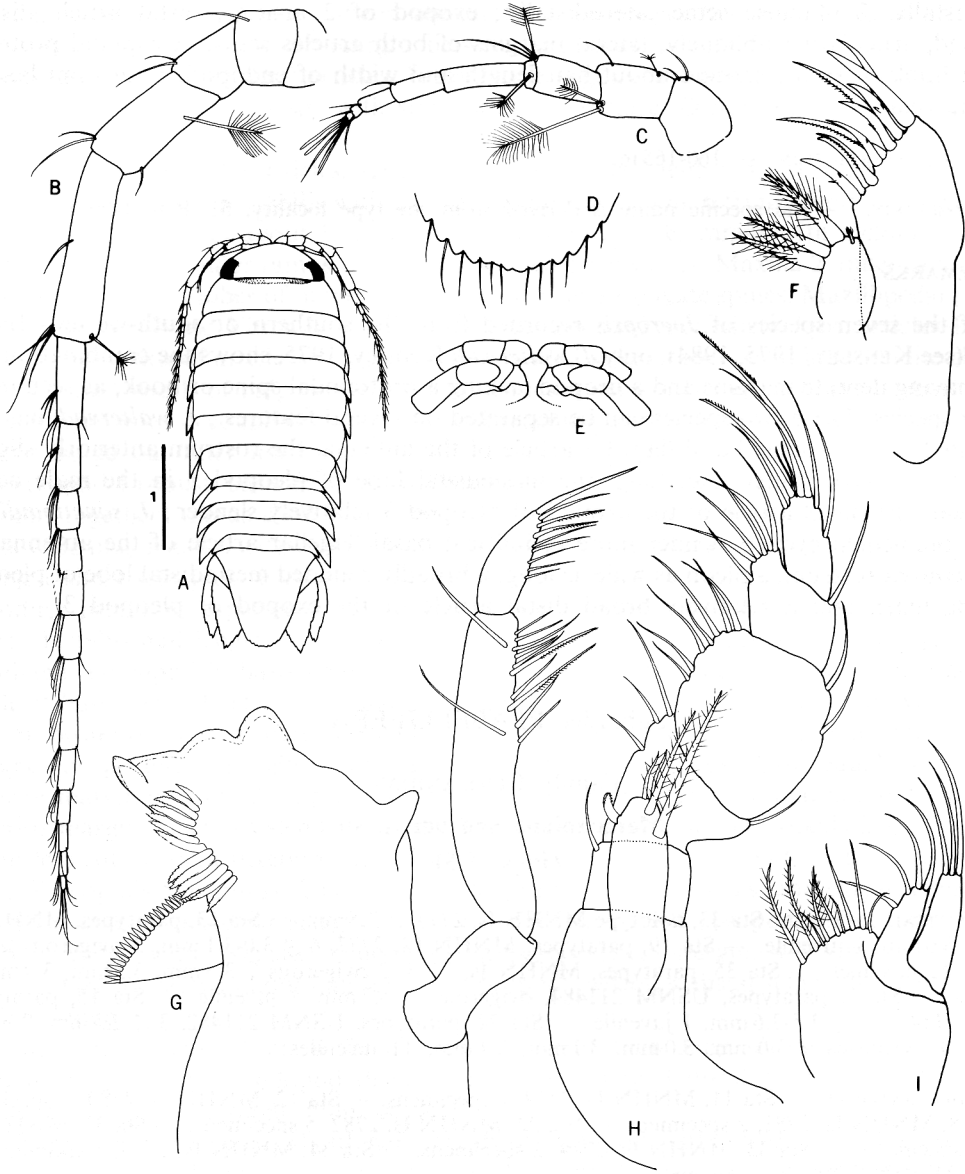


FIG. 4. — *Metacirolana arnaudi* n. sp. : A, habitus; B, antenna 2; C, antenna 1; D, posterior margin of pleotelson; E, frontal lamina and antennal and antennular bases; F, maxilla 1; G, mandible; H, maxilliped; I, maxilla 2.

frontal lamina widening anteriorly, about 1.5 times longer than greatest width; clypeus projecting anteroventrally. Eyes well developed, strongly pigmented.

Antennular peduncle of 3 articles subequal in length; flagellum of 6 articles, few aesthetascs on terminal article. Antennal peduncle of 5 articles, 3 proximal articles short, articles 4 and 5 more elongate; flagellum of about 13 setose articles, reaching posteriorly to

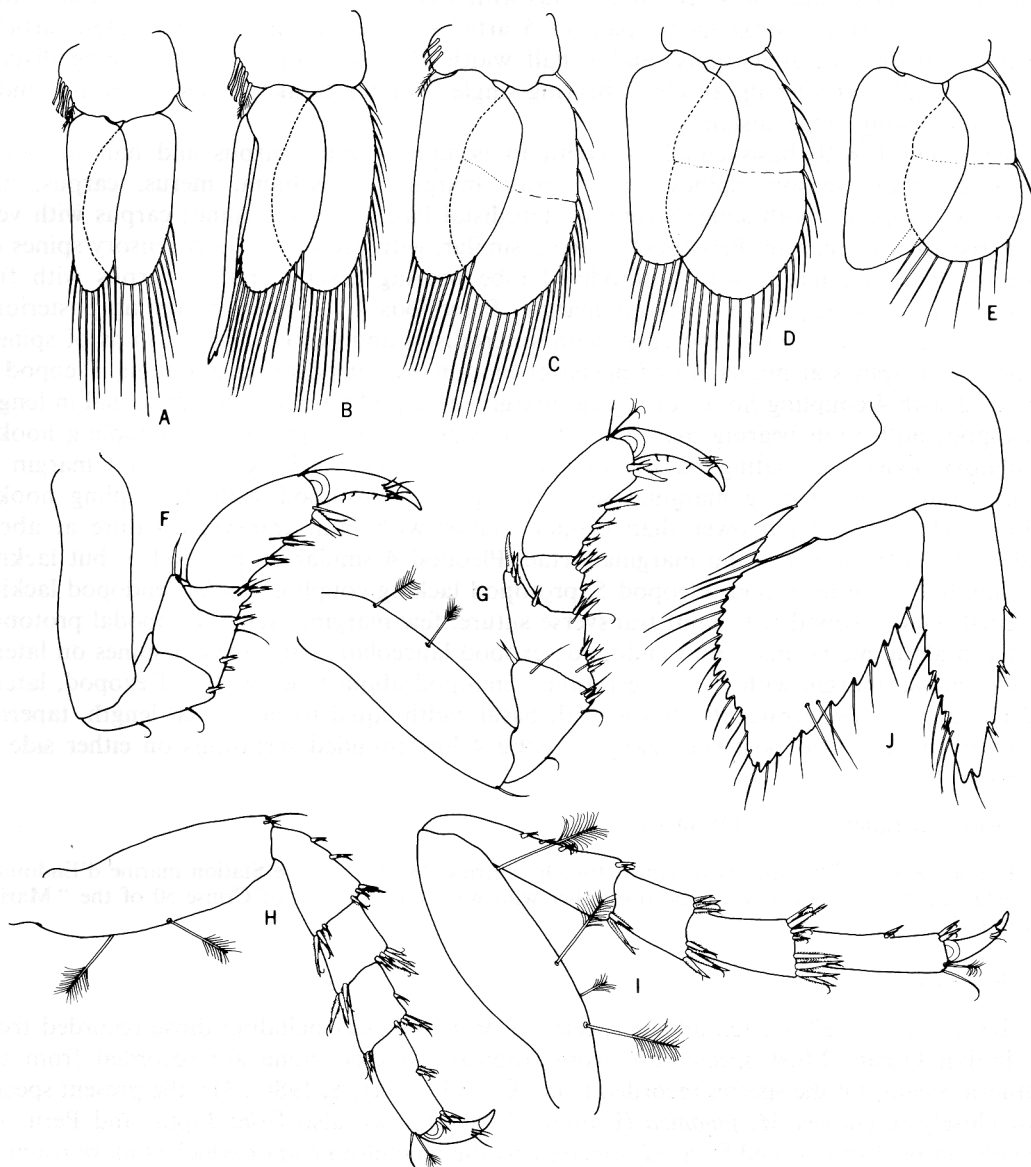


FIG. 5. — *Metacirolana arnaudi* n. sp. : A, pleopod 1; B, ♂ pleopod 2; C, pleopod 3; D, pleopod 4; E, pleopod 5; F, pereopod 1; G, pereopod 2; H, pereopod 4; I, pereopod 7; J, uropod.

level of pereonite 5. Mandibular palp of 3 articles, article 2 about 2.2 times article 1 in length, with 10 spines and 2 elongate setae distally; article 3 0.3 times article 2 in length, with 9 distal spines; incisor process with 3 sclerotized cusps; spine row having about 13 spines; molar thin-walled, triangular, with row of spines on upper margin. Maxilla 1, inner ramus with 3 stout terminal fringed setae; outer having 10 variously fringed or spinulose spines. Maxilla 2, inner ramus with 9 setae; inner lobe of outer ramus with 4 elongate distal spines, outer lobe with 3 elongate distal spines. Maxillipedal palp of 5 articles, article 3 longest and widest, articles bearing setae on mesial margins; endite half width of basal palp article, reaching distally almost to midlength of palp article 2, bearing single coupling hook on mesial margin, and 2 short and 2 long setae distally.

Pereopod 1 with basis equal in length to ischium, merus, carpus and half propodus combined; short sensory spines on posterior margins of ischium, merus, carpus, and propodus; propodus with single strong posterodistal basally serrate spine; carpus with very short free anterior margin. Pereopods 2 and 3 similar, with groups of short sensory spines on posterior margins; merus with anterodistal lobe bearing several spines; carpus with free anterior margin subequal to posterior margin. Pereopods 4-7 similar, becoming posteriorly more elongate; ischia, meri, and carpi with anterodistal and posterodistal clumps of spines; propodi with spines at midlength of posterior margin and at posterodistal angle. Pleopod 1, protopod with 4 coupling hooks on mesial margin, endopod narrower but subequal in length to exopod, both rami bearing marginal setae. Pleopod 2, protopod with 4 coupling hooks; copulatory stylet articulating basally on endopod, reaching well beyond distal margin of ramus; both rami bearing marginal setae. Pleopod 3, protopod with 3 coupling hooks; endopod shorter and narrower than exopod; latter with faint transverse suture at about midlength; both rami bearing marginal setae. Pleopod 4 similar to pleopod 3, but lacking coupling hooks on protopod. Pleopod 5, protopod lacking coupling hooks; endopod lacking marginal setae; exopod with faint transverse suture, few marginal setae. Uropodal protopod produced along mesial margin of endopod; exopod lanceolate, with 3 small spines on lateral margin, mesial margin with 5 or 6 serrations; endopod about twice width of exopod, lateral and mesial margins serrate. Pleotelson with basal width equal to middorsal length, tapering posteriorly to rounded posterior margin having 4 low rounded serrations on either side of midpoint.

DEPTH DISTRIBUTION. — 135-1430 m.

ETYMOLOGY. — This species is named for Dr. Patrick ARNAUD of the Station marine d'Endoume, Marseille, France, esteemed Antarctic researcher who was chief scientist of Cruise 50 of the "Marion Dufresne".

REMARKS

BRUCE (1986 : 222) listed all the species of *Metacirolana*, including those recorded from the Indian Ocean. Most species are from tropical habitats; none are recorded from the southern oceans. Of the species recorded from Australia (BRUCE, 1986 : 31), the present species most closely resembles *M. japonica* (Hansen, 1890), known also from Japan and Peru. *M. arnaudi* can be distinguished from *M. japonica* by the pleotelsonic apex which is more rounded and with fewer serrations, fewer spines on the mandibular palp, and a more elongate uropodal endopod.

BATHYLANA n. gen.

DIAGNOSIS. — Eyes lacking. Antennular flagellum of few articles. Mandibular palp lacking. Maxillipedal endite lacking coupling hooks. Pereopods 1-3 prehensile, 4-7 ambulatory. Pleonite 4 overlapping pleonite 5 laterally. Pleopod 2 in male with copulatory stylet articulating basally on endopod. Pleopods 3 and 4 both rami bearing marginal setae. Uropodal protopod produced along mesial margin of endopod.

TYPE-SPECIES. — By present designation, *Bathylana apalpalis*, new species.

ETYMOLOGY — The generic name is a combination of 'bathy', meaning deep, and the suffix 'lana' frequently used in the Cirolanidae. The gender is feminine.

REMARKS

The absence of a mandibular palp in this species immediately separates it from any previously described cirolanid. Apart from the distinctive mandible, the species would fit the diagnosis of *Cirolana* (see BRUCE, 1986 : 139), were it not for the lack of coupling hooks on the maxillipedal endite.

Bathylana apalpalis n. sp.

(Figs. 6-8)

MATERIAL. — Sta 29, holotype, MNHN Is. 2775, ♂ 3.5 mm; paratype, MNHN Is. 2776, ♀ 3.8 mm. — Sta 13, paratype, USNM 211485, ovigerous ♀ 4.1 mm. — Sta 29, paratype, USNM 211486, ♂ 3.5 mm.

DESCRIPTION

Male : Body about 2.5 times longer than wide, widest at pereonite 6; dorsally smooth, unornamented. Cephalon lacking eyes; frontal lamina as wide as long, very thin and flat, not projecting from ventral surface, anteriorly bluntly trilobed, barely separating antennular bases, posterior suture poorly demarked, widely separated from clypeus. Pereonites 2-7 with transverse impressed line just behind anterior margin. Pleonites 1 and 2 lacking free lateral margins; pleonite 5 laterally overlapped by 4, almost completely lacking free lateral margin. Pleotelson basally considerably broader than long, posterior margin broadly convex, with 4 small serrulations on either side of midpoint.

Antennular peduncle of 3 articles, article 3 longest and narrowest; flagellum of short basal article plus elongate distal article perhaps consisting of 2 fused articles, with single aesthetasc at midlength and one distally. Antennal peduncle of 5 articles, 3 proximal articles short, together equal length to article 4, article 5 longer than article 4; flagellum of 9 setose articles, reaching posteriorly to posterior margin of pereonite 3. Mandible lacking palp; incisor process of 3 sclerotized cusps; lacinia mobilis apparently not differentiated; spine row of 8 serrate spines; molar triangular, with row of about 10 spines along upper margin. Maxilla 1, inner ramus bearing 3 stout distal fringed spines; outer ramus with 11 strong distal spines, some of

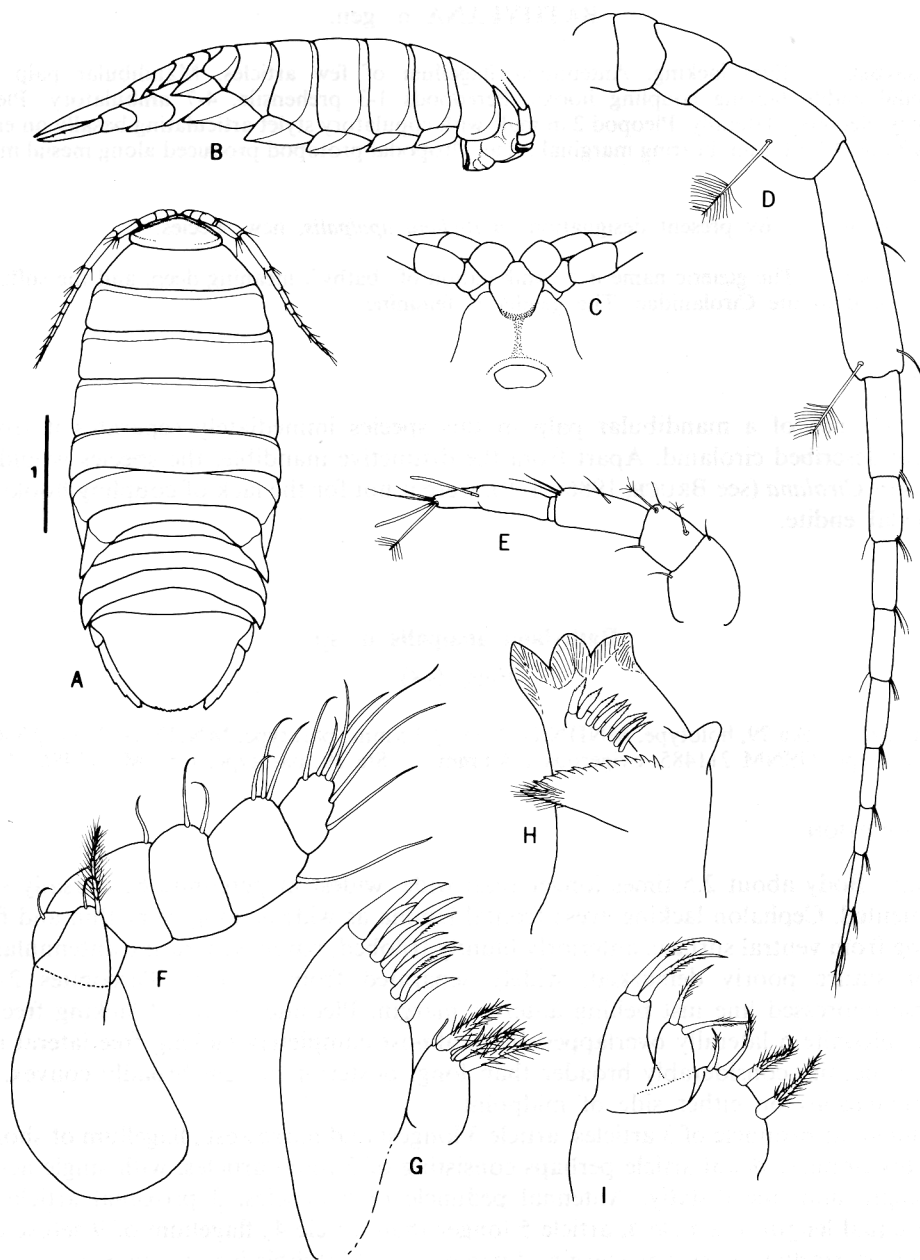


FIG. 6. — *Bathylana apalpalis* n. sp. : A, habitus, dorsal view ; B, habitus, lateral view ; C, frontal lamina, clypeus, and antennal and antennular bases ; D, antenna 2 ; E, antenna 1 ; F, maxilliped ; G, maxilla 1 ; H, mandible ; I, maxilla 2.

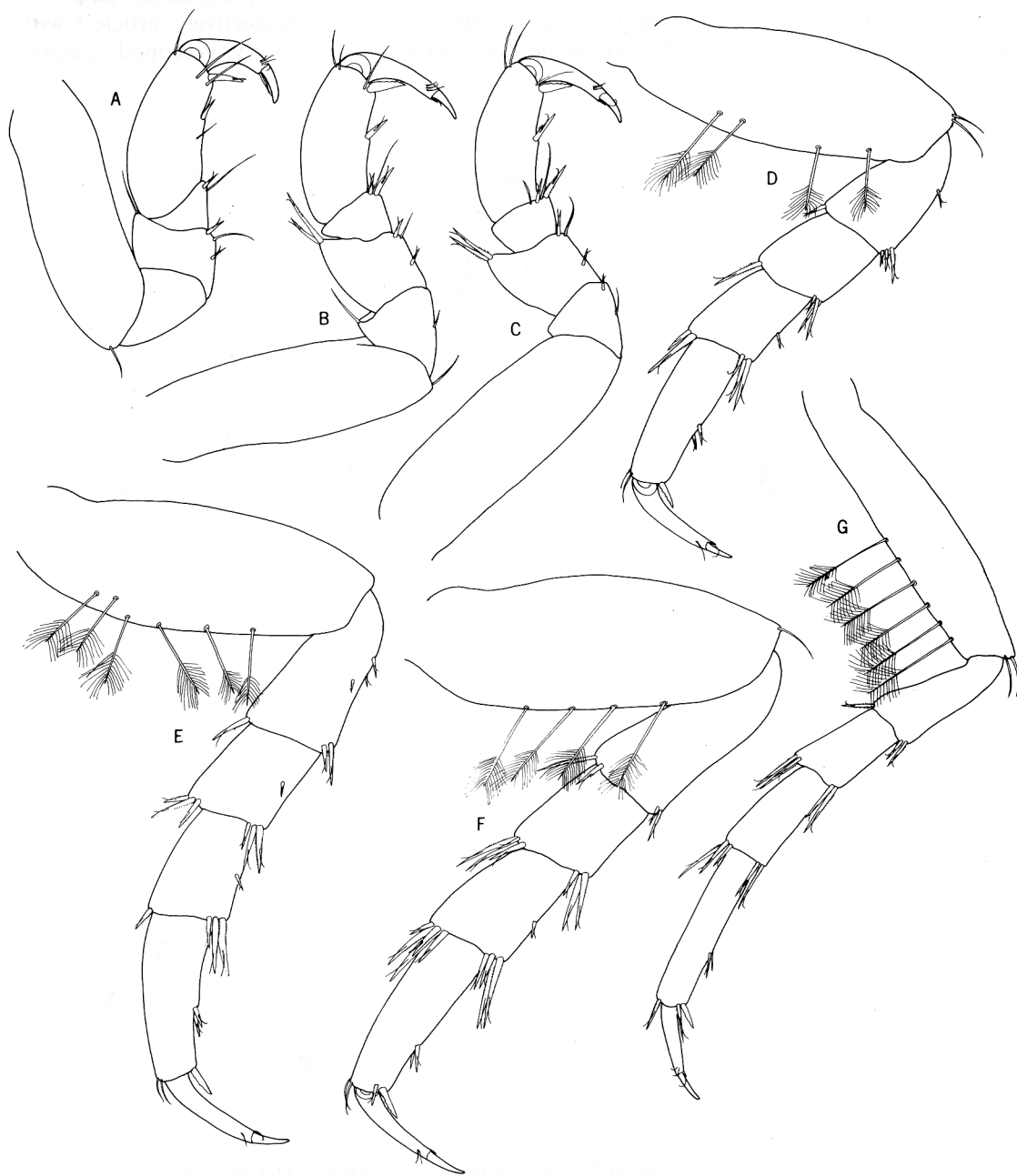


FIG. 7. — *Bathylana apalpalis* n. sp.: A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, pereopod 6; G, pereopod 7.

which serrate. Maxilla 2, inner ramus mesially convex, bearing 4 fringed setae; lobes of outer ramus each bearing 2 distal fringed spines. Maxillipedal endite short, reaching distally to base of article 2, bearing single fringed, and single simple seta, lacking coupling hook; palp of 5 articles, 2-4 of similar width, bearing 1, 2, and 3 mesiodistal setae respectively, article 5 with several distal and lateral setae. Pereopods increasing in length posteriorly. Pereopod 1, merus

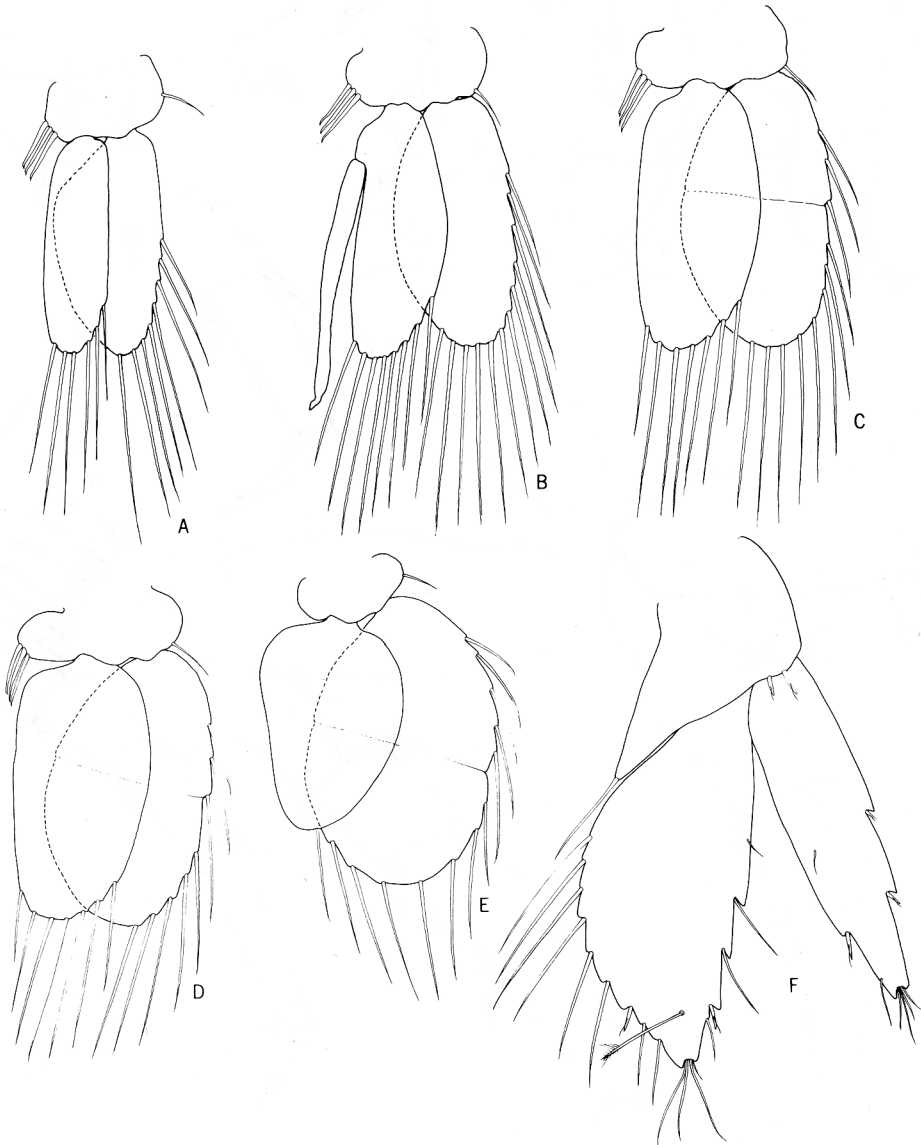


FIG. 8. — *Bathylana apalpalis* n. sp.: A, pleopod 1; B, ♂ pleopod 2; C, pleopod 3; D, pleopod 4; E, pleopod 5; F, uropod.

with 2 sensory spines on posterior margin; carpus short, lacking free anterior margin, with single posterodistal sensory spine; propodus slightly curved, with sensory spine slightly distal to midlength of posterior margin, and stronger sensory spine posterodistally; dactylus curved, unguis about half length of remainder of dactylus. Pereopods 2 and 3 similar, meri bearing 2 sensory spines on posterior margin and 2 elongate spines anterodistally; carpi with anterior margin free, increasing in length, with 2 posterodistal spines; propodi with spine at midlength of posterior margin and strong barbed posterodistal spine; dactyli less curved than in pereopod 1. Pereopods 4-6 robust, with clusters of spines at anterodistal and posterodistal corners of ischia, meri, carpi; propodi becoming more slender, with 2 small spines at midlength of posterior margin, strong weakly barbed spine posterodistally. Pereopod 7 more slender than pereopod 6, but of similar structure. Penes on ventrum of pereonite 7 very short lobes. Pleopod 1, protopod with 3 mesial coupling hooks; rami of equal length, both with distal plumose marginal setae, endopod about half width of exopod. Pleopod 2, protopod bearing 3 mesial coupling hooks; copulatory stylet articulating at base of endopod, reaching distally well beyond ramus. Pleopods 3 and 4 similar, protopods with 3 mesial coupling hooks; exopods with faint transverse suture; both rami bearing marginal plumose setae. Pleopod 5, protopod lacking coupling hooks; endopod lacking marginal setae, much shorter and narrower than exopod; latter broadly oval, with transverse suture and marginal plumose setae. Uropodal protopod produced along mesial margin of endopod; exopod slender, with 2 or 3 notches along lateral margin, distally bifid, mesial margin with single notch; endopod twice width of exopod; both margins serrate.

Female : Similar to male, except for slightly smaller eyes, and lack of penes and copulatory stylet.

DEPTH DISTRIBUTION. — 1200-1340 m.

ETYMOLOGY. — The specific name refers to the lack of a palp on the mandible.

DISCUSSION

While the isopod fauna of much of the subantarctic Indian Ocean is imperfectly known, reports over the last few years have slowly added to the overall knowledge of the area. KENSLEY (1976) recorded 34 species from shallow water of the St. Paul and Amsterdam region. The present collection, made in depths ranging from 50-2200 m, contains 19 species, of which only 13 could be identified to species level. Of these 13 species, ten were taken in depths of less than 200 m. These include *Dynamenella dioxus*, *Janira capensis*, *Janiropsis palpalis*, *Stenetrium crassimanus*, *Joeropsis beuroisi*, *Santia hofsteni*, *Panathura amstelodami*, *Uromunna nana*, all of which were recorded in the earlier report (KENSLEY, 1976), plus two previously undescribed species, *Joeropsis sanctipauli* and *Metacirolana arnaudi*. The presence of the first four species reaffirms a previously noted affinity with the cold-temperate southern African fauna. The depth distribution for three species is extended: *Janiropsis palpalis* 40-975 m, *Joeropsis beuroisi* 25-465 m, and *Uromunna nana* 50-420 m. The new species, *Metacirolana arnaudi* shows a remarkable depth distribution, from 135-1430 m, which might be a reflection both of the species' habitat tolerance as well as the relatively stable oceanic conditions.

Of the species taken exclusively in depths below 200 m, the majority are asellotes, of which only *Desmosoma longimana* was in sufficiently good condition to be identified. This species perhaps indicates a not surprising Antarctic element in the fauna. Of the two cirrolanid species from below 200 m, the presence of *Natatolana anophthalma*, previously recorded from the region of Kerguelan Island, confirms a subantarctic element in the deepwater fauna.

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BIBLIOGRAPHIC REFERENCES

- BARNARD, K. H., 1914. — Contributions to the Crustacean Fauna of South Africa. 3. Additions to the marine Isopoda, with notes on some previously incompletely known species. *Ann. S. Afr. Mus.*, **10** (11) : 325a-442.
- BRUCE, N. L., 1986. — Cirrolanidae (Crustacea : Isopoda) of Australia. *Rec. Aust. Mus.*, suppl. **6** : 1-239.
- CARVACHO, A., 1977. — Sur une importante collection d'Isopodes des îles Kerguelen. *CNFRA*, **42** : 173-191.
- HANSEN, H. J., 1916. — Crustacea Malacostraca. III. V. The Order Isopoda. *Dan. Ingolf-Exped.*, **3** (5) : 1-262.
- KENSLEY, B., 1975. — Five species of *Jaeropsis* from the southern Indian Ocean (Crustacea, Isopoda, Asellota). *Ann. S. Afr. Mus.*, **67** (10) : 367-380.
- 1976. — Isopodan and tanaidacean Crustacea from the St. Paul and Amsterdam Islands, southern Indian Ocean. *Ann. S. Afr. Mus.*, **69** (11) : 261-323.
- 1980. — Marine isopods from Marion, Prince Edward, and Crozet islands (Crustacea, Isopoda). *Ann. S. Afr. Mus.*, **82** (5) : 155-185.
- KUSSAKIN, O. G., and G. S. VASINA, 1982a. — Addition to the fauna of benthic Isopoda and Gnathiida (Crustacea) of Subantarctic waters of the Indian Ocean 1. Isopoda (Flabellifera and Anthuridea). *Téthys*, **10** (3) : 261-273.
- KUSSAKIN, O. G., and G. S. VASINA, 1982b. — Additions to the fauna of benthic Isopoda and Gnathiida (Crustacea) of Subantarctic waters of the Indian Ocean 2. Isopoda (Valvifera and Asellota) and Gnathiida. *Téthys*, **10** (4) : 315-336.
- MENZIES, R. J., 1962. — The isopods of abyssal depths in the Atlantic Ocean. *Vema Res. Ser.*, **1** : 79-206.
- NORDENSTAM, A., 1933. — Marine Isopoda of the families Serolidae, Idotheidae, Pseudidotheidae, Arcturidae, Parasellidae and Stenetriidae mainly from the South Atlantic. *Further zool. Results Swed. Antarct. Exped., 1901-1903*, **3** (1) : 1-284.
- VANHÖFFEN, E., 1914. — Die Isopoden der Deutschen Südpolar-Expedition 1901-1903. *Dt. Südpol.-Exped.*, **15** : 447-598.
- WOLFF, T., 1962. — The systematics and biology of bathyal and abyssal Isopoda Asellota. *Galathea Rep.*, **6** : 1-320.