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## Shallow-water Palaemonoid shrimps from New Caledonia (Crustacea : Decapoda)

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### ABSTRACT

A collection of palaemonoid shrimps from New Caledonian waters less than 100 m depth has been examined and found to include 39 species, including three new species, *Palaemonella dolichodactylus*, *Periclimenes ischiopinosus* and *P. tenuirostris*, and fourteen species new to the New Caledonian fauna, increasing to 67 the number of marine palaemonoid shrimps known from New Caledonia.

### RESUME

Une collection de crevettes palaemonides trouvées dans les eaux de moins de 100 m de profondeur en Nouvelle-Calédonie a été examinée et 39 espèces ont été identifiées, trois d'entre elles sont nouvelles pour la science, *Palaemonella dolichodactylus*, *Periclimenes ischiopinosus*, *P. tenuirostris*, et quatorze espèces sont nouvelles pour la faune de Nouvelle-Calédonie. Le nombre des espèces de crevettes palaemonides marines est maintenant porté à soixante-sept. La zoogéographie de ces espèces est brièvement discutée.

### INTRODUCTION

The marine palaemonoid shrimps of New Caledonia have not attracted a great deal of study. Early collections were made by Abbé CULLIERET in 1890 and deposited in the collections of the Muséum national d'Histoire naturelle, Paris, some of which were reported upon by KEMP (1922). HOLTHUIS (1953) recorded the presence of *Stegopontonia commensalis*. BRUCE (1968, 1970 a, 1970 c) added nine further species to the New Caledonian fauna list and more recently a series of papers by MONOD (1969, 1972, 1973, 1976 a, 1976 b) provided data on a further nine species. BRUCE (1980 a) added a

further five species and listed the pontoniine fauna known at that time, with 29 species, with the further addition of *Isopontonia platycheles* (Bruce, 1982). LEDOYER (1984), in a study of the seagrass fauna, added two more species. Most recently a paper by BRUCE (1990) has reported on the deep-sea palaemonoids of New Caledonian waters, adding a further eleven species, derived from recent collections carried out by a series of campaigns by ORSTOM (Institut Français de Recherche Scientifique pour le Développement en Coopération) and the Muséum national d'Histoire naturelle. Other campaigns carried out during a program named "Lagon" collected numerous palaemonoid specimens from shallow waters, less than a 100 m depth, which are now reported upon (RICHER de FORGES, 1991).

The present report provides information on 38 species, including three new species, *Palaemonella dolichodactylus*, *Periclimenes ischiospinosus* and *P. tenuirostris*, and fourteen species are now reported from New Caledonia for the first time, yielding a total marine palaemonoid fauna of 67 species. Many common and well known Indo-West Pacific species are not represented on the collection, particularly those associated with scleractinian and other coelenterates, and with sponges and tunicates. Undoubtedly, many more remain to be discovered in the coral reef biotope and other shallow water habitats around New Caledonia

For well known species, restricted synonymies only are provided, with reference to New Caledonian reports. Carapace length refers to the post orbital carapace length.

## SPECIES LIST

### PALAEEMONINAE

- Leandrites cyrtorhynchus* Fujino & Miyake, 1969
- Leander tenuicornis* (Say, 1818)
- Palaemon debilis* Dana, 1852
- Palaemon pacificus* (Stimpson, 1860)
- Urocaridella gracilis* Borradaile, 1915

### PONTONIINAE

- Palaemonella rotumana* (Borradaile, 1898)
- Palaemonella longidactylus* sp. nov. dolicho
- Periclimenes amboinensis* (De Man, 1888)
- Periclimenes amymone* De Man, 1902
- Periclimenes brevicarpalis* (Schenkel, 1902)
- Periclimenes holthuisi* Bruce, 1969
- Periclimenes imperator* Bruce, 1967
- Periclimenes lanipes* Kemp, 1922
- Periclimenes novaecaledoniae* Bruce, 1967
- Periclimenes psamathe* (De Man, 1902)
- Periclimenes seychellensis* Borradaile, 1915
- Periclimenes ?tenuipes* Borradaile, 1898
- Periclimenes ischiospinosus* sp. nov.
- Periclimenes tenuirostris* sp. nov.
- Periclimenaeus arabicus* (Calman, 1939)
- Periclimenaeus bidentatus* Bruce, 1970b
- Periclimenaeus nobilii* Bruce, 1974
- Periclimenaeus rastrifer* Bruce, 1980a
- Apopontonia dubia* Bruce, 1982
- Thaumastocaris streptopus* Kemp, 1922
- Anchistus australis* Bruce, 1977
- Anchistus demani* Kemp, 1922
- Anchistus gravieri* Kemp, 1922
- Anchistus pectinis* Kemp, 1925
- Conchodytes meleagrinae* Peters, 1852
- Conchodytes tridacnae* Peters, 1852
- Harpiliopsis depressa* (Stimpson, 1860)

*Coralliocaris graminea* (Dana, 1852)  
*Coralliocaris superba* (Dana, 1852)  
*Dasycaris zanzibarica* Bruce, 1973b  
*Pliopontonia furtiva* Bruce, 1973a  
*Pontonides* sp.  
 HYMENOCERIDAE  
*Phyllognathia ceratophthalma* (Balss, 1913)  
 ANCHISTIOIDIDAE  
*Anchistioides willeyi* (Borradaile, 1899)

## SYSTEMATIC ACCOUNT

## PALAEMONINAE

*Leandrites cyrtorhynchus* Fujino & Miyake, 1969  
 (Figs 1 c, 3 d)

*Leandrites cyrtorhynchus* Fujino & Miyake, 1969 : 143-149, figs 1-3. – MONOD, 1976, 11-14, figs 42-45, 53-57.

MATERIEL EXAMINED. – Stn 136, 21 m, 25.10.1980, coll. P. LABOUE, (CB 218) : 1 ♂, 1 ovig. ♀ (MNHN Na. 11246). – Stn 246, 22°28.3'S - 166°57.0'E., île Ouen, baie du Prony, 66 m, 23.10.1984 : 1 ovig. ♀ (MNHN Na. 11248). – Stn 588, 22°31.6'S - 167°26.2'E., île des Pins, 31-32 m, 18.07.1985 : 1 ♀ (MNHN Na. 11249). – Stn 633, 21°55.6'S - 166°48.2'E., Lagon Est, 50 m, 6.08.1986 : 1 ♀ (MNHN Na. 11247).

REMARKS. – The specimens agree well with the original description. The mouth parts were removed from specimen Na. 11248 and were without any trace of a palp. The fourth thoracic sternite also showed a distinct median process. All four specimens with an intact rostrum had a large acute epigastric tooth, with two further similar rostral teeth over the orbital region, with two central and two or three distal dorsal teeth. The ventral margin bore 9-10 teeth, with a bilateral submarginal row of plumose setae. The dactylus of the third ambulatory pereopod is slender, about 6.0 times longer than its proximal depth, feebly curved and with a poorly demarkated unguis. The dorsal margin bears a small group of setae at about 0.55 of its length, with a pair of distolateral sensory setae and additional small setae. The distal propod is provided with a pair of slender spines, about 0.3 of dactylus length. This species has been previously reported from New Caledonia by MONOD (1976), with an ovigerous female from 3 m in the baie des Citrons, Nouméa.

DISTRIBUTION. – Type locality : Tô Island, Tanabe Bay, Japan. Also known only from Kenya, Australia and New Caledonia.

*Leander tenuicornis* (Say, 1818)  
 (Figs 1 b, 2)

*Palaemon tenuicornis* Say, 1818 : 249.

*Leander tenuicornis* - KEMP, 1925 : 302. – HOLTHUIS, 1950 : 26, figs 1-2. – LEDOYER, 1984 : 253, fig. 9.

MATERIAL EXAMINED. – Stn 106, 22°23.1'S - 166°42.4'E., Grand Récif Sud, 33 m, 22.08.1984 : 1 ♂, 1 ovig. ♀ (MNHN Na. 11195). – Stn 109, 22°23.4'S - 166°44.7'E., île Ouen, baie du Prony, 16 m, 22.08.1984 : 1 ♀ (MNHN Na. 11197). – Stn 110 bis, 22°23.9'S - 166°47'E., île Ouen, baie du Prony, 40 m, 22.08.1984 : 1 ♂ (MNHN Na. 11199). – Stn

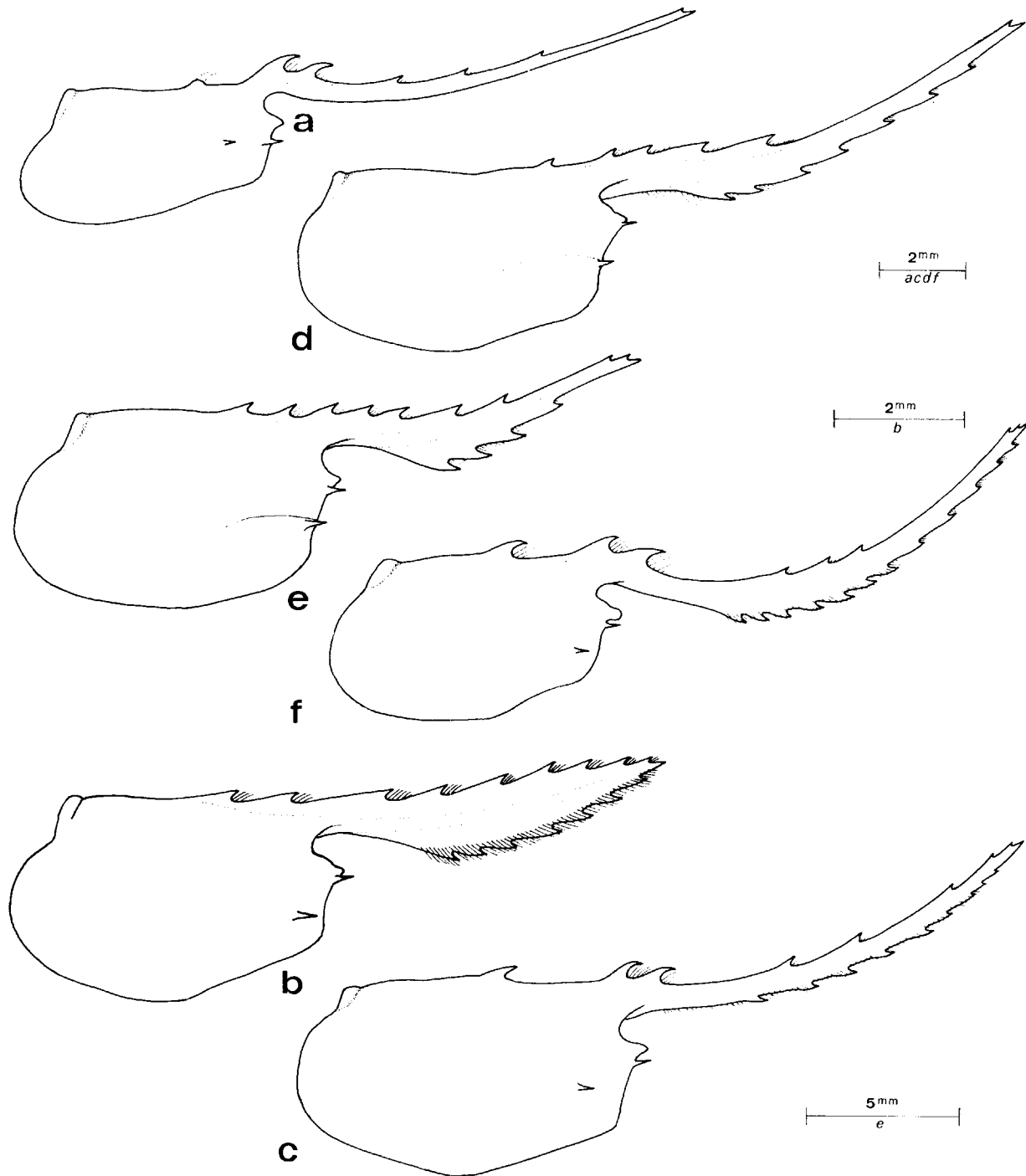


Fig. 1. - Carapace and rostrum. A, *Periclimenes psamathe* (De Man). B, *Leander tenuicornis* (Say). C, *Leandrites cyrtorhynchus* Fujino & Miyake. D, *Palaemon debilis* (Dana). E, *Palaemon pacificus* (Stimpson). F, *Urocaridella gracilis* Borradaile.

242, 22°23.8'S - 167°00.7'E., île Ouen, baie du Prony, 25 m, 23.10.1984 : 1 ♂ (MNHNa. 11196). - Stn 398, 22°37.0'S - 167°11.8'E., Grand Récif Sud, 71 m, 23.01.1985 : 1 ovig. ♀ (MNHNa. 11195).

REMARKS. - LEDOYER (1984) reported on numerous examples from New Caledonian seagrass beds. The present specimens were all obtained from sublittoral waters down to depths of 71 m, but it is not clear if the specimens were caught on the bottom at these depths. It seems more probable that they were collected from floating algae at the water surface during the shooting or hauling of gear. The species is well known as a *Sargassum* shrimp.

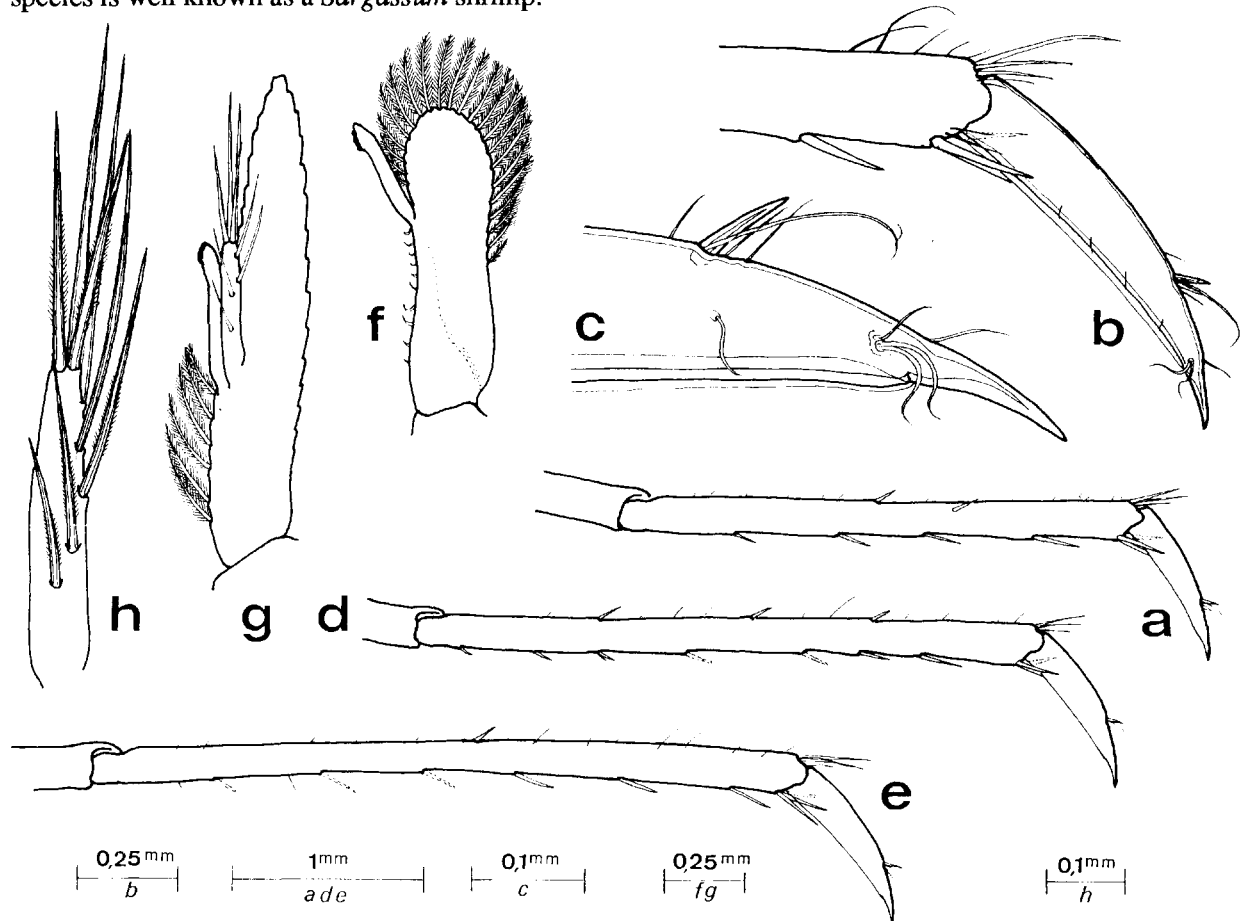


Fig. 2. - *Leander tenuicornis* (Say), ovigerous female, stn. 114. A, third pereiopod, propod and dactylus. B, same, dactylus and distal propod. C, same, distal dactylus. D, fourth pereiopod, propod and dactylus. E, fifth pereiopod, propod and dactylus. F, male first pleopod, endopod. G, male second pleopod, endopod. H, same, appendix masculina.

The specimens show no significant differences from previous descriptions. Males have carapace lengths of 3.8-4.9 mm, females 3.6-4.7 mm and the ovigerous female, 4.7 mm. The rostral dentition varies from 2 + 7/6 (♂) to 2 + 9/7 (♀). It has been previously noted that the male rostrum is longer and more slender than that of the female (HOLTHUIS, 1950). As previously reported (KEMP, 1925), the endopod of the male first pleopod has a well developed appendix interna, arising from about 0.7 of the medial margin's length. The endopod is about 3.5 times longer than wide, distally rounded, the distal margins with numerous short plumose setae. The medial margin, proximal to the appendix masculina, bears a series of about 10 short simple curved spinules. The endopod of the second pleopod is about 6.0 times longer than its proximal width, tapering distally, with the appendices at about 0.35 of the medial margin length, reaching to about 0.66 of the endopod length. Appendices interna and masculina

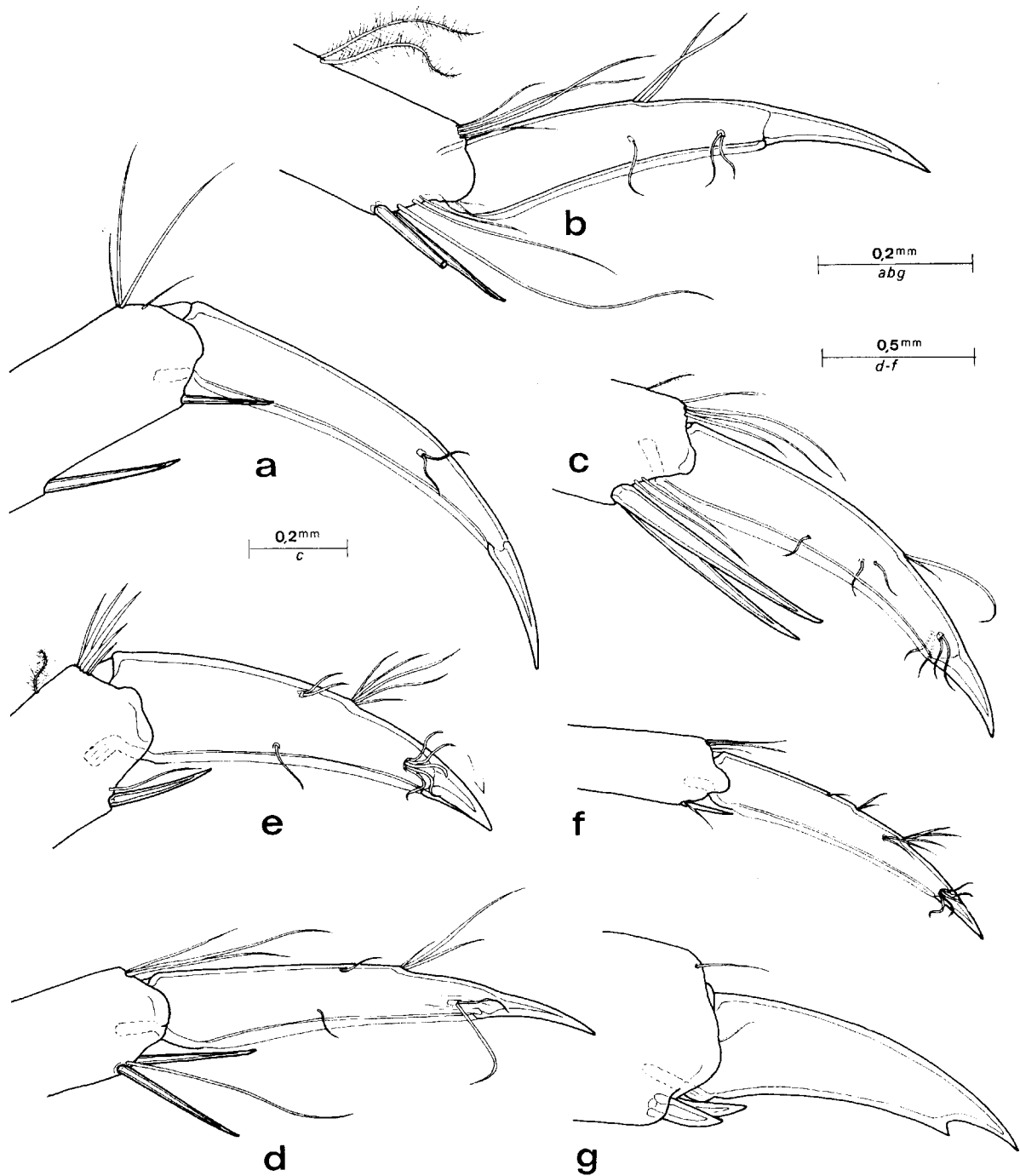


Fig. 3. — Dactyls of third ambulatory pereiopods. A, *Periclimenes psamathe* (De Man). B, *Periclimenes ischiopinosus* sp. nov. C, *Urocaridella gracilis* Borradaile. D, *Leandrites cyrtorhynchus* Fujino & Miyake. E, *Palaemon pacificus* (Stimpson). F, *Palaemon debilis* (Dana). G, *Anchistioides willeyi* (Borradaile), stn. 59.

are subequal in length, the appendix masculina having the corpus about 5.0 times longer than proximal width, tapering slightly distally, with three terminal spines and five ventrolateral spines, most finely setulose. The ambulatory pereiopods have the propods of increasing length posteriorly, in the ratio of 1:1.2:1.35, the length of the dactylus remaining approximately constant at 0.3. The dactylus is compressed, with a sharp ventral cutting edge, about 6.0 times longer than proximal depth, without a clearly demarkated unguis, with a short stout spine at about 0.6 of the dorsal margin length, with some slender adjacent setae. Some similar spines are present along the dorsal margin of the ambulatory propods. In the figure provided by HOLTHUIS (1950), the dactylus of the third pereiopod is only about 0.5 of the propod length, in contrast to about only 0.3 in the present material.

DISTRIBUTION. – Type locality : Newfoundland Banks. "The species is known from tropical and subtropical seas all over the world, except for the American west coast", (HOLTHUIS, 1950).

*Palaemon debilis* Dana, 1852  
(Figs 1 d, 3 f)

*Palaemon debilis* Dana, 1852 : 26.

*Palaemon (Palaemon) debilis* - HOLTHUIS, 1950 : 66-70, fig. 13.

MATERIAL EXAMINED. – Mission Picard : baie du Prony, sublittoral, 1980 : 5 ♂, 4 ♀ (1 ovig. ♀) (MNHN Na. 11251).

REMARKS. – The specimens present no special features. Males range in carapace length from 2.7-3.0 mm, females 3.0-3.6 mm, with the single ovigerous example at 6.2 mm. Rostral dentition varies from 1 + 5-6/6-8, (three specimens have damaged rostra). The rostrum has the ventral margin intermittently setose, with a single median row of short plumose setae. The mandibles were without palps. The dactylus of the ambulatory pereiopods is slender, about 6.2 times longer than the proximal depth, with the unguis not distinctly demarkated. The dorsal margin bears a small proximal group of short setae at about 0.45 of the length, with a larger group of longer setae at about 0.65 of the length. The distoventral angle of the propod bears only a single short spine, about 0.15 of the dactylus length. Apparently not previously reported from New Caledonia.

DISTRIBUTION. – Type locality : Hilo, Hawaiian Islands. New to the New Caledonian fauna. Common and widespread throughout the Indo-West Pacific region, from the Gulf of Suez to Hawaii and the Tuamotu Islands.

*Palaemon pacificus* (Stimpson, 1860)  
(Figs 1 e, 3 e)

*Leander pacificus* Stimpson, 1860 : 40. – BORRADAILE, 1898 : 410.

*Palaemon pacificus* - RATHBUN, 1906 : 924, pl. 22, fig. 3. – HOLTHUIS, 1950 : 87-90, fig. 19.

MATERIAL EXAMINED. – Plage de Plum, April 1984, coll. A. CROSNIER : 1 ovig. ♀ (MNIIN Na. 11251).

REMARKS. – The single example has a carapace length of 7.7 mm and a rostral dentition of 2 + 7/4. The ventral interdental rostral spaces are provided with a single median row of short plumose setae. In comparison with *P. debilis* above, the dactylus of the ambulatory pereiopod is short and stout, about 3.8 times longer than the proximal depth, with a poorly demarkated unguis and a single group of setae at about 0.56 of the dorsal margin length. The distal propod bears a single spine, about 0.25 of the dactylus length. Previously recorded from New Caledonia by BORRADAILE (1899) from the île des Pins.

DISTRIBUTION. – Type locality : Shimoda, Japan. Also recorded from the Red Sea to the Cape of Good Hope, India, Indonesia, Japan, Taiwan, Hong Kong, to the Hawaiian Islands.

*Urocaridella gracilis* Borradaile, 1915  
(Figs 1 f, 3 c, 4)

*Urocaridella gracilis* Borradaile, 1915 : 210 ; 1917 a, 352, pl. 53, fig. 2. – KEMP, 1922 : 122. – BRUCE, 1990a : 150-151.

*Leander urocaridella* - HOLTHUIS, 1950 : 28-31. – JOHNSON, 1961 : 55; 1976 : 29.

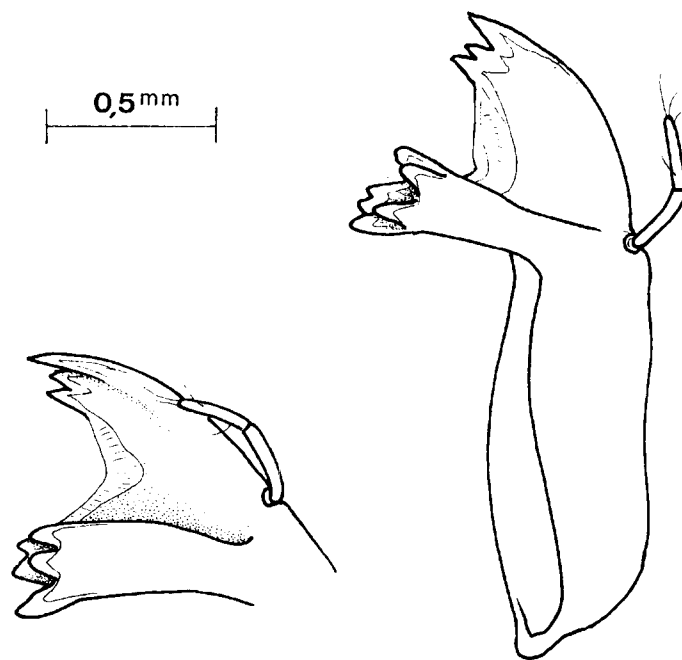


Fig. 4. – *Urocaridella gracilis* Borradaile, stn. 110 bis, ovigerous female, mandible.

MATERIAL EXAMINED. – Stn 110 bis, 22°23.8'S - 166°47.0'E., île Ouen, baie du Prony, 40 m, 22.08.1984 : 2 ♂ (MNHN Na. 11207). – Stn 114, 22°23.6'S - 166°49.6'E., île Ouen, baie du Prony, 37 m, 22.08.1984 : 1 ovig. ♀ (MNHN Na. 11209). – Stn 713, 21°22.6'S - 166°00.7'E., Lagon Est, 34-35 m, 11.08.1986 : 1 ♂ (MNHN Na. 11208).

REMARKS. – The specimens agree well with the available data. A further specimen, from stn. 397 at a depth of 125 m, has been referred to earlier (BRUCE, 1990). The male has a carapace length of 4.6 mm ; the females 5.0, 5.5 mm ; the ovigerous female, 6.0 mm. All specimens have the characteristic epigastric and two supraorbital dorsal rostral teeth, with minute disto-ventral serrations. The male has a rostral dentition of 7/10, with three preterminal teeth ; the ovigerous female has 7/10 with two preterminal teeth. Only one of the non-ovigerous female has a complete rostrum, with a dentition of 6/10, with three preterminal teeth. The ventral margin of the rostrum has a bilateral submarginal row of short plumose setae along the central third of its length with short rows of similar setae in the interdental spaces on the distal third. All examples have a two segmented palp on each mandible. The dactylus of the ambulatory pereopods are about 6.0 times longer than the proximal depths, with a poorly demarkated unguis, about 0.25 of the corpus length. The ventral margin of the corpus is sharp and with



the unguis feebly biconcave. The dorsal margin bears a single pair of setae at about 0.66 of its length. The distoventral angle of the propod bears a pair of long simple spines, about 0.56 of the dactylus lengths.

DISTRIBUTION. – Type locality : Maldives Islands. Also known from Andaman Islands, Mergui Islands, Singapore, Indonesia, and New Caledonia.

#### PONTONIINAE

##### *Palaemonella rotumana* (Borradaile, 1898) (Figs 5, 6 a-e)

*Periclimenes rotumanus* Borradaile, 1898 : 385.

*Palaemonella vestigialis* Kemp, 1922 : 123-126, figs 1-2, pl. 3, fig. 2.

*Palaemonella rotumana* - BRUCE, 1970c : 276-279, pl. 1 e-f.

MATERIAL EXAMINED. – Stn 27, 22°16.7'S - 166°31.4'E., secteur de Nouméa, 18 m, 23.05.1984 : 1 ♂ (MNHN Na. 11131). – Stn 110 bis, 22°23.8'S - 166°47.0'E., île Ouen, baie du Prony, 40 m, 22.05.1984 : 1 ♂ (MNHN Na. 11132). – Stn 127, 22°30.6'S - 166°45.9'E., île Ouen, baie du Prony, 55 m, 23.05.1984 : 1 ♂ (MNHN Na. 11139). – Stn 130, 22°29.1'S - 166°48.3'E., île Ouen, baie du Prony, 32 m, 23.05.1984 : 1 ♂ (MNHN Na. 11129). – Stn 272, 22°13.1'S - 166°22.0'E., secteur de Nouméa, 20 m, 8.11.1984 : 1 ♂, (MNHN Na. 11127). – Stn 287, 22°21.0'S - 166°28.8'E., secteur de Nouméa, 29 m, 9.11.1984 : 1 ♀ (MNHN Na. 11126). – Stn 415, 22°36.3'S - 167°14.2'E., Grand Récif Sud, 20-60 m, 24.01.1985 : 1 ♂ (MNHN Na. 11125). – Stn 747, 21°14.7'S - 165°50.9'E., Lagon Est, 31-34 m, 6.01.1987 : 1 ♀ (MNHN Na. 11124).

REMARKS. – Unfortunately all specimens are damaged, some extensively so, and many are without second pereopods and many of the ambulatory pereopods, so that in many cases the identifications cannot be considered fully reliable. In two specimens the rostra were damaged or lacking but in the others the dentition was 7-8 / 2-3.

*Palaemonella rotumana* has been previously recorded from baie de Saint Vincent and Îlot Maître, Nouméa, BRUCE (1970c) from unspecified but probably shallow depths. The present records considerably extend the bathymetric range of this species in New Caledonian waters, to at least 55 m. The specimen reported upon by BRUCE (1970c), from the South China Sea, at a depth of 126-128 m has been re-examined and confirmed as a typical example of *P. rotumana*, and represents the greatest depth record from which this species has been recorded. It is a male specimen with a carapace length of 3.1 mm, rostral dentition of 7/2, with a small two-segmented palp, and with both second pereopods, which have relatively feebly dentate fingers. The propods of the ambulatory pereopods are robust, with the distoventral spines long, and the dactylus stout.

The New Caledonian specimens have strongly dentate fingers on the chelae of the second pereopods, with a pair of large acute teeth on the proximal half of each cutting edge, those on the fixed finger larger and separated by a deeper U-shaped notch than those of the dactylus, which are more distally placed, both fingers with smaller acute teeth proximally. The dactylus has a well marked proximomedial fossa, with a thickened margin. The carpus in some examples has a strong slender acute dorsomedial tooth, with a larger acute lobe laterally.

The coxa of the fourth and fifth pereopods have a posteromedian flattened semicircular plate and the eighth sternite has a compressed acute median tooth in the males. The endopod of the male second pleopod is about 3.3 times longer than broad, very feebly expanded distally, without medial lobule, proximal third of median margin with five long simple setae, adjacent third with five short serrulate spines, distal third with longer feebly setulose setae, distal and distomedial margins with short plumose setae. Endopod of male second pleopod with appendices at about 0.45 of medial margin length, appendix masculina with corpus elongate, subcylindrical, feebly tapering distally, far exceeding appendix interna and tip of endopod, with medial, ventral and lateral rows of about 4-9 short spines, four feebly serrulate distal spines.

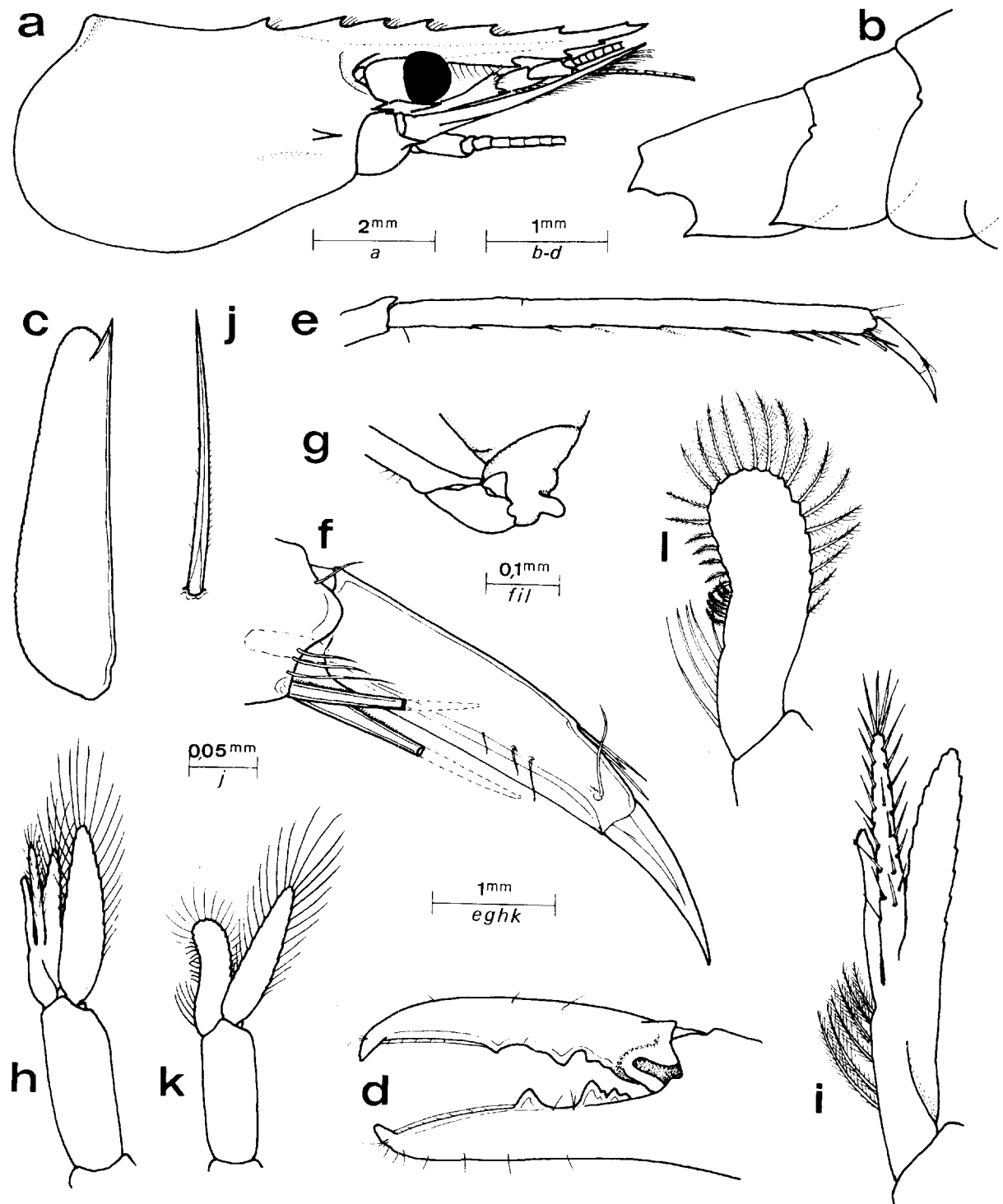


Fig. 5. — *Palaemonella rotumana* (Borradaile), male, stn. 127. A, carapace, rostrum and antennae. B, fourth to sixth abdominal segments. C, scaphocerite. D, second pereiopod, fingers. E, third pereiopod, propod and dactylus. F, same, distal propod and dactylus. G, fifth pereiopod, coxa, medial aspect. H, first pereiopod. I, same, endopod. J, second pereiopod. K, same, endopod. L, same, distal spine of appendix masculina.

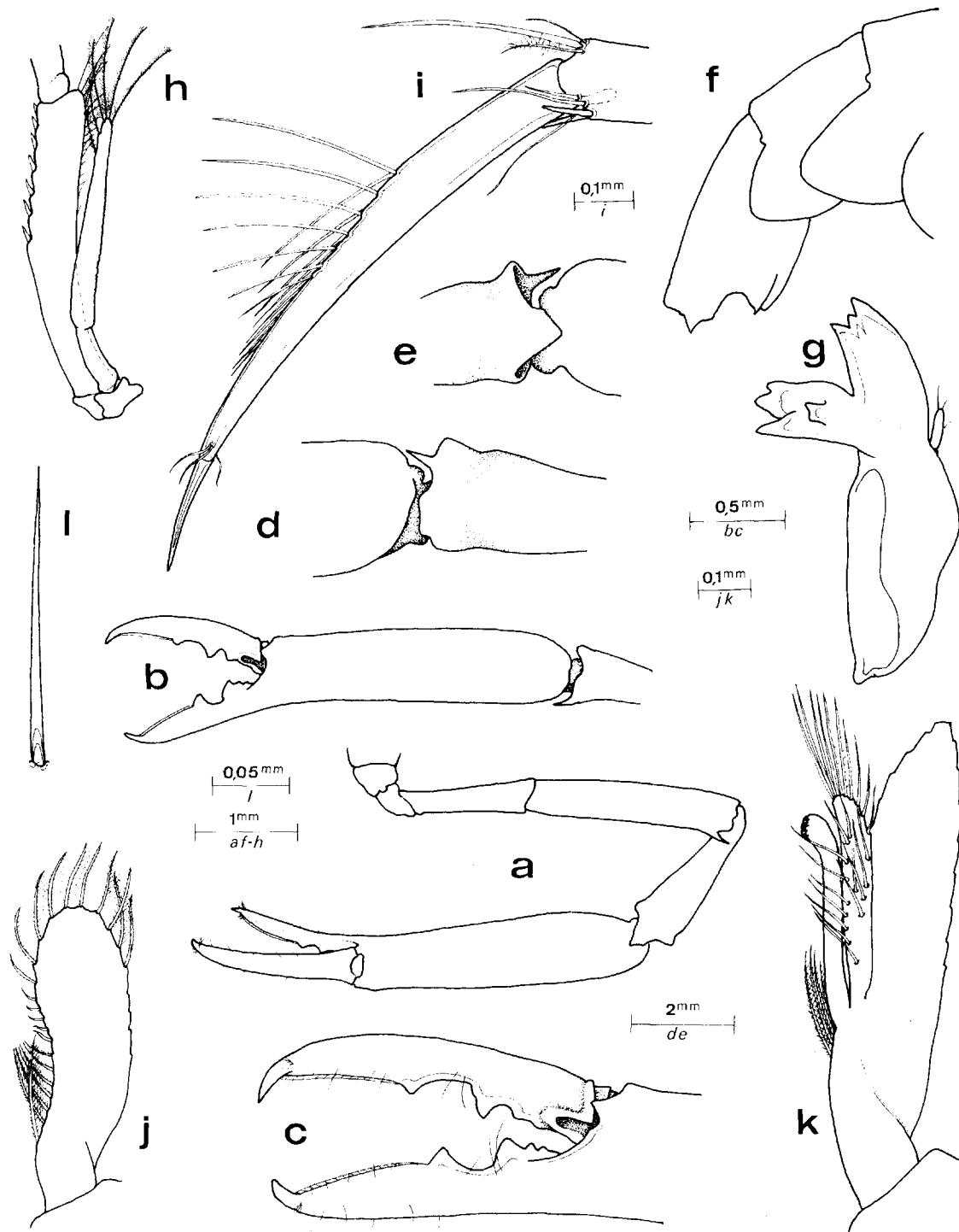


Fig. 6. — *Palaemonella rotumana* (Borradaile), male, stn. 415. A, second pereopod. B, same, chela. C, same, fingers. D, same, carpo-propodal joint, medial. E, same, lateral. *Palaemonella dolichodactylus* sp. nov., holotype female, stn. 605. F, fourth to sixth abdominal segments, G, mandible. H, third maxilliped., ischiomerus, basis and exopod. I, third pereopod, dactylus and distal propod. Paratype male. J, first pleopod, endopod. K, second pleopod, endopod. L, same, distal spine of appendix marculina.

DISTRIBUTION. – Type locality, Rotuma Island, Fijian Islands. Common and widespread throughout the whole Indo-West Pacific region, also present in eastern Mediterranean Sea.

*Palaemonella dolichodactylus* sp. nov.  
(Figs 6 f-1, 7)

MATERIAL EXAMINED. – Stn 238, 22°26.0'S - 166°56.3' E., île Ouen, baie du Prony, 50 m, 23.10.1984 : 1 ♀ (MNHN Na. 11128). – Stn 605, 22°14.5'S - 167°02.0'E., Lagon Est, 65-70 m, 5.08.1986 : 1 ♂, paratype, 1 ♀, holotype (MNHN Na. 11138). – Stn 757, 21°15.3'S - 165°45.55'E., Lagon Est, 44 m, 7.01.1987 : 1 ♀ (MNHN Na. 11130).

DESCRIPTION. – All specimens are damaged. The second pereiopods are missing from all specimens. The paratype male has all ambulatory pereiopods and the left first pereiopod but lacks both scaphocerites and the left uropod is damaged. The holotype female lacks both first pereiopods and third maxillipeds. The other specimens also lack many pereiopods, including the second pereiopods.

A medium sized, slenderly built species of *Palaemonella* with male and female similar, carapace glabrous, smooth ; rostrum slender, straight, horizontal, subequal to carapace length, distinctly exceeding antennular peduncle, reaching to level of distal scaphocerite, dorsal carina low with eight or nine acute teeth, distal tooth very small, preterminal ; lateral carinae feebly developed ; ventral carina with 3-4 acute teeth on distal half, ventral margin with median row of plumose setae ; epigastric spine present, orbit feebly developed, with distinct posterior marginal ridge, without tubercle or spine ; inferior orbital angle produced, rounded, with small inner flange, antennal spine well developed, acute, marginal, exceeding inferior orbital angle ; hepatic spine stout, at distinctly lower level than antennal spine, anterior to level of epigastric spine ; anterolateral margin of branchiostegite not produced, bluntly angular.

Abdomen glabrous, smooth ; third segment not posteriorly produced ; sixth segment about 1.5 times longer than fifth, compressed, about 1.6 times longer than deep, posterolateral angle large, acute, posteroventral angle smaller, acute ; pleura of first three segments broadly rounded, fifth and sixth posteriorly produced, posteroventrally acute ; damaged in most specimens ; telson as in *P. rotumanus*.

Antennal peduncle without special features ; upper flagellum biramous, with proximal 18 segments fused, equal to about 0.8 of carapace length, slender free ramus with 2 segments ; lower ramus slender, filiform, about 1.2 times carapace length. Antenna with robust basicerite, with small acute lateral tooth ; carpocerite short, slightly exceeding stylocerite ; scaphocerite far exceeding antennular peduncle, 4.0 times longer than broad, greatest width at about 0.3 of length, lateral margin straight, with strong distolateral tooth, distinctly exceeding broadly rounded distal margin of lamella.

Eye normal with large globular, slightly oblique cornea with small dorsal accessory pigment spot.

Ophthalmic somite without bec ocellaire, with small pigment spot. Epistome unarmed. Fourth thoracic sternite with long slender median process, fifth with pair of large acute spines posterolaterally, sixth to eighth sternites narrow, unarmed.

Mouthparts generally as in *P. rotumana*. Mandible (left) robust ; corpus stout with small single segmented, sparsely setose palp, molar process stout with large blunt teeth, incisor process broad, with three stout acute distal teeth, central tooth smaller than adjacent teeth. Third maxilliped with ischiomerus distinct from basis, with series of about seven spines along distal lateral margin ; with small rudimentary arthrobranch.

First pereiopods slender, exceeding rostrum by chela and distal fourth of carpus, chela with palm feebly subcylindrical, compressed, about 2.9 times longer than deep, with 6-7 transverse rows of short cleaning setae proximally ; fingers, long, slender, about 1.3 times palm length, with feebly hooked tips, cutting edges laterally situated, sharp, entire ; carpus about 1.5 times chela length, slender, slightly broadened distally, about 9.0 times longer than distal width, with long cleaning setae distally ; merus about 0.9 of carpal length, about 12.0 times longer than wide ; ischium about 0.6 of meral length ; basis normal ; coxa with small setose ventral process. Ambulatory pereiopods slender, third pereiopod exceeding rostrum by dactylus and propod. Dactyl of third pereiopod long, slender, feebly curved, with unguis distinctly demarkated, about 6.5 times longer than proximal width ; corpus about 10.5 times

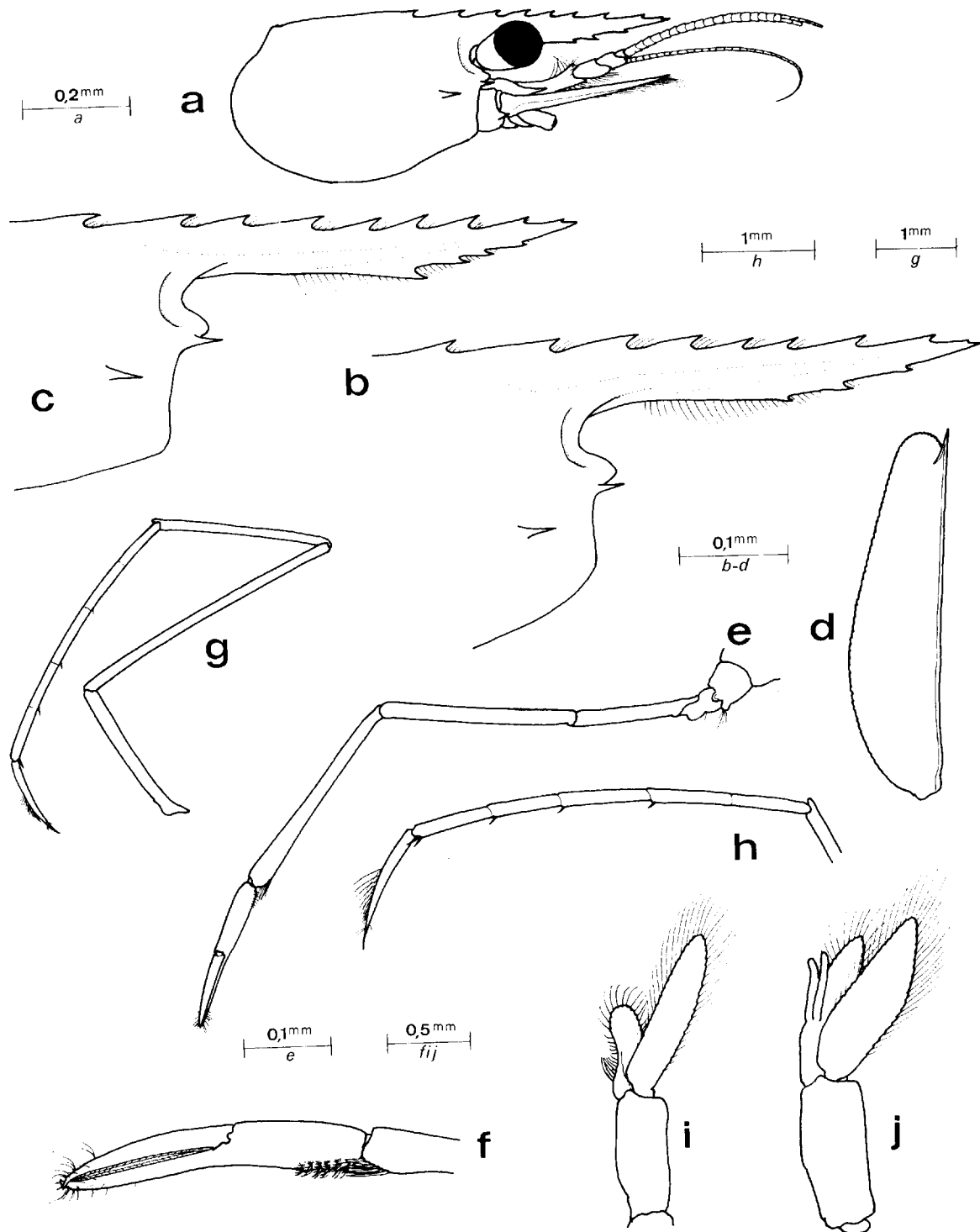


Fig. 7. — *Palaemonella dolichodactylus* sp. nov., stn. 605. A, carapace, rostrum and antennae. B, C, anterior carapace and rostrum. D, scaphocerite. E, first pereiopod. F, same, chela. G, third pereiopod. H, same, propod and dactylus. I, first pleopod. J, second pleopod. AB, D-H, female holotype. C, IJ, male paratype.

longer than proximal width, dorsal margin with double row of long simple setae along central fourth, longer setae of about 0.28 of dactylus length ; with pairs of short setae distolaterally ; propod about 3.0 times dactylus length, slightly longer than carapace length, about 26.0 times longer than wide, uniform, feebly segmented (?), with two small distoventral spines, length about 0.75 of distal propod width, and three single shorter ventral spines ; carpus about 0.64 of propod length, slender, unarmed ; merus subequal to propod length, slender, unarmed ; ischium about 0.6 of propod length, slender, unarmed ; basis and coxa normal. Fourth and fifth pereopods similar.

Male first pleopod with basipodite about 2.0 times longer than broad ; exopod about 1.4 times basipodite length, 4.4 times longer than broad ; endopod about 0.5 of exopod length 4.0 times longer than central width, slightly expanded distally, medially curved, proximal half of medial margin with 7 short plumose setae, third quarter of margin with five short simple spinules, distal medial margin and distal half of lateral margin with about 14 short plumose setae. Male second pleopod with basipodite about 2.2 times longer than broad, 1.2 times length of first pleopod basis ; exopod about 1.2 times basipodite length, about 3.2 times longer than wide ; endopod about 0.8 of exopod length, 5.2 times longer than broad, with appendices at 0.4 of medial margin length ; appendix masculina with corpus subcylindrical, about 6.2 times longer than wide, about 0.4 of endopod length, reaching distally to about 0.8 of endopod length, slightly exceeding appendix interna, with ventrolateral and distal row of 14 spines, short, simple proximally ; longer, feebly setulose distally, longest about 0.55 of corpus length, ventral medial margin with row of nine similar non-setulose spines.

*Measurements* (mm.) : Holotype female ; carapace length, 4.0 ; carapace and rostrum, 8.0 ; total body lengths (approx.) 20.0. Male : carapace length, 3.5 ; carapace and rostrum, 7.2 ; total body length (approx.) 18.5.

SYSTEMATIC POSITION. – Despite the lack of second pereopods from all specimens, the general morphology of the carapace, with well developed dentate rostrum, hepatic and antennal spines, the presence of a small mandibular palp, slender median process on the fourth thoracic sternite, with a pair of acute teeth on the fifth, and the simple fingers on the chela of the first pereopod and simple dactylus on the ambulatory pereopods, clearly indicate that these specimens belong on the genus *Palaemonella* Dana.

Without the second pereopods it is not possible to establish the precise systematic position of *P. dolichodactylus* with regard to the other species of the genus. It may be readily distinguished from all of these by the following combinations of characters : carapace with postorbital ridge, without supraorbital spines or tubercles, mandible with small, single segmented palp, ambulatory pereopods markedly slender, dactylus about 12.0 times longer than proximal width, with double row of long setae along second fourth of dorsal margin, propod with pair of very short distoventral spines, about 0.08 of dactylus length, and appendix masculina not exceeding tip of endopod of second pleopod.

The following key will distinguish *P. dolichodactylus* from the other Indo-West Pacific species of the genus *Palaemonella*.

1. – Carapace with supraorbital spines. . . . . 2
  - Carapace without supraorbital spines. . . . . 3
2. – Second pereopods with ischium distoventrally dentate ; R. 1 + 7/3 . . . . . *P. crosnieri* Bruce
  - Second pereopods with ischium distoventrally unarmed ; R. 1+5/2 . . . . . *P. spinulata* Yokoya
3. – Ambulatory dactylus long and slender, about 12 times longer than proximal depth, with double row of dorsal setae, about 12 times longer than distoventral propod spines ; propods about 26 times longer than width ; R. 1+8-9/3-4 . . . . . *P. dolichodactylus* sp. nov.
  - Ambulatory dactylus shorter, stouter, not more than 5 times longer than proximal depth ; propods much less than 20 times longer than wide, generally about 15 times. . . . . 4
4. – Merus of second pereopod distoventrally unarmed. . . . . 5
  - Merus of second pereopod with distoventral tooth. . . . . 7
5. – Carpus of second pereopod with two conspicuous distomedial teeth ; R. 1+6-7/2-3 . . . . .
  - . . . . . *P. lata* Kemp

- Carpus of second pereiopod distomedially unarmed. . . . . 6
- 6. – Small species, rostrum shorter than antennular peduncle ; R. 6/1 . . . . . *P. pusillus* Bruce
- Larger species, rostrum longer than antennular peduncle ; R. 8/2 . . . . . *P. burnsi* Holthuis
- 7. – Distoventral carpal tooth on second pereiopods distinctly preterminal ; R. 1+5-7/2-3. . . . .
- . . . . . *P. tenuipes* Dana
- Distoventral carpal spines on second pereiopod marginal ; with distinct postorbital ridge, generally tuberculate ; R. 1+5-7/1-3. . . . . 8
- 8. – Dactyls of ambulatory pereiopods ventrally concave ; distal propodal spines long, about 0.5 of dactylus length ; free-living. . . . . *P. rotumana* (Borradaile)
- Dactyls of ambulatory pereiopods ventrally sinuous or biconcave ; distal propodal spines short, about 0.25 of propodal length ; crinoid associates. . . . . *P. pottsi* Borradaile

***Periclimenes amboinensis*** (De Man, 1888)

*Anchistia amboinensis* De Man, 1888 : 546-548, pl. 22 a, fig. 2.

*Periclimenes amboinensis* - BORRADAILE, 1898 : 385.

MATERIAL EXAMINED. – Récif Améré, 6 m, coll. P. LABOUTE : 1 ♂, 1 ovig. ♀ (MNHN Na. 11254).

*Host* : *Comanthus bennetti* (J. Müller) (Echinodermata : Crinoidea).

REMARKS. – The male specimen is complete, the female lacks both second pereiopods. The male specimen, carapace length 2.2 mm, has a rostral dentition of 7/1 and the female, carapace length 4.0 mm, 6/1, with the distal tooth subterminal. In both specimens the supraorbital teeth and conoidal process of the cornea are well developed and, in the male, the distoventral angle of the merus of the second pereiopod bears a strong acute tooth. The female specimen has a conspicuous pair of curved epistomal horns. The fourth thoracic sternite is without a median process, second and third are wider, the third narrow anteroposteriorly, the second wider, centrally swollen, fifth segment narrowest, posterior sternites progressively broadening. The association with *C. bennetti* has been previously recorded, together with *Capillaster multiradiatus*, *Comanthina briareus*, *Comantheria rotula*, *Comanthus parvicirrus* and *C. samoanus*.

DISTRIBUTION. – Type locality : Ambon, Indonesia. New to the New Caledonian fauna. Further specimens have been subsequently reported from Indonesia (BRUCE, 1983) and from Heron Island, Australian Great Barrier Reef.

***Periclimenes amymone*** De Man, 1902

*Periclimenes amymone* De Man, 1902 : 829-833, pl. 25, fig. 23. – BRUCE, 1968 : 1166.

*Periclimenes* cf. *amymone* - LEDOYER, 1984 : 28-29, fig. 11.

MATERIAL EXAMINED. – Stn 1007, 20°11.8'S - 163°51.6'E., Lagon Nord-Ouest, 23-24 m, 2.05.1988 : 1 ovig ♀ (MNHN Na. 11257).

REMARKS. – The single example has a carapace length of 2.9 mm and a rostral dentition of 1 + 7/2. The fourth thoracic sternite has a well developed slender median process. The depth of 23-24 m represents the greatest depth from which this species has been captured. It is a common associate of branching corals on the Great Barrier Reef and appears to be an obligatory commensal.

DISTRIBUTION. – Type locality : Ternate, Indonesia. First recorded from New Caledonia by BRUCE (1968) and subsequently reported by LEDOYER (1984). Also known from the Nicobar Islands, Great Barrier Reef, Solomon and Samoan Islands.

*Periclimenes brevicarpalis* (Schenkel, 1902)

*Ancylocaris brevicarpalis* Schenkel, 1902 : 563, pl. 13, fig. 21.

*Periclimenes (Ancylocaris) brevicarpalis* - KEMP, 1922 : 185-191, figs 40-42, pl. 67.

*Periclimenes (Harpilius) brevicarpalis* - HOLTHUIS, 1952 : 69-73, fig. 29. - MONOD, 1976a : 24.

MATERIAL EXAMINED. - Stn 1008, 20°11.0'S - 163°53.4'E., Lagon Nord-Ouest, 27 m, 2.05.1988 : 1 ovig ♀ (MNHN Na. 11256).

REMARKS. - The single example has a carapace length of 7.1 mm and a rostral dentition of 6/1, with all teeth anterior to the posterior orbital margin. The first three thoracic sternites appear fused, forming a broad unarmed field. The fourth thoracic sternite is discrete, broad and without a median process, the fifth is narrow and the posterior sternites progressively broadening, unarmed. The dactylus of the ambulatory propods bear a minute distal ventral accessory tooth on the corpus, as previously reported for Madagascar specimens (BRUCE, 1978). The fingers of the second pereopod retain subterminal purple rings, as did the distal end of the palm. *P. brevicarpalis* was first recorded in New Caledonia, from the Fosse aux Canards, Nouméa, at 20 m, by MONOD (1976).

DISTRIBUTION. - Type locality : Makassar, Indonesia. Common and widespread, in association with giant anemones, throughout much of the Indo-West Pacific region, from the Red Sea and East Africa, to Palau, Eniwetak and Fanning Island.

*Periclimenes holthuisi* Bruce, 1969

*Periclimenes holthuisi* Bruce, 1969 : 258-259. - MONOD, 1969 : 216-220, figs 69-73.

MATERIAL EXAMINED. - Stn 157, 22°34.4'S - 166°35.6'E., île Ouen, baie du Prony, 15 m, 24.08.1984 : 1 ovig ♀ (MNHN Na. 11265). - Stn 236, 22°28.9'S - 166°53.8'E., île Ouen, baie du Prony, 67 m, 23.10.1984 1 ♂ (MNHN Na. 11224). - Stn 468, 18°26.7'S - 163°09.7'E., Atoll de Surprise, 40 m, 1.03.1985 : 1 ♂ (MNHN Na. 11225). - Stn 592, 22°34.2'S - 167°22.0'E., Grand Récif Sud, 65 m, 18.07.1985 : 1 ovig. ♀ (MNHN Na. 11226).

REMARKS. - The specimens do not differ from previously published data, including that of MONOD (1969). The male specimens have carapace lengths of 3.1, 3.3 mm and rostral dentitions 1 + 8/1 and 1 + 8/0 respectively. The smaller specimen lacks both second pereopods. The ovigerous females have carapace lengths of 3.6 and 4.0 mm, with the rostral dentition of 1 + 8/1 for the smaller example, the larger specimen being incomplete with badly damaged rostrum, lacking both first and left second pereopods and third pereopods, with telson and uropods also damaged. In the intact specimens, the rostrum slightly exceeds the second segment of the antennular peduncle in the male, but is slightly shorter in the female. Previously recorded from New Caledonia from 2 m, in the baie des Citrons, Nouméa, by MONOD (1969).

DISTRIBUTION. - Type locality : Lung Ha Wan, Hong Kong. Also recorded from the Red Sea and East Africa to Japan, Indonesia, Papua New Guinea, New Caledonia and Marshall Islands.



*Periclimenes imperator* Bruce, 1967

*Periclimenes imperator* Bruce, 1967 : 53-62, figs 23-25 ; 1968 : 1166-1167, fig. 10.

MATERIAL EXAMINED. – Stn 315, W. of île des Pins, 3 m, 2.07.1987, (CB 191), coll. P. LABOUTE : 1 ♂, 1 ovig. ♀ (MNHN Na. 11214). – Stn 224, 22°34.3'S - 166°41.1'E., île Ouen, baie du Prony, 30 m, 22.10.1984 : 1 ♂, 1 ovig. ♀ (MNHN Na. 11211). – Stn 252, 22°22.8'S - 166°23.7'E., secteur Nouméa, 22 m, 7.11.1984 : 1 ♂, 1 ♀, badly macerated, (MNHN Na. 11213). – Stn 1060, 20°14.3'S - 164°15'E., Lagon Nord-Ouest, 12-14 m, 5.05.1988 : 1 ♂ (MNHN Na. 11210).

*Host* : *Holothuria (Microthele) fuscopunctata* Jager (Echinodermata : Holothuria).

REMARKS. – The specimens agree with previously published descriptions. The males have carapace lengths of 4.3 - 5.6 mm, with rostral dentitions of 25-30/0. The females have carapace lengths of 5.8 - 7.2 mm and rostral dentitions of 28/0. The specimen from stn. 1060 still showed a deep red colouration on the fingers of the first and second pereopods, and dactylus of the ambulatory pereopod was completely devoid of any accessory tooth. The association with the holothurian *Holothuria fuscopunctata* is a new host record, but the shrimps have been found in association with a wide range of holothurian genera and with nudibranchs, particularly the genus *Hexabranchnus*.

DISTRIBUTION. – Type locality : Chumbe Island, Zanzibar. First reported from Nouméa, New Caledonia, by BRUCE (1968). Also known from Red Sea, Kenya, Moçambique, Comoro and Seychelle Islands, Japan, Australia and Hawaii.

*Periclimenes lanipes* Kemp, 1922

*Periclimenes (Periclimenes) lanipes* Kemp, 1922 : 156-158, pl. 4, fig. 4. – MONOD, 1973 : 9-10, figs 14-23. – BRUCE, 1990 : 160, fig. 7.

MATERIAL EXAMINED. – Canal Woodin, 15 m, 23.12.1980, (CB. 174), coll. P. TIRARD : 1 ♂, 1 ♀, 1 juv. (MNHN Na. 11258).

*Host* : Euryalinida indet. (Echinodermata, Ophiura).

REMARKS. – The specimens present no special features, and were captured at the same locality as the specimens reported on by MONOD (1973), also in association with a large unidentified basket-star. Recorded from depths to 73 m. An ovigerous female, also collected from 25 m in the Canal Woodin, by R. CATALA in 1971, is reported upon in BRUCE (1990).

DISTRIBUTION. – Type locality : 12°48'N - 98°16.16'E., Mergui Islands, 44 m. Previously recorded from New Caledonia by MONOD (1973) and BRUCE (1990). Also reported from Somalia, Kenya, Zanzibar, Moçambique, Madagascar, northern South China Sea and north east Australia.

*Periclimenes novaecaledoniae* Bruce, 1967

*Periclimenes novaecaledoniae* Bruce, 1967 : 1157-1165, figs 6-9 ; 1980 : 8-10, fig. 4 a-e.

MATERIAL EXAMINED. – Stn 121, 22°28.0'S - 166°43.1'E., île Ouen, baie du Prony, 12 m, 23.08.1984 : 1 ovig. ♀ (MNHN Na. 11223).

REMARKS. – The single example is damaged, but with both detached second pereopods preserved. It has a carapace length of 2.8 mm and a rostral dentition of 8/1. The second pereopods are subequal, not unequal as in the holotype, but have the cutting edges of the fingers similarly denticulate. The type specimen was found in association with the crinoid *Tropiometra afra*.

DISTRIBUTION. – Type locality : Ilot Maître, Nouméa, New Caledonia. Possibly also occurring in northern Madagascar (BRUCE, 1978).

*Periclimenes psamathe* (De Man, 1902)  
(Figs 1 a, 3 a)

*Urocaris psamathe* De Man, 1902 : 816-822, pl. 25, fig. 51.

*Periclimenes (Ancylocaris) psamathe* - KEMP, 1922 : 173.

*Periclimenes (Harpilius) psamathe* - HOLTHUIS, 1952 : 61, fig. 23. – MONOD, 1976a : 14-22, figs 1-28.

*Periclimenes psamathe* - BRUCE, 1970b : 541-543, fig. 3.

MATERIAL EXAMINED. – Stn 110 bis, 22°23.8'S - 166°47.0'E., île Ouen, baie du Prony, 40 m, 22.08.1984 : 1 ♀ (MNHN Na. 11221). – Stn 127, 23°30.6'S - 166°45.9'E., île Ouen, baie du Prony, 55 m, 23.08.1984 : 2 ovig. ♀ (MNHN Na. 11219). – Stn 248, 22°23.8'S - 166°47.0'E., île Ouen, baie du Prony, 47 m, 24.08.1984 : 1 ♀ (?) (MNHN Na. 11220). – Stn 401, 22°32.1'S - 167°15.4'E., Grand Récif Sud, 49 m, 23.01.1985 ; 1 ovig. ♀ (MNHN Na. 11252). – Stn 654, 21°46.3'S - 166°29.0'E., Lagon Est, 32 m, 8.08.1986 : 1 ovig. ♀ (MNHN Na. 11217). – Stn 707, 21°25.3'S - 166°04.1'E., Lagon Est, 34-38 m, 10.08.1986 : 1 ♂ (MNHN Na. 11218). – Stn 877, 20°45.5'S - 165°13.9'E., Lagon Est, 28-36 m, 11.01.1987 : 1 ♂ (MNHN Na. 11216). – Stn 874, 20°33.25'S - 164°49.7'E., Lagon Est, 40 m, 13.01.1987 : 5 (1 ovig. ♀), (MNHN Na. 11215). – Stn ?, îlot Maître, Nouméa, Lagon, no further data : 3 ♂, 3 ♀, 19 ovig. ♀ (MNHN Na. 11222).

*Host* : Specimens from îlot Maître noted as collected from antipatharian host.

REMARKS. – The specimens agree well with previous data. First recorded from New Caledonia by BRUCE (1970b), in association with the gorgonian host, *Mopsella ellisi* Hickson, and subsequently by MONOD (1976a). The largest ovigerous female has a carapace length of 6.4 mm. The carapace and proximal rostrum is always armed with three strong hooked teeth, with serrated ventral borders, with usually two small teeth along the dorsal margin and a small preterminal tooth but some specimens may have 1, 2 or 4 dorsal teeth in addition to the three large proximal teeth. The dactylus of the ambulatory pereopods are slender, uniformly ventrally concave, about 7.0 times longer than the proximal depth, with a distinctly demarkated unguis, about 0.25 of the total length. The carpus bears a pair of small lateral sensory setae, but lacks setae on the dorsal margin. The distoventral angle is armed with a single slender spine, about 0.17 of the dactylus length, with the distal ventral spine longer and more robust. In addition to being found in association with gorgonians, this species has also been reported on hydroids, such as *Lytocarpus philippinus*.

DISTRIBUTION. – Type locality : Ternate, Indonesia. Previously recorded from New Caledonia by BRUCE (1970b) and MONOD (1976a). Also known from East Africa, Maldives and Chagos Islands, Indonesia, South China Sea, Japan, Australia and Palau Islands.

*Periclimenes seychellensis* Borradaile, 1915  
(Fig. 8)

*Periclimenes (Falciger) seychellensis* Borradaile, 1915 : 212 ; 1917 a : 375, pls. 55-55, fig. 14.

*Periclimenes (Ancylocaris) seychellensis* - KEMP, 1922 : 176-178, figs 34-35, pl. 6, fig. 7.

*Periclimenes (Harpilius) seychellensis* - HOLTHUIS, 1952 : 66-67, fig. 13. - LEDOYER, 1984 : 33, fig. 14.

MATERIAL EXAMINED. - Stn 398, 22°37.0'S - 167°11.8'E., Grand Récif Sud, 71 m, 23.01.1985 : 1 ovig. ♀ (MNHN Na. 11194).

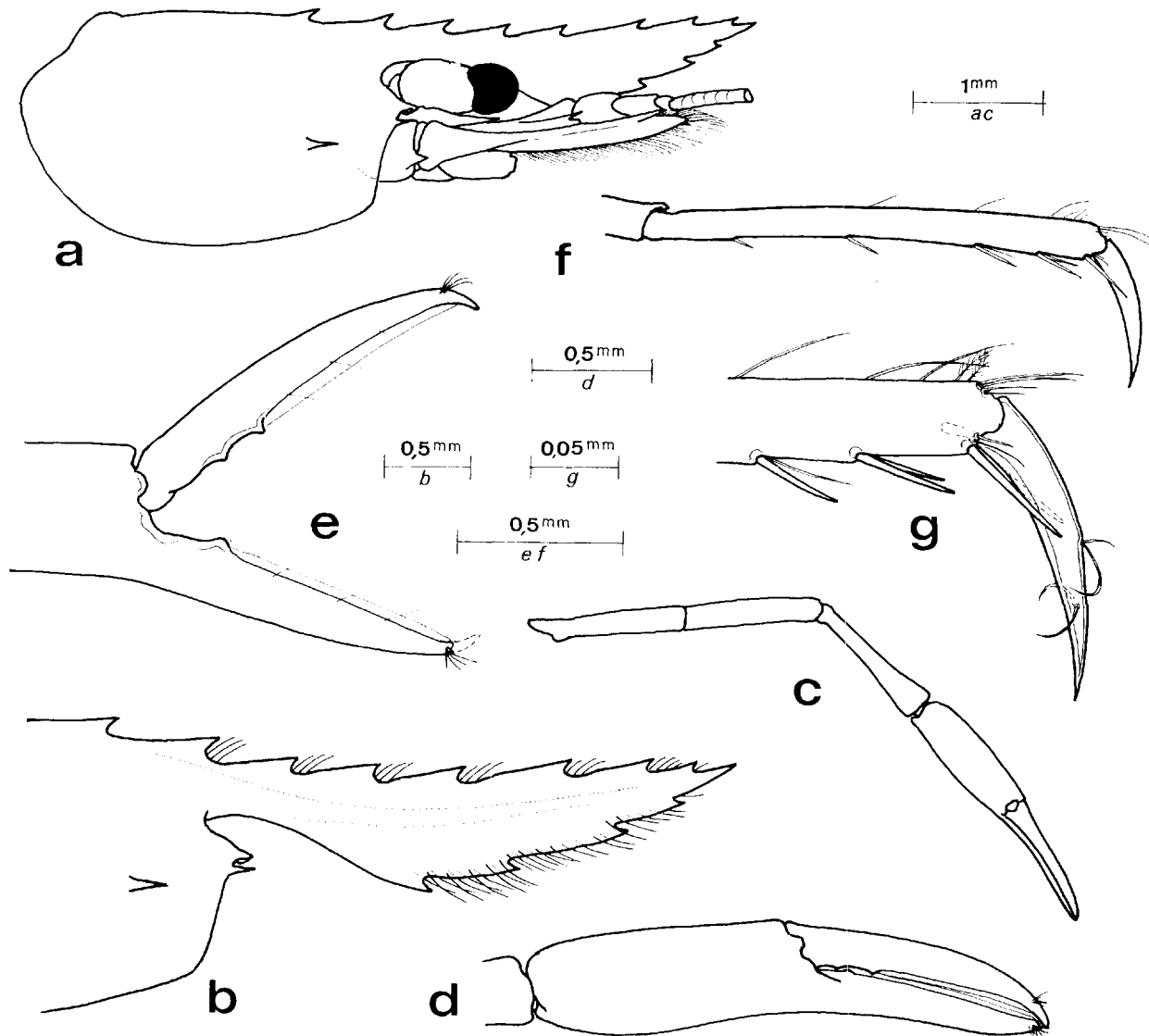


Fig. 8. - *Periclimenes seychellensis* Borradaile, ovigerous female, stn. 398. A, carapace, rostrum and antennal peduncles, lateral. B, anterior carapace and rostrum, C, second pereiopod. D, same, chela. E, same, fingers. F, third pereiopod, propod and dactylus. G, same, dactylus and distal propod.

REMARKS. - The single specimen, with a carapace length of 2.4 mm, has a damaged caudal fan, and generally agrees with the description provided by KEMP (1922). The rostral dentition is 1 + 7/4, with the rostrum deep and slightly upcurved distally. Dorsally, the margin is provided with a few setae proximally in each interdental space ; ventrally the distal half of the margin has a submarginal row of

setae on each side. The inferior orbital angle is acutely produced, with a small ventromedial flange. The eyestalk is provided with a distinct dorsal tubercle and the fourth thoracic sternite is armed with a slender median process. The second pereopod has the fingers slightly shorter than the palm, which is slightly shorter than the subequal carpus and merus. The dactylus is about 6.7 times longer than deep, with an acute, feebly hooked tip, the distal two thirds of the cutting edge sharp, entire, the proximal third with two small acute teeth distally : fixed finger similar, with a single low blunt tooth proximally, opposing the two dactylar teeth. The dactylus of the ambulatory propod is about 0.3 of the propod length, feebly curved, about 5.5 times longer than proximal depth, without a distinct unguis, with medial and lateral sensory setae distally and a pair of setae arising from the middle of the dorsal margin. The distal propod is armed with a pair of long slender spines, about 0.4 of the dactylus length, longer than the ventralpropodal spines. *P. seychellensis* has been previously recorded from New Caledonia by LEDOYER (1984), as common in the sea grass habitat.

DISTRIBUTION. – Type locality : Praslin Island, Seychelle Islands. Also known from Gulf of Suez to the Marshall Islands, including East Africa to Moçambique, Seychelle Islands, Madagascar, Pakistan, Gulf of Manaar, Andaman Islands, Indonesia, Singapore, Japan, New Caledonia, Great Barrier Reef and Eniwetak Atoll.

*Periclimenes tenuipes* Borradaile, 1898

*Periclimenes tenuipes* Borradaile, 1898 : 384.

*Periclimenes (Ancylocaris) tenuipes* - KEMP, 1922 : 220-224, pl. 8, fig. 11.

*Periclimenes (Harpilius) tenuipes* - HOLTHUIS, 1952 : 84-85.

MATERIAL EXAMINED. – Stn 206, 21°57'S - 165°55'E., baie de St. Vincent 8 m, 7.09.1984 : 1 ♂ (MNHN Na. 11187). – Stn 391, 22°28'S - 167°13'E., Grand Récif Sud. 65 m, 22.01.1985 : 1 ovig. ♀ (MNHN Na. 11190). – Stn 464, 18°21'S - 163°03'E., Atoll de Surprise, 44 m 1.03.1985 : 1 ♂ (MNHN Na. 11191). – Stn 487, 18°55'S - 163°31'E., Lagon Nord, 37 m, 1 ♂ (MNHN Na. 11189). – Stn 640, 21°54.8'S - 166°45'E., Lagon Est, 50-80 m, 1 ♂ (MNHN Na. 11192). – Stn 663, 21°42.2'S - 166°30.5'E., Lagon Est, 38-40 m, 8.08.1986 : 1 ovig. ♀ (MNHN Na. 11193). – Stn 372, 21°18.9'S - 165°50.9'E., Lagon Est, 43-50m, 12.08.1986 : 1 ♂ (MNHN Na. 11188).

REMARKS. – The five male specimens have carapace lengths of 3.0 - 4.9 mm, and the two ovigerous females, 3.2 - 4.2 mm. The rostral dentition is 1 + 8/6 in the three males that have intact rostra. Neither of the ovigerous females has the rostrum complete. None of the specimens have second pereopods, so the identifications cannot be considered as absolutely certain. In all other respects, the specimens agree well with the published data on *P. tenuipes*.

DISTRIBUTION. – Type locality : Ralun, New Britain. Not previously recorded from New Caledonian waters. Also known from Red Sea, East Africa, Madagascar, Seychelle, Maldivé Islands, La Réunion, Andaman Islands, Ceylon, Indonesia, Australia, Palau and Eniwetak atoll.

*Periclimenes ischiospinosus* sp. nov.

(Figs 3 b, 9-12)

MATERIAL EXAMINED. – New Caledonia. Stn 650, 21°49.3'S - 166°37.7'E, 50 m, 7.08.1986 : 1 ♀, (MNHN Na. 11203). – Stn 662, 21°44'S - 166°32'E., 50 m, 8.08.1986 : 1 ovig. ♀, holotype, (MNHN Na. 11202);

DESCRIPTION. – A small sized, very slenderly built shrimp of subcylindrical body form. Carapace glabrous, smooth ; rostrum wholly missing in holotype, tip missing in second specimen. Elongate, slender, slightly upturned, much longer than postorbital carapace length, far exceeding antennular peduncle, dorsal and ventral carinae reduced, dorsal carina with six (or more) acute teeth, first situated over posterior orbital margin, fifth tooth distal to end of antennular peduncle, interspaces setose

proximally, ventral margin with three acute teeth, proximal ventral margin with median row of short plumose setae ; epigastric spine probably present, missing in holotype, damaged in paratype, supraorbital spines absent, orbit obsolete, inferior orbital angle feebly produced, blunt, with feeble medial flange, antennal spine large, acute, submarginal ; hepatic spine small, acute, posterior to, at lower level than antennal spine ; anterolateral angle of branchiostegite rounded, not produced.

Abdomen glabrous, smooth ; third segment moderately posterodorsally produced, not carinate, sixth segment about 1.5 times longer than fifth, 1.6 times longer than deep, posteroventral angle small, subacute and posterolateral angle acute, pleura of first three segments broadly rounded, fourth posteriorly produced, rounded, fifth strongly posteriorly produced, posteroventral angle strongly acute. Telson about 1.25 times length of sixth segment 3.0 times longer than anterior width, lateral margins straight, convergent, posterior margin about 0.3 of anterior width, angular, with acute median point, two pairs of small subequal dorsal spines at 0.37 and 0.66 of telson length, equal to about 0.07 of telson length, lateral posterior spines slightly smaller than dorsal, intermediate spines robust, long, about 0.33 of telson length, intermediate spines slender, about of 0.4 of intermediate spine length, setulose.

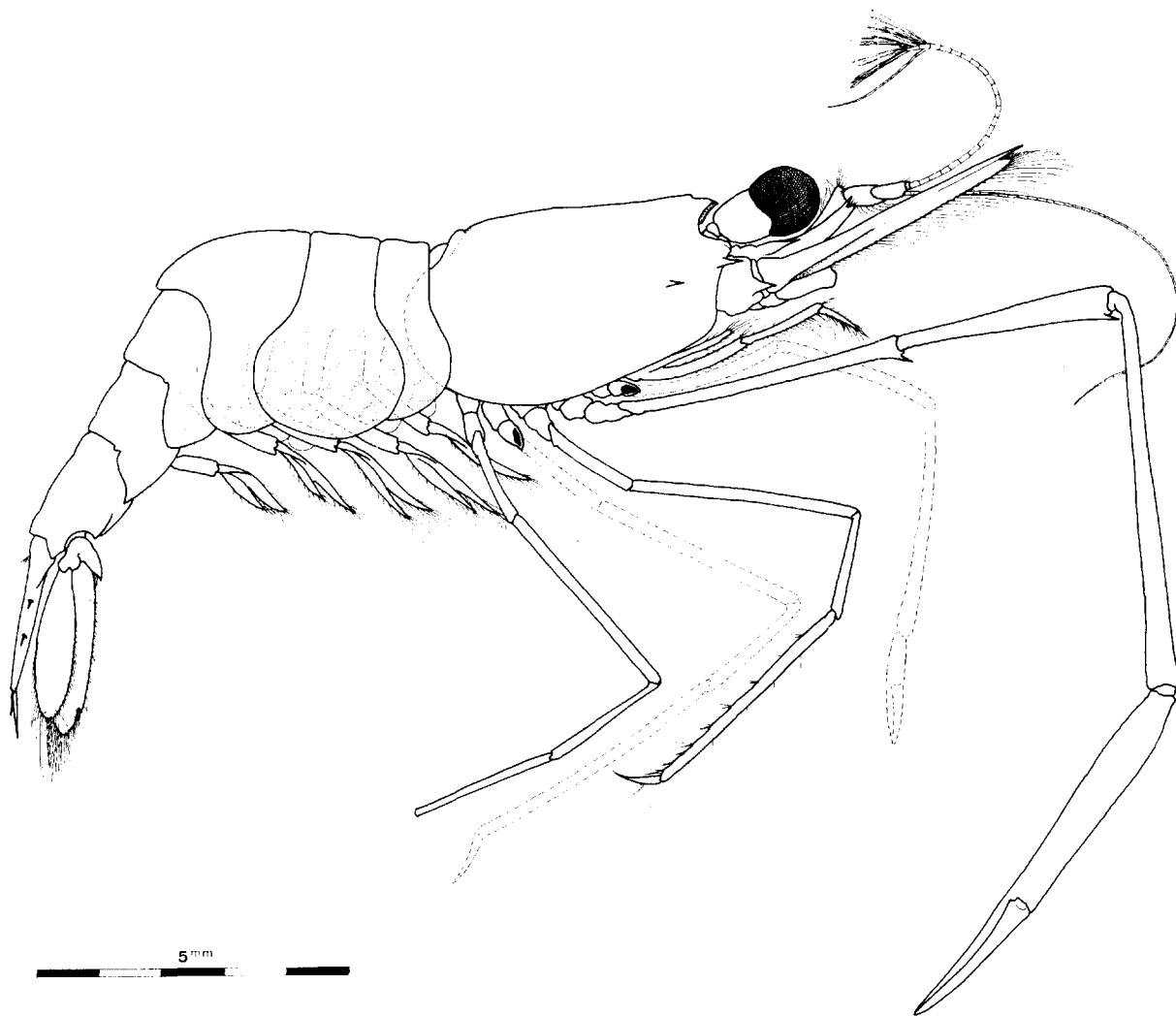


Fig. 9. – *Periclimenes ischiospinosus* sp. nov., ovigerous female holotype, stn. 662. Scale bar in millimetres.

Antennule with proximal peduncular segment about 2.25 times longer than central width, stylocerite moderately broad, acute, reaching to about 0.5 of segment length, statocyst well developed, with subcircular statolith, medial margin setose, with acute ventral tooth at about 0.45 of length, distolateral margin convergent, distolateral angle feebly produced, with small acute distolateral tooth; intermediate segment about 2.6 of proximal segment length, 1.75 times longer than wide, with narrow lateral lobe, obliquely articulated with distal segment; distal segment about 2.0 times longer than wide, subequal to intermediate segment length; upper flagellum biramous, long and slender, with proximal 22 segments fused, subequal to carapace length, shorter free ramus with two segments, five groups of aesthetascs; longer ramus slender, filiform, about 0.38 of fused portion length, 10 segments.

Antenna with robust basicerite with strong acute anterolateral tooth, ischiocerite and basicerite normal, carpocerite short, stout, about 2.0 times longer than distal width, reaching to about 0.25 of scaphocerite length; scaphocerite long, slender, far exceeding antennular peduncle, about 5.75 times longer than proximal width, tapering distally, anterior margin slightly produced, narrow, rounded, lateral margin concave, with strong distal tooth far exceeding distal margin of lamella.

Eye with large, globular, well pigmented cornea, with dorsal accessory pigment spot, stalk about as wide as long, about 0.7 of corneal diameter.

Fourth thoracic sternite moderately broad, without median process; posterior sternites narrow.

Mandible (left) robust, without palp; molar process stout, distally oblique, with five large blunt teeth; incisor process short, broad, obliquely truncate distally, with four acute teeth, central pair smaller than medial and lateral teeth. Maxillula with strongly bilobed palp, upper lobe with several short simple setae, lower lobe with small process ventrally with short simple seta; upper lacinia narrow, curved, with eight short stout simple distal spines, ventral margin with setulose setae; lower lacinia broad, tapering distally with numerous serrulate spiniform setae distally, setulose setae ventrally. Maxilla with broad palp, tapering to subacute distal tip, proximal lateral margin with numerous short setulose setae, basal endite deeply bilobed, upper lobe slightly larger than lower, with numerous finely setulose setae distally, coxal endite obsolete, medial margin feebly convex; scaphognathite moderately broad, about 2.75 times longer than wide, anterior lobe 1.5 times longer than wide, medial margin emarginate, distal half narrow; posterior lobe broad, about 1.2 times longer than wide. First maxilliped with short palp with preterminal medial setulose seta, basal endite large, broad, distally rounded, medial margin with numerous slender setae, coxal endite distinct, feebly bilobed; exopod with well developed flagellum with numerous plumose setae distally, caridean lobe small, narrow; epipod large, triangular, distal lobe enlarged. Second maxilliped with normal endopod, dactylar segment small, about 3.0 times longer than wide, with numerous serrulate spines medially, propodal segment with distal margin broadly rounded, with numerous long slender spines; exopod with slender flagellum, with numerous plumose setae distally; coxa with small medial protuberance, with numerous long sparsely setulose setae; epipod triquetral, without podobranch. Third maxilliped with slender endopod, extending beyond carpocerite by about half length of distal segment, ischiomerus and basis fused, junction indicated by small median notch; ischiomerus segment about 6.5 times longer than proximal width, tapering slightly distally, with numerous slender sparsely setulose setae medially, carpal segment about 0.75 of ischiomerus length, about 8.5 times longer than maximum width, tapering feebly distally, with numerous long, strong, feebly serrulate spines medially; distal segment about 0.4 of ischiomerus length, 6.0 times longer than proximal width, tapering distally, with short stout terminal spine, medial margin with numerous short robust, strongly serrulate spines; exopod as in second maxilliped; coxa with medial margin feebly convex, sparsely setose, with oval lateral plate; arthrobranch rudimentary.

First pereopods slender, exceeding scaphocerite by about chela and half length of carpus; carpocerite by about half length of merus; chela with palm subcylindrical, moderately compressed, about 2.2 times longer than deep, with about six transverse rows of serrulate cleaning setae proximally, fingers about 1.3 times palm length, slender, with acute hooked tips, cutting edges feebly laterally situated, entire, dactylus about 6.5 times longer than proximal depth, fixed finger similar, about 5.0 times longer than deep; carpus slender, subequal to carapace length, about 2.4 times length of chela, about 12.0 times longer than distal width, proximal half generally about half distal width, with two transverse rows of cleaning setae distolaterally; merus 0.7 of carpal length, 11.0 times longer than central width; ischium about 0.57 of carpus length, 11.0 times longer than distal width, slightly swollen distally; basis and coxa without species features.

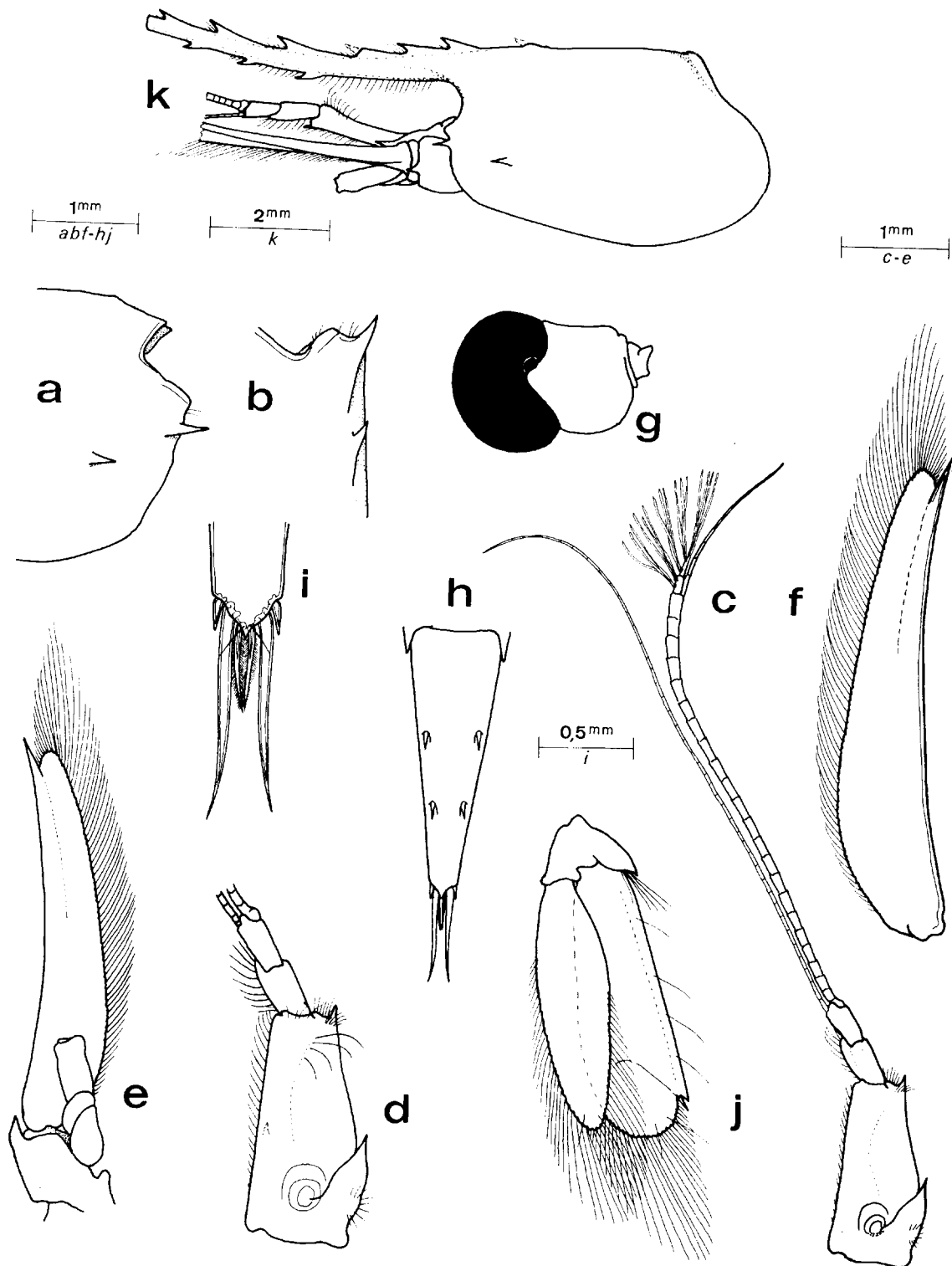


Fig. 10. — *Periclimenes ischiospinosus* sp. nov., ovigerous female holotype, stn. 662. A, anterior carapace and orbital region, lateral. B, inferior orbital region, dorsal. C, antennule. D, antennular peduncle. E, antenna. F, scaphocerite. G, eye, dorsal. H, telson. I, same, posterior spines. J, uropod. Paratype female, stn. 650. K, carapace, rostrum and antennal peduncles, lateral.

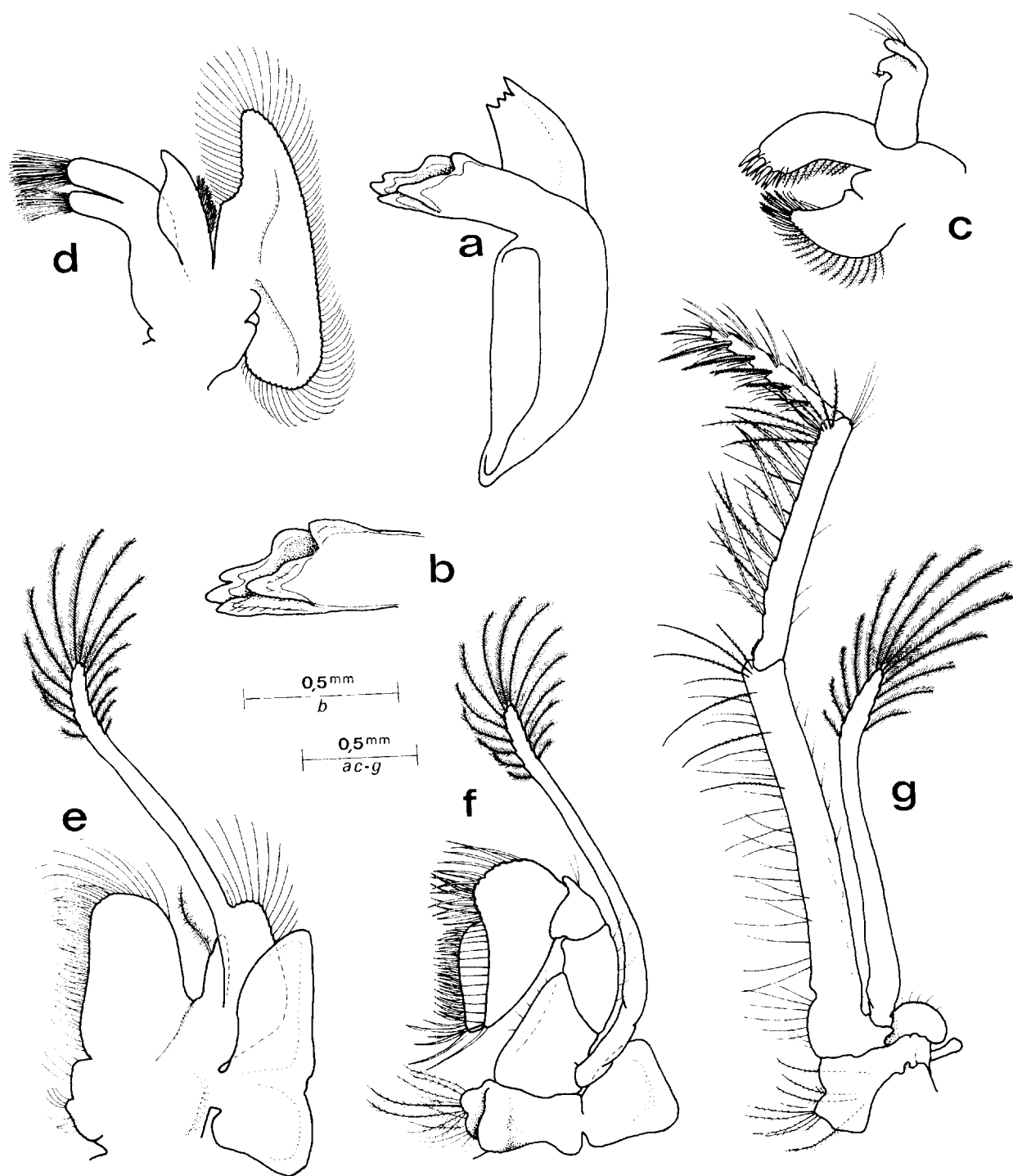


Fig. 11. — *Periclimenes ischiospinosus* sp. nov., ovigerous female holotype, stn. 662. A, mandible. B, molar process. C, maxillula. D, maxilla. E, first maxilliped. F, second maxilliped. G, third maxilliped.



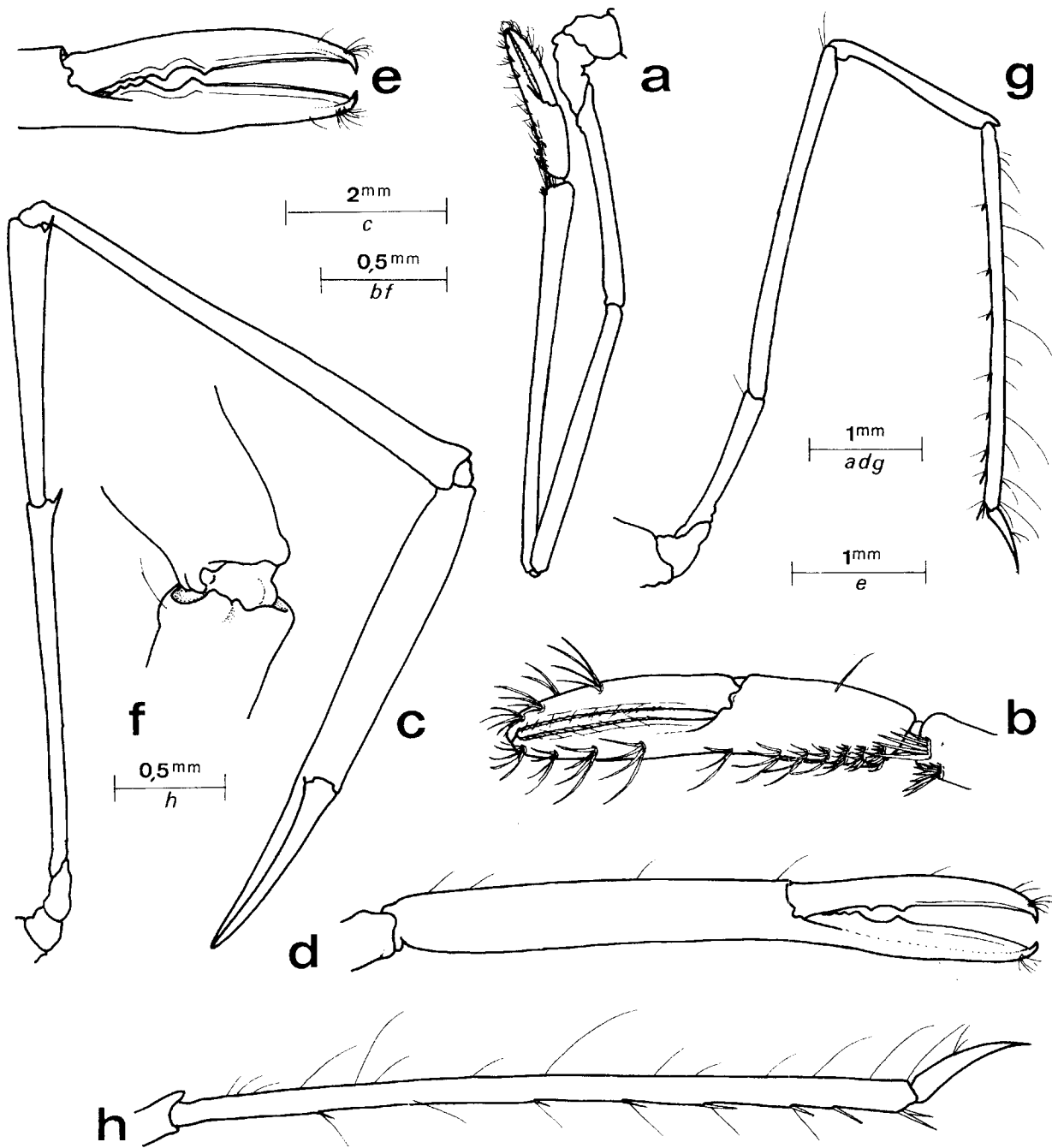


Fig. 12. — *Periclimenes ischiospinosus* sp. nov., ovigerous female holotype, stn. 662. A, first pereiopod. B, same, chela. C, second pereiopod. D, same, chela. E, same, fingers. F, same, carpo-propodal joint, dorsal. G, third pereiopod. H, same, propod and dactylus.

Right second pereopod of holotype preserved, paratype with ischium and merus of one pereopod only. Chela with palm smooth, subcylindrical, slightly compressed, about 1.6 times carapace length, about 6.0 times longer than deep, very slightly swollen proximally; fingers slender, dactylus about 0.6 of palm length, 6.75 times longer than proximal depth, with strong acute hooked tip, distal half of cutting edge sharp, entire, proximal half with two low acute teeth distally; fixed finger similar but with teeth on proximal cutting edge larger, more widely spaced, with two smaller teeth proximally; carpus subequal to chela length, about 20.0 times longer than central width, central width about 0.5 of distal width, distal margin feebly lobed, unarmed; merus about 0.9 of carapace length, 0.6 of carpal length, 9.0 times longer than central width, tapering proximally, expanding distally, with slender acute distoventral tooth; ischium slender, about 1.2 times carapace length, 0.73 of carpal length, about 19.0 times longer than central width, increasing in size distally, with slender acute distoventral tooth; basis and coxa without special features.

Ambulatory pereopods incomplete, slender; third exceeding scaphocerite by dactylus and about half of propod; dactylus slender, moderately curved, about 6.0 times longer than proximal depth, unguis distinct, about 7.0 times longer than proximal depth, 0.5 of corpus length; corpus moderately compressed, about 4.0 times longer than proximal depth, ventral margin sharp, with pair of long setae at 0.6 of dorsal margin, pair of distolateral setae, and single laterally; propod about 5.75 times dactylus length, slender, subequal to carapace length, about 26.5 times longer than central depth, slightly broadened distally, with pair of distoventral spines, subequal to 0.3 of dactylus length, ventral border with 6-7 widely spaced spines; carpus about 0.5 of palm length, slender, about 9.0 times longer than distal width, unarmed; merus about 0.93 of propod length, slender, about 18.0 times longer than distal width, unarmed; ischium about 0.4 of propod length, about 8.0 times longer than distal width, unarmed; basis and coxa without special features. Fourth pereopod similar to third, propod about 1.15 times length of third; right fifth pereopod lacking distal propod.

Uropod with protopodite with strong acute posterolateral tooth, with tuft of setae dorsally, reaching to end of telson; exopod broad, 3.0 times wider than long, lateral margin straight, with small acute tooth distally, with longer mobile spine medially; endopod about 0.88 of exopod length, about 3.7 times longer than wide.

Ova numerous and small.

*Measurements* (mm.): Ovigerous female holotype: carapace length, 3.8; total body length, excluding rostrum, (approx), 14.5 mm; right second pereopod, dactylus, 2.5; chela, 6.5; carpus, 6.4; merus, 3.6; ischium, 4.6; length of ovum, 0.5. Ovigerous female, stn. 650, carapace length, 4.0.

*Colouration*: No data.

*Systematic position.* – Due to the damaged nature of the only two available specimens, the precise relationships of *P. ischiospinosus* are difficult to assess. As only a single second pereopod exists, it is not clear if the second pereopods are subequal and similar or unequal and dissimilar. The exact morphology of the rostrum is similarly unknown as the holotype lacks the rostrum completely and the second specimen has most of the rostrum but lacks the distal part. This specimen also lacks all pereopods except part of one second pereopod, which lacks the chela, carpus and distal merus, but the ischium, with the diagnostic distoventral tooth, is preserved. *P. ischiospinosus* may be distinguished from most species of *Periclimenes* by the elongate carpus on the second pereopod, which is subequal to the length of the chela. In almost all *Periclimenes* species the carpus of this limb is much shorter than the chela. On the basis of the presently available information *P. ischiospinosus* is most closely related to *P. tenuipes* Borradaile, 1898, a widely distributed Indo-West Pacific species occurring from intertidal depths to 60 m (HOLTHUIS, 1952), and which has elongate second pereopods, but in which the carpus is distinctly shorter than the chela. *P. tenuipes* is a member of the "*P. grandis* species group" (BRUCE, 1987), species of which have a prominent median process on the fourth thoracic sternite, and which lacks an acute distoventral tooth on the ischium, a feature unique to *Periclimenes ischiospinosus*. *P. ischiospinosus* does not appear closely related to any of the *Periclimenes* species not included in the "*P. grandis* species group".

*Periclimenes tenuirostris* sp. nov.

(Figs 13-16)

MATERIAL EXAMINED. – New Caledonia. Stn 352, 22°35.1'S - 166°59.5'E., Grand Récif Sud, 82 m, 29.11.1984, 1 ♀ (bopyridized), holotype, (MNHNa. 11204). – Stn 598, 22°19.1'S - 167°06.2'E., Lagon Est, 73-85 m, 5.08.1988 : 1 ovig. ♀, paratype, (MNHNa. 11205).

DESCRIPTION. – A small sized slenderly built shrimp of subcylindrical body form. Carapace glabrous, smooth ; rostrum slender, straight, or very feebly bowed, slightly elevated, (ca.17°), about subequal to carapace length, slightly exceeding antennular peduncle, dorsal carina distinct ; low, with 6-7 small acute teeth, interspaces feebly setose ; ventral carina obsolete, rostrum with 2-3 small acute teeth on distal fourth, ventral margin proximally straight, strongly setose ; epigastric spine present, ? articulated, supraorbital spines absent ; orbital notch small, orbit obsolete, inferior orbital angle strongly produced, acute, with inner ventral flange ; antennal spine slender, submarginal, distinctly lower than inferior orbital angle ; hepatic spine large, distinctly lower than level of antennal spine ; anterolateral margin of branchiostegite bluntly angular.

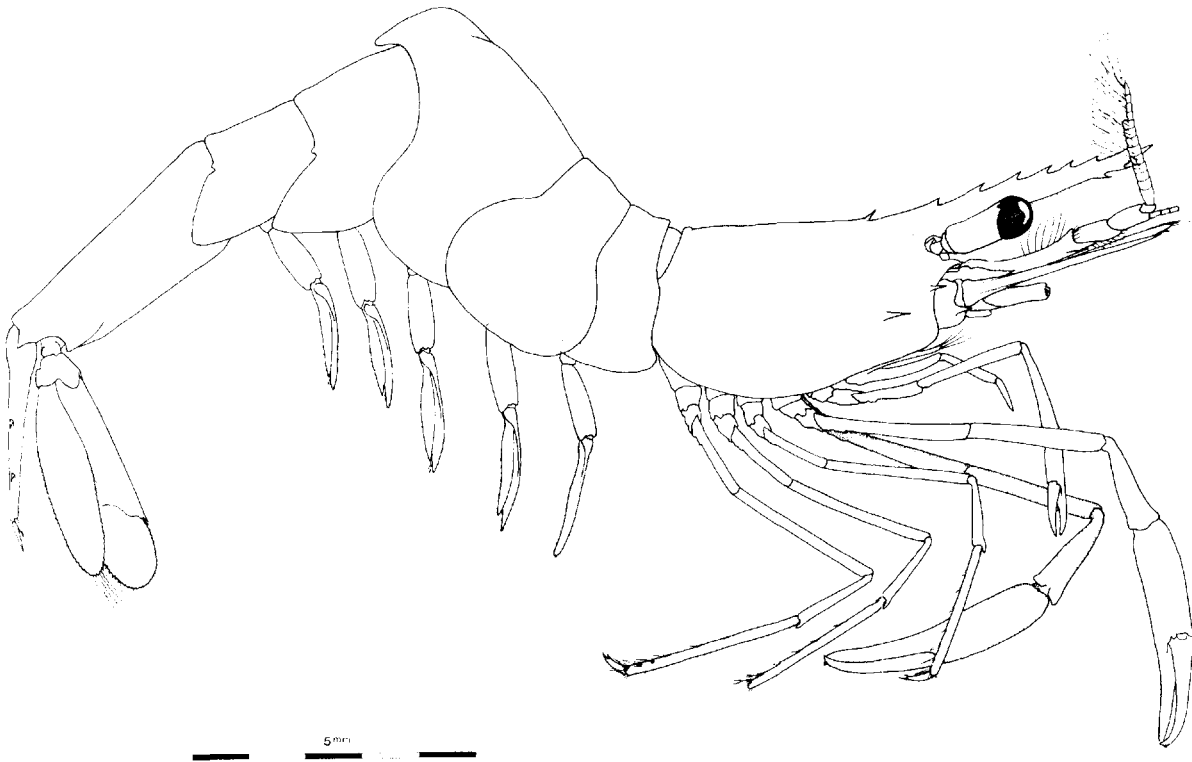


Fig. 13. – *Periclimenes tenuirostris* sp. nov., holotype, stn. 352. Scale bar in millimetres.

Abdomen glabrous, smooth ; third abdominal segment posteriorly produced with distinct posteromedian carina ; sixth segment about 2.5 times longer than fifth, greater than postorbital carapace length, compressed, about 2.75 times longer than anterior depth, posterolateral angle acute, posterolateral angle produced, blunt ; pleura of first three segments broadly rounded, fourth and fifth posteriorly produced, blunt. Telson about 0.75 of sixth segment length, 3.8 times longer than anterior width, lateral margins anteriorly subparallel, posteriorly straight, convergent, posterior margin angular,

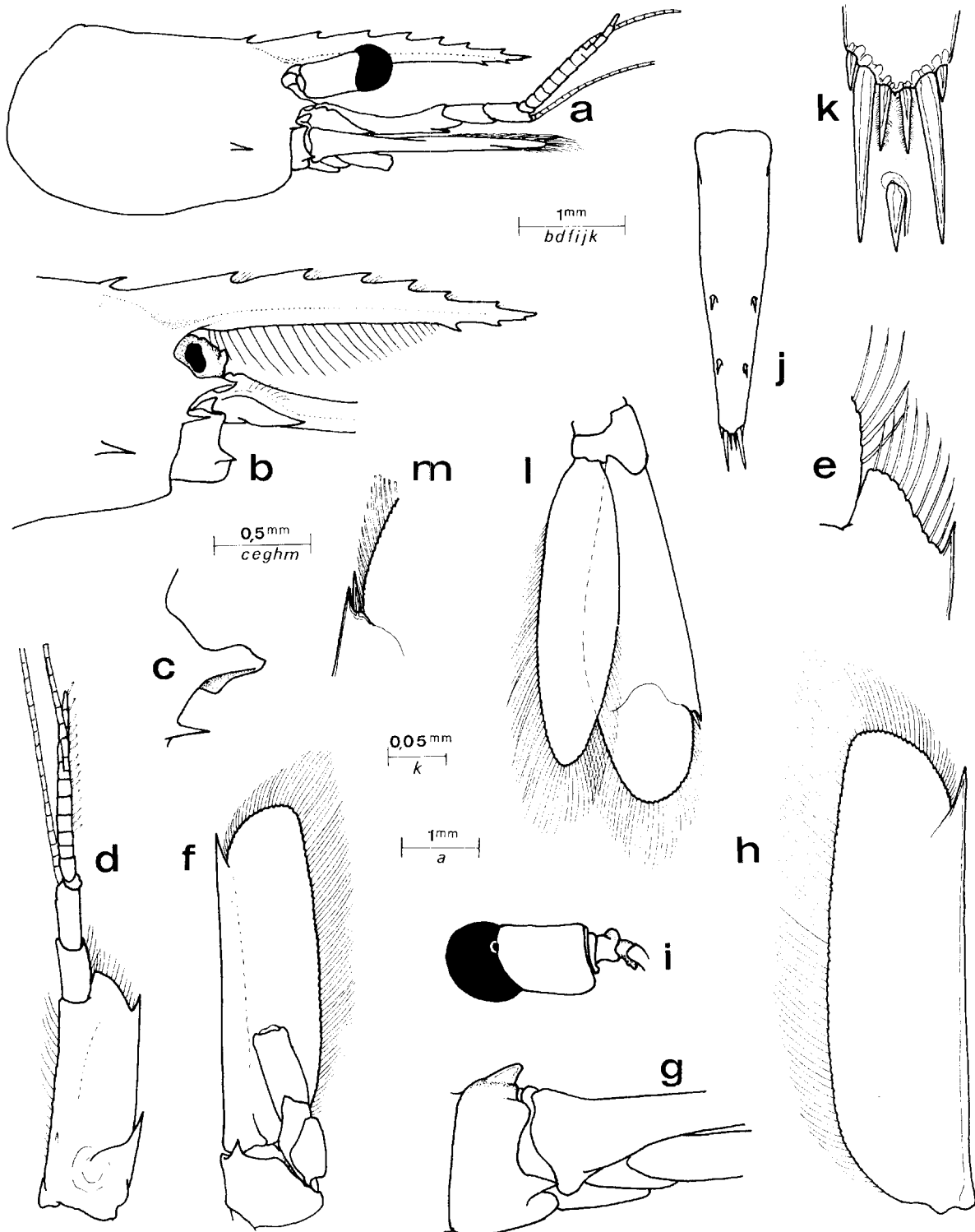


Fig. 14. — *Periclimenes tenuirostris* sp. nov., holotype, stn. 352. A, carapace, rostrum and antennae, lateral. B, anterior carapace and rostrum. C, inferior orbital angle. D, antennule. E, same, proximal segment, distolateral angle. F, scaphocerite. G, basicerite, lateral. H, scaphocerite. I, eye. J, telson. K, same, posterior spines. L, uropod.

with minute median point, about 0.33 of anterior width ; two pairs of small subequal dorsal spines at 0.57 and 0.77 of telson length ; three pairs of posterior spines, lateral spines smaller than dorsal spines, intermediate spines long, slender, about 0.15 of telson length, 4.0 times lateral spine length, submedian spines setulose, about 0.4 of intermediate spine length.

Antennule with proximal segment of peduncle about 2.5 times longer than central width ; stylocerite short, slender, acute, reaching to about 0.5 of length, medial margin setose, with small ventral tooth at about 0.3 of length, anterolateral margin strongly produced, setose, reaching to about middle of intermediate segment, medially angulate, lateral margin straight, with small acute distal tooth ; intermediate segment slender, about 1.6 times longer than wide, 0.3 of proximal segment length, feebly lobed laterally, slightly obliquely articulated with distal segment ; distal segment subequal to proximal segment length, 3.0 times longer than central width ; upper flagellum biramous, proximal seven segments of rami fused, shorter free ramus with four segments, with about 20-21 groups of aesthetascs, lower ramus slender, filiform, incomplete ; lower flagellum slender, filiform, incomplete.

Antenna with stout basicerite with acute lateral tooth, dorsal margin with small raised pointed lobe ; ischiocerite and merocerite normal ; carpocerite about 2.4 times longer than broad, reaching to about 0.37 of scaphocerite length ; flagella lacking ; scaphocerite slightly exceeding antennular peduncle, about 3.5 times longer than central width, broad, anterior lamella strongly produced, lateral margin straight, with strong distal tooth far exceeded by lamella.

Eye with well pigmented, globular, slightly oblique cornea with small dorsal accessory pigment spot ; stalk about 1.4 times longer than proximal width, slightly tapering distally, posterior margin length subequal to maximal corneal diameter ; peduncle with small ventrolateral lobe.

Ophthalmic somite with small "bec ocellaire". Epistome unarmed. Fourth thoracic sternite unarmed, posterior sternites narrow.

Mandible (right) normal, without palp ; molar process with four large blunt teeth ; incisor process tapering distally, obliquely truncate with three acute distal teeth, lateral tooth largest. Maxillula with feebly bilobed palp, lower lobe with small ventral protuberance with short curved ventral setae ; upper lacinia moderately broad with about 8-9 simple distal spines, numerous short spiniform setae ; lower lacinia tapering, blunt, with numerous serrulate setae distally. Maxilla with slender, tapering, non-setiferous palp, basal endite slender, deeply bilobed, with sparse simple distal setae, coxal endite obsolete, medial margin feebly convex ; scaphognathite narrow, about 3.2 times longer than broad, posterior lobe short, 1.5 times longer than wide, anterior lobe 1.5 times longer than broad, distal half narrow. First maxilliped with long slender simple non-setiferous palp ; basal endite large, broad, medial margin sparsely setose, coxal endite feebly demarkated, with few long simple setae medially ; endopod with slender flagellum, with four distal and one preterminal plumose setae, caridean lobe large, broad ; epipod simple, triangular. Second maxilliped with normal endopod ; dactylar segment broad, about 2.75 times longer than broad, with numerous serrulate spines medially, propodal segment broad, with anteromedial margin rounded with long spiniform setae ; carpus with ventromedial process ; ischiomerus and basis normal ; exopod with slender flagellum, with four terminal and one preterminal distal setae ; coxa with medial margin broadly convex, with long simple setae, epipod subrectangular, without podobranch. Third maxilliped with endopod normal, reaching almost to end of carpocerite ; ischiomerus and basis feebly separated, with small notch at junction on medial margin, ischiomerus about 5.0 times longer than proximal width, slightly bowed, uniform, with single small distolateral spine, medial margin sparsely setose, setae simple ; penultimate segment about 0.75 of ischiomerus length, 5.0 times longer than proximal width, feebly tapering distally, with seven groups of spiniform setae medially, several single setae laterally ; terminal segment about 0.5 of ischiomerus length, 4.0 times longer than proximal width, tapering distally to terminal spine (?), (lost in dissection), with 9-10 transverse rows of short serrulate spines medially, paired long slender spiniform setae laterally ; basal segment sparsely setose medially, exopod with broader flagellum with four terminal, three distal plumose setae ; coxa with small setose median process, with oval lateral plate, arthrobranch small, four lamellae.

First pereopod moderately slender, exceeding carpocerite by about 0.4 of carpus length, reaching to about end of scaphocerite ; chela with palm subcylindrical, slightly compressed, 2.0 times longer than deep, very feebly tapering distally, with four transverse rows of short serrulate cleaning setae proximally ; fingers about 1.25 palm length, dactylus slender, about 4.9 times longer than proximal depth, tapering, with slightly laterally situated entire sharp cutting edge, with small acute hooked tip,

fixed finger similar, fingers sparsely setose ; carpus about 0.88 of chela length, 5.2 times longer than distal width, tapering proximally, with longitudinal row of seven serrulate cleaning setae distally ; merus subequal to chela length, 8.5 times longer than wide, uniform ; ischium about 0.5 of chela and merus length, 3.75 times longer than proximal depth ; basis about 0.33 of chela length, 2.0 times longer than wide ; coxa with small setose ventral process.

Second pereopods well developed, similar, slightly unequal, exceeding scaphocerite by length of chela ; major chela about 1.05 of carapace length, palm subcylindrical, slightly swollen proximally, feebly compressed, about 2.7 times longer than maximum width, dactylus slender, tapering, subequal to palm length, about 6.0 times longer than proximal depth, with stout, acute, feebly hooked tip, cutting edge sharp, entire, feebly laterally situated, with small low, acute tooth at about 0.25 of length ; fixed finger generally similar, with larger, slightly recurved tooth at about 0.28 of length, separated by small diastema from smaller tooth at 0.2 of length ; carpus about 0.85 of palm length, 3.2 times longer than distal width, tapering proximally, distal margin slightly expanded, unarmed ; merus about 1.1 times palm length, 6.75 times longer than distal width, slightly tapered proximally, unarmed ; ischium about 1.2 times palm length, slender, 8.2 times longer than distal width, tapering proximally, unarmed ; basis and coxa without special features. Minor second pereopod similar to major pereopod, with chela about 0.8 of carapace length, 0.75 of major chela length, fingers subequal to palm length, cutting edges entire, sharp, unarmed ; carpus subequal to palm length, merus about 1.3 of palm length, ischium about 1.36 times palm length.

Ambulatory pereopods slender, third pereopod reaching to about end of scaphocerite, dactylus without distinct unguis, about 4.2 times longer than proximal depth, compressed, with strong distoventral accessory tooth, about half length of distal tooth, at about 0.33 of dactylus length ; propod about 0.55 of carapace length, 4.7 times dactylus length, 13.4 times longer than wide, uniform, with pair of long, slender, similar distoventral spines, two pairs of similar distal ventral spines, two single ventral spines proximally ; carpus about 0.45 of propod, length, 4.5 times longer than distal width, unarmed ; merus subequal to propod, about 10.6 times longer than wide, subuniform, unarmed ; ischium about 0.5 of propod length, about 5.7 times longer than wide, unarmed ; basis 2.6 of propod length ; coxa without special features. Fourth pereopod similar to third, propod about 1.15 of third propod length. Fifth pereopod with propod about 1.3 of third propod length, with single spines distoventrally, short transverse rows of setae distolaterally.

Uropods with protopodite feebly posterolaterally produced, blunt ; exopod exceeding telson, about 3.2 times longer than broad, broadly rounded distally, with distinct diaeresis, lateral margin straight with small acute distolateral tooth, with larger mobile spine medially ; endopod about 0.85 of exopod length, 3.75 times longer than wide.

Ova numerous, small.

*Measurements* (mm.) : Holotype female, carapace and rostrum, 8.0 ; carapace, 4.2, total body length (approx.), 24.0 ; major second pereopod, chela, 4.5 ; minor second pereopod, chela, 3.4. Paratype, ovig. ♀, carapace length, 2.8.

*Parasites* : *Schizobopyrina andamanica* (Chopra, 1923) (Bopyridae, Isopoda).

*Systematic position.* – *Periclimenes tenuirostris* is closely related to the members of the *P. aesopius* species group. *P. tenuirostris* differs from the other species of the group by the presence of a straight, slender rostrum directed slightly dorsally. Most of the species of this group are characterized by having an arched rostrum. Features shared with the other species are the subequal similar second pereopods, with unarmed merus and carpus, strongly produced, acute, inferior orbital angle, with reflected inner flange, ophthalmic somite with a "bec ocellaire", and the third abdominal segment posterodorsally produced. This group now consists of six species of which *P. tenuirostris* appears most closely related to *P. holthuisi*, sharing with that species, the following features, (i) carpus of second pereopod shorter than chela, (ii) fingers lacking a series of 5-7 small denticles along each cutting edge, with (iii) relatively long distoventral spines on the ambulatory propods. It may be readily distinguished from *P. holthuisi* by the slender, straight, upwardly directed rostrum ; relatively shorter carpus in the second pereopods, distinctly less than the palm length ; and the more elevated posterodorsal carina on the third abdominal tergite.

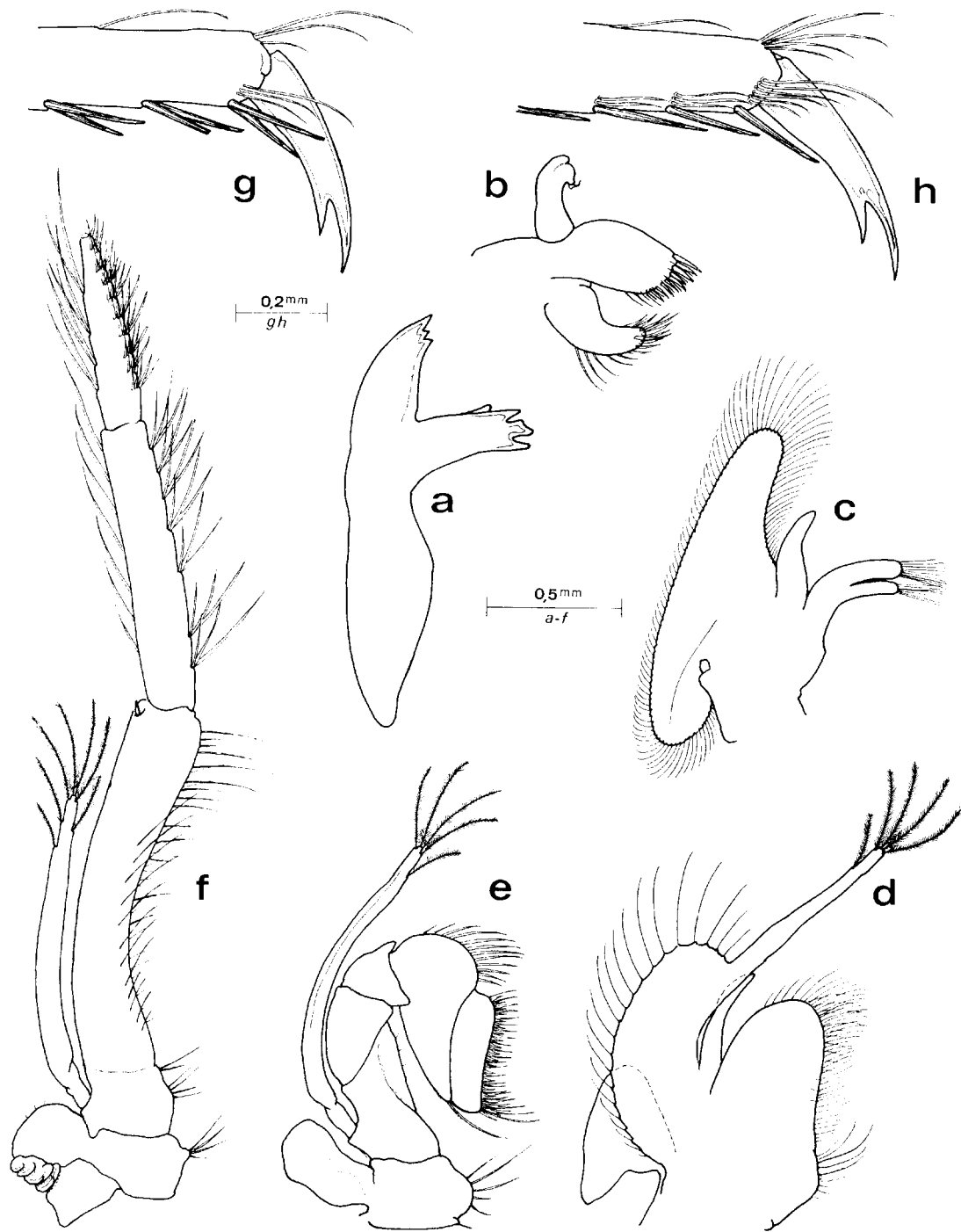


Fig. 15. — *Periclimenes tenuirostris* sp. nov., holotype, stn. 352. A, mandible. B, maxillula. C, maxilla. D, first maxilliped. E, second maxilliped. F, third maxilliped. G, third pereiopod, dactylus and distal propod. H, fourth pereiopod, same.

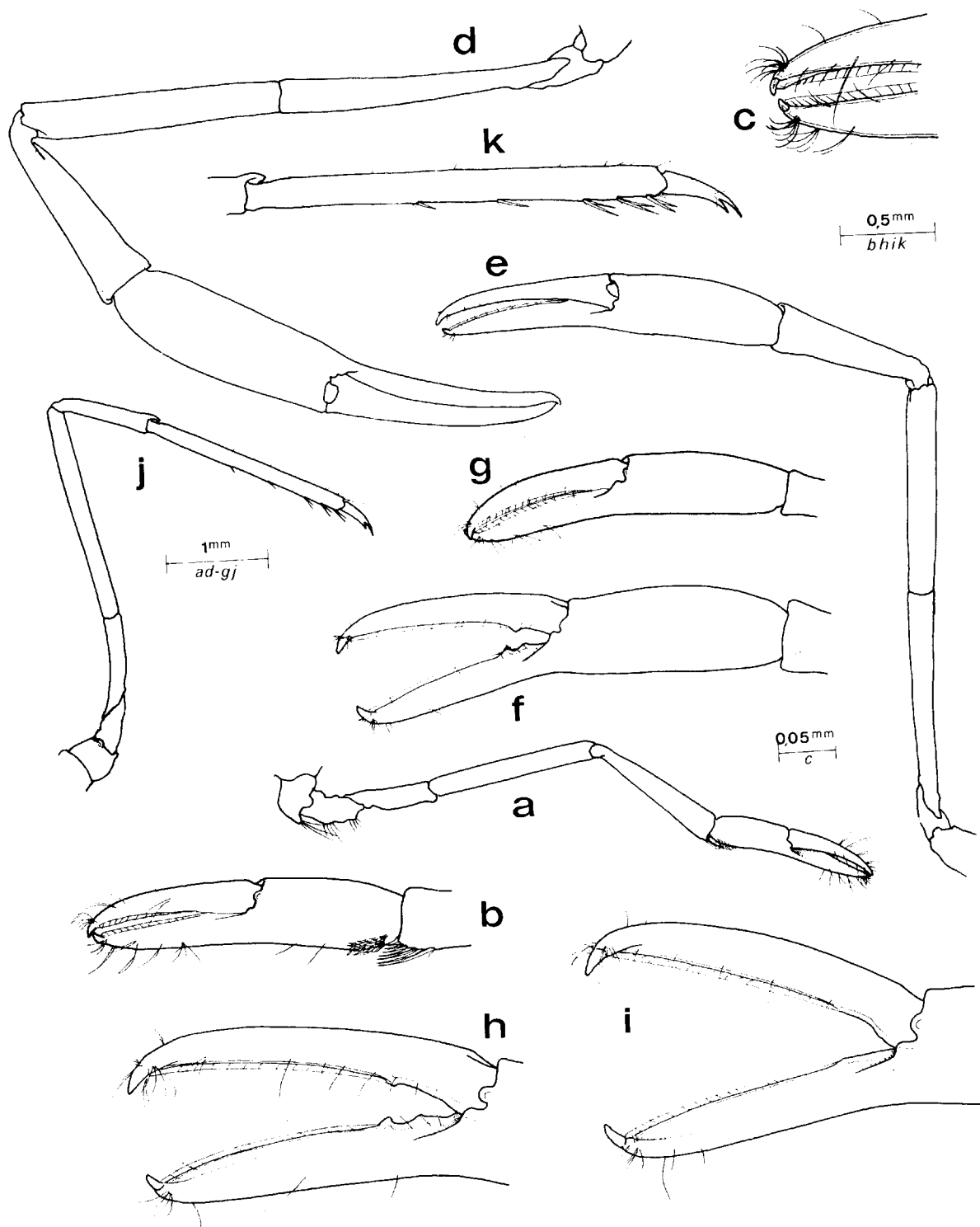


Fig. 16. — *Periclimenes tenuirostris* sp. nov., holotype, stn. 352. **A**, first pereiopod. **B**, same, chela. **C**, same, tips of fingers. **D**, major second pereiopod. **E**, same, chela. **F**, same, fingers. **G**, minor second pereiopod. **H**, same, chela. **I**, same, fingers. **J**, third pereiopod. **K**, same, propod and dactylus.



REMARKS. – The species of the *P. aesopius* group are most readily distinguished by their live colour patterns, but unfortunately, in the case of *P. tenuirostris*, this is as yet unknown. In the other species of the group, the most striking colour feature is generally on the dorsum of the third abdominal segment, (BRUCE, 1990b) and the marked posterodorsal elevation of *P. tenuirostris* suggest that this feature will ultimately be found to have a species specific colouration on this prominence.

*Periclimenaeus arabicus* (Calman, 1939)  
(Fig. 17)

*Periclimenes* (*Periclimenaeus*) *arabicus* Calman, 1939 : 210-211, fig. 4.

*Periclimenaeus arabicus* - HOLTHUIS, 1952 : 13, 130. – BRUCE, 1974 : 1563-1568, figs 3 c-f, 4-6, 7 c-h ; 1980 a : 25-27, 3, fig. 11.

*Periclimenaeus ohshimai* Miyake & Fujino, 1967 : 275-279, fig. 1.

MATERIAL EXAMINED. – MUSORSTOM 4 : stn. 146, 19°53.4'S - 167°47.1'E., 33 m, 13.09.1985 : 1 ♂ (MNHN Na. 11952).

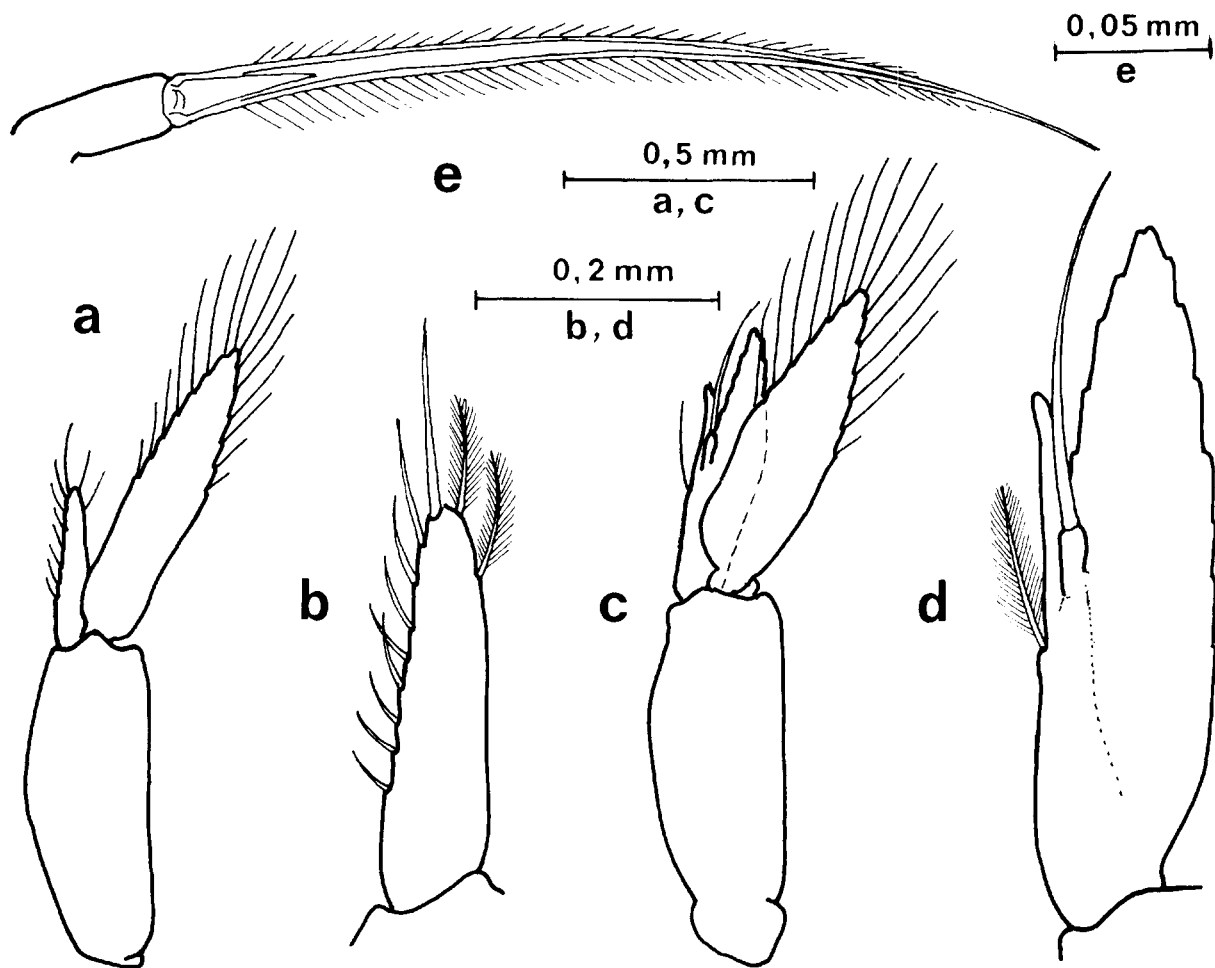


Fig. 17. – *Periclimenaeus arabicus* (Calman), male, stn. 146. A, first pleopod. B, same, endopod. C, second pleopod. D, same, endopod. E, same, appendix masculina.

REMARKS. – The single example lacks the major second pereopod but is otherwise complete, with a rostral dentition of 6/0 and carapace length of 1.7 mm. The specimen agrees well with previously published data. The male pleopods have not been previously described. The first pleopod has the basipodite about 2.5 times longer than the central width ; the endopod is about 0.5 of the basipodite length, about 2.5 times longer than the central width ; the endopod is about 0.5 of the basipodite length, about 3.6 times longer than proximal width, tapering slightly distally, terminally blunt, with eight simple spiniform setae, of increasing length distally, along whole of medial margin, distal lateral margin with two short plumose setae. Second pleopod with basipodite about 2.5 times longer than central width, subequal to first basipodite length ; endopod about 0.8 of basipodite length, four times longer than wide, with appendices at about 0.5 of medial margin length ; appendix masculina with corpus short, stout, about 2.0 times longer than wide, about 0.07 of ramus length, with single long setulose spiniform seta, 7.0 times corpus length, 0.3mm long ; appendix interna slender, far exceeding corpus of appendix masculina, with few distal concinnuli ; exopod about 1.2 times length of endopod, 3.5 times longer than wide.

DISTRIBUTION. – Type locality : South Arabia, 19°22.6'N - 59°33.0'E. Previously reported from flot Maître, Nouméa, New Caledonia (BRUCE, 1980 a), East Africa, Australia and from Japan.

*Periclimenaeus bidentatus* Bruce, 1970  
(Fig. 18)

*Periclimenaeus bidentatus* Bruce, 1970 : 305-307.

MATERIAL EXAMINED. – MUSORSTOM 4 : stn. 146, 19°53.4'S - 167°47.1'E., 33 m, 13.09.1985 : ♀, bopyridized (MNHN Na. 11953).

*Parasites* : *Schizobopyrina andamanica* (Chopra, 1923) (Isopoda, Bopyridae).

REMARKS. – The single example has a carapace length of 2.1 mm and a rostral dentition of 8/0, in contrast to the type material with 7/0. In general, it agrees well with the original description, but the dactylus of the major second pereopod is simply blunt and not clearly bidentate. The dactylus of the minor second pereopod is distinctly bidentate. A sponge associate, previously recorded in association with sponges of the genera *Dysidea*, *Arenochalina*, *Jaspis*, *Sponginella* and *Liosina*.

DISTRIBUTION. – Type locality : Heron Island, Queensland, Australia. New to the New Caledonian fauna. Also previously recorded from Zanzibar and Mombasa, Kenya, and Moreton Bay, Queensland, Australia.

*Periclimenaeus nobilii* Bruce, 1974  
(Fig. 19)

*Periclimenaeus nobilii* Bruce, 1974 : 1577-1581, figs 13 f, 14.

MATERIAL EXAMINED. – Stn NC 38, baie Uie, 10 m July 1988 : 1 ovig.♀ (MNHN Na. 11263). – Stn NC 22, Canal Woodin, 35 m, : 1 juv. (MNHN Na. 11158). – N°UA 324, P. LABOUE, coll. : 1 ♂, 1 ovig ♀ (MNHN Na.11200).

*Hosts* : *Lissoclinum vareau* Monniot & Monniot (UA 324) ; stn. NC 38, *Diplosoma* sp. (Ascidiacea).

REMARKS. – The specimens from the *Lissoclinum*, carapace lengths, 1.4, 1.8 mm, both have a rostral dentition of 2/0, as in female holotype specimen. The ovigerous female from *Diplosoma*,

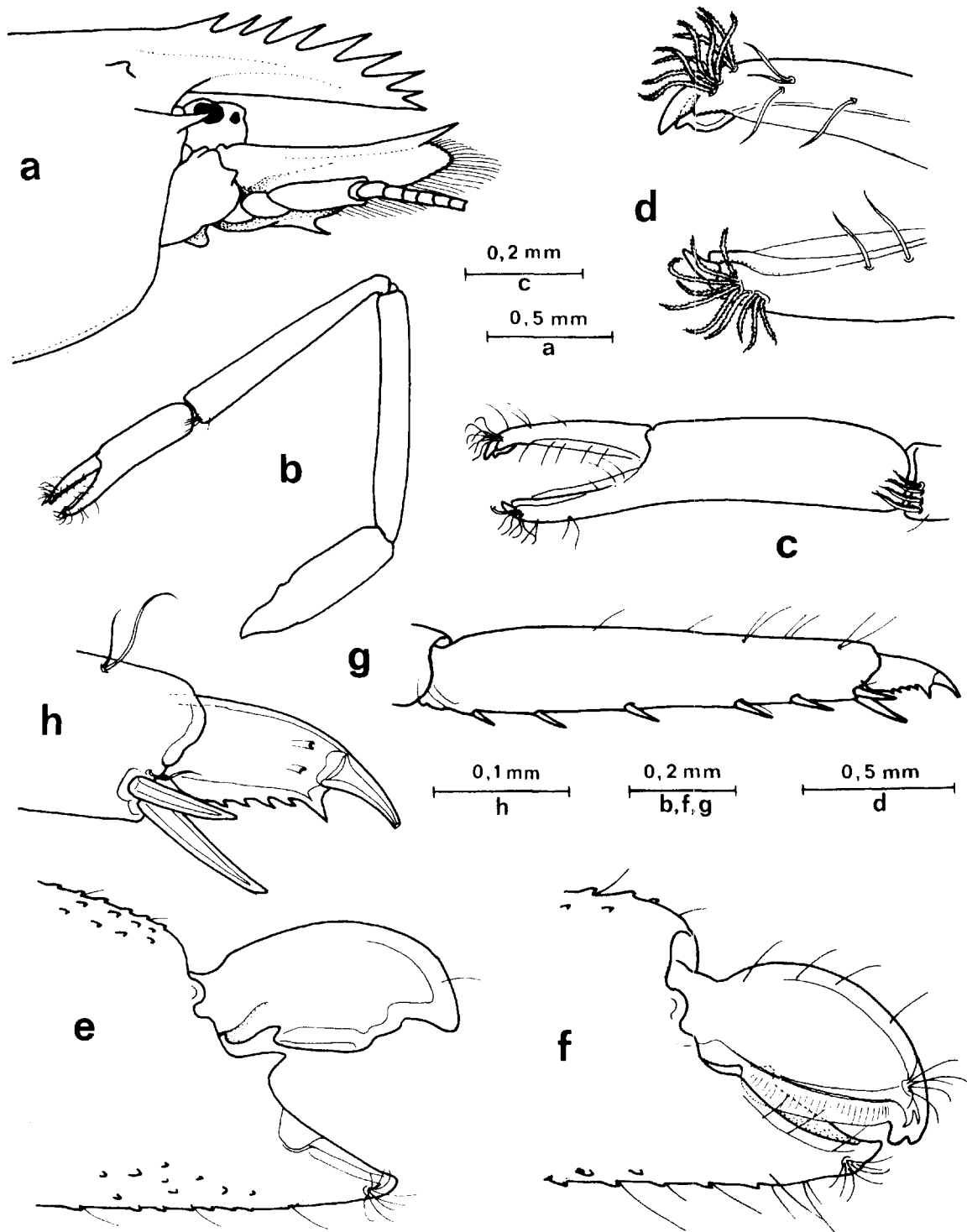


Fig. 18. - *Periclimenaeus bidentatus* Bruce, female, stn. 146. A, anterior carapace, rostrum, antennal peduncles, lateral. B, first pereopod. C, same, chela. D, same, tips of fingers. E, major second pereopod, fingers. F, minor second pereopod, fingers. G, third pereopod, propod and dactylus. H, same, dactylus and distal propod.

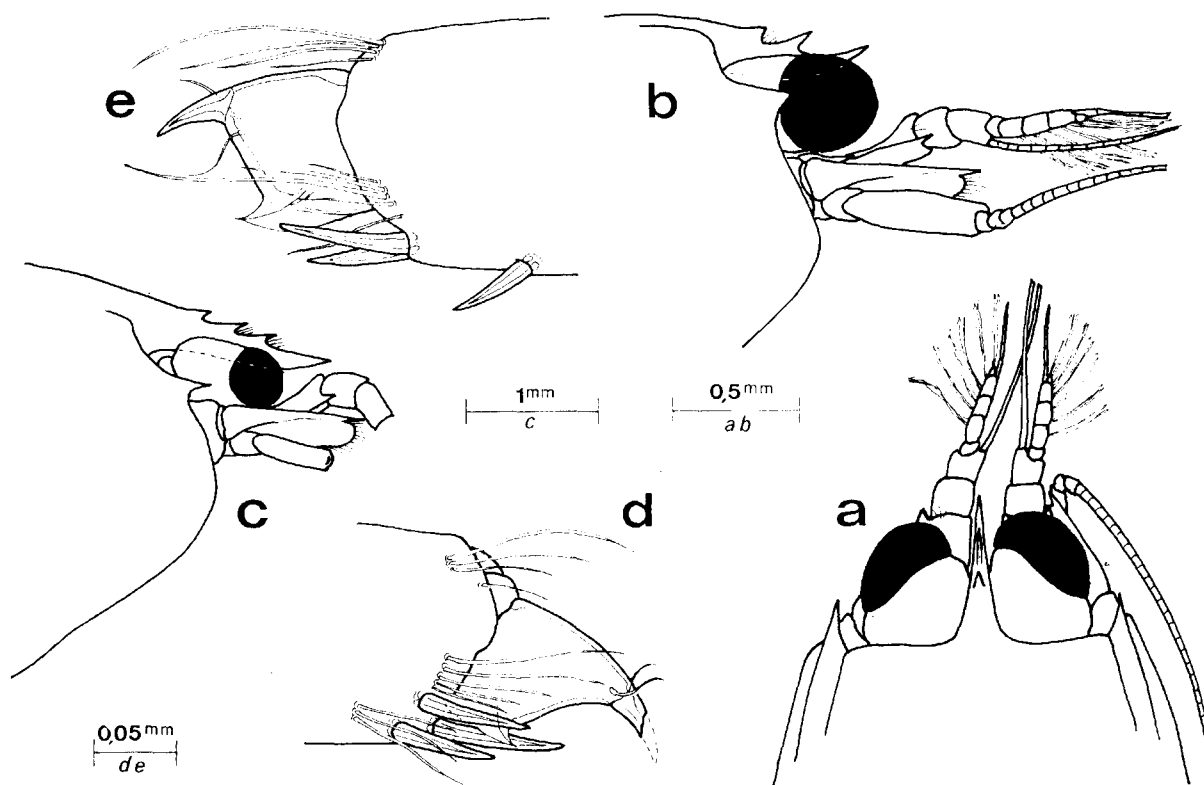


Fig. 19. — *Periclimenaeus nobilii* Bruce, ovigerous females. A, anterior carapace, rostrum, antennal peduncles, dorsal. B, same, lateral. C, same, lateral. DE, third pereopod dactylus. ABD, (MNHN. Na. 11200). ex *Lissoclinum*. CE, NC 38, ex *Diplosoma vareau*.

carapace length 1.8 mm, has a longer, more slender, less upturned rostrum, that far exceeds the anterior margin of the cornea and reaches distally to exceed the proximal segment of the antennular peduncle, and with three acute dorsal teeth. Other differences between the two lots are that, in the ovigerous females, in the *Lissoclinum* material, the eye, and particularly the cornea, is relatively larger, the carapocerite is large and robust and far exceeds the scaphocerite, and the distoventral spines on the third ambulatory propod are closely bunched together at the distoventral angle. In the *Diplosoma* material, the carapocerite is small and short, and falls far short of the distal margin of the scaphocerite, and the propodal spines are separated into a single spine and a distoventral pair; the antennal spine is also distinctly more slender and acute. These small differences suggest that two closely related species may be represented, each specific to a particular host. The juvenile specimen, which lacks its minor second pereopod, has a carapace length of 1.3 mm, and has a rostral dentition of 4/0. The host is unknown. The ambulatory dactylus are very similar both *Lissoclinum* and *Diplosoma* females having an acute, strongly compressed laminar basal tooth, which appears to have a styliform tip, with an associated duct. In the holotype, the basal tooth is longer and more slender.

**DISTRIBUTION.** — Type locality: Red Sea. New to the New Caledonian fauna. Also known from La Réunion.

*Periclimenaeus rastrifer* Bruce, 1980  
(Fig. 20)

*Periclimenaeus rastrifer* Bruce, 1980 a : 27-33, figs 12, 13 a b.

MATERIAL EXAMINED. – MUSORSTOM 4 : stn.146, 19°53.4'S - 163°47.1'E., 33 m, 13.09.1985 : 3 ♂ , 3 ♀ (2 ovig.) (MNHN Na. 11954).

REMARKS. – The original description of this species was based upon a single male specimen with a damaged rostrum. The present specimens agree well with the original description and enable it to be completed. The rostrum is slender, not exceeding the antennular peduncle, males with 5, 6 and 8 dorsal teeth, females with 6, 6 and 7 dorsal teeth, all specimens with a single well developed distal ventral tooth ; without supraorbital tubercles or teeth ; inferior orbital angle distinct, medial to antennal spine. The minor second is provided with a strongly compressed dactylus, with a very short deep feebly convex cutting edge, with a very large hooked distal tooth. The dactylar cutting edge fits into a deep groove along the cutting edge of the fixed finger. The dorsal surface of the palm has numerous long setae. The male specimens have a carapace length of 1.7 - 2.0 mm, females of 2.0 - 2.7 mm.

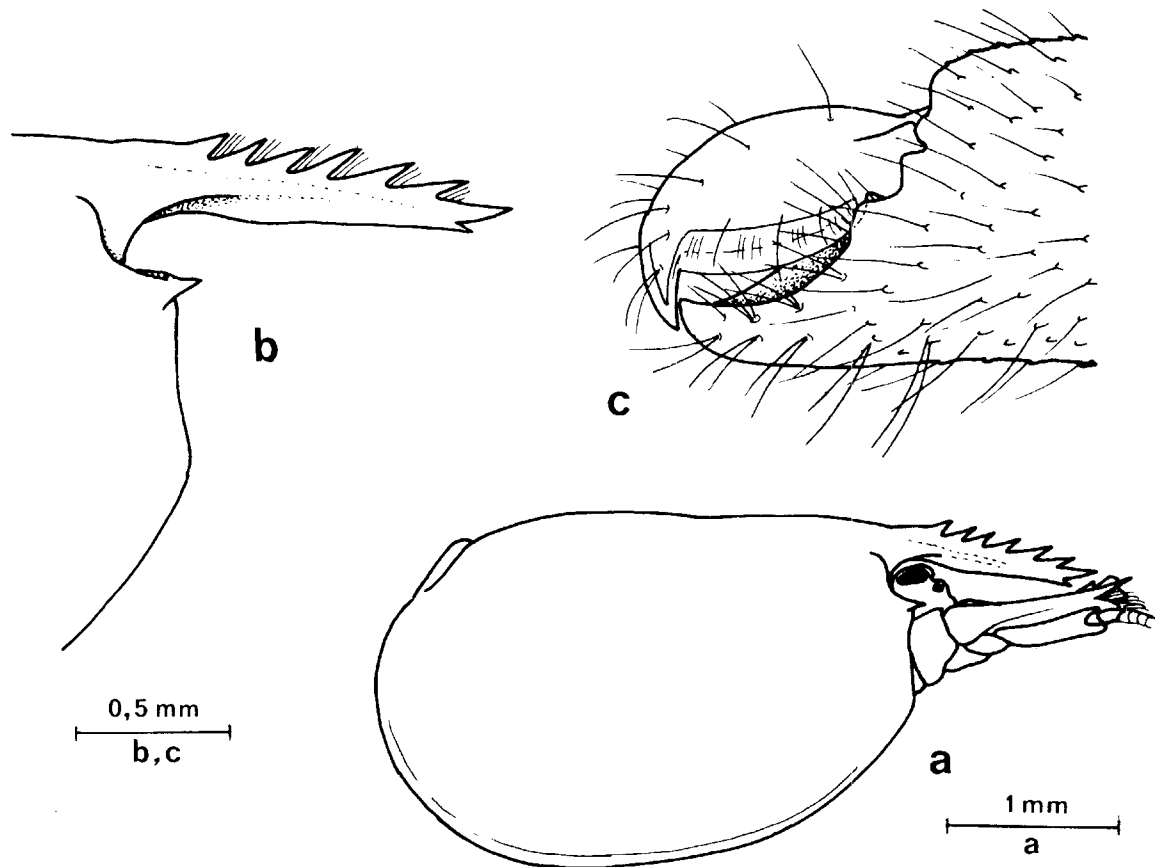


Fig. 20. – *Periclimenaeus rastrifer* Bruce, ovigerous female, stn. 146. A, carapace, rostrum, and antennal peduncles, lateral. B, anterior carapace and rostrum. C, minor second pereiopod, fingers.

DISTRIBUTION. – Type locality : Nouméa, New Caledonia. First recorded from New Caledonia in BRUCE (1980 a) and subsequently recorded only from the Australian Great Barrier Reef at Heron Island.

*Apopontonia dubia* Bruce, 1981

*Apopontonia dubia* Bruce, 1981 : 225-232, figs 1-3 ; 1983 : 210-213, fig. 1.

MATERIAL EXAMINED. – MUSORSTOM 4 : stn. 147, 19°35.0'S - 163°39.6'E., 43 m, 13.09.1985 : 1 ♂, 1 ovig ♀ (MNHN Na. 11955).

REMARKS. – The two specimens are in perfect condition, presumably extracted from a sponge host, both with a rostral dentition of 5/0 and carapace lengths of 1.8 and 2.2 mm respectively. The type material differed in the presence of a minute distal ventral rostral tooth, which is lacking in the present specimens, but was also absent in specimens reported from the southern Great Barrier Reef.

DISTRIBUTION. – Type locality : off North Stradbroke Island, Queensland, Australia. New to the New Caledonian fauna. Otherwise known only from Heron Island, Capricorn Islands, Great Barrier Reef.

*Thaumastocaris streptopus* Kemp, 1922  
(Fig. 21)

*Thaumastocaris streptopus* Kemp, 1922 : 244-247, figs 78-80. – BRUCE, 1980 a : 13-15, fig. 5 d-f.

MATERIAL EXAMINED. – Stn 14, 22°19.9'S - 166°28.7'E., secteur de Nouméa, 22 m, 23.05.1984 : 1 ♂ (MNHN Na. 11231). – Stn 232, 22°34.8'S - 166°43.4'E., île Ouen, baie du Prony, 29 m, 22.10.1984 : 1 ♂ (MNHN Na. 11230). – Stn 553, 22°51.1'S - 166°55.3'E., Grand Récif Sud, 35-42, 16.07.1985. 1 ♂, 1 ♀, 1 juv. (MNHN Na. 11232).

REMARKS. – The specimens agree well with previous descriptions. The largest male has a carapace length of 9.0 mm, with a rostral dentition of 4+8/(4). The largest female is only 8.5 in carapace length, with a rostral dentition of 4+7/3. A postrostral tubercle may be present or absent, and the details of the rostral dentition show considerable variation in the arrangement and size of the teeth, both dorsally and ventrally. A sponge associate, occurring in *Siphonochalina* in New Caledonia, but this species has also found in *Acarinus*, *Arenochalina*, *Haliclona*, *Callyspongia*, *Leucetta* and *Petrosia*.

DISTRIBUTION. – Type locality : Nouméa, New Caledonia. Also previously recorded from New Caledonia by BRUCE (1980 a). Also known from Somalia to Madagascar, Indonesia, Australia, to the Marshall Islands. Its bathymetric range extends from shallow water to 121-141 m.

*Anchistus australis* Bruce, 1977

*Anchistus australis* Bruce, 1977 : 56-62, figs 7-9.

MATERIAL EXAMINED. – 20°14.0'S - 164°15.4'E., baie d'Harcourt, 12.05.1980 : ♀ (MNHN Na. 11264).

REMARKS. – The single example was caught at night in a "bouki-ami" net. The specimen is complete and has a carapace length of 8.5 mm, with a rostral dentition of 6/1, all the dorsal teeth being small and distal. The specimen shows a small but distinct fossa at the position where the hepatic spine would be, i.e., as in *Paranchistus*, and lacks an antennal spine. The cleared dactylus of the ambulatory pereopod

shows a small ventral accessory tooth, with the distodorsal surface with fine longitudinal parallel ridges, without distinct microspinules ; the propod is without distoventral spines, with a few setae only. Recorded elsewhere in association with *Tridacna derasa* and *T. squamosa*.

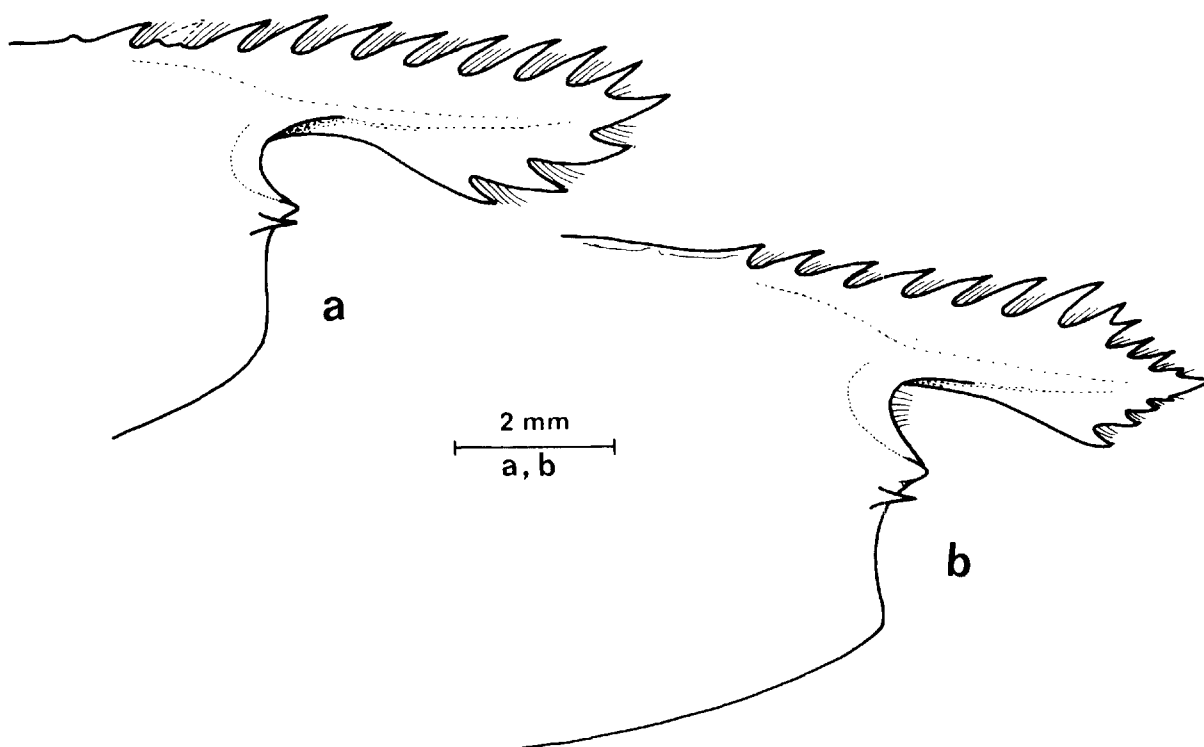


Fig. 21. – *Thaumastocaris streptopus* Kemp, stn. 533. A, anterior carapace and rostrum, male. B, same, female.

DISTRIBUTION. – Type locality : Capre Cay, Swains Reefs, Great Barrier Reef. Not previously recorded from New Caledonia. Also known only from Heron Island and Michaelmas Reef, Great Barrier Reef, and Great Astrolabe Reef, Fiji.

*Anchistus demani* Kemp, 1922  
(Fig. 22)

*Anchistus demani* Kemp, 1922 : 256-259, figs 86-89.

MATERIAL EXAMINED. – Lagon, Nouvelle-Calédonie, in benitiers : N.114, 1 ovig. ♀ (MNHN Na. 11241). – N.118, 1 ovig. ♀ (MNHN Na. 11236). – N.119, 1 ♂, 1 ovig. ♀ (MNHN Na. 11237). – N.121, 1 ♀ (MNHN Na. 11239). – N.122, 1 ♂, 1 ovig. ♀ (MNHN Na. 11238). – N.134, 1 ovig. ♀ (MNHN Na. 11240).

REMARKS. – All specimens have a rostral dentition of 1-2/0, and where pairs of specimens were collected together, both had the same rostral dentition, 1/0 or 2/0. The largest male had a carapace length of 2.2 mm, the largest female, 2.4 mm. In all specimens, the inferior orbital angle was very feebly produced. The dactylus of the third ambulatory pereiopod has the unguis not distinctly demarcated from the corpus, its distodorsal surface densely covered with microspinules, and a feeble accessory tooth is distinct. The distoventral angle of the propod bears a pair of minute spines. KEMP (1922) states spines are absent in this position, but they are very small and may have been overlooked.

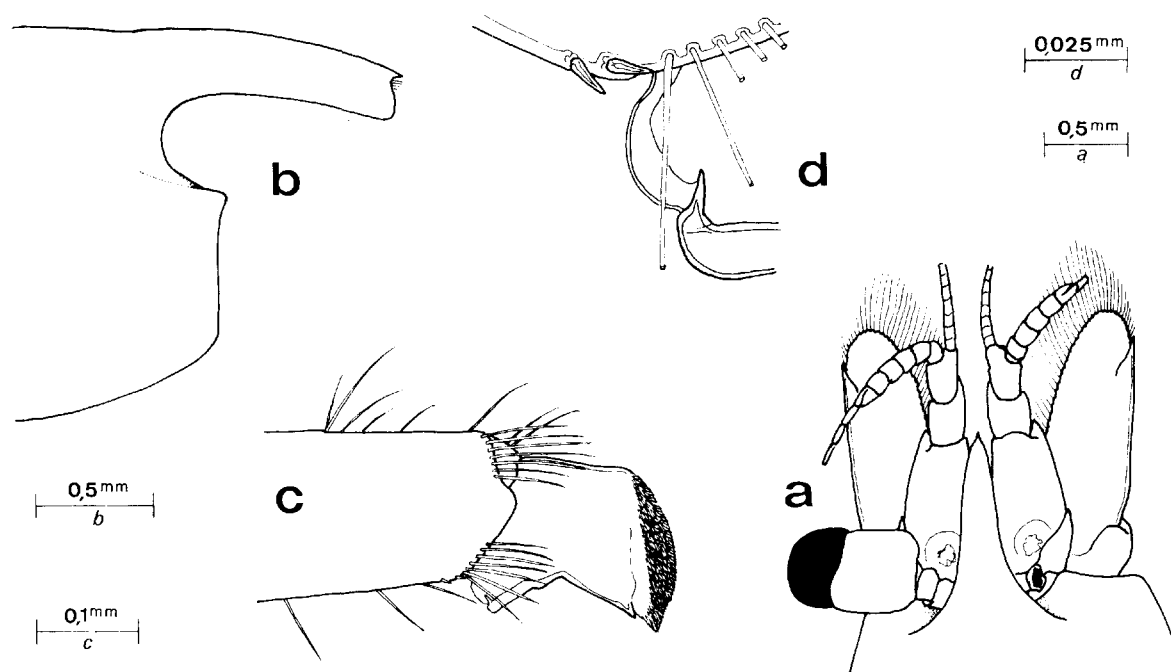


Fig. 22. – *Anchistus demani* Kemp, ovigerous female, N.118. A, anterior carapace, antennal peduncles, dorsal. B, anterior carapace and rostrum, lateral. C, third pereopod, dactylus and distal propod, D, same, distoventral angle of propod.

**DISTRIBUTION.** – Type locality : Port Blair, Andaman Islands. Not previously recorded from New Caledonia. Also known from Kenya, Zanzibar, Comoro Islands, Seychelle Islands, Madagascar, Thailand, Australia, and the Marshall Islands.

*Anchistus gravieri* Kemp, 1922  
(Fig. 23)

*Anchistus gravieri* Kemp, 1922 : 252-286, figs 82-84. – MONOD, 1972 : 24, figs 65-86.

**MATERIAL EXAMINED.** – Lagon, Nouvelle-Calédonie : N.104, 1 ovig. ♀ MNHN Na. 11242).

**REMARKS.** – The single example has a carapace length of 4.1 mm and a rostral dentition of 3/1. The specimen corresponds closely to previously published data. The dactylus of the ambulatory pereopod has a clearly demarkated unguis, the dorsal surface of which is densely covered with microspinules. The corpus is compressed and without a ventral accessory tooth and the dorsal surface is devoid of microspinules. The distoventral angle of the propod is provided with a single small spinule. KEMP (1922) reports that the propods of the ambulatory propods are devoid of spines. The holotype specimen is now in the collection of the Muséum national d'Histoire naturelle, catalogue number MNHN Na. 1854. The species is now known to be an associate of the tridacnid clam *Hippopus hippopus* L., in Australian waters. Recorded by MONOD (1972) from a tridacnid clam on the Grand Récif, Nouméa.

**DISTRIBUTION.** – Type locality : Vanikoro, Santa Cruz Islands. Also known from New Caledonia ; Herald Island, Great Barrier Reef and possibly from Tuléar, Madagascar.



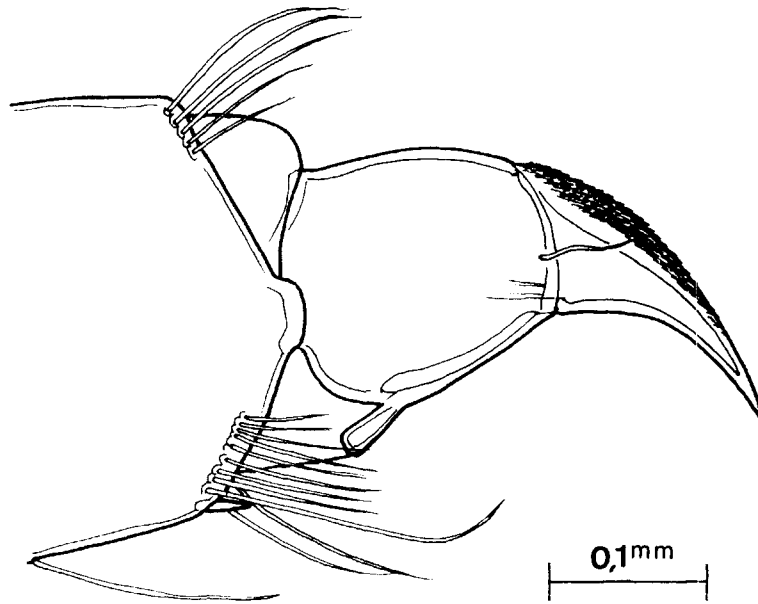


Fig. 23. – *Anchistus gravieri* Kemp, ovigerous female, N.104. Third pereopod, dactylus and distal propod.

*Anchistus pectinis* Kemp, 1925  
(Fig. 24)

*Anchistus pectinis* Kemp, 1925 : 327-330, figs 19-20. – SUZUKI, 1971 : 101-106, figs 5-7, pl. 2.

MATERIAL EXAMINED. – Stn 3, 19°51.1'S - 163°50.4'E., Récif de l'Arche d'Alliance, 33-35 m 14.06.1985 : 1 ovig. ♀ (MNHN Na. 11184). – Stn 67, 22°25.9'S - 166°28.8'E., île Ouen, baie du Prony, 21 m, 20.08.1984 : 1 ovig. ♀ (MNHN Na. 11180). – Stn 68, 22°23.8'S - 166°30.2'E., île Ouen, baie du Prony, 22-40 m, 20.08.1984 : 1 ovig. ♀ (MNHN Na. 11179). – Stn 156, 22°32.9'S - 166°37.0'E., île Ouen, baie du Prony, 21 m, 24.08.1984 : 1 ovig. ♀ (MNHN Na. 11182). – Stn 934, 20°43'S - 164°16.8'E., Lagon Nord-Ouest, 10 m, 27.04.1988 : 1 ovig. ♀ (MNHN Na. 11178). – Stn 942, 20°37.1'S - 164°13.1'E., Koumac, 15 m, 28.04.1988 : 1 ♂ (MNHN Na. 11181). – Stn ? Lagon Nord, 25 m, 3.07.1986, coll. P. LABOUTE : 2 ovig. ♀ (MNHN Na. 11183). – Lagon Est, no further details : 9 ♂, 9 ovig. ♀ (MNHN Na. 1183) (NTM Cr.006766). – Lagon Nord, no further details : 9 ♂, 19 ♀ (18 ovig.), (MNHN Na. 11185).

*Host* : *Amusium japonicum balloti* (Bernardi) (Pectinidae).

REMARKS. – This species has not been previously recorded from New Caledonian waters. The specimens MNHN Na. 11183, have the largest ovigerous females with carapace lengths of up to 6.5 mm. The specimens, in general, agree well with the original description and the subsequent data provided by SUZUKI (1971). In some examples, the carapace is markedly gibbous, with the rostrum unidentate, strongly depressed, protruding beneath the antennal peduncles, and the propods with a pair of small distoventral spines and a single distal ventral spine. Other ovigerous females lack the swollen carapace and depressed rostrum, which is bidentate and the ambulatory pereopods bears only a single small distoventral spine.

DISTRIBUTION. – Type locality : Nicobar Islands. Also recorded from Zanzibar, Japan and northeast Australia.

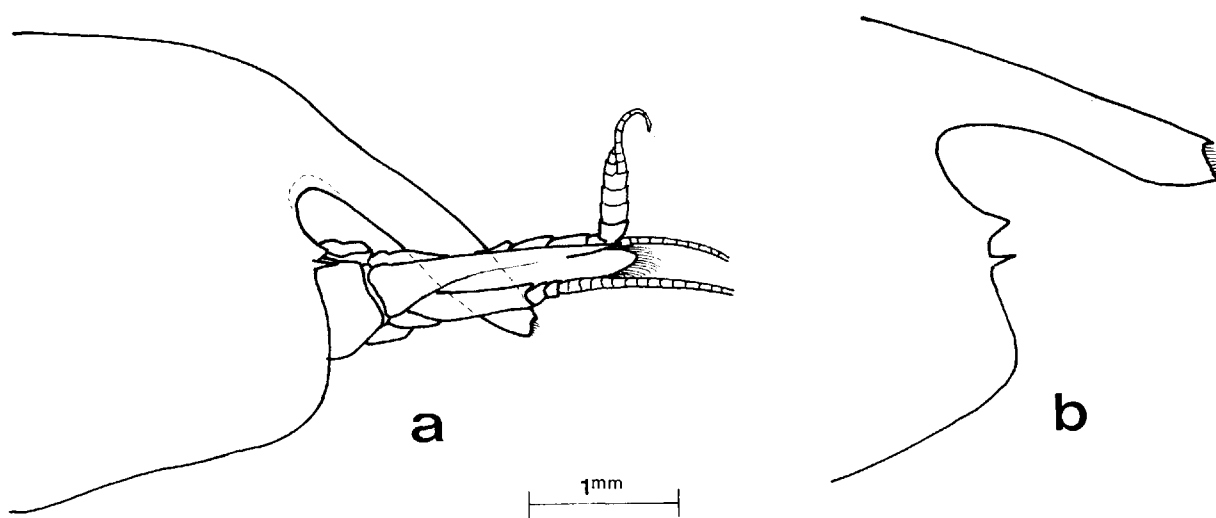


Fig. 24. – *Anchistus pectinis* Kemp. A, ovigerous female, Lagon Est, anterior carapace, rostrum, antennal peduncles, lateral. B, same, Lagon Nord, anterior carapace and rostrum.

*Conchodytes meleagrinae* Peters, 1852  
(Fig. 25 a b c d)

*Conchodytes meleagrinae* Peters, 1852 : 594.

MATERIAL EXAMINED. – Mission Picard 1980 ; Récif de Touaorou, Yaté, sublittoral : 2 ♂, 1 ovig. ♀ (MNHN Na. 11259).

*Host* : Pearl oyster.

REMARKS. – Ovigerous female generally as in description provided by KEMP (1922), carapace length 9.0 mm, carpus of first pereopod shorter than merus, basal process of ambulatory dactylus without small acute tooth and distolateral angle of dorsal spines at 0.2 and 0.7 of telson length, anterior spines distinctly larger than posterior ; posterior telson spines with lateral spines well developed, small ; intermediate spines markedly swollen, about 0.14 of telson length ; submedian spines slender. The male specimens have carapace lengths of 5.5 and 5.0 mm.

DISTRIBUTION. – Type locality : Ibo, Moçambique. New to the New Caledonian fauna. Recorded from numerous localities throughout the Indo-West Pacific region, from the Red Sea to Hawaii.

*Conchodytes tridacnae* Peters, 1852  
(Fig. 25 e f g)

*Conchodytes tridacnae* Peters, 1852 : 594.

MATERIAL EXAMINED. – Lagon, Nouvelle-Calédonie, N. 103 : 1 juv. ♀ (MNHN Na. 11244) ; N.142, 1 ovig. ♀ (MNHN Na. 11243).

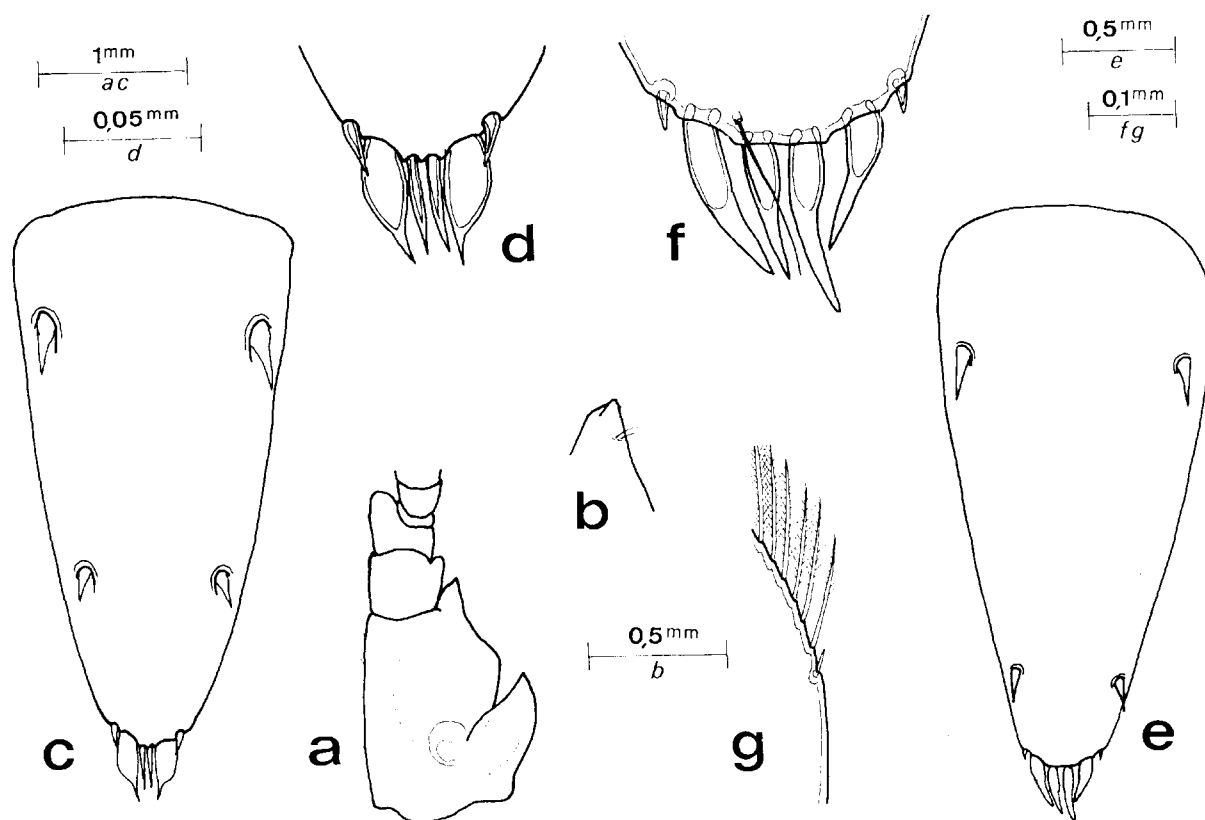


Fig. 25. – *Conchodytes meleagrinae* Peters, ovigerous female, Récif de Touaorou. A, antennular peduncle. B, same, proximal segment, distolateral angle. C, telson. D, same, posterior spines. *Conchodytes tridacnae* Peters, ovigerous female, stn. 142. E, telson. F, same, posterior spines.

REMARKS. – The species is distinguished from *C. meleagrinae* by having a first pereopod carpus longer than the merus. The dorsal telson spines are less unequal, with the anterior pair less robust, situated at about 0.27 and 0.85 of the telson length. The posterior telson spines have the lateral spines minute, with the intermediate spines fusiform, much less swollen than in the *C. meleagrinae* specimens, and with the submedian spines slightly swollen proximally, as long or longer than the intermediate spines. The exopod of the uropod has a small slender mobile distal spinule, but lacks a distolateral tooth.

DISTRIBUTION. – Type locality : Ibo, Moçambique. New to the New Caledonian fauna. Known from throughout the western Indian Ocean and western Pacific region to the Marshall Islands.

*Harpiliopsis depressa* (Stimpson, 1860)

*Harpilius depressus* Stimpson, 1860 : 38.

*Harpiliopsis depressus* - HOLTHUIS, 1951 : 70-75, pls. 21 a-i, 22 a-f.

*Harpiliopsis depressa* - BRUCE, 1976a : 36.

MATERIAL EXAMINED. – Stn 160, 23°36.2'S - 166°37.1'E., île Ouen, baie du Prony, 10 m, 24.08.1984 : 1 ♂ (MNHN Na. 11261).

REMARKS. – The single example, which lacks both second pereopods, has a carapace length of 2.5 mm and rostral dentition of 7/4. The hepatic spine occupies a low position on the lateral carapace, so the specimen cannot belong to *H. beaupresii* (Audouin), but separation from *H. spinigera* (Ortmann) is less certain. The body is stout and squat, which would appear to eliminate the more gracile *H. spinigera* from consideration. The species is normally an associate of pocilloporid corals, but the host of the present specimen was not recorded.

DISTRIBUTION. – Type locality : Hawaii. New to the New Caledonian fauna. Common and widespread throughout most of the Indo-West Pacific region and also from the central Eastern Pacific region.

*Coralliocaris graminea* (Dana, 1852)

*Oedipus gramineus* Dana, 1852 : 25.

*Coralliocaris inaequalis* - BORRADAILE, 1898 : 408.

*Coralliocaris graminea* - STIMPSON, 1860 : 38. – KEMP, 1922 : 271.

MATERIAL EXAMINED. – Stn 6, 22°25.5'S - 166°21.2'E, secteur de Nouméa, 12 m, 21.05.1984 : 2 ♀, immature (MNHN Na. 11260).

REMARKS. – The two specimens have carapace lengths of 2.3, 2.0 mm and rostral dentitions of 5/1. The second pereopods are all detached but two are preserved. The specimens are without trace of colour pattern. An associate of *Acropora* corals in shallow waters, this species has been reported from depths of up to 22 m.

DISTRIBUTION. – Type locality : Viti Levu, Fiji. Previously recorded from New Caledonia by KEMP (1922) and from the Loyalty Islands (BORRADAILE, 1898, as *C. inaequalis*). Generally common and widespread throughout most of the Indo-West Pacific region, from the Red Sea to Moçambique, to Polynesia, excluding the Hawaiian Islands.

*Coralliocaris superba* (Dana, 1852)  
(Fig. 26)

*Oedipus superbus* Dana, 1852 : 25.

*Coralliocaris superba* - STIMPSON, 1860 : 38. – MONOD, 1976 : 149-150, figs 61-66, 74-75.

MATERIAL EXAMINED. – Stn 47, 22°14.9'S - 166°16.4'E., secteur de Nouméa, 28 m, 25.05.1984 : 1 ♂, 1 ovig. ♀ (MNHN Na. 11233). – Stn 79, 22°29.0'S - 166°29.1'E., île Ouen, baie du Prony, 16 m, 21.05.1984 : 1 ♀ (MNHN Na. 11234).

REMARKS. – The île Ouen specimen has a carapace length of 4.2 mm and a rostral dentition of 5/2, with the rostrum short, shallow and slightly exceeding the proximal segment of the antennular peduncle, and is lacking both second pereopods. The Nouméa specimens have carapace lengths of 2.3, 3.6 mm. The rostral dentition is also 5/2 but the rostra are relatively longer, reaching to the distal end of the intermediate segment in the female and exceeding the antennular peduncle in the male. In the île Ouen specimen the third maxilliped corresponds well to the figure provided by KEMP (1922) for *C. superba* with a relatively short, broad distal segment to the endopod. The coxa has a well developed semi circular lateral plate, but the arthrobranch is only feebly developed with a few vestigial lamellae. In addition there appears to be a distinct demarkation between the ischiomerus of the endopod and the

basis, not shown by KEMP. Usually found in association with corals of the genus *Acropora* in shallow depths.

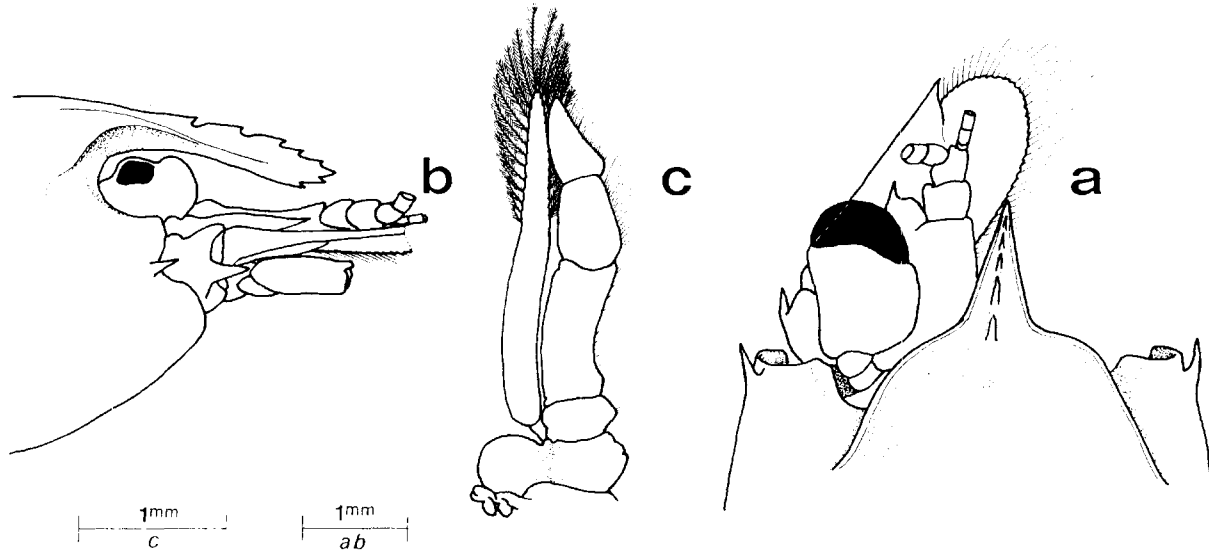


Fig. 26. – *Coralliocaris superba* (Dana), ovigerous female, stn. 99. A, anterior carapace, rostrum, antennal peduncles, dorsal. B, same, lateral. C, third maxilliped.

**DISTRIBUTION.** – Type locality : Tongatabu, Tonga. Previously recorded from Nouméa, New Caledonia, by MONOD (1970). Also known from most of the Indo-West Pacific region from the Red Sea to Moçambique, to Tahiti and the Society Islands.

*Dasycaris zanzibarica* Bruce, 1973  
(Fig. 27)

*Dasycaris zanzibarica* Bruce, 1973 b : 247-257, figs 1-6.

**MATERIAL EXAMINED.** – Stn 469, 18°28.5'S - 163°10.4'E., Atoll de Surprise, 39 m, 1.05.1985 : 3 ovig. ♀ (MNHN Na. 11229). – Lagon Est, no further data, 1 ♂, 1 ovig. ♀ (MNHN Na. 11228). – îlot Brun, no further data : 1 ovig. ♀ (MNHN Na. 11227).

**Host :** The îlot Brun specimen was noted as collected from an antipatharian host.

**REMARKS.** – The single male example has a carapace length of 2.7 mm and the largest ovigerous female, of 3.3 mm. In the specimen from Lagon Est, the posterodorsal margins of the second and third abdominal segments were distinctly raised, forming low transverse humps. In the Atoll de Surprise specimens, the dorsal carapace teeth were only feebly developed, particularly in the smallest specimen, carapace length 2.5 mm, where they formed only low humps. The present record of 41 m represents the greatest depth at which this species has so far been recorded. The species has previously been found in association with *Cirripathes* in shallow water situations.

**DISTRIBUTION.** – Type locality : Changu Island, Zanzibar. New to the fauna of New Caledonia. Also known from north eastern Australia.

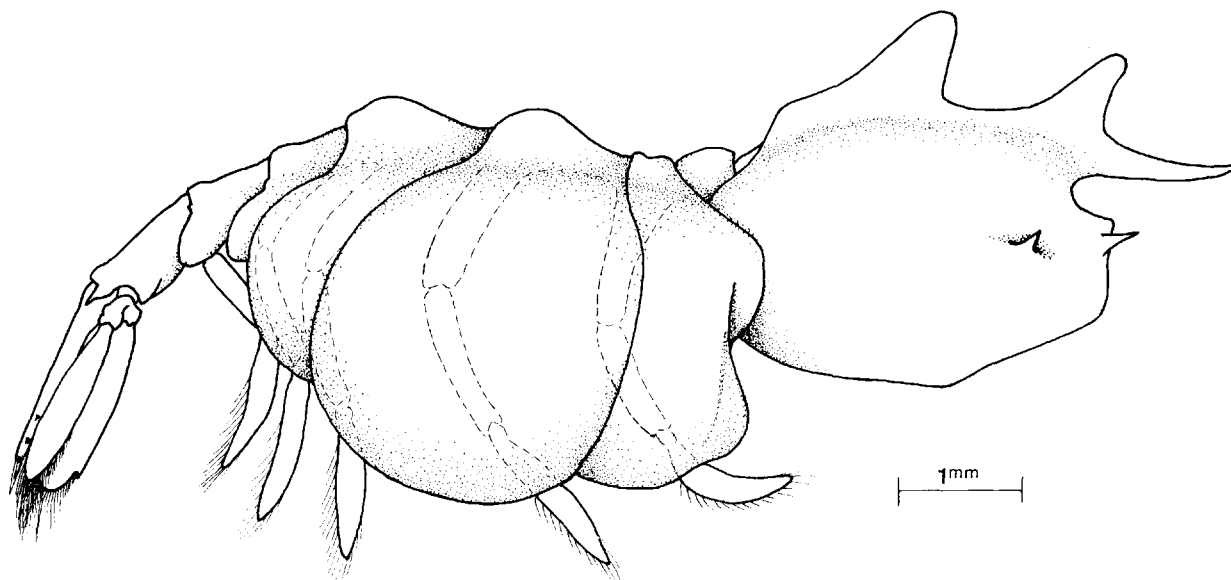


Fig. 27. – *Dasycares zanzibarica* Bruce, ovigerous female, îlot Brun.

***Pliopontonia furtiva* Bruce, 1973**

*Pliopontonia furtiva* Bruce, 1973 a : 99-108, figs 1-5, pl. 1.

MATERIAL EXAMINED. – Stn 437, 18°08.1'S - 162°50.2'E., Atoll de Huon, 40 m, 25.02.1985 : 1 ovig. ♀ (MNHN Na. 11255).

REMARKS. – The single example lacks both second pereopods, third right and fourth left pereopods. The specimen is otherwise in good condition, with a carapace length of 4.2 mm. The rostral dentition is 8/0, the rostrum shallow, slightly upcurved, reaching to the end of the intermediate segment of the antennular peduncle and with three postorbital teeth. The antennal spine is also upwardly directed and the ambulatory pereopods are also held in a characteristically dorsiflexed position, as previously described (BRUCE, 1973). This shrimp has been previously reported in association with corallimorpharian zoanthids in shallow waters, but the host of the New Caledonian specimen is unknown. The present record represents the greatest depths at which this species has so far been recorded.

DISTRIBUTION. – Type locality : Ras Iwatine, Mombasa, Kenya. Also known from only the Great Barrier Reef and New South Wales, Australia.

***Pontonides* sp.**

MATERIAL EXAMINED. – îlot Brun, Lagon de Nouvelle-Calédonie, 12 m : 3 ovig. ♀ (MNHN Na. 11135).

REMARKS. – The three specimens are to be discussed separately, together with further specimens of this genus from New Caledonia and other localities.

## HYMENOCERIDAE

*Phyllognathia ceratophthalma* Balss, 1913  
(Fig. 28)

*Hymenocera(?) ceratophthalma* Balss, 1913 : 236 ; 1914 : 54-56, figs 34-37.

*Phyllognathia ceratophthalma* - BORRADAILE, 1915 : 206 ; 1917 a : 409-410, pl. 58, fig. 9.

MATERIAL EXAMINED. – Ilot Freycinet, 6 m, 24.10.1988, coll. P. LABOUE : 1 ♂ (MNHN Na. 11951).

REMARKS. – The single example has a carapace length of 2.6 mm and a rostral dentition of 7/5. The posterodorsal carapace is damaged and may have had a further tooth. The rostrum is about 1.66 of the carapace length, slightly upcurved, and distinctly exceeds the antennular peduncle and scaphocerite. The carapace has a bluntly produced inferior orbital angle, with a small inner flange, and a strong postmarginal antennal spine. The anterolateral angle of the branchiostegite is strongly produced, forming a deep antennal notch, and folded under the basicerite. The lateral aspect of the carapace bears a few simple setae. The antennular peduncle is as previously described. The ventral medial margin of the proximal segment bears a strong tooth at about half its length. The upper flagellum is feebly biramous, with seven flattened fused segments proximally. The shorter free ramus consists of only a single segment, and the longer ramus of four, with twelve groups of aesthetascs. The lower flagellum is short, with nine segments. The antennal basicerite has a strong lateral tooth and the ischiocerite is produced in a blunt ventral lobe. The eye has the cornea obliquely set on the peduncle and strongly conoidally produced, with a distinct accessory pigment spot dorsally about 0.75 of the peduncle length, 2.0 times longer than wide ; with the peduncle subcylindrical, feebly tapered distally, 2.7 times longer than proximal width. The epistome is without processes, but is strongly produced and protuberant. The distodorsal margin of the ischium of the third maxilliped is expanded, with three acute teeth, rather similar to the two distodorsal teeth on the merus of the second pereopod. The paragnaths are unusually large and conspicuous, fleshy and deeply bilobed. The first and second sternites appear broad and fused, the third is similar but wider. The fourth sternite is without a median process, with two low posterolateral ridges. The fifth has a larger posterior transverse ridge, with a small median notch. The sixth to eighth sternites are narrow. The dactylus of the ambulatory pereopods are compressed, with a feebly marked unguis, equal to about 0.5 of the corpus length ; the corpus is about 2.5 times longer than the proximal depth, with a very acute distoventral tooth, and sharp ventral margin, with a few scattered simple setae. The distoventral margin of the third propod bears a single spine, about 0.25 of the dactylus length, with a finely serrated dorsal margin, the distal ventral propodal spines are paired and similarly serrated. The male first pleopod has the basipodite about 2.25 times longer than wide, the exopod subequal to the basipodite length, about 4.0 times longer than wide. The endopod is about 0.4 of the exopod length, tapering distally, 3.0 times longer than the proximal width, with 14 short simple spines along the length of the medial margin and five short plumose setae along the distal 0.6 of the lateral margin, with a single non-setulose seta distally. The second pleopod has the basipodite about 2.65 times longer than wide, subequal to the first basipodite length. The exopod is subequal to the basipodite length, about 3.4 times longer than wide. The endopod is slightly shorter than the exopod, about 4.2 times longer than wide, with the appendices arising at about 0.38 of the medial margin length. The appendix masculina has the corpus subcylindrical, slightly swollen centrally, about 3.75 times longer than wide, with 11 distal and ventral spines, the longest spines about 1.5 times the corpus length. The appendix interna distinctly exceeds the corpus of the appendix masculina. The colouration of the specimen, from a transparency provided by the collector, shows a general uniform yellow brown ground colour with a superimposed pattern of patches of blue enclosing yellow dots, exactly as shown for Great Barrier Reef specimens as illustrated in BRUCE (1980 b).

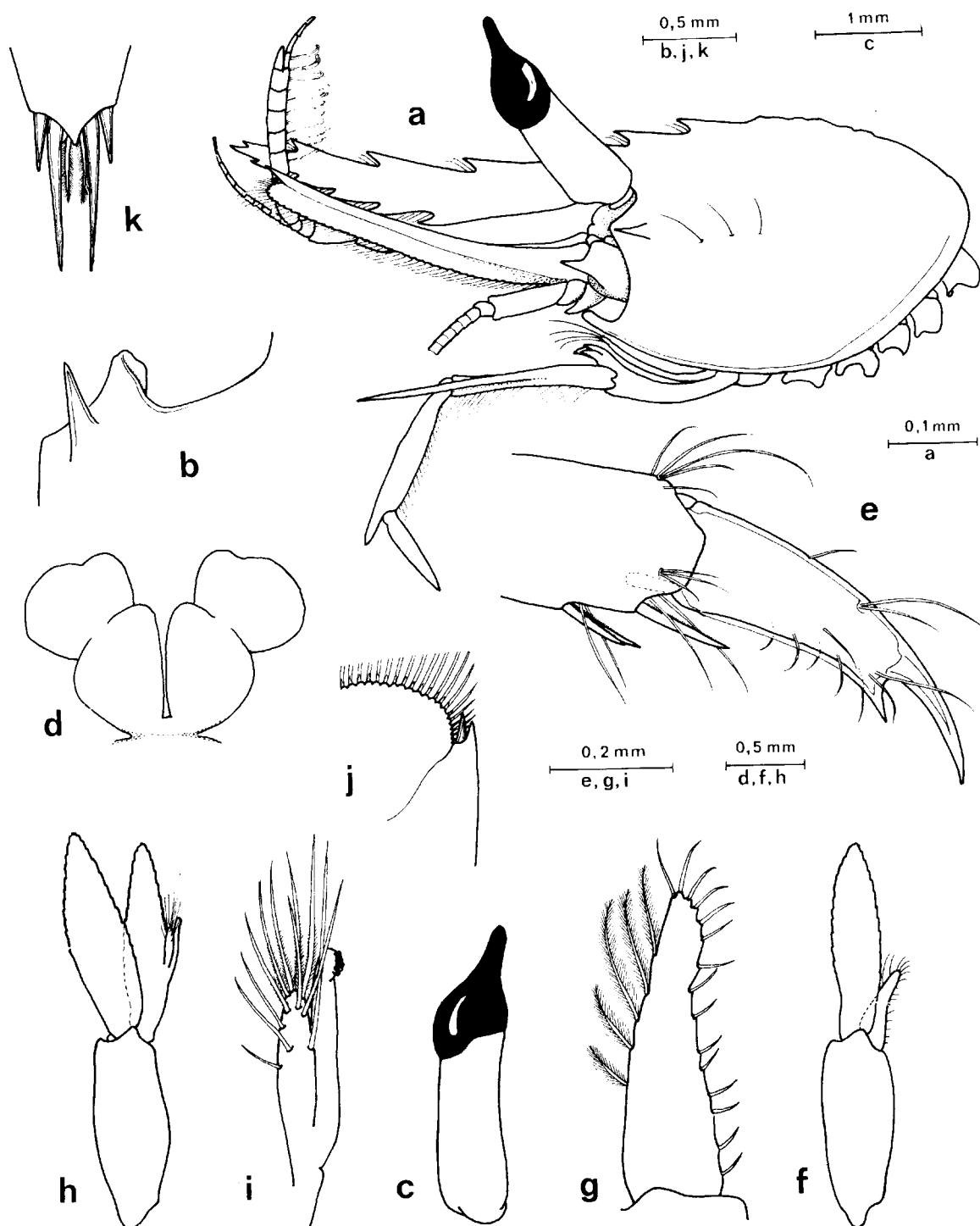


Fig. 28. — *Phyllognathia ceratophthalma* (Balss), male, îlot Freycinet. A, carapace, rostrum, antennae, eye, and third maxilliped, lateral. B, inferior orbital angle. C, right eye. D, paragnath. E, third pereiopod, dactylus and distal propod. F, male first pleopod. G, same, endopod. H, male second pleopod. I, same, appendix masculina and appendix interna. J, uropod, exopod, posterolateral angle. K, posterior telson spines.



DISTRIBUTION. – Type locality : Satsumu, Japan. Also known only from the Maldive Islands and the Australian Great Barrier Reef.

#### ANCHISTIOIDIDAE

#### *Anchistioides willeyi* (Borradaile, 1899) (Figs 3 g, 29, 30)

*Palaemonopsis willeyi* Borradaile, 1899 : 410, pls. 36, 37 fig. 7.

*Amphipalaemon willeyi* - BORRADAILE, 1917 b : 407, pl. 59, fig. 13.

*Anchistioides willeyi* - GORDON, 1935 : 435, figs 23 a, 24 a. – BRUCE, 1976 : 464.

*Anchistioides* aff. *willeyi* - BRUCE, 1976 : 464.

MATERIAL EXAMINED. – Stn 12, 22°16.8'S - 166°23.0'E., secteur de Nouméa, 23 m, 21.05.1984 : 1 ♀ (MNHN Na. 11172). – Stn 15, 22°19.7'S - 166°31.5'E., secteur de Nouméa, 27 m, 22.05.1984 : 1 ♀ (MNHN Na. 11173). – Stn 16, 22°20.7'S - 166°37.9'E., secteur de Nouméa, 30 m, 22.05.1984 : 1 ♂ (MNHN Na. 11174). – Stn 57, 22°11.6'S - 166°13.8'E., secteur de Nouméa, 10 m, 25.05.1984 : 1 ovig. ♀ (MNHN Na. 11169). – Stn 103, 22°27.8'S - 168°38.6'E., île Ouen, 25 m, 22.08.1984 : 1 ♀ (MNHN Na. 11160). – Stn 248, 22°23.8'S - 166°47.0'E., île Ouen, 47 m, 24.10.1984 : 2 ♂, 2 ♀, 2 ovig. ♀ (MNHN Na. 11171). – Stn 265, 22°20.4'S - 166°18.6'E., secteur de Nouméa, 15 m, 8.11.1984 : 1 ♂ (MNHN Na. 11168). – Stn 301, 22°34.9'S - 166°51.7'E., Grand Récif Sud, 46 m, 26.11.1984 : 1 ♀ (MNHN Na. 11175). – Stn 362, 22°37.7'S - 167°00.1'E., Grand Récif Sud, 83 m, 29.11.1984 : 1 ovig. ♀ (MNHN Na. 11167). – Stn 413, 22°38.9'S - 167°16.6'E., Grand Récif Sud, 40-60 m, 24.01.1985 : 1 ♀ (MNHN Na. 11170). – Stn 588, 22°31.6'S - 167°26.2'E., île des Pins, 31-32 m, 18.07.1985 : 1 ♀ (MNHN Na. 11166). – Stn 601, 22°18.0'S - 167°02.5'E., Lagon Est, 47-48 m, 5.08.1986 : 1 ovig. ♀ (MNHN Na. 11177). – Stn 612, 22°08.9'S - 167°00.5'E., Lagon Est, 46-48 m, 5.08.1986 : 1 ♂, 1 ovig. ♀ (MNHN Na. 11164). – Stn 614, 22°08.3'S - 166°67.5'E., Lagon Est, 48-50 m, 5.08.1986 : 1 ♂ (MNHN Na. 11162). – Stn 1 046, 20°05'S - 164°06.6'E., Lagon Nord-Ouest, 6-7 m, 4.05.1988 : 1 ovig. ♀ (MNHN Na. 11162). – Nouvelle-Calédonie, N.O. "Vauban", no further data : 1 ♀ (MNHN Na. 11159). – Nouvelle-Calédonie, no further data : 1 ♂ (MNHN Na. 11165). – Stn 127, 22°31'S - 166°46'E., île Ouen, 55 m, 23.08.1984 : 1 ♂, 1 ♀ (MNHN Na. 11273).

*Colouration.* : Transparent, with black cornea, (from colour transparency).

REMARKS. – The collection represents the largest number of specimens of a single species obtained during the New Caledonian survey, with a total of 26 individuals (9 males, 17 females, including 9 ovigerous females). A single further example was also collected from the Grand Récif Sud, at 127 m, and has been referred to earlier (BRUCE, 1990).

The situation is slightly complicated by the occurrence of two morphological forms, characterized by the proportions of the second pereopod chelae, and which may represent two separate species. Such forms have been previously found to occur in central East African and Madagascar waters (BRUCE, 1976b, 1978). All specimens clearly fell into one category or the other, short fingered and stout palm or long fingered and slender palm. The left and right chelae are approximately subequal and similar in each specimen. In the slender palm, long fingered type, the dactylus is about 3.0 times longer than the depth of the palm ; in the stout palm, short fingered form, about 2.2 times. The inner cutting edges of the fingers of both forms are provided with a series of small blunt tubercular teeth, of decreasing size distally, with a sharp laterally situated cutting edge.

The male specimens ranged in carapace length from 6.3-10.9 mm, with ovigerous females from 7.5-12.4 mm and non-ovigerous females from 7.6-9.7 mm, with three specimens at 4.0, 5.9 and 6.8 mm. The rostral dentition in males is 6-10/3-4 and in ovigerous females 6-9/3-4. No specimens show the rostrum as strongly armed and elongate as in some of the specimens from Madagascar, which may have a rostral dentition of 13/7.

The ambulatory pereiopods have a short stout dactylus which lacks a clearly demarkated ungius and is without sensory setae. The ventral margin bears a single small accessory tooth at about 0.22 of its length. The distoventral angle of the propod has a pair of short stout spines, about 0.25 of the dactylus length.

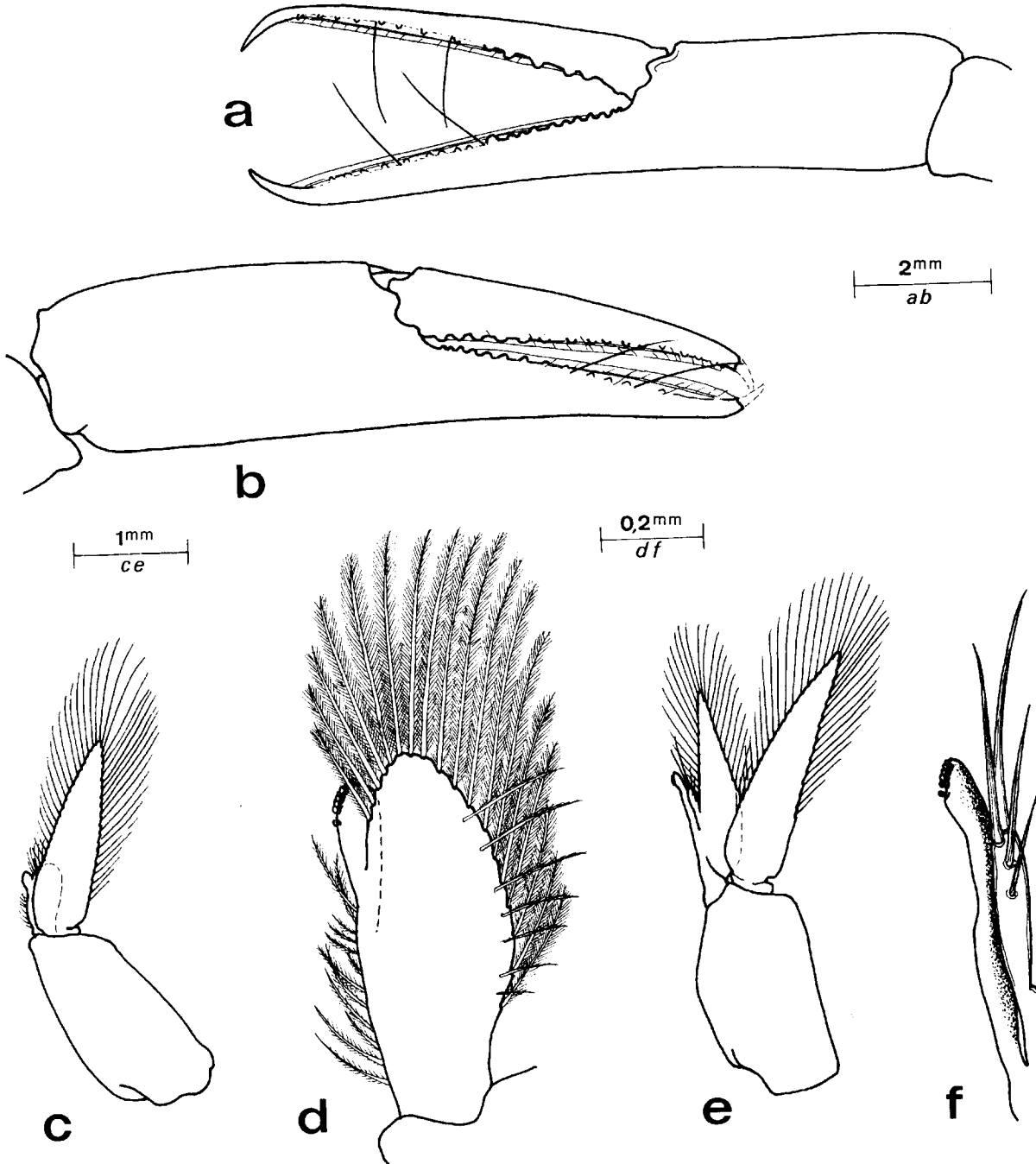


Fig. 29. — *Anchistioides willeyi* (Borradaile), A, second pereiopod, chela, male, stn. 588. B, same, ovigerous female, stn. 370. Male, stn. 16. C, first pleopod. D, same, endopod. E, second pleopod. F, same, appendix interna and appendix masculina.

The male first pleopod has the basipodite about 2.2 times longer than broad, tapering slightly distally ; exopod about 3.25 times longer than broad, 0.9 of basipodite length ; endopod about 0.35 of exopod length, 2.3 times longer than wide, distal and lateral margins with numerous short plumose setae, short appendix interna arising at 0.66 of medial margin length. Basipodite of second pleopod about 1.8 times longer than central width, broader than in first pleopod ; endopod about 0.9 of exopod length, 4.0 times longer than broad, appendices at about 0.36 of medial margin length, appendix masculina with corpus subcylindrical, about 4.5 times longer than wide, with simple distal spine, about 1.5 times corpus length, and three shorter distodorsel spines ; appendix interna distinctly longer than appendix masculina, flattened, strap-like.

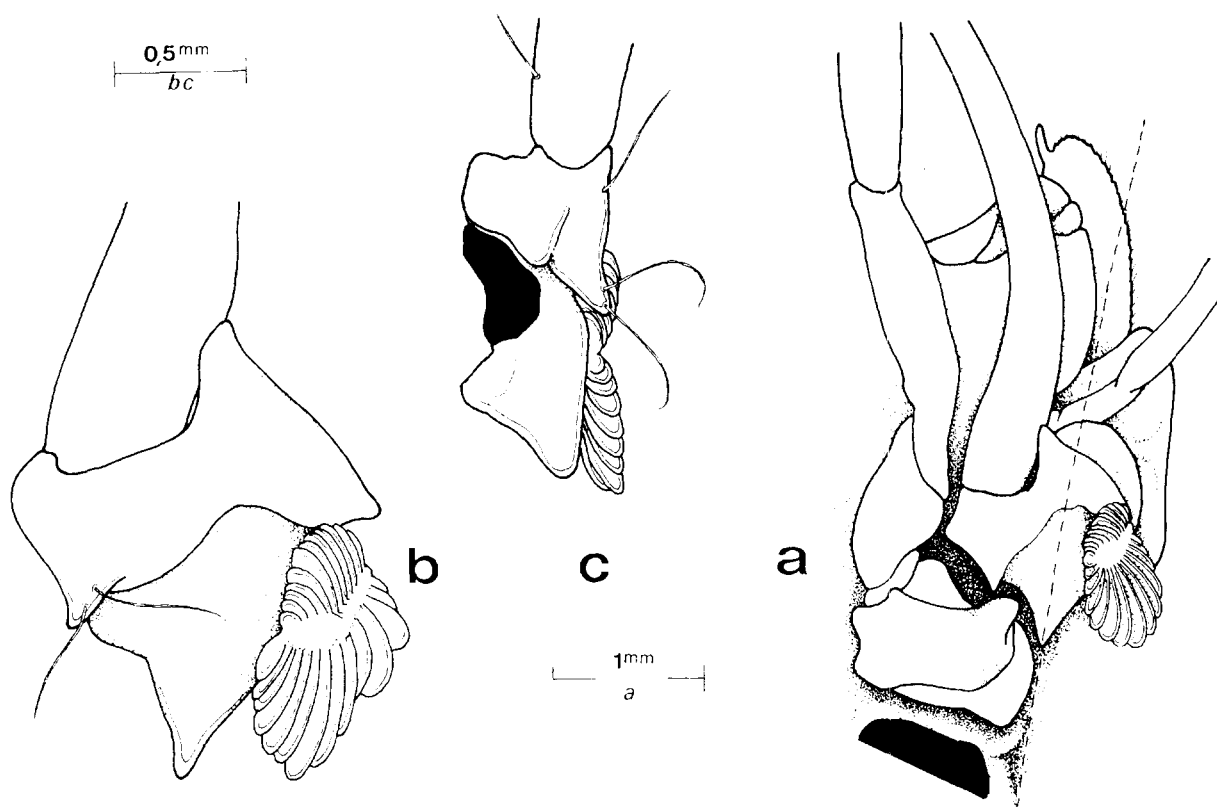


Fig. 30. – *Anchistioides willeyi* (Borradaile), male, stn. 588. A, right third maxilliped, first pereopod and adjacent structures, ventral aspect, second pereopod removed, branchiostegal margin represented by dashed line. B, third maxilliped, proximal segments and articular membrane, ventral aspect. C, same, medial aspect.

The coxa of the third maxilliped bears a well developed lateral plate with an angularly produced distal margin, the posteroventral margin is also angularly produced ; the proximal articular membrane bears a small well developed arthrobranch laterally, and is angularly produced and well calcified posteriorly. The angular posterior projection of the coxa and articular membrane form the borders of a notch that encloses blunt anterolateral projection from the coxa of the first pereopod, the two appendages being closely approximate, separated by a deep vertical fissure.

The first three thoracic sternites are fused forming a broad field with a small central eminence with similar adjacent lateral swellings. The fourth thoracic sternite is broad and unarmed ; fifth narrow anteriorly and tapering posteriorly ; posterior sternites also narrow and unarmed.

DISTRIBUTION. – Type locality : Ralun, New Britain. Previously reported from the Grand Récif Sud at 127 m (BRUCE, 1990a). Also known from the western Indian Ocean, Maldive Islands, Indonesia, Australia, South China Sea.

## DISCUSSION

(Fig. 31 ; Tab. 1)

Sixty seven species of marine palaemonoid shrimp are now known to occur in the waters of New Caledonia. Of these, fourteen are not yet known to occur elsewhere, but it is difficult to consider them as endemic. Most of them occur in moderately deep or deep offshore waters and are of small size and are only likely to be captured by fairly small meshed gear if free-living, or obtained from the examination of their hosts, if commensally associated with other marine animals.

Of the remainder, 38 species (56.7 %) have distributional ranges that extend, to the west, as far as the coasts of eastern Africa, with 20 (29.85 %) occurring in the Red Sea. To the east, far fewer species are shared with the Pacific island groups, only 13 (19.4 %) species with the Vanuatu, Fiji, Tonga, Kiribati-Tuvalu, Samoan and Phoenix groups, and 6 (8.95 %) with the Tokelau, Cook, Society, Austral, Tuamotu, Marquesas groups, although 9 (13.4 %) are shared with the Hawaiian group. Three species (4.5 %) extend across the Eastern Pacific Barrier to occur on the western American seaboard.

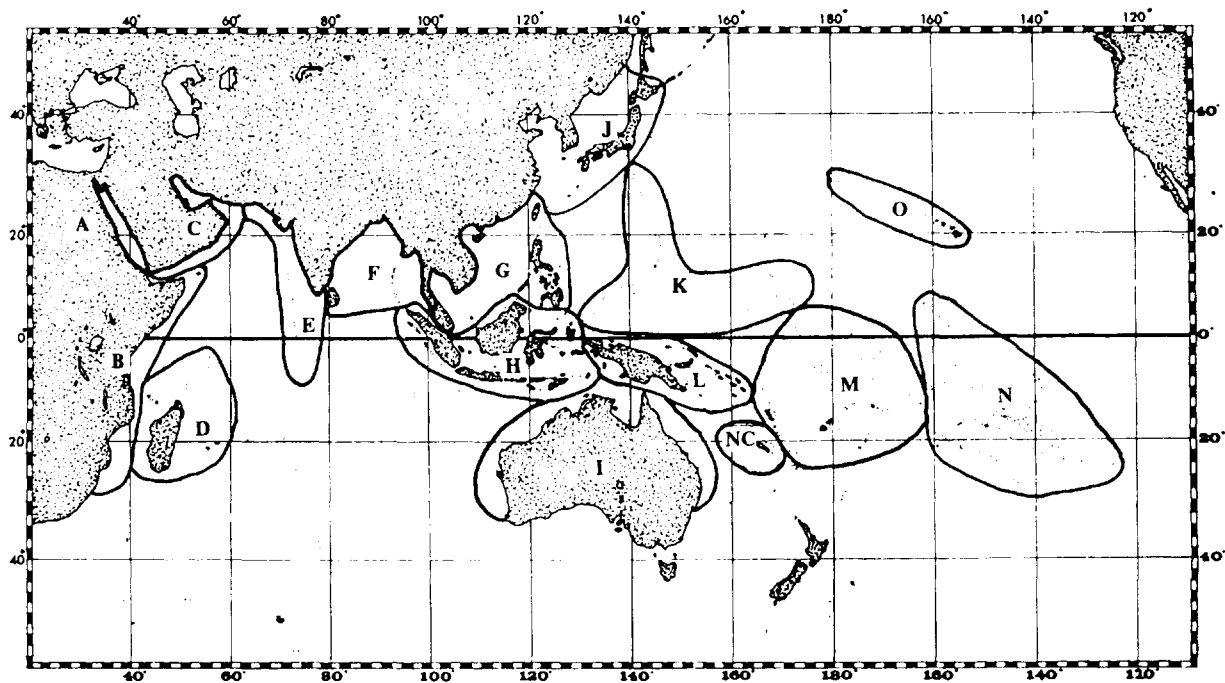


Fig. 31. – Major divisions of Indo-West Pacific region. A, Red Sea. B, East Africa. C, southern Arabia, Gulf of Oman, Persian Gulf. D, Madagascar, Comoro and Seychelle Islands, Mauritius, Réunion. E, western India, Maldives and Laccadive Islands. F, Sri Lanka, Bay of Bengal, Andaman and Nicobar Islands, Burma, western Thailand. G, Malaya, South China Sea, southern China, Taiwan, Philippines. H, Indonesia. I, western, northern, eastern Australia. J, eastern China, Korea, Japan. K, Mariana, Caroline and Marshall Islands. L, Irian Jaya, Papua New Guinea, Bismark Archipelago. NC, New Caledonia, Chesterfield Islands. M, Vanuatu, Fiji, Tonga, Kiribati-Tuvalu, Solomon, Phoenix Islands. N, Tokelau, Cook, Line, Society, Austral, Society and Marquesas Islands. O, Hawaiian Islands.

Forty eight species (71.6 %) are shared with the Australian fauna. If the newly described deep water New Caledonian species are omitted from consideration, to compensate for the comparative lack of study of the deep-water fauna of the Australian east coast, then the resemblance is more marked, with 81.0 % of the New Caledonian species being known from Australian waters. Although it is to be expected, by virtue of their proximity alone, that the faunas of New Caledonia and eastern Australian will have much in common, they have not yet been studied in sufficient detail to make detailed comparisons of much value. The fauna of the New Caledonian coral reefs has not been studied in detail and many common Indo-West Pacific species, particularly those directly associated with corals, are poorly represented although almost certainly present, for example, such ubiquitous species as *Periclimenes spiniferus* (De Man), *Periclimenes elegans* (Paulson), *Periclimenes lutescens* (Dana) or *Anchistus custos* (Forskål). Although the fauna of the reefs of the Australian Great Barrier Reef is comparatively well known, little is known of the benthic fauna between reefs or in deeper off-shore waters, so the comparisons with the mainly trawl-caught New Caledonian fauna are not of great value. However, some shallow water species found in New Caledonian waters, such as *Isopontonia platycheles*, have not been found on the Great Barrier Reef.

The New Caledonian fauna may also be compared with that of the Indonesia, as reported in the reports of the Siboga-Snellius Expeditions and Rumphius II Expeditions. These reported on material collected over the period 1899-1900 and 1929-30 from coastal reefs to deep sea habitats, including much obtained by trawl, and listed 77 species, subsequently increased to 83 (BRUCE, 1983, FRANSEN, 1989), but only 40 (58.8 %) of these have also been reported from New Caledonia. The presence of only 12 of the New Caledonian species in the New Guinean-Soloman Islands region, indicates only the lack of study of the marine fauna of that area. Of possibly more value is the comparison of the deep water fauna of New Caledonia with that of the Philippines, also collected by the MUSORSTOM campaigns. These collections included seven species of *Periclimenes* from more than 100 m depth, none of which featured in the New Caledonian collections. Conversely, none of the deep-water New Caledonian species were collected from the Philippines waters.

Of the sixty seven species now known from New Caledonian waters, 48 (70.6 %) are known or probable "commensal" associates of other marine invertebrates. It is probable that some of the deep-water species of *Periclimenes*, such as *P. parvispinatus* and *P. uniunguiculatus*, will also have similar associations, but this seems likely to remain obscure as long as collections are made by trawl and dredge.

## ACKNOWLEDGEMENTS

I am most grateful to Dr Alain CROSNIER and B. RICHER de FORGES for the opportunity to report upon this interesting collection, and to Professor J. FOREST, for the facilities provided at the Laboratoire de Carcinologie du Muséum, and to Lorna WATT, for processing innumerable drafts. Dr. J. C. MARKHAM kindly provided the bopyrid parasite identifications.

Tab. 1. - The Palaemonoid fauna of New Caledonia : General distribution.

A, Red Sea. B, East Africa. C, Southern Arabia, Gulf of Oman and Arabia. D, Comoro, Madagascar, Mascarene and Seychelle Islands. E, Western India, Maldive and Laccadive Islands. F, Sri Lanka, Bay of Bengal, Andaman and Nicobar Islands, Burma. G, Malaya, South China Sea, Taiwan, Philippines, Singapore. H, Indonesia. I, Australia. J, East China, Japan, Korea, Ryukyu Islands. K, Mariana, Marshall and Caroline Islands. L, Papua New-Guinea, Solomon Islands. N C, NEW CALEDONIA. M. Vanuatu, Fiji, Tonga, Kiribati-Tuvalu, Samoan, Phoenix Islands. N, Tokelau, Cook, Line, Society, Austral, Tuamotu, Marquesas Islands. O, Hawaiian Islands. P, Eastern Pacific region.

|   | A | B | C | D | E | F | G | H | I | J | K | L | N | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. <i>Leandrites cyrtorhynchus</i>      | - | + | - | - | - | - | - | - | + | + | - | - | O | - | - | - | - |
| 2. <i>Leander tenuicornis</i>           | + | + | + | + | - | + | + | + | + | + | - | + | O | - | - | - | ? |
| 3. <i>Palaemon debilis</i>              | + | + | - | + | + | + | + | + | + | + | + | - | O | - | + | + | - |
| 4. <i>Palaemon pacificus</i>            | + | + | - | - | + | - | + | + | - | + | - | - | ⊙ | - | - | + | - |
| 5. <i>Urocaridella gracilis</i>         | - | - | - | - | + | - | + | + | - | - | - | - | O | - | - | - | - |
| 6. <i>Palaeomonella dolichodactylus</i> | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 7. <i>Palaeomonella rotumana</i>        | + | + | + | + | + | + | + | + | + | + | + | + | O | + | - | + | - |
| 8. <i>Periclimenes affinis</i>          | - | - | - | - | - | - | + | - | + | ? | - | - | O | - | - | - | * |
| 9. <i>Periclimenes agag</i>             | + | - | - | - | - | + | - | - | - | - | + | - | O | - | - | - | - |
| 10. <i>Periclimenes amboinensis</i>     | - | - | - | - | - | - | - | + | + | - | + | - | ⊙ | - | - | - | * |
| 11. <i>Periclimenes anymone</i>         | - | - | - | - | - | + | + | + | + | - | - | + | O | + | - | - | * |
| 12. <i>Periclimenes brevicarpalis</i>   | + | + | + | + | - | + | + | + | + | + | + | + | O | - | - | - | * |
| 13. <i>Periclimenes commensalis</i>     | - | + | - | + | - | - | + | + | + | + | + | + | O | + | - | - | * |
| 14. <i>Periclimenes fujinoi</i>         | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 15. <i>Periclimenes hertwigi</i>        | - | - | - | - | - | - | - | + | + | + | - | - | O | - | - | - | * |
| 16. <i>Periclimenes holthuisi</i>       | + | + | - | + | + | + | + | + | + | + | + | + | O | - | - | - | * |
| 17. <i>Periclimenes imperator</i>       | + | + | - | + | - | - | - | - | + | - | + | - | O | - | - | + | * |
| 18. <i>Periclimenes incertus</i>        | - | + | + | + | + | + | + | + | + | - | - | - | O | - | - | - | * |
| 19. <i>Periclimenes ischiopinosus</i>   | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 20. <i>Periclimenes lanipes</i>         | - | + | - | + | - | + | + | - | + | - | - | - | O | - | - | - | * |
| 21. <i>Periclimenes parvispinatus</i>   | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 22. <i>Periclimenes uniunguiculatus</i> | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 23. <i>Periclimenes novaecaledoniae</i> | - | - | - | - | - | - | - | - | - | - | - | - | O | - | - | - | * |
| 24. <i>Periclimenes psamathe</i>        | - | + | - | + | + | + | + | + | + | + | + | + | O | - | - | - | * |
| 25. <i>Periclimenes richeri</i>         | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 26. <i>Periclimenes seychellensis</i>   | + | + | + | + | - | + | + | + | + | - | + | + | O | - | - | - | - |
| 27. <i>Periclimenes soror</i>           | + | + | + | + | - | + | + | + | + | + | + | - | O | + | - | + | + |
| 28. <i>Periclimenes tenuipes</i>        | + | + | - | + | + | + | - | + | + | - | + | + | O | - | - | - | - |
| 29. <i>Periclimenes tenuirostris</i>    | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 30. <i>Periclimenes vaubani</i>         | - | - | - | - | - | - | - | - | - | - | - | - | ● | - | - | - | - |
| 31. <i>Periclimenaeus arabicus</i>      | - | + | + | - | - | - | - | - | + | + | - | - | O | - | - | - | * |
| 32. <i>Periclimenaeus bidentatus</i>    | - | + | - | - | - | - | - | - | + | - | - | - | ⊙ | - | - | - | * |

|     |                                     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |
|-----|-------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|
| 33. | <i>Periclimenaeus nobilii</i>       | +  | -  | -  | +  | -  | -  | -  | -  | -  | -  | -  | -  | -  | ⊙  | - | - | - | - | * |
| 34. | <i>Periclimenaeus rastrifer</i>     | -  | -  | -  | -  | -  | -  | +  | -  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 35. | <i>Apopontonia dubia</i>            | -  | -  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 36. | <i>Onycozaris longirostris</i>      | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | ●  | - | - | - | - | * |
| 37. | <i>Thaumastocaris streptopus</i>    | +  | +  | -  | +  | -  | -  | -  | +  | +  | -  | +  | -  | -  | ○  | - | - | - | - | * |
| 38. | <i>Isopontonia platycheles</i>      | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | ●  | - | - | - | - | * |
| 39. | <i>Anchistus australis</i>          | -  | -  | -  | -  | -  | -  | -  | +  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 40. | <i>Anchistus demani</i>             | -  | +  | -  | +  | -  | +  | +  | -  | +  | -  | +  | -  | -  | ⊙  | - | - | - | - | * |
| 41. | <i>Anchistus gravieri</i>           | -  | -  | -  | ?  | -  | -  | -  | -  | +  | -  | -  | +  | -  | ○  | - | - | - | - | * |
| 42. | <i>Anchistus miersi</i>             | +  | +  | -  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | ○  | + | + | - | - | * |
| 43. | <i>Anchistus pectinis</i>           | -  | +  | -  | -  | -  | +  | -  | -  | +  | +  | -  | -  | -  | ⊙  | - | - | - | - | * |
| 44. | <i>Conchodytes meleagrinae</i>      | +  | +  | +  | +  | -  | +  | +  | +  | +  | +  | +  | +  | -  | ⊙  | + | - | + | - | * |
| 45. | <i>Conchodytes tridacnae</i>        | +  | +  | -  | +  | +  | +  | +  | +  | +  | +  | +  | +  | -  | ⊙  | - | - | - | - | * |
| 46. | <i>Harpiliopsis depressa</i>        | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | ⊙  | + | - | + | + | * |
| 47. | <i>Philarius lifuensis</i>          | -  | -  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 48. | <i>Jocaste japonica</i>             | -  | +  | -  | +  | +  | -  | +  | -  | +  | +  | +  | -  | -  | ○  | + | + | - | - | * |
| 49. | <i>Jocaste lucina</i>               | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | +  | -  | ○  | + | - | - | - | * |
| 50. | <i>Coralliocaris graminea</i>       | +  | +  | -  | +  | -  | +  | +  | +  | +  | +  | +  | +  | -  | ⊙  | + | - | - | - | * |
| 51. | <i>Coralliocaris superba</i>        | +  | +  | -  | +  | +  | +  | -  | +  | +  | +  | +  | +  | -  | ○  | + | + | - | - | * |
| 52. | <i>Dasyzaris symbiotes</i>          | -  | -  | -  | -  | -  | +  | -  | -  | -  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 53. | <i>Dasyzaris zanzibarica</i>        | -  | +  | -  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | ⊙  | - | - | - | - | * |
| 54. | <i>Pliopontonia furtiva</i>         | -  | +  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | -  | ⊙  | - | - | - | - | * |
| 55. | <i>Pontonides</i> sp.               |    |    |    |    |    |    |    |    |    |    |    |    |    | ○  |   |   |   |   | * |
| 56. | <i>Hamodactylus boschmai</i>        | -  | +  | -  | -  | -  | -  | +  | +  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 57. | <i>Hamodactylus noumeae</i>         | -  | +  | -  | -  | -  | -  | -  | +  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 58. | <i>Pontonia katoi</i>               | -  | +  | -  | -  | -  | -  | -  | +  | +  | +  | -  | -  | -  | ○  | - | - | - | - | * |
| 59. | <i>Pontonia monnioti</i>            | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | ●  | - | - | - | - | * |
| 60. | <i>Altopontonia disparostris</i>    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | ●  | - | - | - | - | * |
| 61. | <i>Mesopontonia gracilicarpus</i>   | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | ●  | - | - | - | - | * |
| 62. | <i>Stegopontonia commensalis</i>    | -  | +  | -  | +  | -  | -  | -  | -  | +  | -  | -  | -  | -  | ○  | + | + | + | - | * |
| 63. | <i>Parapontonia nudirostris</i>     | -  | -  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 64. | <i>Zenopontonia noverca</i>         | -  | +  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
| 65. | <i>Phyllognathia ceratophthalma</i> | -  | -  | -  | -  | +  | -  | -  | -  | +  | +  | -  | -  | -  | ⊙  | - | - | - | - |   |
| 66. | <i>Gnathophyllum americanum</i>     | -  | +  | +  | +  | -  | +  | +  | +  | +  | -  | -  | -  | -  | ○  | - | + | + | + |   |
| 67. | <i>Anchistioides willeyi</i>        | -  | +  | -  | +  | -  | -  | +  | +  | +  | -  | -  | -  | -  | ○  | - | - | - | - | * |
|     | Total                               | 20 | 37 | 10 | 27 | 15 | 24 | 27 | 39 | 47 | 22 | 22 | 12 | 67 | 12 | 6 | 9 | 3 |   |   |

\* known or probably "commensal" species

● known only from New Caledonian waters

⊙ new to the New Caledonian fauna

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