

Crustacea Isopoda : Some Cirolanidae from the MUSORSTOM cruises off New Caledonia

Niel L. BRUCE

Zoologisk Museum, University of Copenhagen
Universitetsparken 15, DK 2100, Copenhagen Ø
Denmark

ABSTRACT

Two new genera and four new species of Cirolanidae are reported from deep water (c. 440-2,050 m) off New Caledonia. These are *Scutulana pezata*, gen. nov., sp. nov., *Sintorolana atrox* gen. nov., sp. nov., *Metacirolana neocaledonica* sp. nov. and *Politolana crosnieri* sp. nov. *Scutulana* is distinguished by the unique pleonal morphology which has pleonites 4 and 5 laterally reduced but not overlapped by pleonite 3, morphology of the frontal lamina, by several mouthpart characters and by pereopod 1 having a setal brush on the dactylus. *Sintorolana* is closely related to *Natatolana*, and is distinguished from that genus and the other cirolanid genera by the expanded propodus of the anterior pereopods which are also heavily armed with spines and the elongate haptorial dactylus which extends to the merus. *Metacirolana neocaledonica* is closely allied to *M. fornicata* Mezhov, 1981, from which it is distinguished by the ornamentation of the pleotelson. These two species are separated from all others in the genus by the frontal lamina having an acute anteromedial point. *Politolana crosnieri* sp. nov., the second record of the genus from beyond Atlantic waters, differs from other species of the genus in having a longer uropodal exopod, a pentagonal frontal lamina, and in the proportions of the antennule peduncle articles.

RÉSUMÉ

Crustacea Isopoda : Sur quelques Cirolanidae récoltés lors des campagnes MUSORSTOM au large de la Nouvelle-Calédonie.

Deux genres et quatre espèces nouveaux de Cirolanidae sont décrits des eaux profondes (440-2.050 m) de la Nouvelle-Calédonie. Ce sont : *Scutulana pezata* gen. nov., sp. nov., *Sintorolana atrox* gen. nov., sp. nov., *Metacirolana neocaledonica* sp. nov. et *Politolana crosnieri* sp. nov. *Scutulana* se distingue par la segmentation unique du pléon qui présente des pléonites 4 et 5 réduits latéralement et non recouverts par le pléonite 3, par la morphologie de la lamina frontale, par plusieurs caractères des pièces buccales et par la présence d'une brosse de soies sur le dactyle des premiers périéopodes. *Sintorolana* est très proche de *Natatolana* et se distingue de ce genre et des autres genres de Cirolanidae par le

BRUCE, N. L., 1996. — Crustacea Isopoda : Some Cirolanidae from the MUSORSTOM cruises off New Caledonia. In : A. CROSNIER (ed.), Résultats des Campagnes MUSORSTOM, Volume 15. *Mém. Mus. natn. Hist. nat.*, **168** : 147-166. Paris ISBN 2-85653-501-1.

propode dilaté des péréiopodes antérieurs qui sont également fortement armés d'épines et par le dactyle ravisseur qui s'étend jusqu'au mérus. *Metacirolana neocaledonica* est très proche de *M. fornicata* Mezhov, 1981, dont il se distingue par l'ornementation du pléotelson. Ces deux espèces se distinguent de toutes les autres espèces du genre par la lamina frontale qui présente une pointe antéromédiane aiguë. *Politolana crosnieri* sp. nov., la seconde mention du genre en dehors de l'Atlantique, diffère des autres espèces du genre par des uropodes dont l'exopode est plus long, une lamina frontale pentagonale et les articles du pédoncule antennulaire dont les proportions sont différentes.

INTRODUCTION

The family Cirolanidae has now received substantial recent attention in Australia (BRUCE, 1986, 1991, 1992, 1994; BRUCE & HUMPHREYS, 1993) while, in contrast, other South and southwestern Pacific regions have received, at best, erratic attention, with publications generally recording new species, sometimes describing new genera (e.g. BRUCE 1982, 1993, 1995 in press, on Papua New Guinea; MÜLLER, 1993, on French Polynesia; STEBBING, 1900). Most of these records, other than those dealing with the Australian cirolanids, document shallow water taxa. There exist few publications dealing specifically with the marine isopod fauna of New Caledonia, those being two papers by MONOD (1971, 1973) recording two species of marine cirolanid from the region [*Bathynomus propinquus* Richardson, 1910, and *Hansenolana anisopous* (Stebbing, 1900)].

The material described here is drawn from the collections obtained by the MUSORSTOM expeditions to New Caledonia, and this paper reports only on the new genera and species of special significance in terms of new distributional or character information. The remaining deep-water collections contain several cirolanid species, most if not all of which are undescribed. The genera *Cirolana*, *Natatolana* and *Metacirolana* are represented, as well species of other related flabelliferan families: Aegidae, Corallanidae and Sphaeromatidae. The shallow water and coral reef isopods of New Caledonia have yet to be documented.

MATERIAL AND METHODS. — All appendages were dissected from the right hand side of the specimen unless otherwise stated.

Abbreviations used: CPS- circumplumose setae; SMS- simple marginal setae; PMS- plumose marginal setae; MNHN- Muséum national d'Histoire naturelle, Paris.

Due to the limited number of specimens available, the descriptions given here are brief compared to those usually given.

All material is deposited at the Muséum national d'Histoire naturelle, Paris.

TAXONOMIC ACCOUNT

Order ISOPODA Latreille

Suborder FLABELLIFERA Sars, 1882

Family CIROLANIDAE Dana, 1852

Genus *SCUTULANA* nov.

TYPE SPECIES: *Scutulana pezata* sp. nov, by present designation.

DIAGNOSIS. — Body smooth, unornamented, without chromatophores or pigment; about twice as long as wide, markedly ovate in dorsal view. Eyes absent. Coxae of pereonite 7 extending beyond posterior of pleon. Pleonites 1 and 2 prominent, wider than pleotelson, pleonite 2 widest, with epimera visible in dorsal view; pleonites 3-5 narrow, not extending to lateral margin of pleotelson, pleonites 4 and 5 subequal in width, narrower than, but not laterally overlapped by, pleonite 3, about 63% width of pleotelson. Pleotelson unarmed, without PMS or spines.

Frontal lamina regularly rhomboid in shape, ventrally flat, posteriorly with narrow stem to clypeus; clypeus and labrum both ventrally flat. Antennule peduncle article 1 shortest, articles 2 and 3 about subequal in length; flagellum shorter than peduncle. Antenna peduncle article 1 shortest, articles 2 and 3 subequal in length and shorter than articles 4 and 5 which are longest and also subequal in length; flagellum shorter than peduncle.

Mandible incisor narrow, spine row absent; molar process reduced in size, without spinose anterior margin; palp 3-articled. Maxillule lateral lobe with 8 mostly simple spines; medial lobe without spines. Maxilla with 3 lobes: lateral lobe large and laminar; middle lobe with spines and medial lobe with spines along medial margin. Maxilliped endite small, simple, without coupling hooks or CPS; palp with 5 articles, article 5 small, about 20% length of article 4; article 3 with lateral margin a thin blade; article 2 with prominent CPS at distolateral angle; medial margins with elongate and short weakly serrate spines.

Pereopod 1 slender, with few setae or spines; dactylus with distinct unguis and prominent secondary unguis, both surrounded by 2 prominently pectinate spines which extend distally beyond dactylus, and 2 stout simple setae; carpus as wide as adjacent articles; anterodistal angles of ischium and merus not produced. Pereopod 2 similar to but more robust than 1, with short acute spines on posterior margins of ischium, merus and carpus. Pereopods 5-7 basis not flattened or expanded, without plumose setae; ischium to merus not flattened or distally expanded; articles with few setae, lightly spined, with clusters of spines at distal extremities of ischium to propodus.

Pleopod 1 exopod thickened, not indurate; endopod about 34% as wide as exopod; exopod widest at distal third. Pleopod 2 of similar proportions to pleopod 1. Pleopods 3-5 exopods with entire transverse suture, endopods 3-5 distinctly smaller than exopods, distal margins with PMS; pleopod 5 endopod without distinct proximomedial lobe. Peduncles of pleopods 1-4 with coupling hooks, pleopod 5 without. Uropod with exopod articulating at anterolateral angle of protopod, overlapping only slightly with endopod.

REMARKS. — This genus is readily separated from all other cirolanid genera by the unique pleon morphology, frontal lamina structure, ornamentation of pereopod 1 dactylus, unique structure of the maxilla and maxillipedal palp, and the anteriorly positioned articulation of the uropodal exopod. The body shape in the preserved specimens presents a limpet-like discoidal appearance.

It is not possible to postulate relationships with other genera at present. This taxon does not exhibit any character states that would unambiguously place it in any of the recognised generic groups. Informally, the pereopodal, antennular and pleopod morphology would place it within the subfamily Cirolaninae, sensu KENSLEY and SCHOTTE (1989).

ETYMOLOGY. — The generic name is derived from the Latin word *scutula* (a little flat dish) combined with the ending *-lana* to indicate the family affinity.

Scutulana pezata sp. nov.

Figs 1-3

MATERIAL EXAMINED. — **New Caledonia**. BIOCAL: stn DW 44, 22°47.30'S, 167°14.30'E, 440 m, 30 Aug 1982: *Holotype*, 1 non-ovig. ♀ (3.6 mm) (MNHN-Is 3070). *Paratype*, 1 manca (2.4 mm) (MNHN-Is 3071).

DESCRIPTION. — Body about 1.6 times as long as greatest width; maximum width at pereonite 5. Cephalon with transverse suture at mid-length, and submarginal suture running between anterolateral angles of cephalon; 1 low and obscure tubercle present towards posterior mid-line. Pereonites without ridges, sutures or other ornamentation; coxae all without carina, posterolateral angles smoothly rounded.

Maxillule with 8 spines on lateral lobe. Maxilla middle and medial lobe with 2 and 5 weakly plumose spines respectively. Maxilliped palp articles 2-5 medial margins with 3, 6, 5 (2 short, 3 long) and 5 long stout setae respectively; endite with single short terminal spine and slender seta.

Pleopod 1 exopod with 27 PMS and 5 submarginal dorsal PS; endopod rectilinear, with 9 PMS. Pleopod 2 exopod and endopod with 28 and 6 PMS respectively. Pleopods 3-5 endopods each with 3 PMS. Pleopods 3-5 exopods with 31, 28 and 29 PMS respectively. Uropod exopod about 46% as long as endopod.

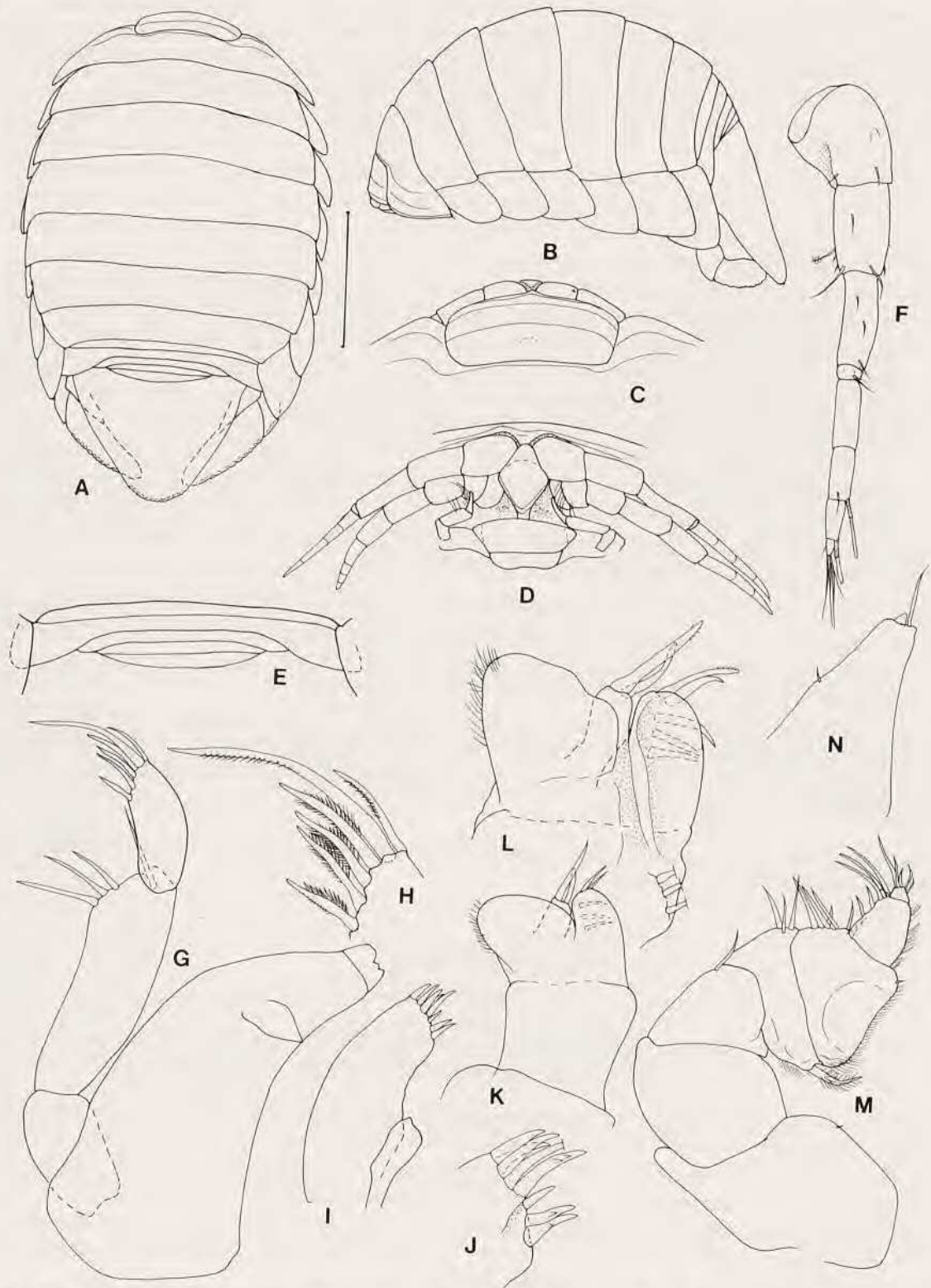


FIG. 1. — *Scutulana pezata* sp. nov. A-E, holotype, F-N, paratype. A, dorsal view; B, lateral view; C, cephalon, dorsal view; D, frons; E, detail, pleonal somites; F, antennule; G, right mandible; H, distal margins, mandibular palp article 3; I, maxillule; J, maxillule exopod, detail; K, maxilla; L, maxilla, distal articles, detail; M, maxilliped; N, maxilliped endite. A, B, scale 1.0 mm.

REMARKS. — Adult males and females (i.e. either ovigerous, or with developed penes and appendix masculina) were not available.

ETYMOLOGY. — The species name is derived from the combination of the Greek words *peza* (foot) and *seta* (bristle), and alludes to the clustered setae on the dactylus of pereopod 1.

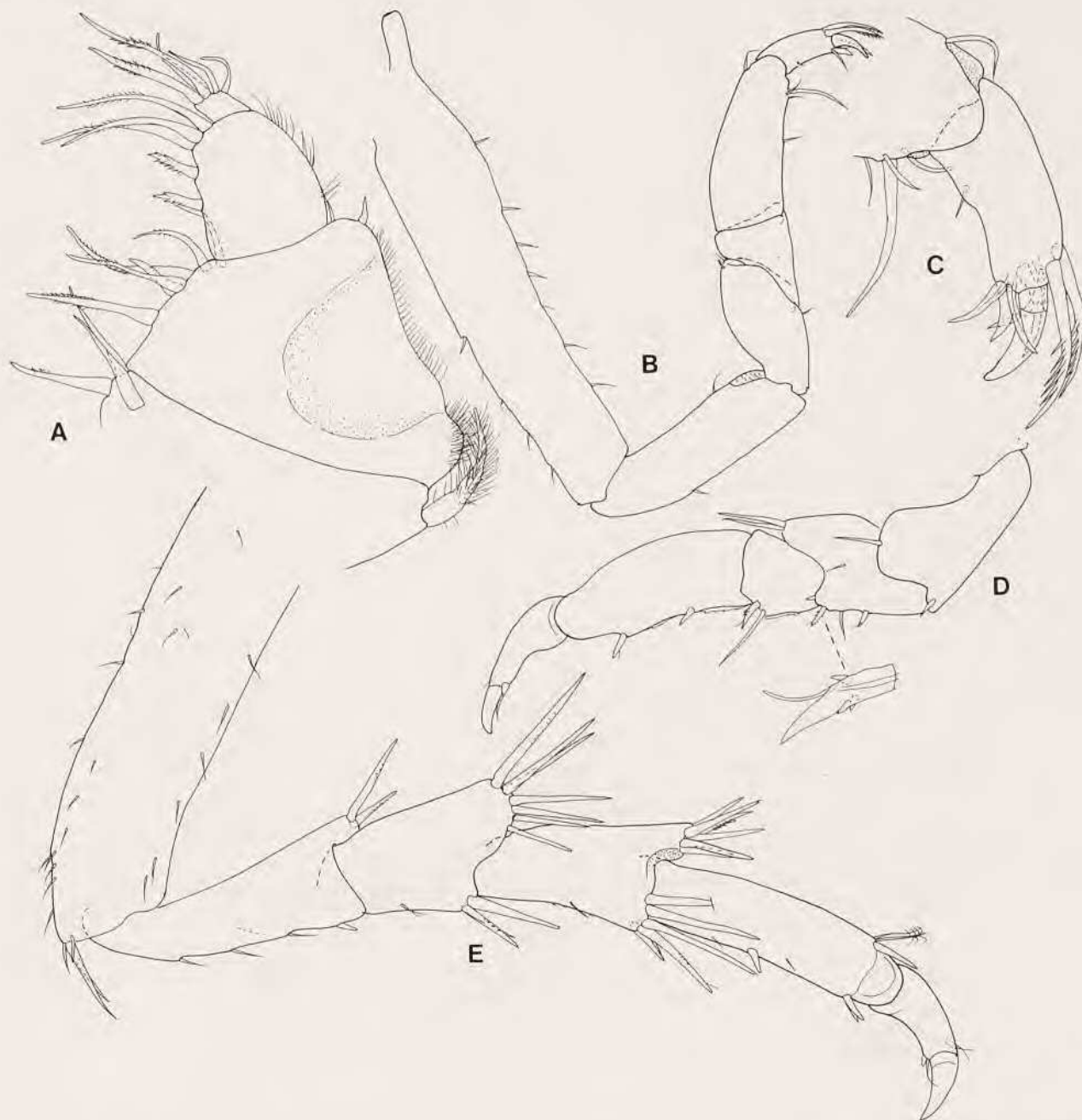


FIG. 2. — *Scutulana pezata* sp. nov. B, E, holotype, remainder paratype. A, maxilliped palp, detail; B, pereopod 1; C, pereopod 1, dactylus; D, pereopod 2; E, pereopod 7.

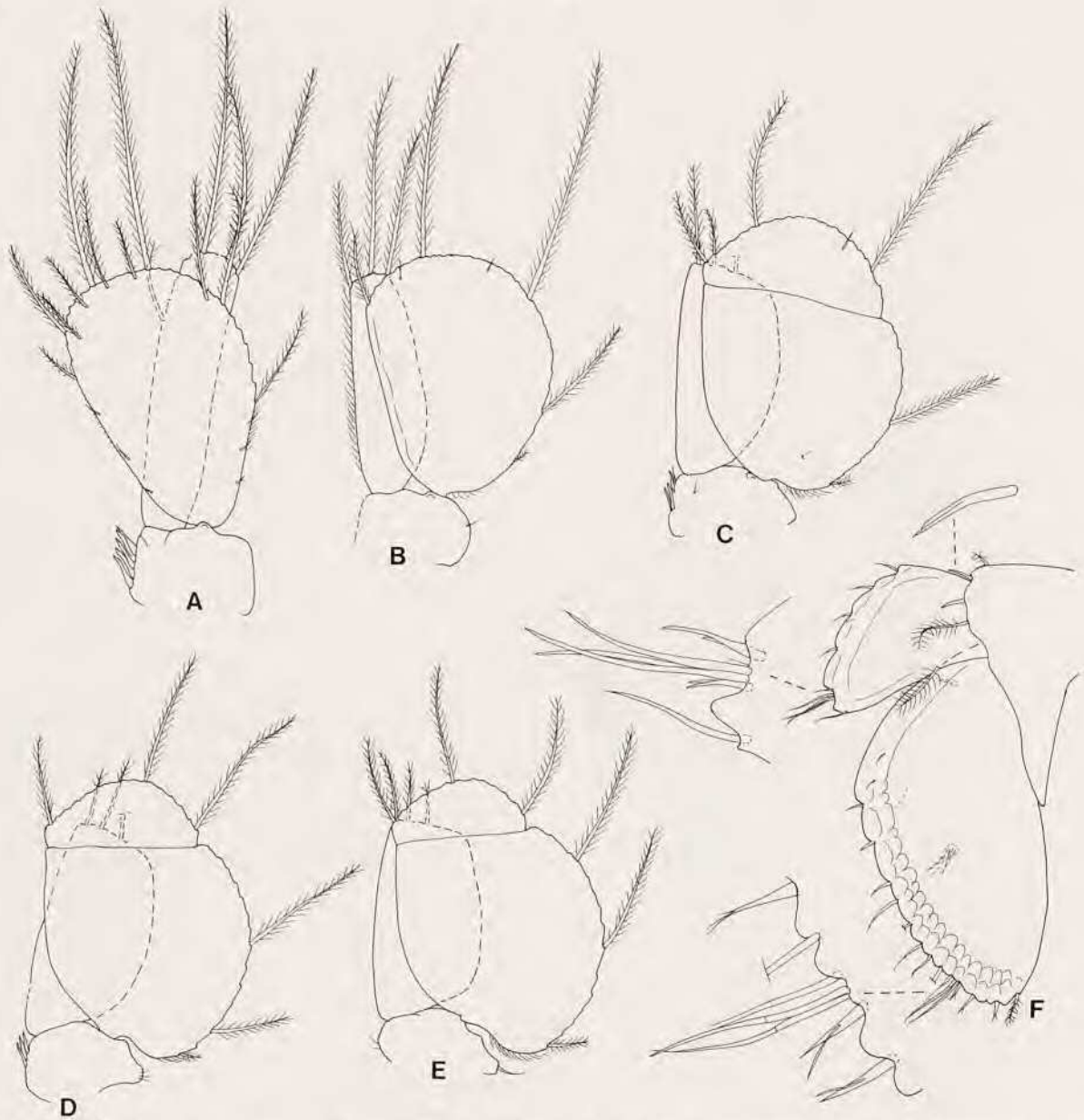


FIG. 3. — *Scutulana pezata* sp. nov. A-E, holotype, F, paratype. A-E, pleopods 1-5 respectively; F, uropod in ventral view, with details of apices.

Genus *SINTOROLANA* nov.

TYPE SPECIES : *Sintorolana atrox* sp. nov, by present designation.

DIAGNOSIS. — Body smooth, unornamented, without chromatophores or pigment; about three times as long as wide, lateral margins sub-parallel in dorsal view. Eyes unpigmented, reduced to few inconspicuous ocelli. Pleonites all visible dorsally, pleonite 5 laterally encompassed by pleonite 4. Pleotelson linguiform, with PMS and spines.

Frontal lamina slender, about 5 times as long as wide, ventrally flat; clypeus and labrum both with ventral surface flat. Antennule peduncle article 3 longest. Antenna peduncle articles 3 and 4 subequal in length, article 5 longest.

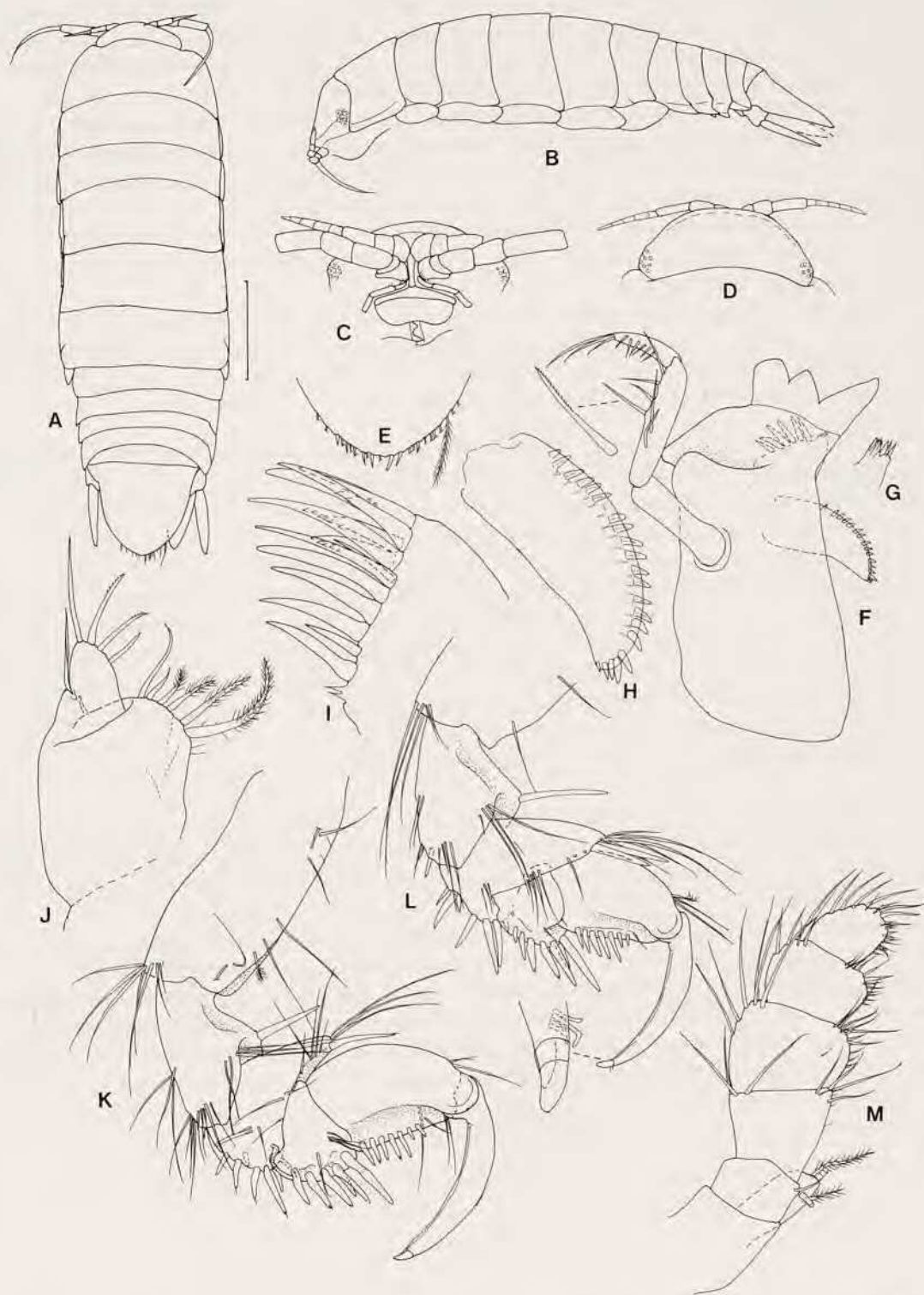


FIG. 4. — *Sintorolana atrox* sp. nov. **A**, dorsal view; **B**, lateral view; **C**, frons; **D**, cephalon, dorsal view; **E**, posterior margin of pleotelson; **F**, left mandible; **G**, spinose process, mandibular spine row; **H**, molar process; **I**, maxillule exopod; **J**, maxilla; **K**, pereopod 1; **L**, pereopod 2; **M**, maxilliped. **A**, **B**, scale 1.0 mm.

Mandible incisor strongly tridentate, posterior cusp prominent; spine row present, with small spinose medial lobe. Maxillule lateral lobe with about 12 spines, some of which are serrate; medial lobe with 3 stout CPS spines. Maxilla lateral lobe minute, with single seta; middle lobe with 4 setae, medial lobe with simple and long CPS. Maxilliped endite with single coupling hook; palp with 5 articles, none of which are laterally expanded; medial and lateral margin of articles 3-5 with setae, those of lateral margins being longest.

Pereopods 1-3 robust, with prominent and stout spines along posterior margins of ischium, merus and propodus; propodus somewhat expanded, with lateral sub-marginal surface excavate; dactylus robust, haptorial, longer than (1.2-1.3) propodus; anterodistal angle of merus strongly produced, that of ischium with elongate acute spine. Pereopod 2 propodus less strongly excavate than pereopod 1. Pereopod 6 with basis flattened, anterior margin with PMS, posterodistal margin of basis with long PMS extending to beyond ischium; ischium with long SMS and PMS on posterior margin; ischium to propodus articles flattened, not distally expanded. Dactylus of all pereopods without distinct secondary unguis.

Pleopod 1 lamellar; endopod and exopod about subequal in width and length. Pleopod 2 with appendix masculina sub-basally attached. Pleopods 3-5 exopods without complete transverse suture; endopods of pleopods 3 and 4 with PMS, that of pleopod 5 without PMS. Peduncles of pleopods 1-4 with coupling hooks, pleopod 5 without. Uropods with both rami elongate, with PMS and spines.

REMARKS. — This genus shares several characters with the genus *Natatolana* Bruce, 1981b (see also BRUCE, 1986), including the general morphology of the body shape, antenna, antennules, frons, pereopods and pleopods. The more significant presumed synapomorphies include the shape and setal ornamentation of the basis of pereopods 5-7, character states shared only with *Natatolana* and *Dolicholana* Bruce, 1986. *Sintorolana* is distinguished from these and all other genera of the *Conilera*-group (BRUCE, 1986; WETZER *et al.*, 1987; Conilerinae KENSLEY & SCHOTTE, 1989) by the propodal palm of pereopods 1-3 being expanded and heavily armed with spines (in contrast to slender with few and small spines or spines absent on pereopod 1) and with the dactylus of pereopods 1-3 being longer (1.2-1.3) than the axial length of the propodus, and extending to the merus. This appears to be the longest relative dactylar length recorded for the family, as no other genus has the dactylus longer than the propodus. Only the anchialine cave dwelling genus *Haptolana* Bowman, 1966 (a *Cirolana*-group genus, see BRUCE & HUMPHREYS, 1993) approaches this condition. Other characters include reduction of the maxilla lateral lobe, mandibular spine row with a spinose medial lobe, and the anterodistal angle of the ischium of pereopods 1-3 being very weakly produced.

Although similar to *Natatolana*, the pereopodal characters are of generic significance. *Natatolana* is a large genus, currently with about 60 species, but the pereopodal morphology is consistent throughout the genus. The morphology of the anterior pereopods shown by *Sintorolana* is closer in form to that of the Aegidae than Cirolanidae and *Natatolana*.

It could be argued that to base a genus on a single specimen that is not adult (although the appendix masculina is fully developed, pereonite and pereopods 7 are not present) is unwise. Cirolanid genera do not exhibit strong sexual dimorphism, and there are no genera in the *Conilera*-group that cannot be placed as juveniles or manca. *Sintorolana* belongs with a group of genera that show no secondary sexual dimorphism, and furthermore do not change appearance on reaching sexual maturity. Generally manca of the genus *Natatolana* can be identified to species on the basis of adult characters. As the generic characters of *Sintorolana* are readily perceived and the probability of obtaining additional material of the species is not high, the new data presented here are considered of sufficient importance to establish the new genus and species.

ETYMOLOGY. — The generic name is derived from the Greek word *sintor* (ravenous, tearing) combined with the ending *-olana* to indicate the family affinity.

Sintorolana atrox sp. nov.

Figs 4-6

MATERIAL EXAMINED. — **New Caledonia.** BIOCAL : stn KG 85, 20°59.24'S, 166°00.18'E, 1639 m, 6 Sep 1985 : *Holotype*, ♂ (5.5 mm) (MNHN-Is 3072).

DESCRIPTION. — Body about 3.2 times as long as greatest width; maximum width at pereonite 6. Pleotelson posterior margin with about 8 spines set among PMS. Cephalon with transverse dorsal interocular suture. Coxae all without carina, posterolateral angles smoothly rounded.

Antennule flagellum with 5 articles, extending to posterior of pereonite 2. Mandible spine row with 5 or 6 spines, and medial spinose lobe. Maxilla lateral lobe with 1 seta, middle lobe with 4, medial lobe with 2 simple and 4 CP spines respectively. Maxilliped palp articles 2-5 with both margins setose, those of lateral margins being longer than those of medial margins; endite with single coupling hook and 2 long CPS.

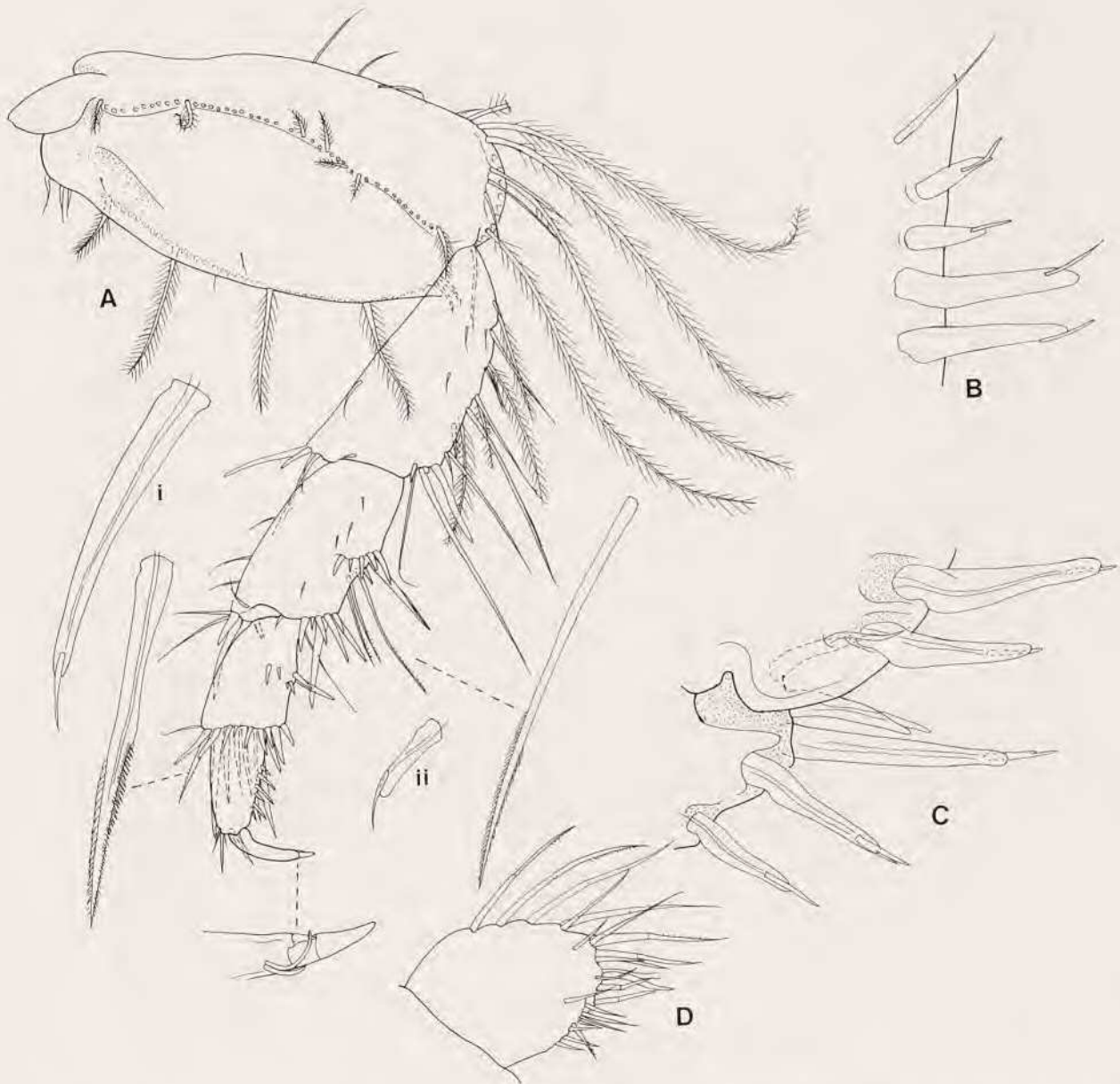


FIG. 5. — *Sintorolana atrox* sp. nov. A, pereopod 6, i - spine from anterodistal angle of merus, ii - spine from mesial spine row of merus; B, spines from distal palm, pereopod 1; C, spines from posterior margin of join of merus and carpus, pereopod 1; D, maxilliped palp article 5.

Pleopod 1 exopod with ~50 PMS, endopod with 17 PMS. Pleopod 2 exopod and endopod with ~45 and 18 PMS respectively; appendix masculina slender, straight, extending only very slightly beyond distal margin of endopod. Pleopods 3-4 endopods with 14, 13 PMS respectively, pleopod 5 endopod without PMS. Pleopods 3-5 exopods with ~45, 36 and 25 PMS respectively. Uropod exopod slender about 7.5 times as long as proximal width, subequal in length to endopod; exopod lateral margin with about 9 PMS and 1 subapical spine, medial margin with 9 or 10 PMS and 1 subapical spine, apex with 2 apical spines; endopod lateral margin nearly straight, with 3 spines and about 6 PMS, medial margin convex, with 1 long spine and 11 PMS, apex with 3 apical spines.

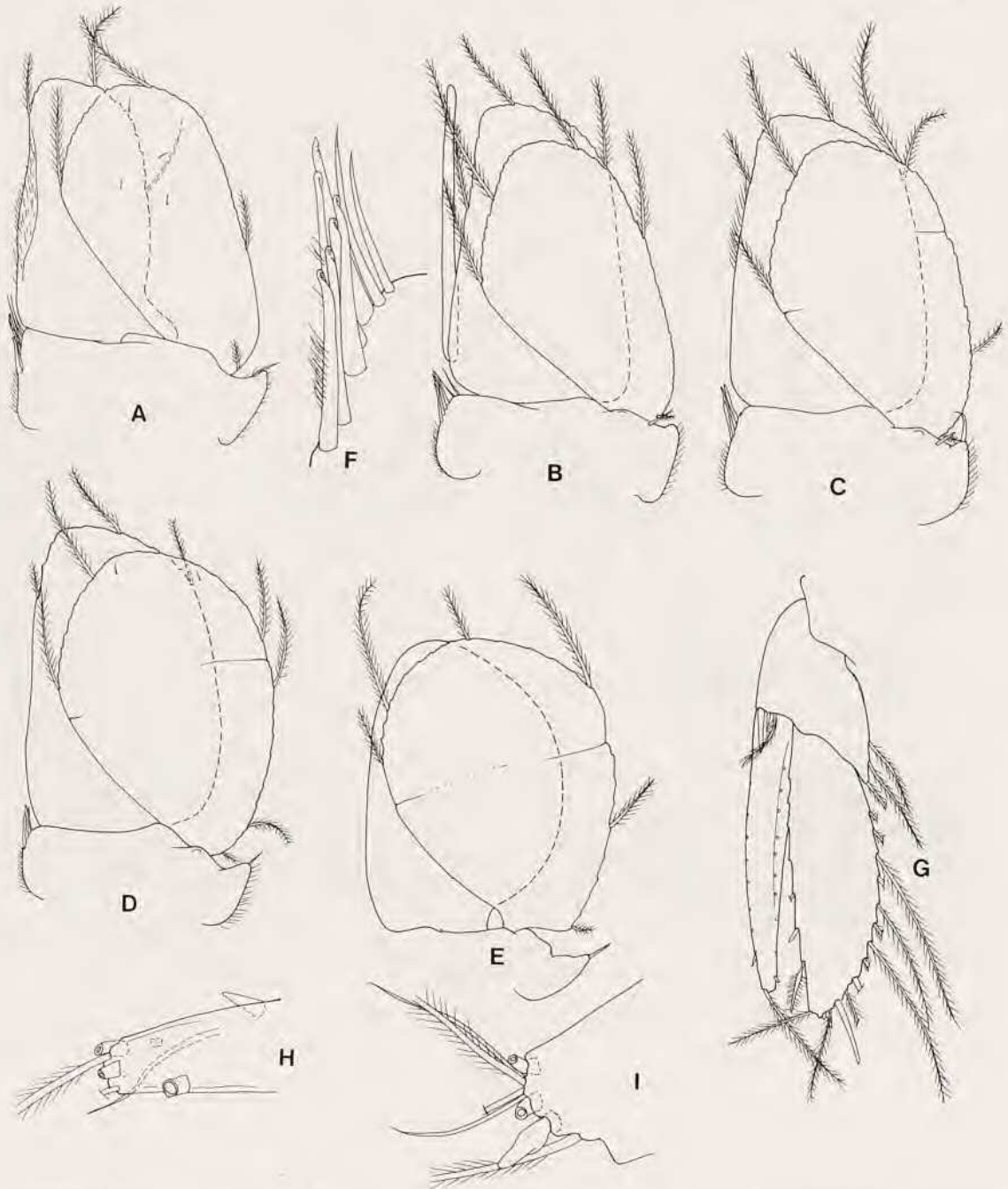


FIG. 6. — *Sintorolana atrox* sp. nov. A-E, pleopods 1-5 respectively; F, coupling hooks, medial margin pleopod 1; G, uropod, ventral view; H, uropod exopod, apex; I, uropod endopod, apex.

REMARKS. — The single specimen is an immature male, as pereopod 7 was not developed, and the penes and vasa deferentia could not be discerned. The appendix masculina, in contrast, is of the adult form seen commonly in the genus *Natanolana*, and therefore probably fully developed.

The specimen had somewhat battered pleotelson and uropods, and the precise number of pleotelsonic spines could not be determined. The maxillule was observed to be of the usual cirolanid form, but was lost after dissection, and is therefore not illustrated. Female specimens not available.

ETYMOLOGY. — The species name is the Greek word *atrox* (cruel, harsh), and alludes to the armature and the dactylus of the anterior pereopods; to be treated as a noun in apposition.

Genus *METACIROLANA* Nierstrasz, 1931

Metacirolana Nierstrasz, 1931 : 147. — KUSSAKIN, 1979 : 212. — BRUCE, 1981b : 950, figs 1f-i, 2c-f, 3c-d, 4b, 5e-g; 1986 : 31. — KENSLEY, 1984 : 33 (remarks). — KENSLEY & SCHOTTE, 1989 : 153.
Paracirolana Nierstrasz, 1931 : 147.

REMARKS. — The genus *Metacirolana* now contains 24 species (a further 4-6 species from the coral reefs at Madang, Papua New Guinea await description - NLB in preparation). The genus occurs commonly on coral reefs and also the subtidal waters of all oceans to a depth of 2,000 metres. It can be divided into three groups of species : those with rugose ornamented dorsal surfaces such as *M. sphaeromiformis* Hansen, 1890, *M. rugosa* Bruce, 1980, and *M. mbudya* Bruce, 1981a; another group which has the antennule peduncle article 3 longest including *Metacirolana moortgati* Müller, 1993 (which is also rugose) and *Metacirolana costaricensis* Brusca & Iverson, 1985 [the rugose *Metacirolana sphaeromiformis* appears to have the antennule peduncular articles 2 and 3 subequal in length (HANSEN, 1890)]. The remaining species, all lacking ornamentation of the pereon and pleon, are all similar to each other with the exception of *M. bicornis* (Kensley, 1978) which has prominent cephalic "horns", and the two species pairs : *M. spinosa* (Bruce, 1980) and *M. halai* Kensley, 1984; and *M. fornicata* Mezhev, 1981, and the new species described below.

The generic diagnosis provided by BRUCE (1981b, 1986) stated that antennule peduncular article 2 is always longest and 3 shortest or subequal in length to article 1. Since that time several species have been described, as mentioned above, that have peduncular article 3 longest. *Metacirolana fornicata* and *M. neocaledonica* sp. nov., both of which have antennule peduncle article 3 long, are immediately distinguished from that group of species by the frontal lamina structure and in having robust CPS on the maxillule endite rather than the slender and weakly plumose spines that are typical of the genus.

A revision of the genus is necessary clearly to establish its autapomorphies, and to identify homoplasious and reversed characters. Several character states can be identified as presumed apomorphies : the posteriorly stemmed and ventrally flat frontal lamina with an anteriorly free margin, the right mandible incisor with a small fourth cusp on the posterior margin, free lateral margins on pleonite 5, and a blade-like projection on the clypeus [the last two characters not being unique to *Metacirolana*, occurring in other genera such as *Eurydice* and *Pseudolana* (see BRUCE, 1986)].

Metacirolana neocaledonica sp. nov.

Figs 7-9

MATERIAL EXAMINED. — **New Caledonia**. BIOGEOCAL : stn: DW 311, 20°49.07'S, 166°54.07'E, 1,620 m, 1 May 1987 : *Holotype*, ♂ (10.5 mm) (MNHN-Is 3073).

CALSUB : stn: PL 17, 21°25'S, 166°24'E, 1,753-2,049 m, 8 Mar 1989 : *Paratype*, ♀ ovig. (13.0 mm) (MNHN-Is 3074).

DESCRIPTION. — Body about twice as long as greatest width; maximum width at pereonites 5 and 6. Cephalon with submarginal anterior suture. Pereonites 2-7 each with 2 fine transverse ridges; coxae all with entire carina, posterolateral angles of coxae 5-7 acute smoothly rounded. Pleonites 2-5 each with posterior transverse ridge, that

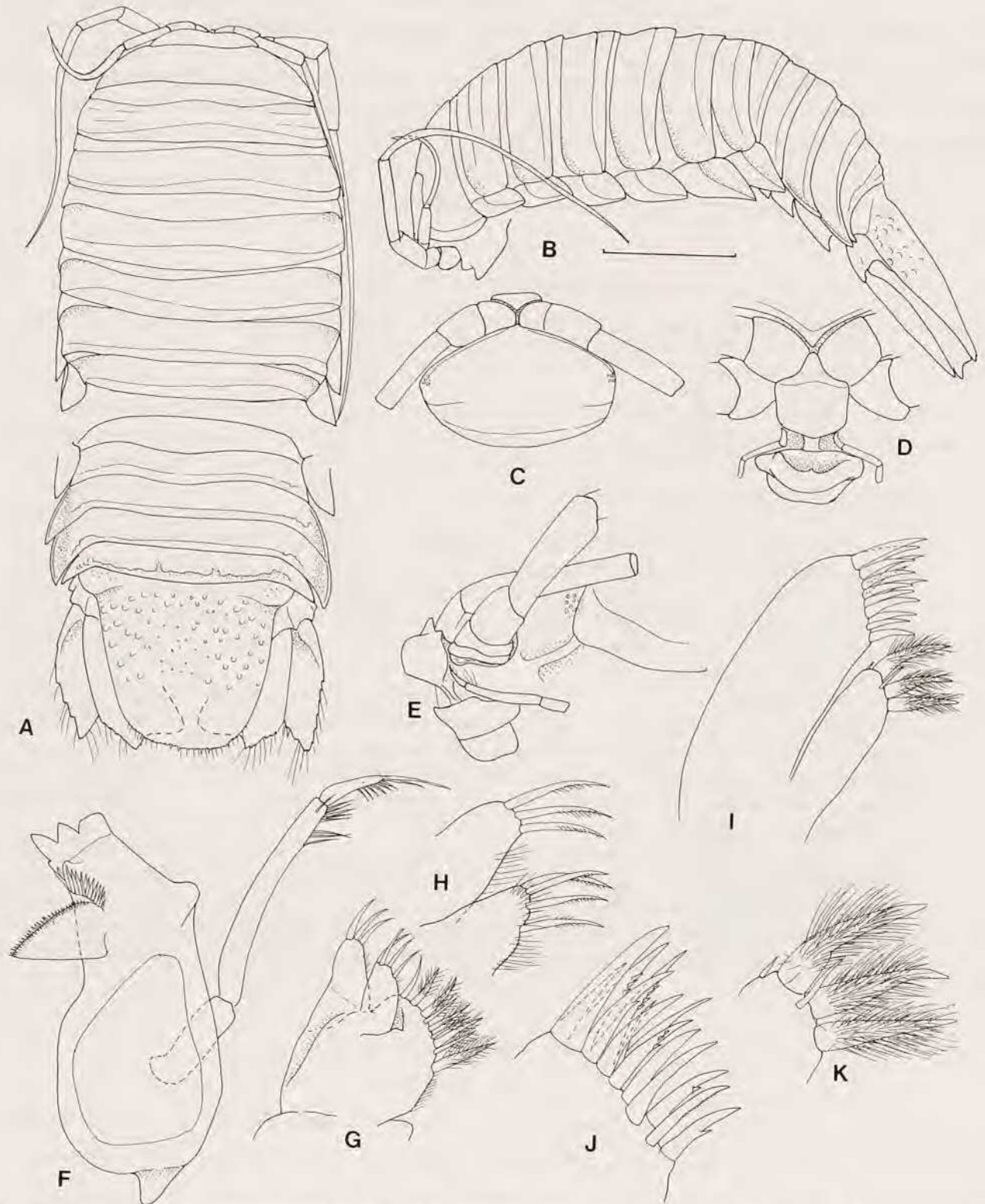


FIG. 7. — *Metacirolana neocaledonica* sp. nov. A-E, holotype, remainder paratype. A, dorsal view; B, lateral view; C, cephalon, dorsal view; D, frons; E, lateral view of cephalon; F, right mandible; G, maxilla; H, apex of maxilla lateral lobes; I, maxillule; J, maxillule lateral lobe; K, maxillule medial lobe. Scale 2.0 mm.

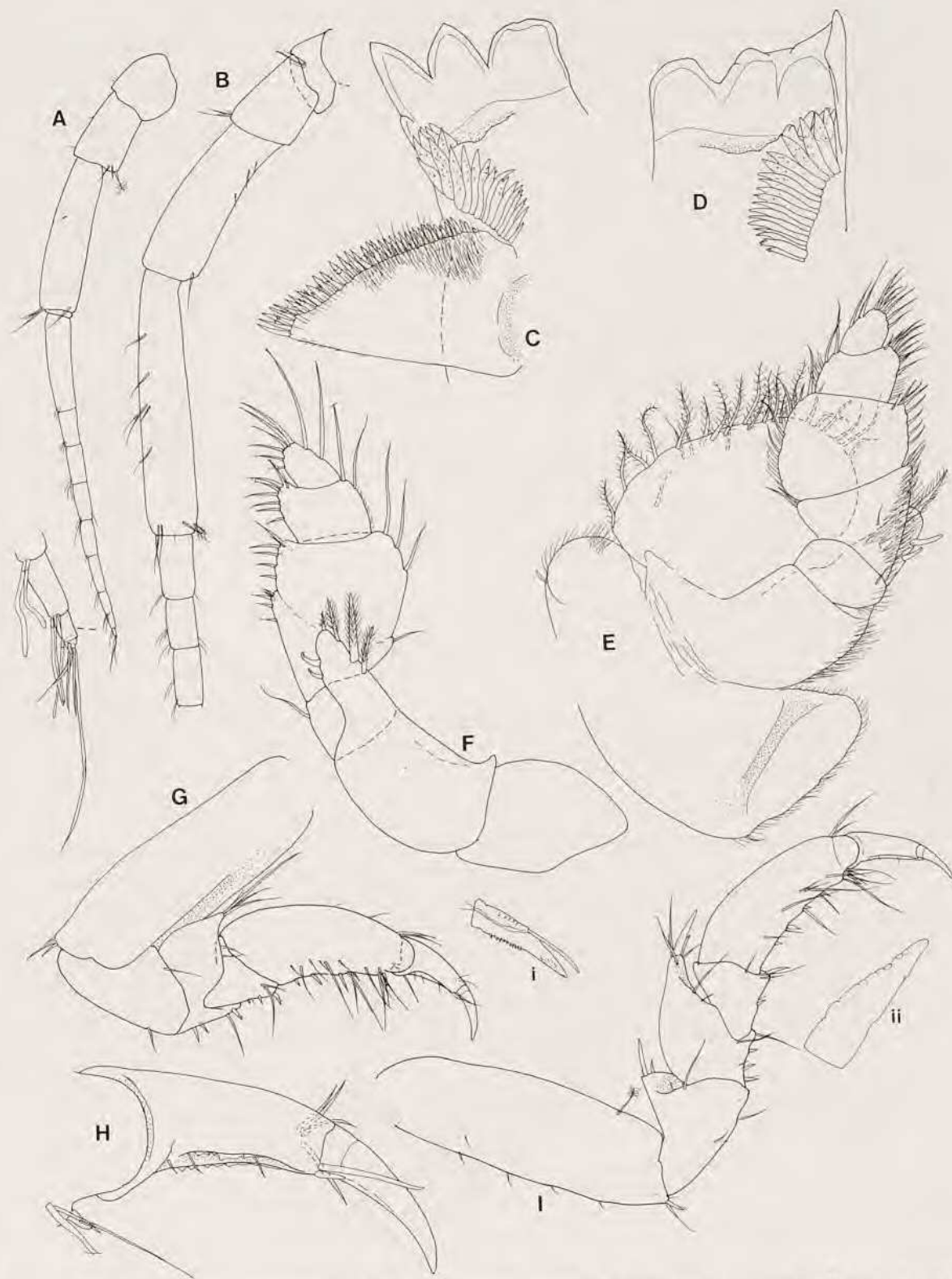


FIG. 8. — *Metacirolana neocaledonica* sp. nov. F-I, holotype, remainder paratype. A, antennule; B, antenna peduncle; C, right mandible; D, left mandible; E, female maxilliped; F, maxilliped; G, pereopod 1, i - spine from posterior margin of merus; H, pereopod 1, dactylus; I, pereopod 2, ii - spine opposing base of dactylus.

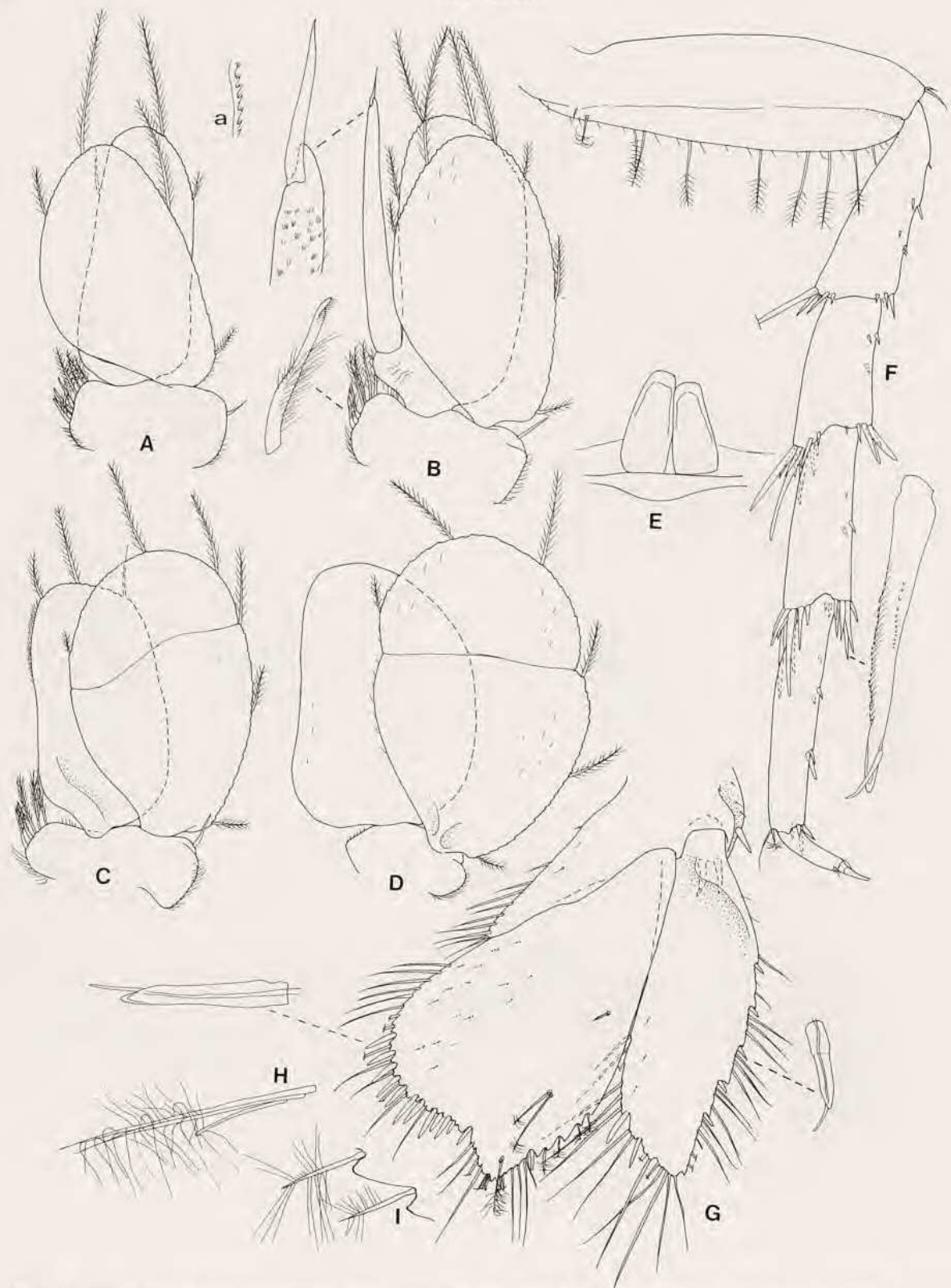


FIG. 9. — *Metacirolana neocaledonica* sp. nov. Holotype, except F. A-D, pleopods 1-3 and 5 respectively; a, detail of endopod proximolateral margin; E, penes, in situ; F, pereopod 7; G, uropod; H, setae from distolateral surface of uropod endopod; I, setae from lateral margin of uropod endopod.

of pleonite 5 prominent, with 2 submedial excisions; pleonite 1 largely concealed by pereonite 7, pleonites 3 and 4 widest, as wide as pereon, with lateral margins forming an acute point; pleonite 5 narrower than 4, overlapped by 4 in lateral view, with free lateral margins forming acute point. Pleotelson about 75% as long as greatest width, posterior margin subtruncate, provided with approximately 20 short PMS and 6 spines; anterodorsal two-thirds covered with scattered tubercles.

Antennule peduncle article 1 shortest, slightly shorter than article 2, article 3 about twice as long as article 2; flagellum slightly longer than peduncle, with 9 articles, first longest, about 2.7 times as long as article 2, extending to posterior of pereonite 3. Antenna peduncle articles 1 and 2 short, article 3 about twice as long as article 2, article 4 more than twice as long as 3, article 5 longest, about 1.5 times as long as 4; flagellum of about 19 articles, extending to pereonite 6.

Frontal lamina with posterior stem, ventral surface otherwise flat, anterior margin projecting with distinct anteromedian point; clypeus with deeply excavate downwardly projecting blade. Mandible with small medial cusp on left right mandible; spine row with 17-20 spines, left mandible with small fleshy lateral lobe; molar process anterior margin setose, with about 30 spines along anterior margin, most of which have 1 or 2 fine serrations. Maxillule lateral lobe with 13 spines on gnathal surface, medial lobe with 3 stout CP spines, and 2 short simple spine on distomedial margin. Maxilla lateral lobe with 3 seta, middle lobe with 4, medial lobe with 7 CP spines. Maxilliped palp articles 2-3 partly fused, palp otherwise with both margins setose, those of lateral margins being longer than those of medial margins; endite with 2 coupling hooks and 4 long CPS.

Pereopods all slender, weakly spined. Pereopod 1 with spine opposing dactylus small, distally rounded, that of pereopod 2 prominent, triangular in profile, distally acute.

Paired unfused penial processes present on posterior of sternite 7, each process about 3 times as long as basal width.

Pleopod 1 exopod with ~40 PMS, endopod with ~32 PMS. Pleopod 2 exopod and endopod with ~46 and 24 PMS respectively; appendix masculina widest basally, straight, extending slightly beyond distal margin of endopod, apex with acute articulating point. Pleopods 3-4 endopods each with about 20, 11 PMS respectively, pleopod 5 endopod without PMS. Pleopods 3-5 exopods with ~45, 36 and 25 PMS respectively. Uropod exopod about 7.5 times as long as proximal width, slightly shorter in length than endopod; exopod lateral margin with 5 spines and about 16 PMS, and series of 4 distally plumose sensory setae, medial margin with 2 spines and about 14 PMS; endopod lateral margin convex, with 1 spine and 9 PMS, medial margin strongly sinuate, with 12 spines and about 17 PMS.

REMARKS. — This species is immediately separated from most other species in the genus by the presence of a frontal lamina with an acute anterior median process, a character state shared only with *Metacirolana fornicata* Mezhev, 1981. That species can be identified and separated from *M. neocaledonica* by the lack of prominent transverse ridges on the pereonites, lack of tubercles on the dorsal surface of the pleotelson, and the propodal palm and posterior margin of the merus and carpus with more and larger spines (merus, carpus, propodal palm 5, 4, 6 in *M. fornicata* versus 3, 2, 4 in *M. neocaledonica*).

BRUCE (1986) transferred *Metacirolana fornicata* to the genus *Cirolana*, but description of the present species and reassessment of MEZHOV's figures show that action to have been in error, and the original generic designation to have been correct.

ETYMOLOGY. — The species is named after the type locality.

Genus *POLITOLANA* Bruce, 1981

Politolana Bruce, 1981b : 958; 1991 : 270. — WETZER, DELANEY & BRUSCA, 1987 : 1. — KENSLEY & SCHOTTE, 1989 : 140.

REMARKS. — While agreeing in most respects with the diagnoses of the genus given by BRUCE (1981b) and WETZER *et al.* (1987), *Politolana crosnieri* sp. nov. differs in two particularly important characters, generally

considered to be of generic significance : the proportions of the antennule peduncle which has article 2 longest, and in the short pentagonal frontal lamina which has the same appearance as that of many species of *Cirolana*. In other respects, such as mouthparts, pereopodal, pleopodal, uropodal and pleotelson morphology, *Politolana crosnieri* agrees with the generic diagnoses and is therefore retained within that genus.

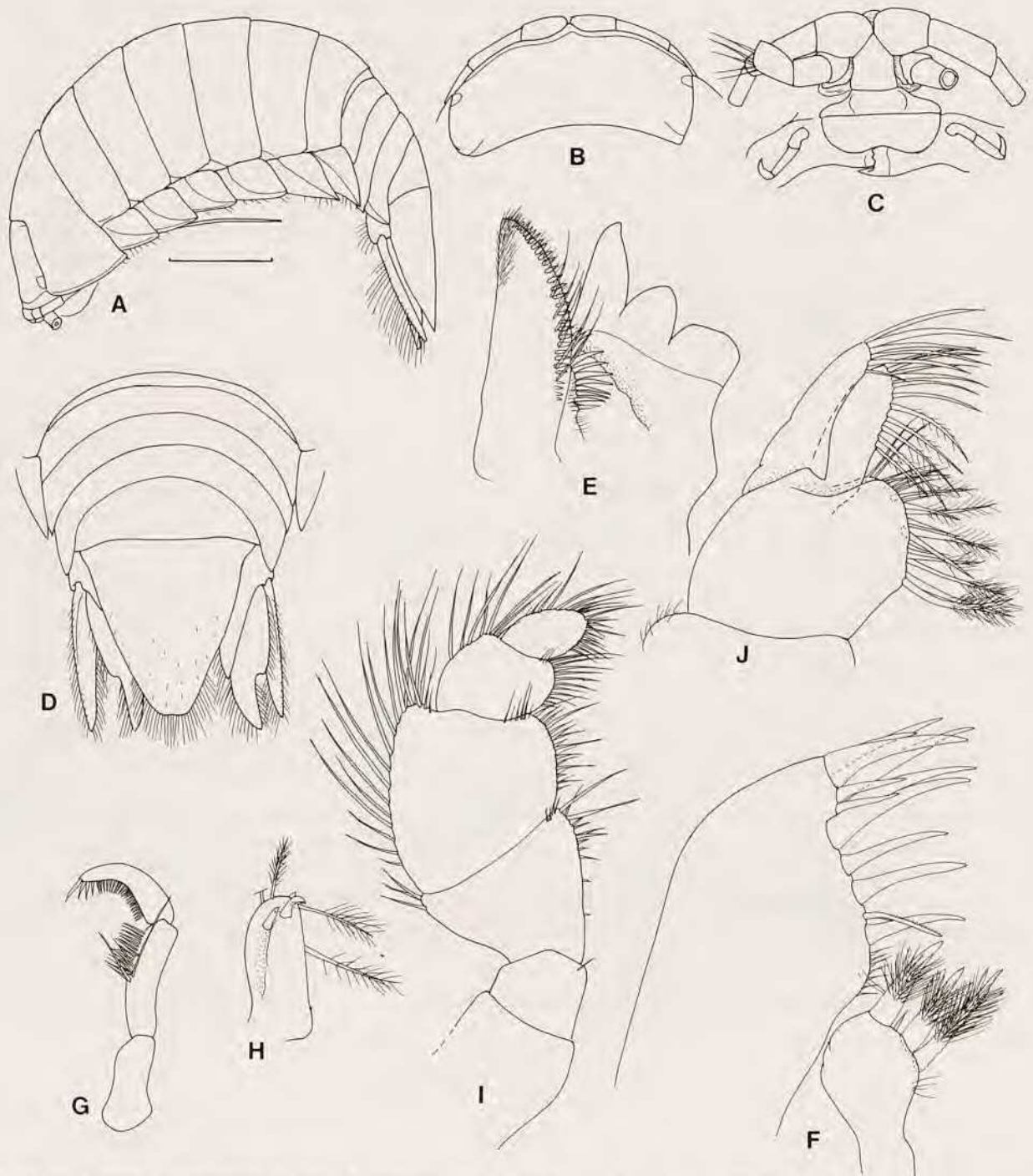


FIG. 10. — *Politolana crosnieri* sp. nov. A, lateral view; B, cephalon, dorsal view; C, frons; D, pleon and pleotelson, dorsal view; E, right mandible; F, maxillule; G, mandible palp; H, maxilliped endite; I, maxilliped; J, maxilla. A, scale 3.0 mm.

Politolana crosnieri sp. nov.

Figs 10-12

MATERIAL EXAMINED. — New Caledonia. BIOCAL : stn CP 40, 22°55.32'S, 167°23.30'E, 650 m, 30 Aug 1985 : *Holotype*, ♀ non-ovig. (17.5 mm) (MNHN-Is 3076).

DESCRIPTION. — Body about 1.5 times as long as greatest width; maximum width at pereonites 5 and 6. Cephalon with submarginal anterior suture; eyes small, ocelli distinct, unpigmented. Pereonites 2-7 unornamented; coxae all with entire carina, posterolateral angles of coxae 5-7 acute. Pleotelson about as long as greatest width, posterior margin narrowly subtruncate, with weak median indentation; posterior quarter with approximately continuous PMS, without spines.

Antennule peduncle article 1 shortest, article 2 longest; flagellum extending to posterior of pereonite 5. Antenna peduncle articles 1 and 2 short, articles 3 and 4 subequal in length, article 5 and flagellum not observed.

Frontal lamina pentagonal, slightly longer (1.2) than wide, ventrally flat. Mandible spine row with about 12 slender spines; molar process anterior margin with setules and proximally with 7 long setae, anterior margin with about 30 spines. Maxillule lateral lobe with 12 spines on gnathal surface, medial lobe with 3 stout CP spines, and 4th short simple spine. Maxilla lateral lobe with 6 setae, middle lobe with about 15 distally in 2 ranks, medial lobe with 12 CP spines and some simple setae. Maxilliped endite with 2 coupling hooks, short terminal spine and 4 long CPS.

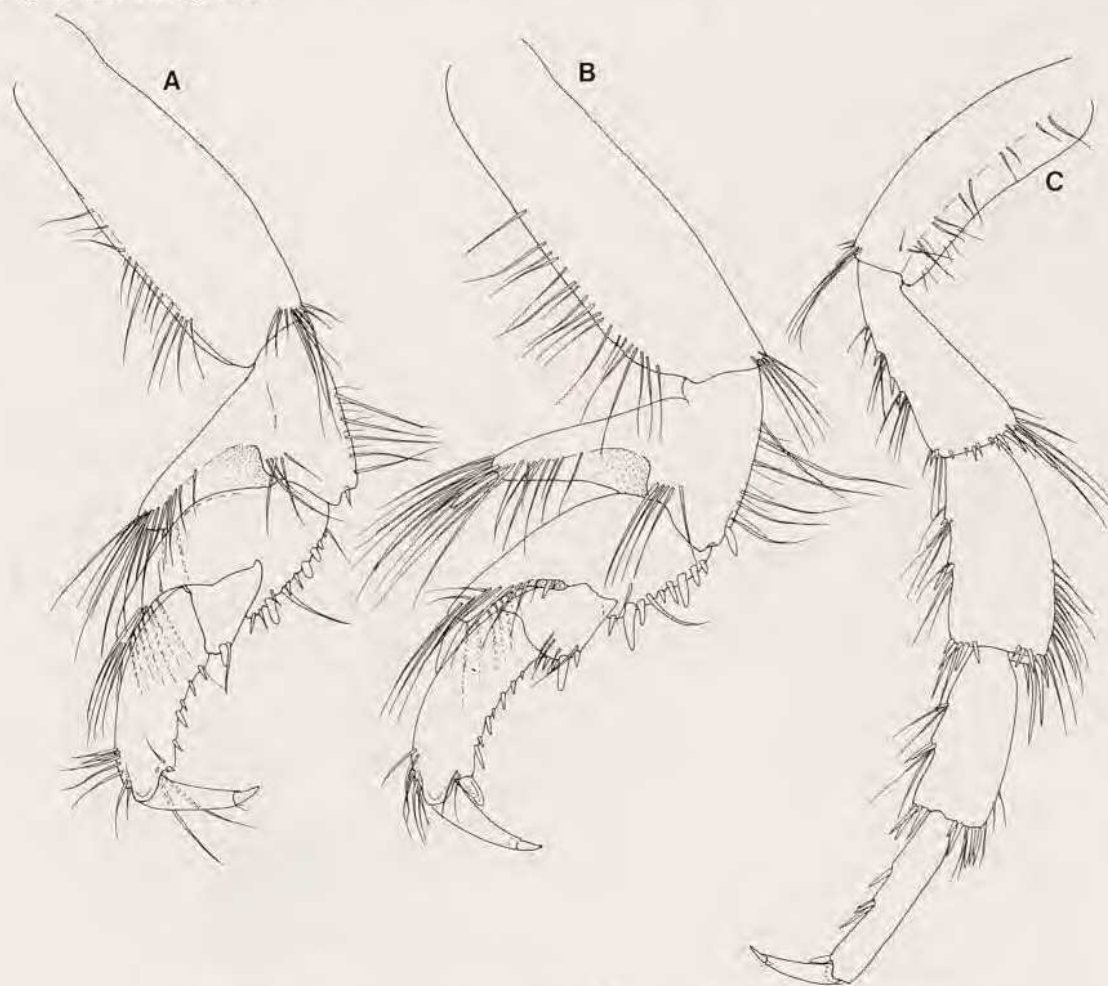


FIG. 11. — *Politolana crosnieri* sp. nov. A-C, pereopods 1, 2, 7 respectively.

Pereopods all slender. Pereopod 1 merus posterior margin with 4 blunt and 4 acute spines, carpus with 1 blunt spine and propodus with 5 acute and 1 large blunt spine opposing dactylus base. Pereopod 2 posterior margin of merus with 8 spines, merus with 3 short acute spines and 1 longer blunt spine, and propodus with 7 acute spines and 1 large blunt spine opposing base of dactylus.

Pleopod 1 exopod largely concealing endopod, rounded, with ~48 PMS and spine at mid-lateral margin, endopod with ~28 PMS. Pleopod 2 exopod and endopod with ~72 and 20 PMS respectively. Pleopods 3-4 endopods each with ~14, 10 PMS respectively, pleopod 5 endopod without PMS. Pleopods 3-5 exopods each with distinct transverse suture, each with ~100 PMS. Uropod exopod slender, straight, about 6 times as long as proximal width, slightly shorter in length than endopod, with continuous PMS, without spines; endopod lateral margin deeply indented at midlength, with 1 spine either side of indentation, medial margin smoothly convex, with 2 spines; both margins with continuous prominent PMS.

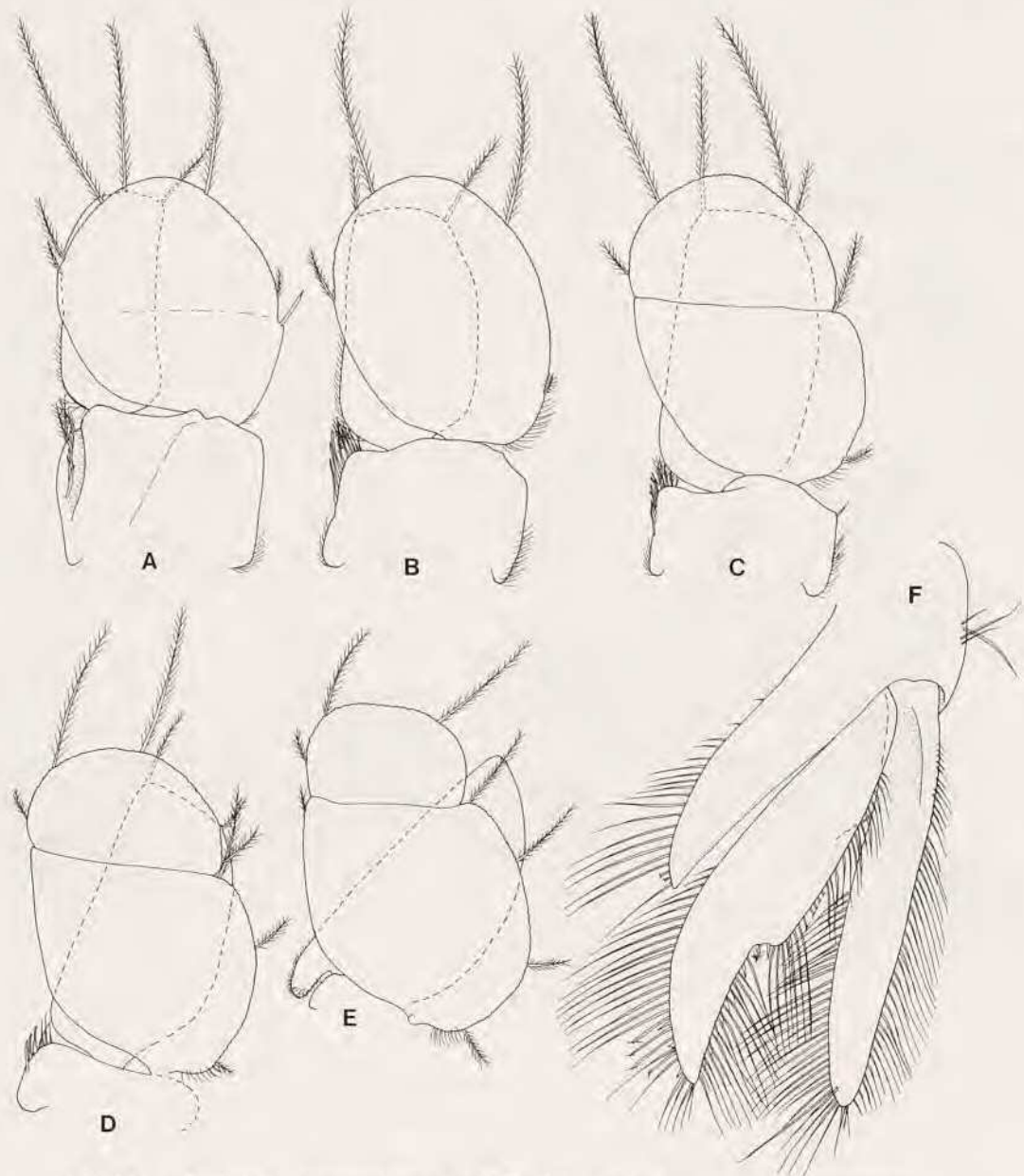


FIG. 12. — *Politolana crosnieri* sp. nov. A-E, pleopods 1-5 respectively; F, uropod.

REMARKS. — This species is separated from other species in the genus by the wide body proportion, presence of a pentagonal frontal lamina, long uropod exopod, elongate antennule flagellum extending to the posterior of pereonite 5, the proportions of the antennule peduncle which has article 2 longest, and the lack of spines on the pleotelson and uropod exopod.

ETYMOLOGY. — I take pleasure in naming this species in honour of Alain CROSNIER, recognising his great contribution to knowledge of the Crustacea, and also his efforts in assisting other workers to gain access to material collected by the MUSORSTOM expeditions.

ACKNOWLEDGEMENTS

I express my thanks to Alain CROSNIER for making these specimens available to me, and for his kind assistance during my visit.

REFERENCES

- BRUCE, N.L., 1980. — Cirolanidae (Crustacea: Isopoda) of Australia. Heron Island and the Capricorn Group. *Bulletin of Marine Science*, **30** : 108-130.
- BRUCE, N.L., 1981a. — New records of Cirolanidae (Crustacea: Isopoda) from the Tanzanian coast of East Africa. *Journal of Crustacean Biology*, **1** : 457-460.
- BRUCE, N.L., 1981b. — Cirolanidae (Crustacea: Isopoda) of Australia: Diagnoses of *Cirolana* Leach, *Metacirolana* Nierstrasz, *Neocirolana* Hale, *Anopsilana* Paulian & Deboveville, and three new genera - *Natatolana*, *Politolana* and *Cartetolana*. *Australian Journal of Marine and Freshwater Research*, **32** : 945-966.
- BRUCE, N.L., 1982. — Records of isopod Crustacea (Corallanidae, Cirolanidae) from Papua New Guinea, with the description of a new genus. *Journal of Crustacean Biology*, **2** : 612-618.
- BRUCE, N.L., 1986. — Cirolanidae (Crustacea: Isopoda) of Australia. *Records of the Australian Museum*, Supplement **6** : 1-139.
- BRUCE, N.L., 1991. — New records of marine isopod crustaceans (Sphaeromatidae, Cirolanidae) from south-eastern Australia. *Memoirs of the Museum of Victoria*, **52** : 263-275.
- BRUCE, N.L., 1992. — *Anopsilana barnardi*, a new species of estuarine cirolanid crustacean isopod from tropical eastern Australia. *Memoirs of the Queensland Museum*, **32** : 1-8.
- BRUCE, N.L., 1993. — Two new genera of marine isopod crustaceans (Cirolanidae) from Madang, Papua New Guinea. *Memoirs of the Queensland Museum*, **31** : 1-15.
- BRUCE, N.L., 1994. — The marine isopod *Neocirolana* Hale, 1925 (Crustacea: Cirolanidae) from tropical Australian waters. *Memoirs of the Queensland Museum*, **37** : 41-51.
- BRUCE, N.L., 1995. — *Cirolana* and related marine isopod crustacean genera (family Cirolanidae) from the coral reefs of Madang, Papua New Guinea. *Cahiers de Biologie Marine*, **35**, 1994 (1995) : 375-413.
- BRUCE, N.L. & HUMPHREYS, W.F., 1993. — *Haptolana pholeta*, sp. nov., the first subterranean flabelliferan isopod crustacean (Cirolanidae) from Australia. *Invertebrate Taxonomy*, **7** : 875-884.
- BRUSCA, R.C. & IVERSON, E.W., 1985. — A guide to the marine isopod Crustacea of Pacific Costa Rica. *Revista di Biologia Tropical*, **33**, supplement 7 : 1-77.
- HANSEN, H.J., 1890. — Cirolanidae et familiae nonnullae propinquaе Musaei Hauniensis. *Det Kongelige Danske Videnskabernes Selskab Skrifter, Naturvidenskabelig og Mathematisk*, **6**(3) : 237-426.
- KENSLEY, B., 1978. — The South African Museum's Meiring Naude cruises. Part 7. Marine Isopoda. *Annals of the South African Museum*, **74** : 125-157.

- KENSLEY, B., 1984. — The Atlantic Barrier Reef ecosystem at Carrie Bow Cay, Belize. III. New marine Isopoda. *Smithsonian Contributions to the Marine Sciences*, **24** : i-iii, 1-81.
- KENSLEY, B. & SCHOTTE, M., 1989. — Guide to the Marine Isopod Crustaceans of the Caribbean. (Smithsonian Institution: Washington, D.C.), 308 pp.
- KUSSAKIN, O.G., 1979. — Marine and Brackish Water Isopod Crustacea. Suborder Flabellifera. (Academy of Science, U.S.S.R., Leningrad), 470 pp. [In Russian].
- MEZHOV, B.V., 1981. — Isopoda. In : Benthos of the submarine mountains of the Marcus-Necker and adjacent Pacific regions : 62-82. Academy of Sciences of the U.S.S.R., P.P. Shirshov Institute of Oceanology [In Russian].
- MONOD, Th., 1971. — Sur un exemplaire topotypique d'*Hansenolana anisopous* Stebbing, 1900 (Crust., isopodes). *Cahiers du Pacifique*, **15** : 7-18.
- MONOD, Th., 1973. — Sur quelques crustacés néo-calédoniens de profondeur. *Cahiers ORSTOM, sér. Océanographie*, **11** : 117-131.
- MÜLLER, H-G., 1993. — Cirolanidae (Isopoda) from French Polynesian coral reefs: description of three new species. *Crustaceana*, **64** : 197-220.
- NIERSTRASZ, H.F., 1931. — Die Isopoden der Siboga-Expedition. 3. Isopoda Genuina. 2. Flabellifera. *Siboga-Expedition Monographs*, **32c** : 123-233, 2 pls.
- RICHARDSON, H., 1910. — Marine isopods collected in the Philippines by U.S. Fisheries steamer Albatross in 1907-1908. *Department of Commerce and Labor, Bureau of Fisheries Documents*, (736) : 1-44.
- STEBBING, T.R.R., 1900. — On Crustacea brought by Dr Willey from the South Seas. In : Zoological results based on material from New Britain, New Guinea, Loyalty Islands, and elsewhere, collected during the years 1895, 1896 and 1897. (A. Willey ed.), **5** (33) : 605-690 (University Press, Cambridge).
- WETZER, R., DELANEY, P.M. & BRUSCA, R.C., 1987. — *Politolana wickstenae* new species, a new cirolanid isopod from the Gulf of Mexico, and a review of the "Conilera genus group" of Bruce (1986). *Contributions in Science, Natural History Museum of Los Angeles County*, **392** : 1-10.