8

Crustacea Decapoda : A revision of the genus *Mursia* Desmarest, 1823 (Calappidae)

Bella S. GALIL

National Institute of Oceanography
P.O.B. 8030, Haifa, Israel

ABSTRACT

The collections of the deep water calappid crab genus *Mursia* at the Muséum national d'Histoire naturelle, assembled between 1971 and 1991 off Madagascar, the Philippines and New Caledonia, have been studied, in addition to material sought from other collections. Fifteen species have been identified, of which four are new : *M. africana*, *M. danigoi*, *M. flamma* and *M. musorstomia*. The allied genus *Platymera*, formerly submerged within *Mursia*, is reinstated as a distinct genus. All taxa are described, photographed and illustrated, and a key to their identification is provided.

RÉSUMÉ

Crustacea Decapoda : Révision du genre *Mursia* Desmarest, 1823 (Calappidae).

Les collections de Calappidae du genre *Mursia* se trouvant au Muséum national d'Histoire naturelle, récoltées entre 1971 et 1991 au large de Madagascar, des Philippines et de la Nouvelle-Calédonie, ont été étudiées ainsi que diverses autres. Quinze espèces ont été identifiées dont quatre sont nouvelles : *M. africana*, *M. danigoi*, *M. flamma* et *M. musorstomia*. Le genre proche *Platymera*, autrefois mis en synonymie avec *Mursia*, est rétabli. Toutes les espèces sont décrites et figurées et une clé pour leur identification est proposée.

INTRODUCTION

The Institut Français de Recherche Scientifique pour le Développement en Coopération (ORSTOM) and the Muséum national d'Histoire naturelle, Paris, have carried out a series of cruises in the Indo-West Pacific Ocean. These resulted in extensive collections of specimens belonging to the deep water calappid crab genus *Mursia* Desmarest, 1823.

A study of the material at the Muséum national d'Histoire naturelle, and collections made available by The Natural History Museum, London (BM), Nationaal Natuurhistorisch Museum, Leiden (NNM), South

GALIL, B. S., 1993. — Crustacea Decapoda : A revision of the genus *Mursia* Desmarest, 1823 (Calappidae). *In* : A. CROSNIER (ed.), Résultats des Campagnes MUSORSTOM, Volume 10. *Mém. Mus. natn Hist. nat.*, **156** : 347-379. Paris **ISBN** 2-85653-206-3.

African Museum, Capetown (SAM), and the National Museum of Natural History, Washington (USNM) have allowed re-examination of most type specimens and much of the published material.

Although *Mursia* has been known since 1823, the relative rarity and superficial resemblances of its species have caused taxonomic confusion. *Mursia cristiata* H. Milne Edwards, 1837, whose illustration was first published by DESMAREST (1825) as 'Mursie mains-en-crête', was also described as *Cryptosoma orientis* (Adams & White, 1848). Similarly, *Mursia armata* de Haan, 1837, was redescribed as *Thealia acanthophora* Lucas, 1839. On the other hand, ALCOCK (1899a) suggested that the closely allied genus *Platymera* H. Milne Edwards, 1837, is synonymous with *Mursia*. DOFLEIN (1904 : 37) elevated to specific rank five of the six "formen" of *M. armata*, explaining : "ihre Verschiedenheiten sind aber so gering, das sie nicht zur Aufstellung von œsonderen Arten genbigen." This course was upheld by IHLE (1918) : "Mit Recht hat DOFLEIN *M. armata, curtispina, aspera, bicristimana* and *hawaiiensis* als eine Art zusammengefasst, welche er dann in mehrere Unterarten zer legt. Als Unterarten von *M. armata* durfen win auch *M. spinimanus* Rathbun, welche sich *M. armata bicristimana* anschliesst, und *M. armata trispinosa* Parisi betrachten." The superficial resemblance and seeming intergradation of the species has also engendered equivocating statements. GRINDLEY (1961 : 133) stated : "This form [*M. armata curtispina*] is strikingly distinct from the typical form of *M. armata*, but is now regarded as a subspecies. *M. aspera* is relegated to the synonymy, despite its characteristic appearance." Thus SAKAI (1965) wrote disconcertingly : "With regard to the Indo-Pacific species, some confusion may be taken into consideration, as far as synonymy and validity are concerned."

The present study includes descriptions of four new species : *M. africana, M. danigoi, M. flamma* and *M. musorstomia*. Descriptive and distributional information is given here as well as detailed references to literature. Some material, notably that of SAKAI, was unavailable for examination, so that unequivocal identifications were sometimes impossible. All the taxa have been illustrated and photographed, and a key is proposed for their identification.

Measurements given refer to the carapace length (cl), carapace width excluding lateral spines (cw) and carapace width including lateral spines (mcw).

SYSTEMATIC ACCOUNT

Genus *MURSIA* Desmarest, 1823

Mursia Desmarest, 1823 : 231. — DESMAREST, 1825 : 108. — LATREILLE, 1829 : 39. — H. MILNE EDWARDS, 1837a : 54; 1837b : 109. — DE HAAN, 1837 : 68. — LUCAS, 1840 : 108. — DANA, 1852 : 391. — MIERS, 1886 : 290. — ORTMANN, 1892 : 564. — ALCOCK, 1896 : 146. — DOFLEIN, 1904 : 36. — STEBBING, 1910 : 334. — IHLE, 1918 : 179, 300, 307. — RATHBUN, 1937 : 215. — SAKAI, 1937 : 85; 1965 : 51; 1976 : 134. — BARNARD, 1950 : 353. — GUINOT-DUMORTIER & DUMORTIER, 1960 : 139.
Thealia Lucas, 1839 : 577.

TYPE SPECIES. — *Mursia cristiata*, H. Milne Edwards, 1837.

DIAGNOSIS. — Carapace subcircular to transversely ovate, convex, granulate, regions undefined, ridges tuberculate. Front wider than orbit, trilobate, median lobe projecting. Anterolateral margin arcuate, tuberculate. Posterolateral margin sharply convergent, carinate. Lateral spine well developed. Eyes filling orbit, eyestalk short, granulate, setose, cornea large. Orbital margins with long plumose setae. Supraorbital margin with one or two fissures. Inner orbital tooth separated from outer orbital margin by wide hiatus opening into oblique subhepatic canal. Subhepatic region minutely granulate. Third maxilliped not covering anterior part of buccal cavity, ischium of endopod with granulate row distally forming stridulating organ when rasped against milled ridge on dactylus of chela. Chelipeds massive, subequal. Merus distally spinose. External surface of chela swollen, granulose, upper margin crested, dentate; internal surface setose near lower margin; lower margin serrate. Larger dactylus with molariform tooth proximally fitting into cup-like depression. Pereiopods large, laterally compressed, dactyli long,

styliform. Male abdomen five-segmented, tapering, prominent trilobate carina on second segment. First male pleopod stout, tapering, distally spinulose. Second male pleopod long, slender, distally cornute.

REMARKS. — DESMAREST (1823 : 231) described *Mursia* in a footnote in the 'Dictionnaire des Sciences naturelles' as "se rapproche beaucoup des hépates par la forme générale du corps et par la compression des mains, mais qui en diffère en ce que ses pieds-mâchoires extérieurs ont, comme ceux des crabes, leur troisième article court, presque carré et échancré intérieurement". That same note appeared two years later (DESMAREST, 1825) accompanied by a figure (pl. 9 fig. 3) of 'Mursie Mains-en-Crête', clearly identifiable as *Mursia cristiata* H. Milne Edwards, 1837. *Thealia*, erected by LUCAS (1839 : 579) has, in his own words "beaucoup d'analogie avec les *Mursia*" - so much so that MIERS (1886) and subsequent authors considered it a junior synonym of *Mursia*.

We recognize as valid the following species : *M. africana* sp. nov.; *M. armata* de Haan, 1837; *M. aspera* Alcock, 1899; *M. australiensis* Campbell, 1971; *M. bicristimana* Alcock & Anderson, 1894; *M. cristiata* H. Milne Edwards, 1837; *M. curtispina* Miers, 1886; *M. danigoi* sp. nov.; *M. flamma* sp. nov.; *M. hawaiiensis* Rathbun, 1893; *M. mcdowelli* Manning & Chace, 1990; *M. microspina* Davie & Short, 1989; *M. musorstomia* sp. nov.; *M. spinimanus* Rathbun, 1906; *M. trispinosa* Parisi, 1914.

Key to *Mursia* species

1. Internal surface of cheliped dactylus irregularly granulate; carina on second abdominal segment entire ..... ***Platymera gaudichaudii***
— Internal surface of cheliped dactylus with a milled ridge; carina on second abdominal segment trilobate ..... ***Mursia*** 2

2. Posterior margin of carapace arcuate, entire; suborbital tooth subquadrate; front pointed .. .. ***M. cristiata***
— Posterior margin bi- or trilobate; suborbital tooth triangular; front trilobate 3

3. Lateral spine of carapace less than 0.07 carapace width 4
— Lateral spine of carapace more than 0.07 carapace width 7

4. Conical tubercles on external surface of cheliped and carpus of fourth pereiopod .... ***M. aspera***
— No conical tubercles on external surface of cheliped and carpus of fourth pereiopod 5

5. Posterior margin distinctly trilobed ..... ***M. flamma*** sp. nov.
— Median lobe on posterior margin indistinct or missing 6

6. Carapace coarsely granulose, lateral spine upcurved, inferior proximal tubercle on external surface of chela conical, second male pleopod crook-shaped distally (fig. 6h) .... ***M. microspina***
— Carapace finely granulose, lateral spine straight, inferior proximal tubercle on external surface of chela keel-like, second male pleopod beta-shaped distally (fig. 6d) .... ***M. hawaiiensis***

7. Lateral spine massive, over one third carapace width, posterior margin bearing two cylindrical lobes, second male pleopod distally looped (fig. 3c) ..... ***M. armata***
— Lateral spine slender, less than one third carapace width, lobes on posterior margin not cylindrical, second male pleopod different 8

8. Posterior margin bilobed 9
— Posterior margin trilobed 10

9. Supraorbital margin bifissured, distalmost spine on merus of cheliped longer than lateral spine, external surface of fourth ambulatory merus granulose, second male pleopod distally curved (fig. 10a) ..... ***M. musorstomia*** sp. nov.

— Supraorbital margin unifissured, distalmost spine on merus of cheliped shorter than lateral spine, external surface of fourth ambulatory merus smooth, second male pleopod distally hook-like, tip upcurved (fig. 10h) ..... ***M. trispinosa***

10. Supraorbital margin bifissured ..... ***M. mcdowelli***
— Supraorbital margin unifissured 11

11. Lower margin of chela minutely serrate 12
— Lower margin of chela prominently serrate 13

12. Cheliped merus trispinose, distalmost spine longer than lateral spine, second male pleopod sinuous (fig. 3e) ..... ***M. australiensis***
— Cheliped merus quadrispinose, distalmost spine shorter than lateral spine, second male pleopod distally coiled (fig. 3j) ..... ***M. bicristimana***

13. Lobes on posterior margin indistinct, nearly effaced, second male pleopod crook-shaped (fig.3a) ..... ***M. africana*** sp. nov.
— Lobes on posterior margin distinct, triangular, second male pleopod different 14

14. Carapace minutely granulate ..... ***M. spinimanus***
— Carapace prominently granulate 15

15. Anterolateral margins indistinctly denticulate, three tubercles in inferior row externally on chela ..... ***M. curtispina***
— Anterolateral margins distinctly dentate, more than three tubercles in inferior row externally on chela ..... ***M. danigoi*** sp. nov.

Mursia africana sp. nov.

Fig. 1 a, 2 a-b, 3 a-b

Mursia armata - BARNARD, 1950 : 356, fig. 67g. Non de Haan, 1837.

MATERIAL EXAMINED. — **Kenya**, 3°08'S, 40°20.5'E, 250-255 m, 5 September 1974, coll. A. J. BRUCE : 1 ♂, holotype, cl 30.8, cw 38.8, mcw 56.7 (NNM).

Portuguese East Africa, 26°03'S, 33°04'E, 290 m, 1924, coll. GILCHRIST, id. BARNARD : 1 ♂ juv., paratype, cl 20.1, cw 24.5, mcw 34.8; 1 ♀ juv., paratype, cl 17.8, cw 20.9, mcw 27.5 (SAM A6794).

TYPE LOCALITY. — Kenya, 3°08'S, 40°20.5'E.

DESCRIPTION. — Carapace 1.25 wide as long, surface coarsely granulate. Radial tubercles granulate. Front with rounded median lobe projecting beyond lateral lobes. Supraorbital margin unifissured. Anterolateral margin with nine small triangular teeth. Lateral spine 0.2 carapace width, granular. Posterolateral margin beaded, sinuous. Posterior margin minutely beaded, with flattened, nearly effaced lobes. Merus of cheliped bispinose, distal spine twice as long as proximal spine. External surface of palm with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest. Proximal tubercle in lowest row acuminate, keel-like, median and distal tubercles smaller, triangulate. Lower margin strongly serrate, teeth smaller proximally. Dactylus basally granulose on exterior surface. Upper margin of pereiopodal meri minutely granulose, as well as external surface of fourth ambulatory merus. Upper margin of propodi unicristate. Lobes of abdominal crest coequal. Second male pleopod distally crook-shaped, tip slightly outcurved.

Color. - "As preserved, pinkish, a bright red spot on inner surface of hand of both chelipeds at insertion of finger" (BARNARD, 1950).

FIG. 1. — Dorsal view : **a**, *Mursia africana* sp. nov., ♂, holotype, cl 30.8 mm, Kenya, 250 m (NNM). — **b**, *Mursia armata* de Haan, 1837, ♂ cl 30.1 mm, Viet Nam, 145 m (MNHN-B 16325). — **c**, *Mursia aspera* Alcock, 1899, ♀ cl 54.6 mm, Madagascar (MNHN-B 24352). — **d**, *Mursia australiensis* Campbell, 1971, ♀ ovigerous cl 14.6 mm, New Caledonia, 315-320 m (MNHN-B 24369). — **e**, *Mursia danigoi* sp. nov., ♂, holotype, cl 45 mm, Philippines, 143-178 m (MNHN-B 22369). — **f**, *Mursia bicristimana* Alcock & Anderson, 1894, ♂, syntype, cl 19.1 mm, Nicobar Ids, 124-271 m (BM 1898.8.26.3).

ETYMOLOGY. — The specific name refers to the occurence of the species off the African coast.

REMARKS. — *M. africana* resembles both *M. mcdowelli* and *M. bicristimana* in carapace shape and granulosity. *M. mcdowelli* differs from *M. africana* in its shorter lateral spine, bifissured supraorbital margin and beta-shaped second male pleopod. *M. bicristimana* differs from *M. africana* in its quadrispinose cheliped merus and

distally curled second male pleopod. *M. africana* and *M. microspina* both possess a crook-shaped second male pleopod. However, the latter is easily distinguished from *M. africana* by its minute lateral spine.

DISTRIBUTION. — Kenya, Mozambique; 250-290 m.

Mursia armata de Haan, 1837

Fig. 1 b, 2 c-d, 3 c-d

Mursia armata de Haan, 1837 : 70 (list), pl. 19 fig. 2; 1839 : 73. — ORTMANN, 1892 : 564 (part). — DOFLEIN, 1902 : 653; 1904 : 36. — PARISI, 1914 : 290. — IHLE, 1918 : 179. — GORDON, 1931 : 527 (list). — ANDRÉ, 1931 : 641. — YOKOYA, 1933 : 114. — SAKAI, 1937 : 85, pl. 11 fig. 3; 1965 : 51, pl. 20 fig. 4; 1976 : 135, pl. 43 fig. 2. — SHEN, 1940 : 214. — UCHIDA, 1949 : 723, fig. 2091. — GUINOT-DUMORTIER & DUMORTIER, 1960 : 139, fig. 19a-b . — SERÈNE, 1968 : 41 (list). — KIM, 1970 : 11, pl. 2 fig. 1. — TAKEDA, 1978 : 34; 1979 : 153 (list). — MIYAKE, 1983 : 23, 199, pl. 8 fig. 3. — DAI & YANG, 1991 : 107, text-fig. 53, pl. 12 fig. 2.

Thealia acanthophora Lucas, 1839 : 579, pl. 21 figs 1-3.

Mursia armata tipica Doflein, 1904 : 40, pl. 17 fig. 1, pl. 18 fig. 2. — BALSS, 1922 : 124. — SAKAI, 1934 : 284; 1936 : 47, pl. 7 fig. 1.

Not *Mursia armata* - BARNARD, 1950 : 356, fig. 67g. — KENSLEY, 1981a : 38 (list); 1981b : 60 (list) (= *M. africana* sp. nov.).

MATERIAL EXAMINED. — **Japan**. 1825-1834, coll. H. BURGER : 1 ♀ cl 27.4, lectotype (NNM 38154); 2 ♂, 4 ♀, paralectotypes (NNM 38155). — Near Tokyo, 1906, coll. J. HARMAND : 1 juv. (MNHN-B 24350). — Amakusa, off Tomioka, 60-70 m, August 1983, coll. K. HARADA : 2 ♂ cl 22.1, 22.6, cw 27.5, 28.0, mcw 50.0 (NNM 38192). — Misaki, 1930, id. M. J. RATHBUN : 1 ♂ cl 30.1, cw 36.9 (USNM 63691).

Hong Kong. Coll. BARNES: 2 ♂, cl 25.0, 28.3, cw 30.3, 35.9, mcw 53.8, 61.2; 1 ♀ cl 25.0, cw 30.7, mcw 52.6 (BM 1930.12.2.34-36). — vic. Hong Kong, 21°53'N, 115°51'E, 113 m, 4 November 1908 : 1 ♀ cl 26, cw 31.4, mcw 54.7 (USNM).

Viet Nam. Coll. A. KREMPF : 1 ♀ cl 33.2, cw 41.7, mcw 74.3 (MNHN-B 16324). — " *De Lanessan*", 145 m, 30 September 1925, coll. A. KREMPF : 1 ♂ cl 30.1, cw 38.6, mcw 69.5 (MNHN-B 16325).

New Caledonia. Off Thio, trap, 260 m, 21. June 1986 : 1 juv. cl 19.5, cw 24.0 (MNHN-B 24351).

TYPE LOCALITY. — Japan (DE HAAN, 1837).

DESCRIPTION. — Carapace about 1.2 wide as long, surface covered with close spaced flattened granules anteriorly, well-spaced, rounded granules posteriorly. Radial tubercles prominent, median row laterally bordered by deep grooves. Front with slightly rounded lateral lobes and triangular rostrum. Supraorbital margin unifissured. Suborbital sinus v-shaped, suborbital tooth triangular. Anterolateral margins with seven rounded, nearly effaced teeth. Lateral spine massive, over one third carapace width, minutely granulate. Posterolateral margin oblique, beaded, angled medially. Posterior margin beaded, lateral processes stout, cylindrical. Merus of cheliped bispinose, distal spine much longer than proximal. Carpus with nearly effaced granules. Upper margin of palm set with eight teeth. External surface of palm with large, rounded tubercles in three diagonal rows and three more at base of palmar crest, lowest row with median tubercle largest. Lower margin of palm serrate, teeth diminishing in size proximally. Dactylus basally granulate on anterior margin. Upper margins of pereiopodal meri granulose, meri, propodi nearly smooth; fourth pereiopodal meri distinctly granulose on external surface. Abdominal crest with finely granulate margin, rounded lateral lobes widely separated from trapezoid median lobe. Second male pleopod distally looped, its tip incurved.

Color. - Carapace tubercles orange-red; internal palmar surface near dactylar base with deep-orange patch (SAKAI, 1936, pl. 7 fig. 11).

REMARKS. — *M. armata* alone among its congeners possesses long, stout, straight lateral spines, two cylindrical protuberances on posterior margin and distally looped second male pleopod.

M. armata was listed and drawn by DE HAAN (1837), and later described by him (1839), unbeknown to LUCAS (1839), who described it, that same year, as *Thealia acanthophora*. Though clearly distinct, *M. armata* was merged

with other species (ORTMANN, 1892; IHLE, 1918), so that some authors found it necessary to reestablish it as *M. armata typica* (DOFLEIN, 1904; BALSS, 1922; SAKAI, 1934, 1935).

DISTRIBUTION. — Hong Kong, Indochina, Korea, Japan, New Caledonia; 60-260 m.

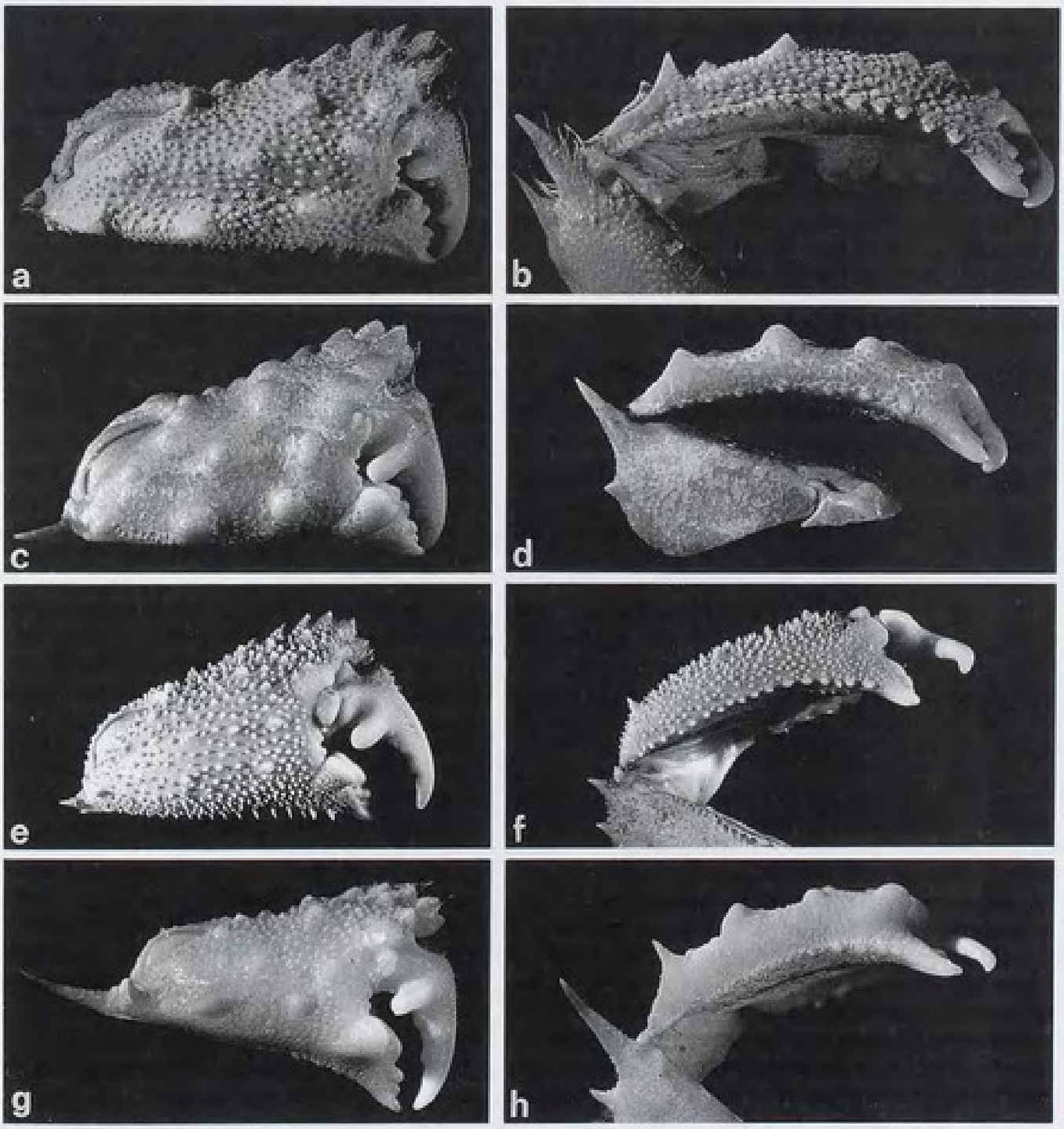


FIG. 2. — Cheliped, external and ventral views : **a-b**, *Mursia africana* sp. nov., ♂, holotype, cl 30.8 mm, Kenya, 250 m (NNM). — **c-d**, *Mursia armata* de Haan, 1837, ♂ cl 30.1 mm, Viet Nam, 145 m (MNHN-B 16325). — **e-f**, *Mursia aspera* Alcock, 1899, ♀ cl 54.6 mm, Madagascar (MNHN-B 24352). — **g-h**, *Mursia australiensis* Campbell, 1971, ♀ ovigerous cl 14.6 mm, New Caledonia, 315-320 m (MNHN-B 24369)

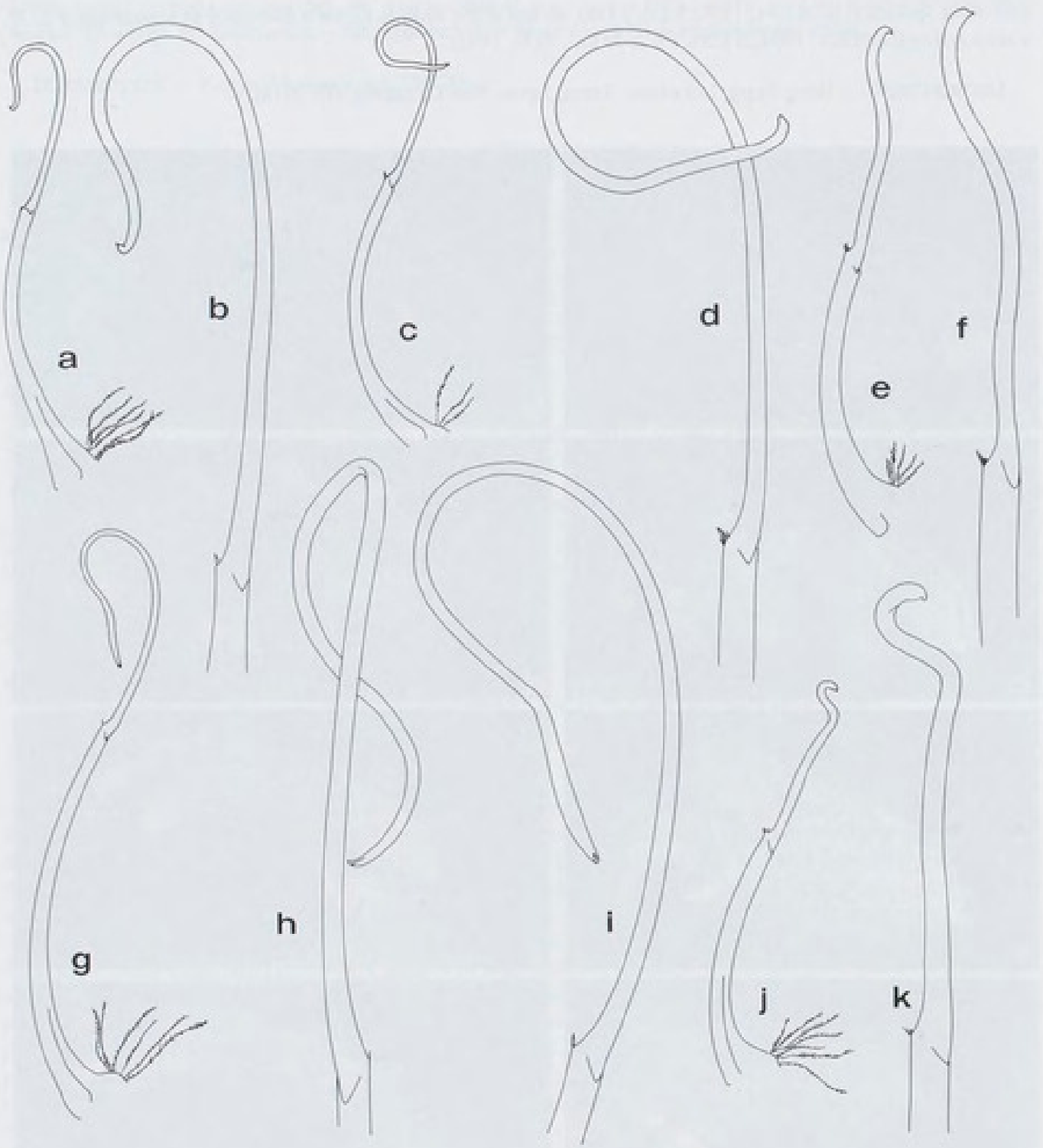


FIG. 3. — Second pleopod male with enlargement of distal part : **a-b**, *Mursia africana* sp. nov., ♂, holotype, cl 30.8 mm, Kenya, 250 m (NNM). — **c-d**, *Mursia armata* de Haan, 1837, ♂ cl 30.1 mm, Viet Nam, 145 m (MNHN-B 16325). — **e-f**, *Mursia australiensis* Campbell, 1971, ♂ cl 11.9 mm, New Caledonia, 300 m (MNHN-B 24355). — **g-i**, *Mursia danigoi* sp. nov., ♂, holotype, cl 45 mm, Philippines, 143-178 m (MNHN-B 22369). — **j-k**, *Mursia bicristimana* Alcock & Anderson, 1894, ♂, syntype, cl 19.1 mm, Nicobar Islands, 124-271 m (BM 1898.8.26.3).

Mursia aspera Alcock, 1899

Fig. 1 c, 2 e-f

Mursia aspera Alcock, 1899a : 24; 1899b, pl. 40 fig. 2. — Serène, 1968 : 41 (list).
Not *Mursia aspera* - Miyake, 1983 : 24, 199, pl. 8 fig. 5 (= *M. australiensis* Campbell, 1971 ?).
Not *Mursia aspera* - Baba, 1986 : 221, pl. 165 (= *M. microspina* Davie & Short, 1989).
Not *Mursia aspera* - Sakai, 1965 : 54, textfig 8c-c'; 1976 : 138, textfig. 74c-c', pl. 42 fig. 2. — Zarenkov, 1990 : 220, fig. 2.

Material examined. — **Madagascar**. *"Vauban"*: West coast, coll. A. Crosnier : 1 ♀ cl 54.6, cw 68.2, mcw 73.3 (MNHN-B 24352).

Seychelles. Cepros : stn 15, 04°09.3'S, 56°11'E, 150-210 m, 20 October 1987 : 2 ♀ cl 50.4, 53.4, cw 63.0, 66.2, mcw 67.9, 71.3 (MNHN-B 19113).

Type locality. — Maldives (Alcock, 1899a).

Description. — Carapace strongly convex, about 1.2 wide as long, surface closely covered with conical tubercles, smaller anteriorly. Radial tubercles only slightly enlarged. Front with lateral teeth more prominent than median. Supraorbital margin unifissured. Anterolateral margins setose, with eleven small granular tubercules. Lateral spine minute, less than 0.04 carapace width, granulate. Posterolateral margin oblique, beaded, medially angled. Posterior margin with three acuminate denticles of nearly equal size. Outer surface of chelipeds covered with acuminate granules and tubercles. Merus of cheliped with four spines increasing in size distally. Palm crested with nine granulate lobes. Lower margin prominently spinose. Posterior surface of fourth pereiopodal merus covered with conical tubercles, as well as upper and lower margins of pereiopodal meri. Upper margin of first and second pereiopodal carpi with three rows of conical tubercles, third with two rows, fourth with single row. Abdominal crest with granulate lateral lobes widely separated from irregularly tuberculate median lobe.

Color. - Carapace bone colored with coral-pink patches on hepatic, mesogastric and branchial regions. Inner palmar face with large, coral-colored patch, at base of dactylus. Ambulatory legs pale coral.

Remarks. — The rarity of *M. aspera* was probably the reason that, despite Alcock's clear description (1899a) and illustration (1899b), it has been submerged as a junior synonym of *M. armata curtispina* by Doflein (1904) and Ihle (1918). The specimens described and depicted by Sakai (1965, 1976) differ from *M. aspera* in having more prominent medial tubercles on the external surface of the chela and a longer lateral spine. Miyake (1983) described a specimen with an even longer lateral spine and a thin, elongate spine distally on the merus of the cheliped, quite similar to *M. australiensis* Campbell, 1971. The specimen depicted by Baba (1986) is *M. microspina* Davie & Short, 1989, which indeed closely resembles *M. aspera* in having a short lateral spine. However, *M. aspera* differs from *M. microspina* in having evenly sized frontal denticles, acuminate tubercles externally on cheliped, four spines distally on cheliped merus, lower margin of palm prominently spinose as well as granulate ambulatory legs. Zarenkov's (1990) specimens differ from *M. aspera* in lacking prominent conii on carapace, external surface of chela and on upper margins of pereiopodal meri.

Distribution. — Madagascar, Seychelles, Maldives; 150-384 m.

Mursia australiensis Campbell, 1971

Fig. 1 d, 2 g-h, 3 e-f, 11

Mursia armata - Whitelegge, 1900 : 160. Non de Haan, 1837.
Mursia australiensis Campbell, 1971 : 31, pl. 2a-b, fig. 1.
? *Mursia aspera* - Miyake, 1983 : 24, 199, pl. 8 fig. 5.

MATERIAL EXAMINED. — **Australia.** Off New South Wales coast, August 1929, coll. and id. M. WARD : 2 ♂, cl 23.6, 24.4, cw 27.5, 27.6, mcw 39.5, 40.9 (USNM 63715).

New Caledonia. MUSORSTOM 5 : stn 252, 25°08.53'S, 159°55.11'E, 300-310 m, 7 October 1986 : 1 ♀ ovigerous, cl 13.7, cw 15.4, mcw 20.9 (MNHN-B 24353). — Stn 255, 25°15.40'S, 159°54.80'E, 280-295 m, 7 October 1986 : 1 ♂, cl 15.7, cw 18.1, mcw 27.7 (MNHN-B 24354). — Stn 261, 25°26.58'S, 159°45.88'E, 300 m, 8 October 1986 : 1 ♂, cl 11.9, cw 19.5, mcw 30.3 (tip broken); 1 ♀, cl 14.3, cw 16.4, mcw 24.9 (MNHN-B 24355).- — Stn 263, 25°21.30'S, 159°46.44'E, 255-150 m, 8 October 1986 : 1 ♀, cl 14.3, cw 16.2, mcw 22.8 (MNHN-B 24356). — Stn 265, 25°21.10'S, 159°45.20'E, 190-260 m, 8 October 1986 : 3 juv. (MNHN-B 24357). — Stn 266, 25°20.20'S, 159°45.70'E, 240 m, 8 October 1986 : 1 ♂, cl 12.8, cw 15.3, mcw 21.3; 1 ♀, cl 14.8, cw 16.1, mcw 23.8; 2 juv. (MNHN-B 24358). — Stn 267, 25°23.60'S, 159°47.20'E, 285 m, 8 October 1986 : 1 ♀, cl 13.5, cw 15.4, mcw 24.3 (MNHN-B 24359). — Stn 269, 24°47.0'S, 159°37.30'E, 270-250 m, 9 October 1986 : 1 juv., cl 6.6 (MNHN-B 24360). — Stn 274, 24°44.83'S, 159°41.00'E, 285 m, 9 October 1986 : 1 ♂, cl 13.8, cw 15.5 (MNHN-B 24361). — Stn 275, 24°46.60'S, 159°40.30'E, 285 m, 9 October 1986 : 1 ♀, cl 14.4, cw 16.3, mcw 22.8; 5 juv. (MNHN-B 24363). — Stn 276, 24°48.90'S, 159°40.90'E, 269-258 m, 9 October 1986 : 3 ♂, cl 12.9-14.5; 2 ♀, cl 13.5, 13.7 (MNHN-B 24362). — Stn 281, 24°10.54'S, 159°34.32'E, 272 m, 10 October 1986 : 1 ♀, cl 11.8, cw 13.2, mcw 17.4 (MNHN-B 24364). — Stn 282, 24°11.55'S, 159°32.22'E, 226-230 m, 10 October 1986 : 3 juv., cl 6.3-10 (MNHN-B 24365). — Stn 284, 24°09.96'S, 159°33.49'E, 225-230 m, 10 October 1986 : 1 ♂, cl 10.6, cw 11.9, mcw 16.4 (MNHN-B 24366). — Stn 285, 24°09.35'S, 159°34.04'E, 245-255 m, 10 October 1986 : 1 ♂, cl 12.8, cw 14.9, mcw 22.1 (MNHN-B 24367). — Stn 289, 24°01.50'S, 159°38.40'E, 273 m, 10 October 1986 : 1 ♂, cl 14.6, cw 16.3, mcw 25.4; 1 ♀, cl 13.3, cw 15.0, mcw 20.7 (MNHN-B 24368). — Stn 312, 22°17.20'S, 159°24.80'E, 315-320 m, 12 October 1986 : 1 ♀ ovigerous, cl 14.6, cw 16.6, mcw 22.6 (MNHN-B 24369).

TYPE LOCALITY. — Cape Moreton, Queensland, Australia (CAMPBELL, 1971).

DESCRIPTION. — Carapace 1.1 wide as long, surface closely covered with granules. Radial tubercules prominent. Median frontal lobe triangular, projecting beyond rounded lateral lobes. Supraorbital margin unifissured. Suborbital sinus v-shaped suborbital tooth triangular pointing distad. Anterolateral margins indistinctly cristate, with ten minute teeth diminishing in size posteriorly. Lateral spine one quarter carapace width, minutely granulate, curved upwards. Posterolateral margins beaded, angled medially. Posterior margin with lateral teeth projecting further than median lobe. Chelipeds externally granulate. Merus of cheliped trispinose, distal spine largest, nearly as long as lateral spine. Outer surface of chela with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest, lowest row with proximal tubercle acuminate, prominent, median and distal tubercles smaller, rounded. Lower margin minutely serrate, teeth smaller proximally. Dactylus minutely granulate proximally on anterior margin. Upper margin of pereiopods nearly rounded, minutely granulate. Abdominal crest with flattened, subequal, rounded lobes. Cornute distal portion of second male pleopod sinuous, tip outcurved.

Color (in alcohol). - Carapace buff with irregular pink spots. Meral and anterolateral spines red distally. Inner palmar face with small, red patch at base of dactylus. Four red dots on distal margin of buccal cavity.

REMARKS. — *M. australiensis* differs from its congeners in having the distal portion of the second male pleopod sinuous with tip curved distad.

DISTRIBUTION. — Australia, New Caledonia, ? Japan; 40-320 m.

Mursia bicristimana Alcock & Anderson, 1894

Fig. 1 f, 3 j-k, 5 c-d

Mursia bicristimana Alcock & Anderson, 1894 : 179. — ALCOCK, 1896 : 150; 1899a : 23; 1899b, pl. 3 fig. 3. — ALCOCK & ANDERSON, 1896, pl. 24 fig. 5. — ANDERSON, 1897 : 103. — LAURIE, 1906 : 355. — LLOYD, 1907 : 6. — BARNARD, 1926 : 120. — SERÈNE, 1968 : 41 (list).

Mursia armata bicristimana - DOFLEIN, 1904 : 41, pl. 17 fig. 3, pl. 18 fig. 4.

MATERIAL EXAMINED. — **Indian Ocean.** 11°14.30'N, 74°57.15'E, 124-271 m, pres. Indian Museum : 1 ♂, cl 19.1, cw 24.1, mcw 32.4. Syntype. (BM 1898.8.26.3). — Stn AB-22B, 31 July 1963, coll. "*Anton Brunn*" : 2 ♂,

cl 18.9, 44.3, cw 23.8, 58.8, mcw 30.9, 74.7; 1 ♀, cl 27.2, cw 34.9, mcw 46.1 (USNM). — Ceylon. coll. HERDMAN : 1 ♂ cl 11.9, cw 21.1, mcw 28.0 (BM 1907.5.22). — Gulf of Manaar, coll. HERDMAN : 1 ♀ ovigerous, cl 11.8, cw 20.5, mcw 25.4 (BM 1934.1.16.23).

TYPE LOCALITY. — Gulf of Manaar (ALCOCK & ANDERSON, 1894).

DESCRIPTION. — Carapace about 1.2 long as wide, coarsely granulate, granules smaller anteriorly. Radial tubercules minutely granulate, prominent. Lateral frontal lobes rounded, effaced, median lobe triangular, projecting. Supraorbital margin unifissured, suborbital sinus v-shaped. Suborbital tooth triangular, pointing distad. Anterolateral margin with nine tuberculate teeth, largest medially. Lateral spine less than one fifth carapace width, granulate. Posterolateral margin beaded, sinuous. Posterior margin with laminar lobes, lateral lobes projecting beyond median. External surface of chelipeds granulose. Merus quadrispinose, distal spine largest. External surface of palm with two longitudinal rows of three granulate tubercles and with granular ridge, unevenly trilobate, with proximal lobe most prominent, triangulate distad, median lobe broadly rounded, distal lobe smallest, obtuse. Lower margin minutely serrate. Dactylus granulose on external surface. Margins of pereiopodal carpi minutely granulate as well as external surface of last pair. Upper margin of meri with three granulate costae, but for last which is bicristate. Abdominal crest with rounded, subequal lobes. Second male pleopod distally coiled.

Color. - "Salmon-pink" (ALCOCK & ANDERSON, 1894 : 179); "upper surface of leg and carapace pale bluish-white studded with orange red granules, lower surface white; fingers of chelipeds white, inner surface of merus of chelipeds deep orange" (ANDERSON, 1897 : 103).

REMARKS. — *M. bicristimana* was well described and illustrated by ALCOCK and ANDERSON (1894), ALCOCK (1899) and DOFLEIN (1904).

M. bicristimana alone among its congeners possesses a corkscrew-shaped second male pleopod.

DISTRIBUTION. — Sri Lanka, Nicobar Islands; 260-732 m.

Mursia cristiata H. Milne Edwards, 1837

Fig. 4 a, 5 e-f, 6 a-c

Mursia Desmarest, 1823 : 231; 1825 : 108.
Mursie Mains-en-crête - Desmarest, 1825, pl. 9 fig. 3.
Mursie en crête - LATREILLE, 1831 : 352.
Mursia cristiata H. Milne Edwards, 1837b : 109.
Mursia cristimanus de Haan, 1837 : 70. — STEBBING, 1900 : 22; 1910 : 334. — DOFLEIN, 1901 : 136. — BARNARD, 1950 : 354, fig. 67a-f. — MACPHERSON, 1983 : 18, figs 8, 9a-f. — MANNING & CHACE, 1990 : 46, 76, 77.
Mursia cristimana - DE HAAN, 1837 : pl. E; 1839 : 73. — KRAUSS, 1843 : 52. — MIERS, 1886 : 291. — DOFLEIN, 1904 : 38, pl. 16, figs 5-12, pl. 18 fig. 1. — STEBBING, 1914 : 272, 307. — ODHNER, 1923 : 26. — GUINOT-DUMORTIER & DUMORTIER, 1960 : 139. — SERÈNE, 1968 : 41 (list). — KENSLEY, 1981a : 38 (list).
Mursia cristata - H. MILNE EDWARDS, 1840 : 17 (explication des planches); 1843, pl. 13 fig. 1-1a. — LUCAS, 1840 : 108, pl. 8 fig. 1. — STUDER, 1883 : 15. — ORTMANN, 1894 : 35.
Mursie custata - H. MILNE EDWARDS, 1840 : 627 (index).
Mursica cristata - H. MILNE EDWARDS, 1843 : pl. 13 fig. 1-1a.
Cryptosoma orientis Adams & White, 1848 : 62, pl. 13 fig. 4.

MATERIAL EXAMINED. — **South Africa.** Cape Province, coll. H. B. VAN HORSTOCK : 1 ♂, cl 27.5, cw 30.0, mcw 34.8. Holotype. det. DE HAAN (NNM 38213). — Coll. STEBBING : 1 ♂, cl 22.3, cw 23.8 (BM 1928.12.1.197). — Simon's Bay, 9-33 m, coll. HMS *"Challenger"* : 1 ♂, cl 27.4, cw 30.4, mcw 36.2 (BM 1884.31). — Sea Point, nr Capetown, coll. HMS *"Challenger"* : 1 ♀, cl 20.1, cw 21.8, mcw 25.3 (BM 1884.31). — Agulhas Bank, stn 142, 35°0'S, 18°37'E, 274 m, coll. HMS *"Challenger"* : 1 ♂, cl 21.3, cw 22.4, mcw 26.5; 2 ♀, cl 15.3, 19.0, cw 15.3, 19.3, mcw 20.3, 23.1 (BM 1884.31). — False Bay, coll. STEBBING : 1 ♂, cl 29.1, cw 31.8 (BM 1928.12.1.198). — Jeffrey's Bay, 28 April 1961, coll. GRAS : 1 ♂, cl 29.7, cw 32.4, mcw 37.2 (NNM 16821). — Durban, coll. STEBBING : 1 ♂,

cl 27.6, cw 30.0, mcw 35.2 (BM 1928.12.1.206). — 29°07.24'S, 15°26.06'E, 183 m, 31 July 1986 : 4 ♂, cl 25.6-30.5, cw 27.9-33.2, mcw 31.6-39.3; 1 ♀, cl 26.0, cw 28.2, mcw 32.8 (USNM 237561).

TYPE LOCALITY. — South Africa, Cape Province (DE HAAN, 1837).

DESCRIPTION. — Carapace nearly as long as wide, granulate, ridges coarsely tuberculate, mesogastric tubercles largest, most prominent. Front ogival. Inner and outer orbital angles prominent. Supraorbital margin bifissured.

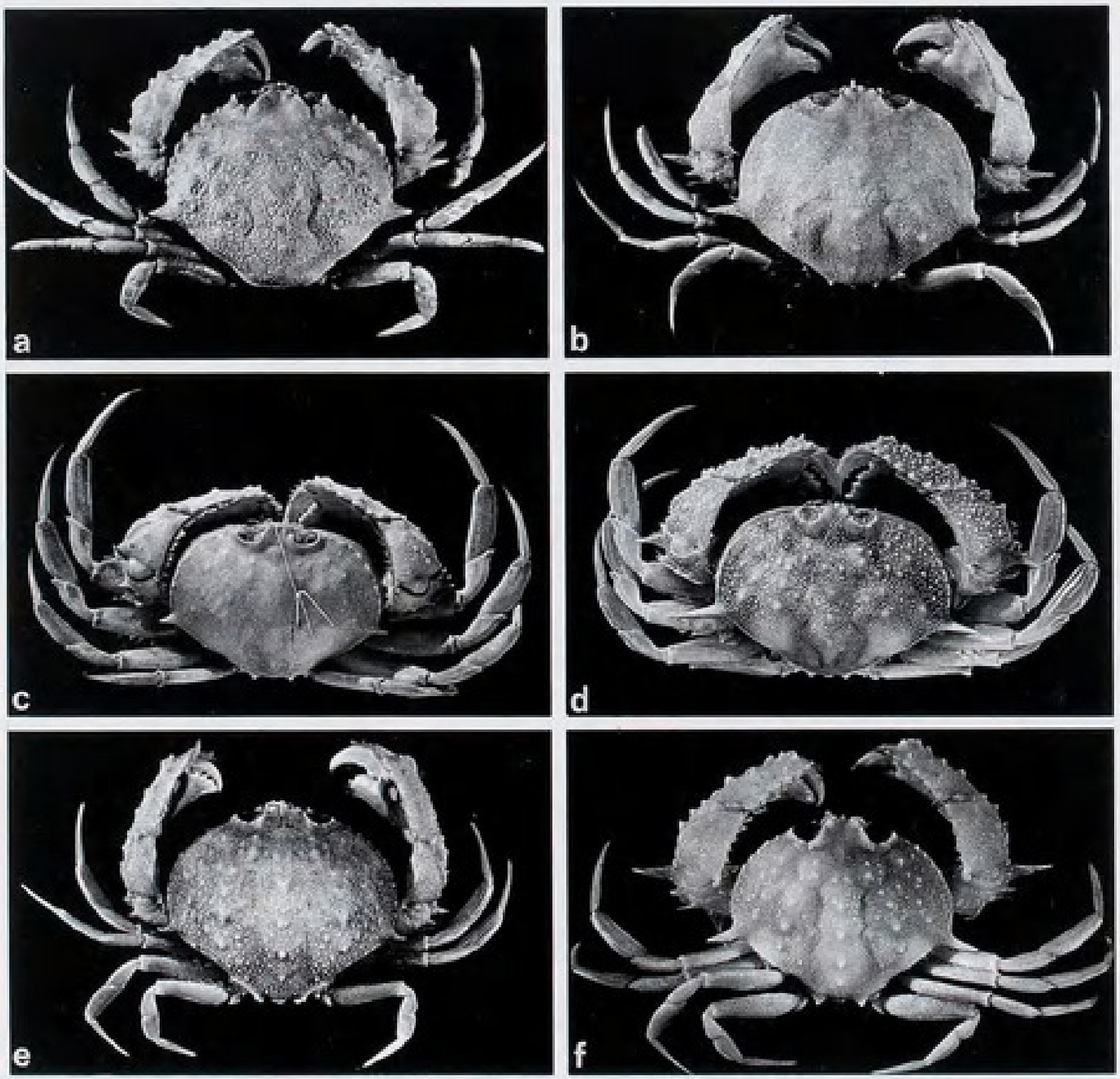


FIG. 4. — Dorsal view : **a**, *Mursia cristiata* H. Milne Edwards, 1837, ♂ cl 27.4 mm, South Africa, Simon's Bay, 9-33 m (BM 1884.31). — **b**, *Mursia curtispina* Miers, 1886, ♀, holotype, cl 29.5 mm, Fiji Ids, 576 m (BM 1884.31). — **c**, *Mursia hawaiiensis* Rathbun, 1893, ♂ cl 22.9 mm, Hawaiian Ids, 386-463 m (USNM 29903). — **d**, *Mursia mcdowelli* Manning & Chace, 1990, ♂, holotype, cl 37.5 mm, Ascension Id., 120-150 m (USNM 221893). — **e**, *Mursia microspina* Davie & Short, 1989, ♂ cl 24.5 mm, New Caledonia, 385-420 m (MNHN-B 24392). — **f**, *Mursia musorstomia* sp. nov., ♂, holotype, cl 19.7 mm, New Caledonia, 475 m (MNHN-B 24396).

Suborbital sinus v-shaped, suborbital tooth quadrate, pointing distad. Anterolateral margins cristate, prominently tuberculate, tubercles diminishing in size posteriorly. Lateral spine less than 0.1 carapace width, minutely granulate, curving upwards. Posterolateral margins beaded, nearly straight. Posterior margin arcuate, evenly beaded. Chelipeds externally granulate. Merus of cheliped trispinose, distal spine largest, longer than lateral spine. Outer surface of chela with nine conical tubercles in three oblique rows and three tubercles near base of serrate upper crest, lower row with proximal tubercle acuminate, somewhat curved, median and distal tubercles smaller, rounded. Lower margin distinctly serrate, teeth smaller proximally. Dactylus minutely granulate proximally on anterior margin. Upper margin of pereiopods slightly beaded, granulate. Abdominal crest with flattened, subequal, rounded lobes. Cornute distal portion of second male pleopod resembling the Greek letter beta.

Color. - Carapace buff with dark red spots on radial tubercles, cheliped carpus and palmar crest.

REMARKS. — *M. cristiata* differs from its congeners in having an ogival front, evenly beaded posterior margin and a subquadrate suborbital tooth.

It was the first species of the genus to be figured (DESMAREST, 1823) and described (H. MILNE EDWARDS, 1837). However, its name fell prey to repeated misspellings and typographical errors, beginning with H. MILNE EDWARDS who provided four different spellings. The specific name itself, *M. cristiata* (H. Milne Edwards, 1837), is evidently a misspelling as in subsequent publications H. MILNE EDWARDS named it *cristata* (1840; 1843), but also *Mursie custata* (1840, index) and *Mursica cristata* (1843, pl. 13). In addition, DE HAAN supplied us with two versions : *M. cristimanus* (1837 : 70) and *M. cristimana* (1837, pl. E; 1839 : 73).

DISTRIBUTION. — Southern Africa, from Natal to Namibia; ? St. Helena Id. (DOFLEIN, 1900); 9-304 m

Mursia curtispina Miers, 1886

Fig. 4 b, 5 g-h

Mursia curtispina Miers, 1886 : 291, pl. 29 fig. 2.
Mursia armata curtispina - DOFLEIN, 1904 : 40, pl. 17 fig. 2, pl. 18 fig. 3.
Not *Mursia armata curtispina* - YOKOYA, 1933 : 115. — SAKAI, 1936 : 48, pl. 7 fig. 3; 1937 : 87, pl. 11 fig. 4 (= *M. trispinosa* Parisi, 1914).
Not *Mursia curtispina* - SAKAI, 1965 : 52, textfig. 8a-a', pl. 21 fig. 2; 1976: 136, textfig. 74a-a', pl. 43 fig. 1. — TAKEDA & KOYAMA, 1974 : 105.

MATERIAL EXAMINED. — **Fiji Ids**. *"Challenger"*: stn 173, 19°09.35'S, 179°41.50'E, 576 m : 1 ♀, cl 29.5, cw 34.0. Holotype (BM 1884.31).

TYPE LOCALITY. — Fiji (MIERS, 1886).

DESCRIPTION. — Carapace 1.15 wide as long, surface closely granulate. Radial tubercles minutely granulate. Front with rounded median lobe projecting beyond lateral lobes. Supraorbital margin unifissured. Anterolateral margin with nine, nearly effaced, granulate teeth. Lateral spine about 0.2 carapace width, granular. Posterolateral margin beaded, sinuous. Posterior margin minutely beaded, with sharply triangular lateral teeth and a small median tooth. Merus of cheliped trispinose, distalmost spine as long as lateral spine. External surface of palm with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest. Lowest row with proximal tubercle acuminate, triangular, median and distal tubercles smaller, rounded. Lower margin strongly serrate, teeth smaller proximally. Dactylus basally granulose on exterior surface. Upper margin of pereiopodal meri minutely granulose, as well as external surface of fourth pereiopodal merus. Upper margin of propodi unicristate. Median lobe of abdominal crest wider than lateral lobes, slightly emarginate.

Color. - "(in spirit) yellowish-brown, inclining to pink on chelipedes; the apices of the dactyli of the ambulatory legs are brown-pink, and a patch of the same colour ornaments the inner surface of the palms of the chelipedes." (MIERS, 1886).

REMARKS. — MIERS (1886) described and depicted *M. curtispina* quite clearly but later authors sought to synonymize *M. curtispina* with *M. armata* (ORTMANN, 1892), later making it a subspecies of *M. armata* (DOFLEIN, 1904; IHLE, 1918; BALSS, 1922). The species described and depicted by SAKAI (1965, 1976) differs from *M. curtispina* in having longer spines laterally on carapace and distally on cheliped merus, in the form of inferior tubercles externally on palm and in the shape of the color patch on inner palmar face.

DISTRIBUTION. — Fiji, Indonesia; 470-576 m.

Mursia danigoi sp. nov.

Fig. 1 e, 3 g-i, 5 a-b

MATERIAL EXAMINED AND TYPES. — **Philippines**. MUSORSTOM 1 : stn 58, 13°58.0'N, 120°13.7'E, 143-178 m, 26 March 1976 : 1 ♂, cl 45, cw 55, mcw 71 (MNHN-B 22369). Holotype. — Stn 58, 13°58.0'N, 120°13.7'E, 143-178 m, 26 March 1976 : 1 ♂, cl 44.6, cw 55.2, mcw 71; 1 ♀, cl 26.5, cw 31.7, mcw 43 (MNHN-B 22371). Paratypes. — Stn 71, 14°09.3'N, 120°26.2'E, 174-204 m, 28 March 1976 : 1 ♀, cl 37.8, cw 45.2, mcw 60.2 (MNHN-B 22368).

MUSORSTOM 2 : stn 59, 14°00'N, 120°17'E, 186-190 m, 28 November 1980 : 1 ♂, cl 46.1, cw 56.5, mcw 75.4; 2 ♀ juv., cl 27.3, 13.3, cw 32, mcw 45.1 (MNHN-B 22366).

MUSORSTOM 3 : stn 88, 14°01'N, 120°17'E, 183-187 m, 31 May 1985 : 1 ♀, cl 37.1, cw 44.2, mcw 56.9 (MNHN-B 22367).

DESCRIPTION. — Carapace 1.2 wide as long, surface granulose. Radial tubercules prominent, minutely granulate. Median frontal lobe triangular, projecting beyond triangulate lateral lobes. Supraorbital margin unifissured. Suborbital sinus v-shaped, suborbital tooth triangulate pointing distad. Anterolateral margins distinctly dentate, teeth diminishing in size anteriorly, posteriorly. Lateral spine reaching one seventh carapace width, minutely granulate, curved upwards. Posterolateral margins beaded, angled medially. Posterior margin with lateral teeth, triangular, flattened, projecting further than median lobe. Chelipeds externally granulate. Merus of cheliped quadrispinose, distal spine largest, half as long as lateral spine. Outer surface of chela with nine tubercles in three oblique rows and two tubercles near base of serrate upper crest; lowest row with proximal tubercle acuminate, keel-like, median and distal tubercles rounded, with subsidiary denticles between teeth. Lower margin prominently serrate, teeth smaller proximally. Dactylus minutely granulate proximally on anterior margin. Upper margin of pereiopods nearly rounded, minutely granulate. Abdominal crest with flattened lobes, median lobe subquadrate, lateral lobes rounded. Comute distal portion of second male pleopod somewhat beta-shaped.

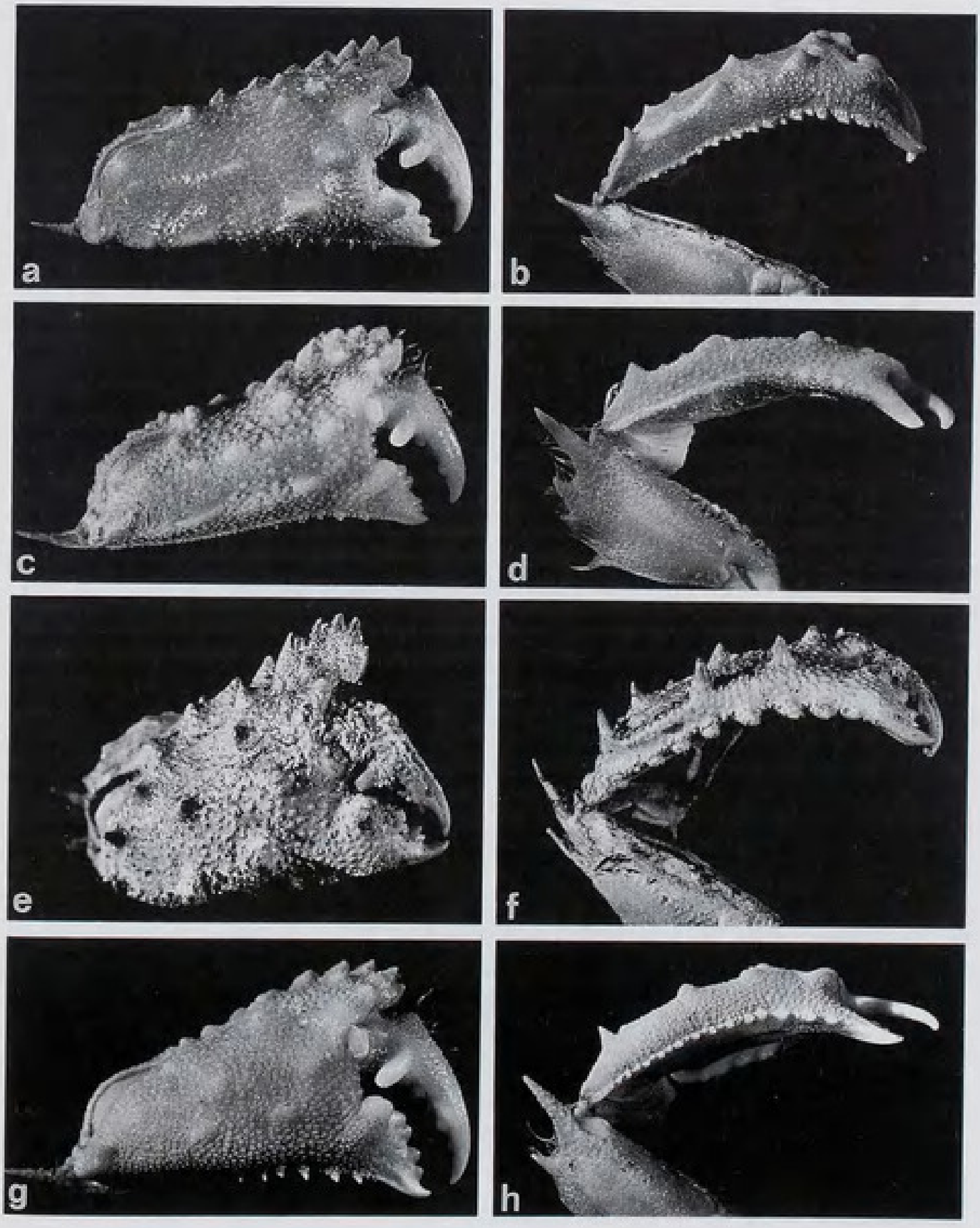
Color (in alcohol). - Inner palmar face with elongate vertical red patch at base of dactylus. Four red dots on distal margin of buccal cavity.

ETYMOLOGY. — The specific name was chosen in recognition of the valuable assistance extended during several of the MUSORSTOM cruises by Adolphe DANIGO, engineer on the research vessels "*Vauban* " and "*Alis*".

REMARKS. — *M. danigoi* sp. nov. resembles *M. africana*, *M. mcdowelli* and *M. spininanus* in general body shape, however it is easily distinguished from each. *M. africana* differs in having a bispinose merus of cheliped and hook-shaped second male pleopod. *M. mcdowelli* differs in having a bifissured supraorbital margin, trispinose merus of cheliped and coarse granulation of carapace and chelipeds. *M. spininanus* differs in having a wider carapace, longer lateral carapace spine, minute anterolateral teeth and fine granulation on the carapace and chelipeds.

DISTRIBUTION. — Known only from the type locality, Philippines; 143-204 m.

FIG. 5. — Cheliped, external and ventral views : **a-b**, *Mursia danigoi* sp. nov., ♂, holotype, cl 45 mm, Philippines, 143-178 m (MNHN-B 22369). — **c-d**, *Mursia bicritimana* Alcock & Anderson, 1894, ♂, syntype, cl 19.1 mm, Nicobar Ids, 124-271 m (BM 1898.8.26.3). — **e-f**, *Mursia cristiata* H. Milne Edwards, 1837, ♂ cl 27.4 mm, South Africa, Simon's Bay, 9-33 m (BM 1884.31). — **g-h**, *Mursia curtispina* Miers, 1886, ♀, holotype, cl 29.5 mm, Fiji Ids, 576 m (BM 1884.31).



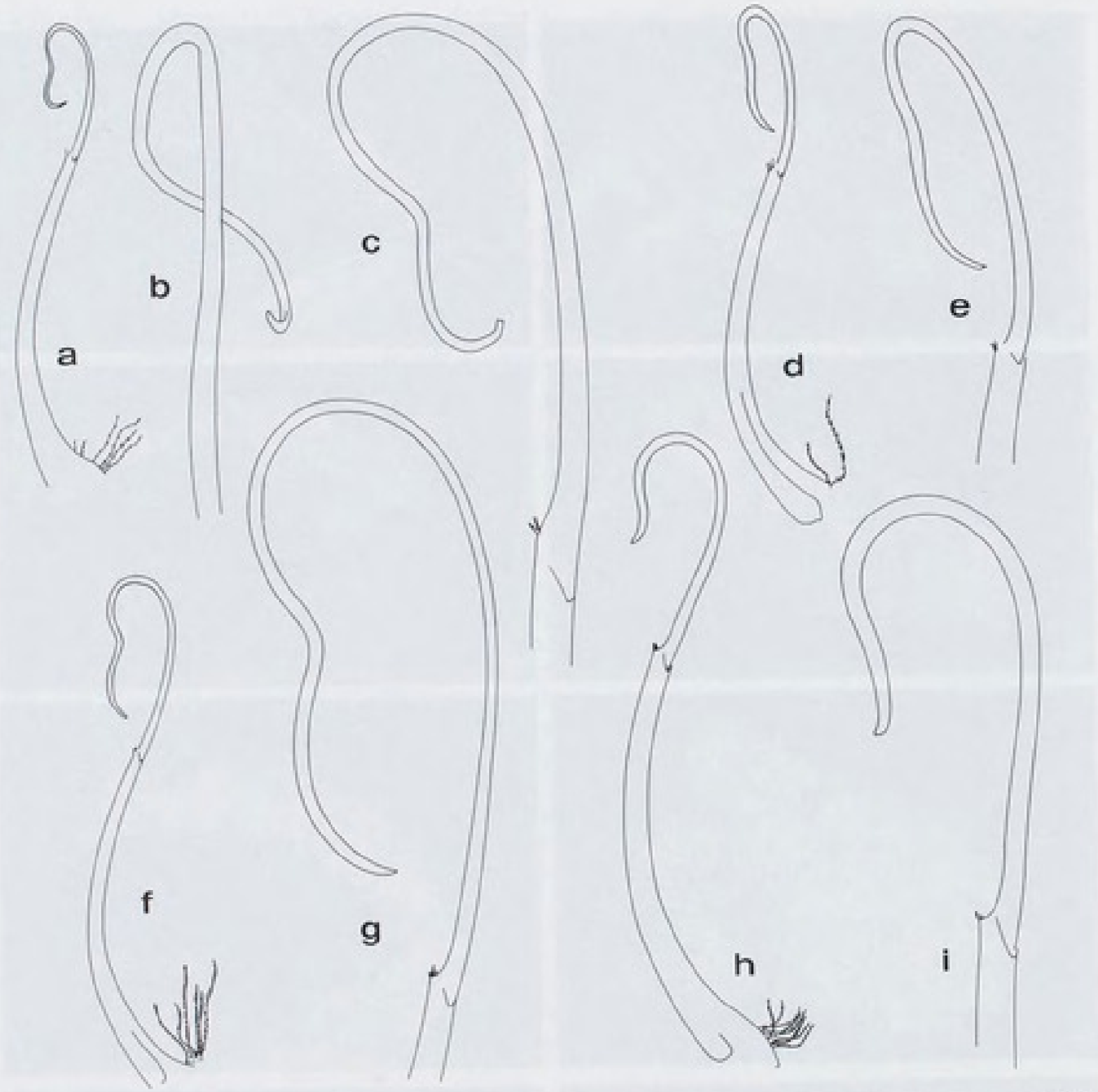


FIG. 6. — Second pleopod male with enlargement of distal part : **a-c**, *Mursia cristiata* H. Milne Edwards, 1837, ♂ cl 27.4 mm, South Africa, Simon's Bay, 9-33 m (BM 1884.31). — **d-e**, *Mursia hawaiiensis* Rathbun, 1893, ♂ cl 22.9 mm, Hawaiian Ids, 386-463 m (USNM 29903). — **f-g**, *Mursia mcdowelli* Manning & Chace, 1990, ♂, holotype, cl 37.5 mm, Ascension Id., 120-150 m (USNM 221893). — **h-i**, *Mursia microspina* Davie & Short, 1989, ♂ cl 24.5 mm, New Caledonia, 385-420 m (MNHN-B 24390).

Mursia flamma sp. nov.

Fig. 7 a, 9 a-b, 10 c-d

Mursia armata curtispina - GRINDLEY 1961 : 132, fig. 4.
Mursia curtispina - SANKARANKUTTY & SUBRAMANIAN, 1976 : 21.

MATERIAL EXAMINED AND TYPES. — **Madagascar**. *"Vauban"*: stn 8, 12°43'S, 48°14'E, 370 m, 14 April 1971 : 1 ♂, cl 57.9, cw 68.2, mcw 76.6, Holotype; 1 juv., cl 32.1, cw 37.6 (MNHN-B 24371). — Stn 4, 12°52'S, 48°10'E, 400-410 m, 4 March 1971 : 1 juv., cl 20.8, cw 25.1 (MNHN-B 24370). — Stn 10, 12°43'S, 48°15'E, 348-360 m, 14 April 1971 : 3 ♀, cl 48.3-66.7, cw 48.6-68.6, mcw 48.6-68.6 (MNHN-B 24373). — Stn 23, 12°42.9'S, 48°12.1'E, 445-455 m, 12 September 1972 : 1 ♂, cl 32.7, cw 38.3 (MNHN-B 24375). — Stn 31, 12°34.1'S, 48°18.3'E, 310-320 m, 13 September 1972 : 1 ♂, cl 15.6, cw 17.9, mcw 24.3; 2 juv., cl 16.3, 30.3, cw 18.7, 35.5, mcw 25.7, 45.5 (MNHN-B 24411).

"FAO 60": stn 73/43, 15°19'S, 46°15'E, 370 m, 11 May 1973 : 1 ♀, cl 48.7, cw 56.2, mcw 67.7 (MNHN-B 24377).

"Mascareignes III" : stn 1, 22°12.3'S, 43°08.2'E, 300-320 m, 20 December 1985 : 4 ♀, cl 44.1-50.4, cw 50.6-58.7, mcw 50.4-69.3 (MNHN-B 24378). — Stn 2, 22°20.5'S, 43°06'E, 400 m, 20 December 1985 : 2 ♂, cl 57.6, 53.9, cw 68.6, 64.2, mcw 78.8, 74.2; 1 juv., cl 21.9, cw 25.8 (MNHN-B 24379). — Stn 3, 22°27.3'S, 43°07'E, 35 m, 20 December 1985 : 1 ♂, cl 55.7, cw 65.2, mcw 74.8 (MNHN-B 24380) . — Stn 4, 22°19.2'S, 43°06.8'E, 400-410 m, 20 December 1985 : 1 ♂, cl 24.2, cw 28.3, mcw 38.7; 1 ♀, cl 23.2, cw 27.0, mcw 34.9 (MNHN-B 24381). — Stn 6, 22°17.3'S, 43°04.3'E, 425-450 m, 21 December 1985 : 1 juv., cl 23.1, cw 26.8, mcw 38.0 (MNHN-B 24382). — Stn 13, 22°17.8'S, 43°04.8'E, 425 m, 23 December 1985: 1 ♂, cl 55.9, cw 65.3, mcw 74.9 (MNHN-B 24479). — Stn 15, 22°25.2'S, 43°05'E, 425-460 m, 1 January 1986 : 1 ♀, cl 46.7, cw 53.9, mcw 64.2; 1 juv., cl 33.6, cw 40.2, mcw 51.0 (MNHN-B 24383). — Stn 45, 22°25.6'S, 43°05.3'E, 475-510 m, 23 January 1986 : 1 ♀, cl 47.2, cw 55.1, mcw 63.0 (MNHN-B 24384). — Stn 57, 22°26'S, 43°05.8'E, 460 m, 17 October 1986 : 2 juv., cl 31.5, 33.6, cw 36.9, 39.5, mcw 47.1, 51.7 (MNHN-B 24385). — Stn 69, 22°21.9'S, 43°04.8'E, 350-420 m, 21 October 1986 : 1 ♂, cl 50.1, cw 65.3, mcw 73.9; 1 ♀, cl 46.6, cw 54.3, mcw 63.6 (MNHN-B 24386). — Stn 117, 22°15'S, 43°06.5'E, 370 m, 28 November 1986 : 1 juv., cl 25, cw 29.9, mcw 36.6 (MNHN-B 24387).

South Africa. Off Natal, between Durban and Tugela mouth, October 1960, coll. P. A. CLANCEY : 1 ♂, cl 58.3, cw 70.7, mcw 79.7 (SAM A.10582).

TYPE LOCALITY. — Madagascar.

DESCRIPTION. — Carapace 1.2 wide as long, surface distinctly granulate. Radial tubercles prominent, granulate. Front with triangular median lobe projecting beyond lateral lobes. Supraorbital margin unifissured. Anterolateral margin with nine, nearly effaced, granulate teeth. Lateral spine short, about 0.07 carapace width, granular. Posterolateral margin beaded, sinuous. Posterior margin with sharply triangular teeth. Merus of cheliped trispinose, distalmost spine as long as lateral spine. External surface of palm with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest. Lowest row with proximal tubercle slender, acuminate, median and distal tubercles thickset, triangular. Lower margin strongly serrate, teeth smaller proximally. Dactylus basally granulose on exterior surface. Upper margin of pereiopodal meri, carpi distinctly granulose. Upper margin of propodi unicristate. Median lobe of abdominal crest wider than lateral lobes, slightly emarginate. Second male pleopod distally crook-shaped, tip slightly outcurved.

ETYMOLOGY. — The specific name is from the Latin and refers to GRINDLEY's specimen which was painted a flame-red, presumably imitating its natural hues.

REMARKS. — *M. flamma* closely resembles *M. curtispina* in carapace shape, however it differs from it in having a shorter lateral spine on carapace and distal spine on cheliped merus, and distinctly granulose meri and carpi of pereiopods.

DISTRIBUTION. — Tanzania, South Africa, Madagascar; 35-510 m.

Mursia hawaiiensis Rathbun, 1893

Fig. 4 c, 6 d-e, 8 a-b

Mursia hawaiiensis Rathbun, 1893 : 252; 1906 : 887, pl. 18, figs 3-4. — TAKEDA & KOYAMA, 1974 : 105.
Mursia armata hawaiiensis - DOFLEIN, 1904 : 41.
Not *Mursia armata hawaiiensis* - IHLE, 1918 : 180.
Not *Mursia curtispina hawaiiensis* - SAKAI, 1965 : 54, textfigs 8d-d'.
Not *Mursia hawaiiensis* - SAKAI, 1976 : 137, textfigs 74d-d', pl. 42 fig. 1. — MIYAKE, 1983 : 199 (list).

MATERIAL EXAMINED. — **Hawaiian Ids.** *"Albatross"*, stn 3472, Kaiwi Channel, 21°12'N, 157°49'W, 540 m, 4 December 1891 : 1 ♂, cl 29.1, cw 36.2, mcw 38.7 (USNM 17515). Holotype. — Stn 3810, Ohau Id., off Honolulu Light, 386-463 m, 27 March 1902 : 1 ♂, cl 22.9, cw 28.4, mcw 30.6 (USNM 29903). — Stn 3919, Ohau Id., off Diamond Head, 470-402 m, 6 May 1902 : 1 ♂, cl 29.6, cw 36.3, mcw 39.5; 1 ♀, cl 29.1, cw 36.2, mcw 39.3 (USNM 29905). — Stn 4081, Maui Id., off Puniawa Point, 370-402 m, 21 July 1902 : 1 ♀ juv., cl 22.5, cw 27.0, mcw 30.6 (USNM 29910). — Stn 4114, Ohau Id., off Kahuku Point, 282-357 m, 25 July 1902 : 1 ♂, cl 32.2, cw 39.8, mcw 43.6; 1 juv., cl 16.3 (USNM 29911). — Stn 4115, Ohau Id., off Kahuku Point, 357-441 m, 25 July 1902 : 1 ♂, cl 34.3, cw 42.7, mcw 46.9; 1 ♀, cl 28.7, cw 35.0, mcw 37.9 (USNM 29912). — Stn 4116, Ohau Id., off Kahuku Point, 441-516 m, 25 July 1902 : 2 ♀, cl 28.5, 35.9, cw 29.4, 38.2, mcw 36.0, 38.6 (USNM 29913). — Stn 4121, Ohau Id., off Kahuku Point, 395-459 m, 25 July 1902 : broken shell (USNM 29915). — Stn 4122, Ohau Id., off Barbers Point, 351-644 m, 26 July 1902 : 1 ♂, cl 26.6, cw 32.6, mcw 36.3; 1 ♀, cl 29.3, cw 36.0, mcw 38.1 (USNM 29916). — Stn 4130, Kauai Id., off Hanamaulu warehouse, 518-565 m, July 1902 : 2 ♀, cl 30.6, 37.1, cw 37.8, 40.0, mcw 39.6, 41.4 (USNM 29917).

Polynesia. Paumotu Archipelago, Rahiroa Atoll, 1252 m, 24 September 1899, id. M. J. RATHBUN : 1 ♂ yg, cl 21.7, cw 26.4, mcw 30.6 (USNM 6907).

N.E. Pacific Ocean. *"Prof. Stockman"*, cruise 18, stn 1920, 25°44.04'S, 85°24.93'W, 220 m, trap, coll. N. ZARENKOV : 2 ♀, cl 30.4, 45.8, cw 36.1, 48.1, mcw 40.7, 53.9 (information possibly inaccurate).

TYPE LOCALITY. — Hawaiian Islands (RATHBUN 1893).

DESCRIPTION. — Carapace 1.2 wide as long, surface closely covered with minute granules. Radial tubercles indistinct. Median frontal lobe projecting forward beyond rounded lateral lobes. Supraorbital margin unifissured. Suborbital sinus v-shaped, suborbital tooth triangular, apex pointing inward. Anterolateral margins cristate, tubercles indistinct. Lateral spine short, about 0.04 carapace width, minutely granulate, curved upwards. Posterolateral margin beaded, sinuous. Lateral lobes of posterior margin triangular, flattened, upcurved. Chelipeds externally granulate. Merus of cheliped trispinose. Outer surface of chela with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest, lowest row with proximal tubercle acuminate, keel-shaped; median, distal tubercles elongate, crested. Lower margin serrate, teeth smaller proximally. Dactylus minutely granulate on anterior margin. Upper margin of perciopodal meri nearly rounded, granulate. Abdominal crest deeply cut, median lobe widest. Corrute distal portion of second male pleopod somewhat beta-shaped.

Color (in alcohol). - "tinges of red on the carapace and chelipeds and an elongated patch of red on the inner surface of the hand, near the dactyl" (RATHBUN, 1893).

REMARKS. — *M. aspera*, *M. nicrospina*, *M. flamma* and *M. hawaiiensis* alone among their congeners possess a lateral spine shorter than 0.07 carapace width. *M. aspera* differs from the rest in having conical tubercles on external surface of chelipeds and on upper margin of perciopodal meri. *M. hawaiiensis* differs from *M. nicrospina* in having nearly effaced granules on carapace, median lobe of abdominal crest wider than lateral lobes and second male pleopod beta-shaped distally and from *M. flamma* in lacking median lobe on posterior margin of carapace.

IHLE (1918) specimen differs from *M. hawaiiensis* in the number of tubercular radial lines on carapace and number of spines on ischium. The species described and depicted by SAKAI (1965, 1976) differs from *M. hawaiiensis* in having the second male pleopod crook-shaped, in the form of the inferior tubercles externally on palm and in the prominent radial tubercles on carapace. MIYAKE (1983) followed SAKAI's list.

DISTRIBUTION. — Hawaiian Islands, Paumotu Archipelago, East Pacific (W of San Felix Id, 25°44.04'S, 85°24.93'W); 97-1252 m.

Mursia mcdowelli Manning & Chace, 1990

Fig. 4 d, 6 f-g, 8 c-d

Mursia mcdowelli Manning & Chace, 1990 : 45, figs 26-27.

MATERIAL EXAMINED. — **South Atlantic Ocean** : Ascension Id., off Georgetown Pierhead, 120-150 m, March 1980, coll. M. McDOWELL : 1 ♂, cl 37.5, cw 47.3, mcw 60.4 (USNM 221893). Holotype.

DESCRIPTION. — Carapace 1.25 wide as long, surface covered with granules, smaller and more closely set posteriorly. Radial tubercules distinct. Median frontal lobe acuminate, projecting forward beyond lateral lobes. Supraorbital margin bifissured. Suborbital sinus v-shaped, suborbital tooth triangular, apex pointing inward. Anterolateral margins cristate, irregularly granulate. Lateral spine 0.14 carapace width, minutely granulate, straight. Posterolateral margin beaded, sinuous. Lateral lobes of posterior margin rounded, projecting beyond median lobe. Chelipeds externally with conic granules. Merus of cheliped trispinose, distal spine as long as lateral spine. External surface of chela with tubercles in three oblique rows, median ridge granulose, unidentate proximally, interrupted distally. Palmar crest deeply serrate. Lower margin serrulate, teeth smaller proximally. Dactylus minutely granulate proximally on anterior margin. Upper margin of pereiopodal carpi nearly rounded, granulate. Abdominal crest with wide median lobe. Cornute distal portion of second male pleopod shaped like the Greek letter beta.

REMARKS. — Among their congeners only *M. mcdowelli* and *M. bicristimana* possess a granulose median ridge proximally on external surface of chela. However, *M. mcdowelli* differs from *M. bicristimana* in having a bifissured supraorbital margin, smaller granules posteriorly on carapace and a beta-shaped second male pleopod.

DISTRIBUTION. — Known only from the type locality, Ascension Island, South Atlantic Ocean (MANNING & CHACE, 1990); 120-150 m.

Mursia microspina Davie & Short, 1989

Fig. 4 e, 6 h-i, 8 e-f, 12

Mursia microspina Davie & Short, 1989 : 172, figs 9a-g, 10.
Mursia aspera - BABA, 1986 : 221, pl. 165.

MATERIAL EXAMINED. — **New Caledonia**. MUSORSTOM 5 : stn 273, 24°43.02'S, 159°43.26'E, 290 m, 9 October 1986 : 1 ♀, cl 23.1, cw 25.5, mcw 28.1 (MNHN-B 24388). — Stn 299, 22°47.70'S, 159°23.70'E, 360-390 m, 11 October 1986 : 1 ♂, cl 19.7, cw 22.1, mcw 25.7 (MNHN-B 24389). — Stn 304, 22°10.34'S, 159°25.51'E, 385-420 m, 12 October 1986 : 1 ♂, cl 24.5, cw 27.8, mcw 30.5 (MNHN-B 22372).

SMIB 6 : stn 124, 18°56.0'S, 163°24.5'E, 360-405 m, 3 March 1991 : 1 ♀, cl 25.1, cw 28.5, mcw 30.2 (MNHN-B 22373).

Loyalty Islands. MUSORSTOM 6 : stn 457, 21°00'S, 167°28.71'E, 353 m, 20 February 1989 : 1 juv., cl 11.2, cw 12.2, mcw 13.0 (MNHN-B 24391). — Stn 464, 21°02.30'S, 167°31.60'E, 430 m, 21 February 1989 : 1 ♀, cl 30.9, cw 35.5, mcw 39.2 (MNHN-B 24392). — Stn 480, 21°08.50'S, 167°55.98'E, 380 m, 22 February 1989 : 1 juv., cl 9.5 (MNHN-B 24393).

TYPE LOCALITY. — Southeast Queensland (DAVIE & SHORT, 1989).

DESCRIPTION. — Carapace 1.1 wide as long, surface closely covered with granules, effaced anteriorly. Radial tubercles distinct. Median frontal lobe projecting forward beyond lateral lobes. Supraorbital margin unifissured. Suborbital sinus v-shaped, suborbital tooth triangular, apex pointing inward. Anterolateral margins cristate, indistinctly tuberculate. Lateral spine short, 0.05 carapace width, minutely granulate, curved upwards. Posterolateral margin beaded, angled medially. Lateral lobes of posterior margin triangular, curved, median lobe nearly indistinct. Chelipeds externally granulate. Merus of cheliped trispinose, distal spine longer than lateral spine. Outer surface of chela with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest, lowermost row with proximal tubercle acuminate. Lower margin minutely serrate. Dactylus minutely granulate proximally on anterior margin. Upper margin of pereiopodal carpi nearly rounded, not granulate. Abdominal crest deeply cut, lobes rounded. Cornute distal portion of second male pleopod crook-shaped, tip outcurved.

Color (in alcohol). - Branchial regions tinged red. Distal margin of buccal cavity with two red spots. Chelipeds pale coral, fingers white. Inner palmar face with a large oculus-shaped coral-colored patch.

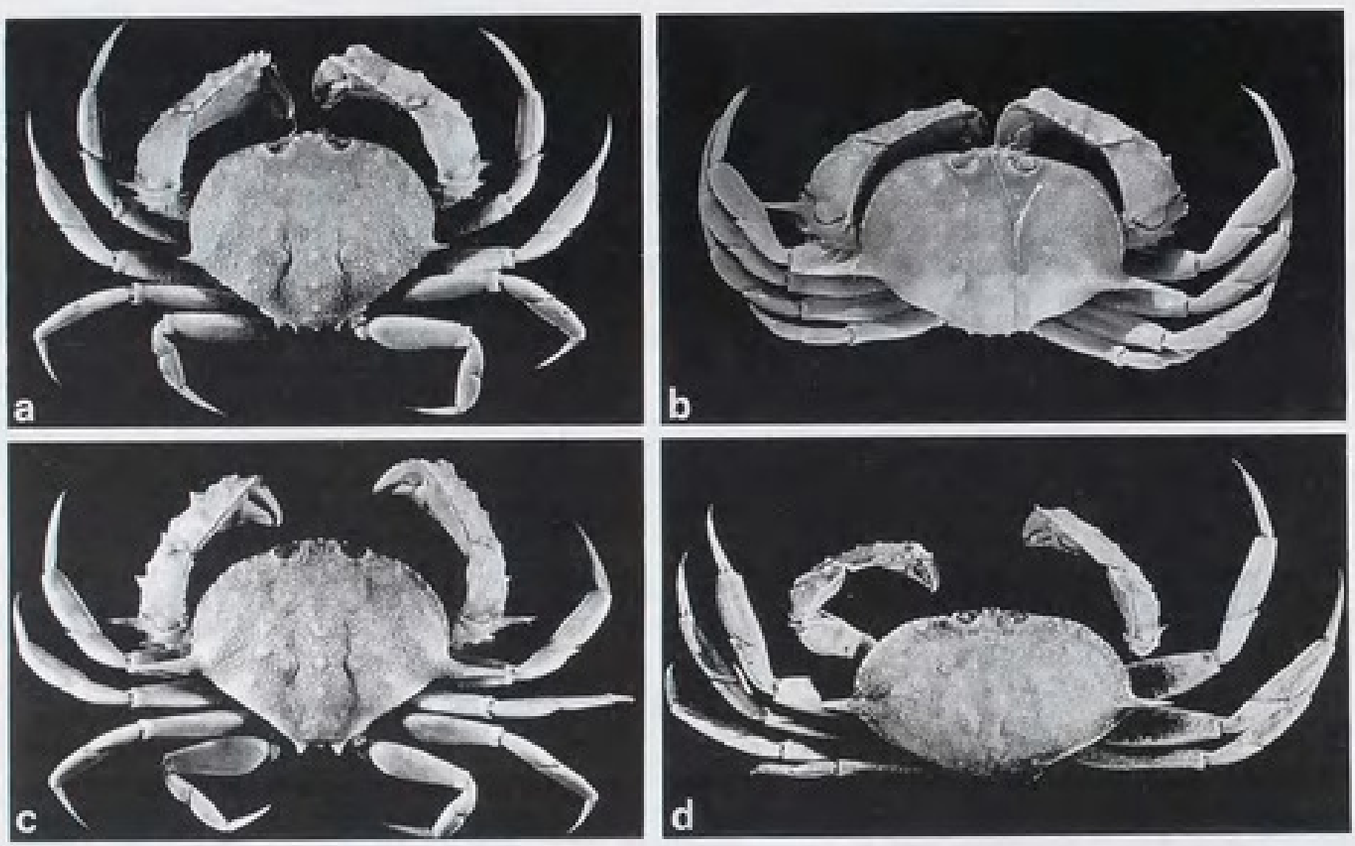


FIG. 7. — Dorsal view : **a**, *Mursia flamma* sp. nov., ♂, cl 57.9 mm, holotype, Madagascar, 370 m (MNHN-B 24371). — **b**, *Mursia spininanus* Rathbun, 1906, ♂, holotype, cl 35.8 mm, Hawaiian Ids, 232 m (USNM 29922). — **c**, *Mursia trispinosa* Parisi, 1914, ♂ cl 42.5 mm, Philippines, 170 m (MNHN-B 24428). — **d**, *Platymera gaudichaudii* H. Milne Edwards, 1837, ♂ cl 45.9 mm, Mexico (MNHN-B 88).

REMARKS. — *M. microspina* bears resemblance to *M. hawaiiensis* in having a short lateral spine but differs in having a more prominent granulation on carapace, lobes of abdominal crest rounded, coequal and distal portion of second male pleopod crook-shaped.

DISTRIBUTION. — Australia, New Caledonia, Japan; 200-420 m.

Mursia musorstomia sp. nov.

Fig. 4 f, 8 g-h, 10 a-b, 13

MATERIAL EXAMINED AND TYPES. — **New Caledonia**. MUSORSTOM 4 : stn 179, 18°56.6'S, 163°13.7'E, 475 m, 18 September 1985 : 1 ♂, cl 19.7, cw 23.5, mcw 29.0 (MNHN-B 22374) Holotype; 1 ♀, cl 18.0, cw 21.2, mcw 25.1 (MNHN-B 24396) Paratype. — Stn 170, 18°57.0'S, 163°12.6'E, 480 m, 17 September 1985 : 1 ♀, cl 19.7, cw 23.3, mcw 27.6 (MNHN-B 24394). — Stn 171, 18°57.8'S, 163°14.0'E, 425 m, 17 September 1985 : 1 ♀, cl 18.4, cw 21.7, mcw 25.5; 1 juv. (MNHN-B 24395). — Stn 201, 18°35.8'S, 163°13.9'E, 490 m, 20 September 1985 : 1 ♀, cl 19.0, cw 22.7, mcw 28.5 (MNHN-B 24397). — Stn 236, 22°11.3'S, 167°15'E, 495-550 m, 2 October 1985 : 1 ♀, cl 19.2, cw 21.9, mcw 25.8; 1 juv. (MNHN-B 24398). — Stn 239, 22°14.8'S, 167°15.7'E, 470-475 m, 2 October 1985 : 1 ♀, cl 19.2, cw 21.9, mcw 25.8 (MNHN-B 24399). — Stn 241, 22°09.0'S, 167°12.2'E, 470-480 m, 3 October 1985 : 1 ♀, cl 12.7, cw 15.4, mcw 20.4 (MNHN-B 24400). — Stn 247, 22°09'S, 167°13.3'E, 435- 460 m, 4 October 1985 : 1 ♂, cl 14.4, cw 17.1, mcw 22.2 (MNHN-B 24401).

MUSORSTOM 5 : stn 380, 19°37.70'S, 158°43.90'E, 555-570 m, 21 October 1986 : 1 ♀, cl 20.4, cw 23.8, mcw 28.6 (MNHN-B 24402).

Chesterfield Islands. CORAIL 2 : stn 16, 20°47.75'S, 160°55.87'E, 500 m, 21 July 1988 : 1 ♀, cl 19.3, cw 22.5, mcw 28.4 (MNHN).

Loyalty Islands. MUSORSTOM 6 : stn 411, 20°40.65'S, 167°03.35'E, 424 m, 15 February 1989 : 1 ♀, cl 17.5 (MNHN-B 24403). — Stn 413, 20°40.10'S, 167°03.50'E, 463 m, 15 February 1989 : 1 ♂, cl 18.4, cw 21.7, mcw 25.8;

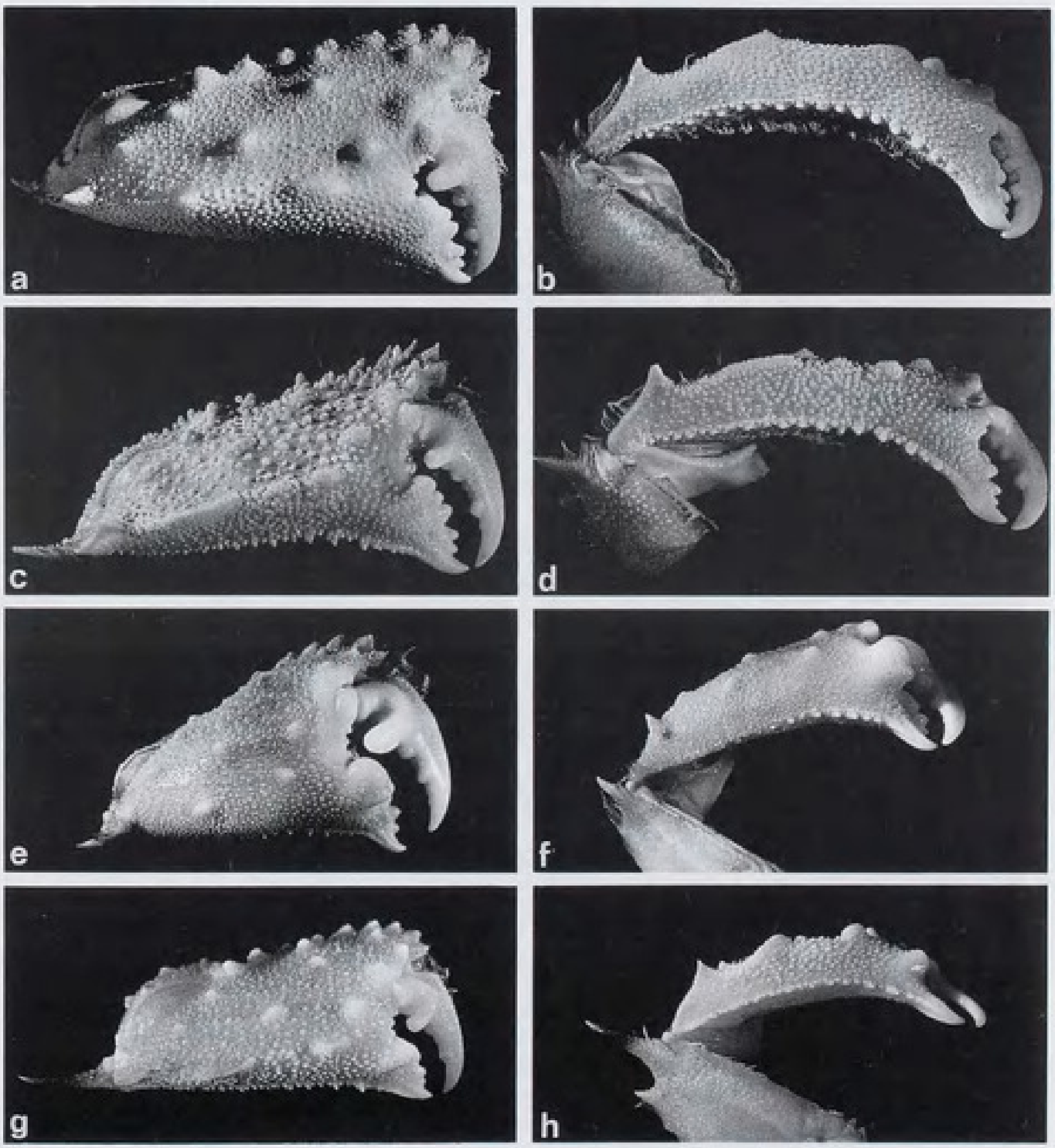


FIG. 8. — Cheliped, external and ventral views : **a-b**, *Mursia hawaiiensis* Rathbun, 1893, ♂ cl 22.9 mm, Hawaiian Ids, 386-463 m (USNM 29903). — **c-d**, *Mursia mcdowelli* Manning & Chace, 1990, ♂, holotype, cl 37.5 mm, Ascension Id., 120-150 m (USNM 221893). — **e-f**, *Mursia microspina* Davie & Short, 1989, ♂ cl 24.5 mm, New Caledonia, 385-420 m (MNHN-B 24392). — **g-h**, *Mursia musorstomia* sp. nov., ♂, holotype, cl 19.7 mm, New Caledonia, 475 m (MNHN-B 24396).

1 ♀, cl 16.6, cw 20.0, mcw 23.9; 3 juv. (MNHN-B 24404). — Stn 415, 20°40.20'S, 167°03.50'E, 461 m, 15 February 1989 : 2 ♂, cl 19.2, 22.0, cw 22.7, 26.4, mcw 27.3, 34.7; 2 ♀, cl 15.5, 16.1, cw 18.5, 19.1, mcw 22.6, 22.9 (MNHN-B 24405). — Stn 428, 20°23.54'S, 166°12.57'E, 420 m, 17 February 1989 : 2 ♂, cl 19.4, 21.1, cw 23.5, 25.1, mcw 29.2, 31.3; 3 ♀, cl 18.0-18.1, cw 21.4-22.1 (MNHN-B 24406). — Stn 464, 21°02.30'S, 167°31.60'E, 430 m, 21 February

1989 : 1 ♂, cl 20.6, cw 24.9, mcw 30.02 (MNHN-B 24407). — Stn 465, 21°03.55'S, 167°32.25'E, 480 m, 21 February 1989 : 1 ♂, cl 17.2, cw 21.6, mcw 26.6; 1 ♀, cl 18.8, cw 22.0, mcw 26.5 (MNHN-B 24408). — Stn 467, 21°05.13'S, 167°32.11'E, 575 m, 21 February 1989 : 1 ♀, cl 19.3, cw 22.8, mcw 27.6 (MNHN-B 24409).

DESCRIPTION. — Carapace 1.2 wide as long, surface densely setose, granulose. Radial tubercles prominent. Median frontal lobe triangular, projecting beyond lateral lobes. Supraorbital margin bifissured. Suborbital sinus wide, U-shaped, suborbital tooth triangular, apex pointing inward. Anterolateral margins cristate, with ten granulose teeth, diminishing in size posteriorly. Lateral spine 0.1 carapace width, minutely granulate, curved upwards. Posterolateral margin beaded, angled medially. Lateral lobes of posterior margin triangular, laminar, curved. Chelipeds externally granulose, setose. Merus of cheliped trispinose, distal spine longer than lateral spine. Outer surface of chela set with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest, tubercles in lowest row laminar, proximalmost triangular, keel-like, distalmost smallest, rounded. Lower margin serrate, teeth smaller proximally. Dactylus minutely granulate proximally on anterior margin. Upper margin of pereiopodal carpi crested, granulate. Abdominal crest with rounded lateral lobes, subquadrate median lobe. Comute distal portion of second male pleopod curved, hook-shaped.

Color (in alcohol). - Two red spots on distal margin of buccal area. Small red spot on inner palm near dactylar base.

ETYMOLOGY. — The specific name is derived from the expedition acronym - MUSORSTOM.

REMARKS. — Superficially resembling *M. australiensis* in its rounded, granulose carapace and elongate distal spine on cheliped merus, *M. musorstomia* is easily distinguished by its setose carapace, shorter lateral spines, bifissured suborbital margins, granulate last ambulatory meri and hook-shaped second male pleopod.

DISTRIBUTION. — Known only from the type locality, New Caledonia; 420-575 m.

Mursia spinimanus Rathbun, 1906

Fig. 7 b, 9 c-d, 10 e-g

Mursia spinimanus Rathbun, 1906 : 888, pl. 16 fig. 1. — SAKAI, 1965 : 51 (list).
Not *Mursia spinimanus* - RATHBUN, 1911 : 198, pl. 15 fig. 3.

MATERIAL EXAMINED. — **Hawaiian Islands**. "*Albatross*" : stn 3856, Pailolo Channel, between Molokai and Maui, 232 m, 9 April 1902 : 1 ♂, cl 35.8, cw 46.4, mcw 65.7, Holotype; 1 ♀, cl 27.6, cw 34.2, mcw 46.6, Paratype (USNM 29922). — Stn 3811, Ohau Id., off Honolulu Lt., 435-461 m, 27 March 1902 : 1 ♂ yg, cl 18.8, cw 23.5, mcw 32.9 (USNM 29919).

TYPE LOCALITY. — Pailolo Channel, Hawaiian Islands (RATHBUN, 1906).

DESCRIPTION. — Carapace 1.3 wide as long, surface minutely granulate. Radial tubercules indistinct. Median frontal lobe triangular, projecting forward beyond rounded lateral lobes. Supraorbital margin unifissured. Suborbital sinus v-shaped, suborbital tooth triangular, apex pointing inward. Anterolateral margins cristate, with ten minute teeth. Lateral spine one fifth carapace width, minutely granulate, slanting upwards. Posterolateral margin beaded, sinuous. Lateral lobes of posterior margin triangular, laminar, upcurved. Chelipeds externally granulate. Merus of cheliped trispinose, distal spine largest. Outer surface of chela closely granulate, with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest, proximal tubercle in lowest row acuminate, keel-like, median tubercle crested. Lower margin serrate, teeth smaller proximally. Dactylus granulate proximally on anterior margin. Upper margin of pereiopodal carpi rounded, minutely granulate. Abdominal crest deeply cut, median lobe quadrate. Comute tip of second male pleopod beta-shaped.

REMARKS. — *M. spinimanus* resembles *M. hawaiiensis* in having a minutely granulate carapace with indistinct radial tubercles, minutely dentate, cristate anterolateral margins and a keel-like tubercle proximally on

outer surface of chela. However, it is easily distinguished by its much longer lateral spines on carapace and distally on merus of cheliped and in having three triangular lobes on posterior margin of carapace.

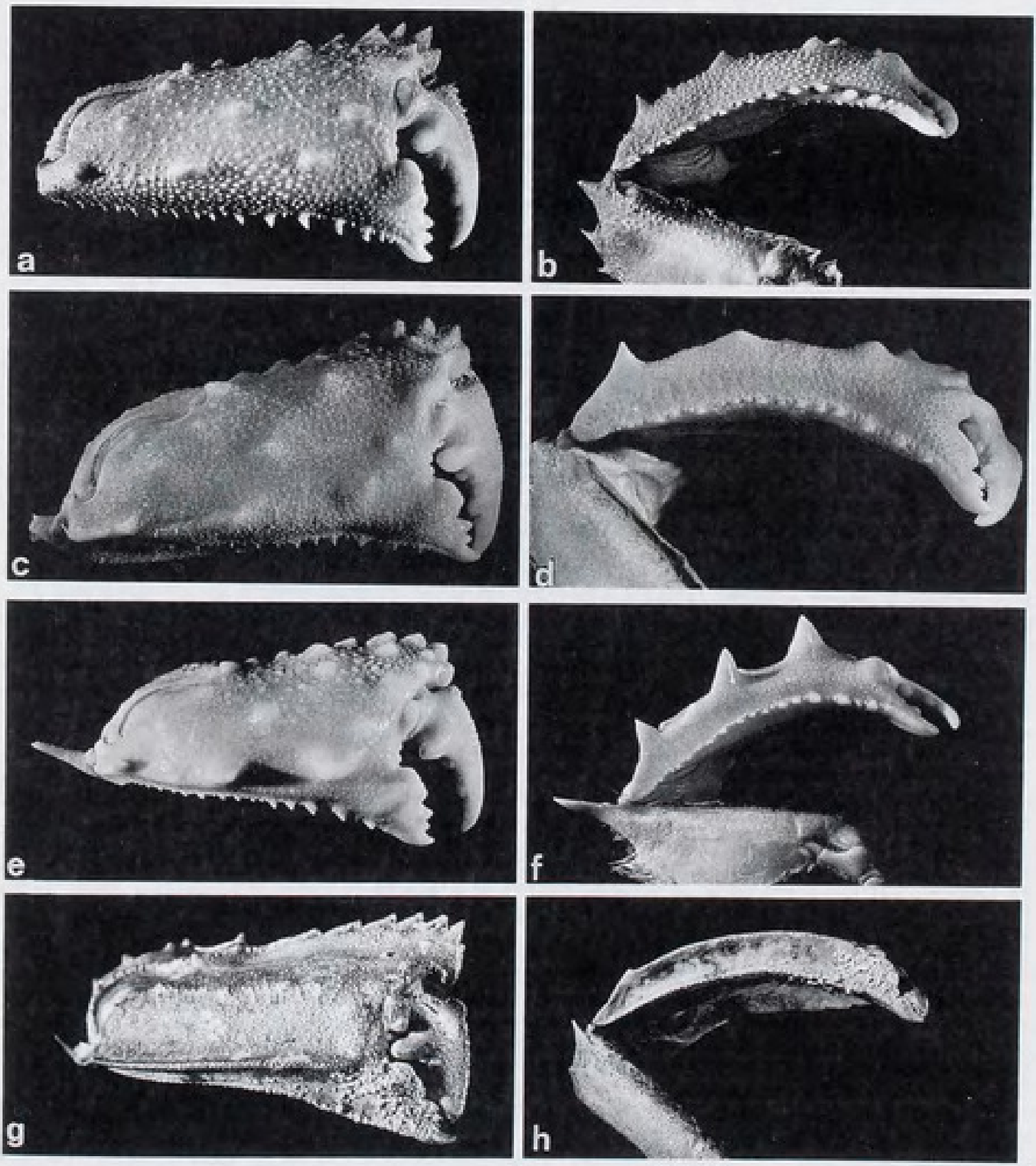


FIG. 9. — Cheliped, external and ventral views : **a-b**, *Mursia flamma* sp. nov., ♂, holotype, cl 57.9 mm, Madagascar, 370 m (MNHN-B 24371). — **c-d**, *Mursia spinimanus* Rathbun, 1906, ♂, holotype, cl 35.8 mm, Hawaiian Ids, 232 m (USNM 29922). — **e-f**, *Mursia trispinosa* Parisi, 1914, ♂ cl 42.5 mm, Philippines, 170-174 m (MNHN-B 24428). — **g-h**, *Platymera gaudichaudii* H. Milne Edwards, 1837, ♂ cl 45.9 mm, Mexico (MNHN-B 88).

The species described and depicted by RATHBUN (1911) differs from *M. spinimanus* in having a rugose carapace with more prominent radial tubercles, backwards slanting lateral spines and quadrispinose cheliped merus.

DISTRIBUTION. — Hawaiian Islands; 95-461 m.

Mursia trispinosa Parisi, 1914

Fig. 7 c, 9 e-f, 10 h-i

Mursia armata trispinosa Parisi, 1914 : 290, pl. 12.
Mursia armata curtispina - SAKAI, 1936 : 48, pl. 7 fig. 3; 1937 : 87 (part), pl. 11 fig. 4. Non Miers, 1886.
Mursia curtispina trispinosa - SAKAI, 1965 : 53, textfig. 8a-a', pl. 21 fig. 2. — KIM & PARK, 1972 : 57, textfig. 1 a-b, pl. 1 fig. 1.
Mursia trispinosa - TAKEDA & KOYAMA, 1974 : 105. — SAKAI, 1976 : 137, textfig. 74b-b', pl. 43 fig. 4. — MIYAKE, 1983 : 24, pl. 8 fig. 6. — DANG *et al.*, 1986 : 204.

MATERIAL EXAMINED. — **Japan**. Mie Prefecture, Kii, 1978-1979, coll. M. YAMASHITA : 1 ♂, cl 38.5, cw 46.0, mcw 64.4 (NMM 32070). — Shikoku Id., Tosa Bay, April 1961, id. T. SAKAI : 1 ♂, cl 41, cw 48, mcw 68 (BMNH 1961.6.5.23). — November 1965, id. T. SAKAI : 1 ♂, cl 43.5, cw 51.9, mcw 73.0 (USNM 268057). — Misaki, id. M. J. RATHBUN : 1 ♂, cl 39.0, cw 45.8, mcw 73.7 (USNM 63690).

Philippines. MUSORSTOM 1 : stn 12, 14°00.8'N, 120°20.5'E, 210-187 m, 20 March 1976 : 1 ♂, cl 42.7, cw 52.1, mcw 74.8; 4 ♀, cl 25.3-36.7, cw 30.3-43.3, mcw 45.3-64.6 (MNHN-B 24410). — Stn 25, 14°02.7'N, 120°20.3'E, 200-191 m, 22 March 1976 : 1 ♂, cl 46.8, cw 56.7, mcw 79.7; 2 ♀, cl 36.4, 37.0, cw 44.2, 44.5, mcw 64.5, 66.1 (MNHN-B 24412). — Stn 26, 14°02.9'N, 120°16.8'E, 189 m, 22 March 1976 : 2 ♂, cl 11.5-23.7, cw 13.5-28.4, mcw 18.9-41.7; 2 ♀, cl 33.8-35.2, cw 40.4-42.6, mcw 62.8-63.1 (MNHN-B 24413). — Stn 34, 14°01.0'N, 120°15.8'E, 191-188 m, 23 March 1976 : 1 juv. (MNHN-B 24414). — Stn 51, 13°49.4'N, 120°04.2'E, 200-170 m, 25 March 1976 : 1 ♀, cl 37.2, cw 45.6, mcw 67.9; 1 juv. (MNHN-B 24415). — Stn 62, 13°59.5'N, 120°15.6'E, 179-194 m, 27 March 1976 : 1 juv. (MNHN-B 24416). — Stn 63, 14°00.8'N, 120°15.8'E, 191-195 m, 27 March 1976 : 1 ♂, cl 21.4, cw 25.2; 1 ♀, cl 36.0, cw 43.3, mcw 65.0 (MNHN-B 24417). — Stn 65, 14°00'N, 120°19.2'E, 202-194 m, 27 March 1976 : 1 ♀, cl 35.7, cw 43.4, mcw 62.6 (MNHN-B 24418).

MUSORSTOM 2 : stn 1, 14°00.3'N, 120°19'E, 188-198 m, 20 November 1980 : 1 ♀, cl 37.5, cw 44.6, mcw 65.5 (MNHN-B 24419). — Stn 2, 14°01'N, 120°17.1'E, 184-186 m, 20 November 1980 : 2 juv. (MNHN-B 24420). — Stn 10, 14°00.1'N, 120°18.5'E, 188-195 m, 21 November 1980 : 5 ♂, cl 11.8-24.0, cw 13.8-29.5, mcw 21.5-44.1; 7 ♀, cl 12.0-36.8, cw 14.0-44.3, mcw 20.5-64.7 (MNHN-B 24421). — Stn 18, 14°00'N, 120°18.6'E, 188-195 m, 22 November 1980 : 6 ♂, cl 16.7-42.8, cw 19.9-53.5, mcw 30.8-81.0; 5 ♀, cl 11.5-38.9, cw 13.5-47.2, mcw 20.0-71.3; 2 juv. (MNHN-B 24422). — Stn 19, 14°00.5'N, 120°16.5'E, 189-192 m, 22 November 1980 : 1 ♂, cl 16.5, cw 19.7, mcw 29.1; 2 ♀, cl 12.3, 35.8, cw 14.4, 43.3, mcw 20.8, 65.2 (MNHN-B 24423). — Stn 20, 14°00.9'N, 120°18.1'E, 192-185 m, 22 November 1980 : 2 ♂, cl 26.9, 42.8, cw 31.3, 52.4, mcw 47.6, 76.4; 4 ♀, cl 17.3-37.2, cw 20.7-45.0, mcw 29.6- 69.8; 3 juv. (MNHN-B 24424). — Stn 21, 14°00.2'N, 120°17.8'E, 191-192 m, 22 November 1980 : 1 ♂, cl 33.8, cw 41.6, mcw 63.5; 7 ♀, cl 18.7-37.7, cw 22.0-45.5, mcw 34.5-67.1 (MNHN-B 24425). — Stn 35, 13°27.9'N, 121°11.6'E, 160-198 m, 24 November 1980 : 1 ♀, cl 30.4, cw 36.7, mcw 55.0 (MNHN-B 24426). — Stn 51, 13°59.3'N, 120°16.4'E, 170-187 m, 27 November 1980 : 2 ♂, cl 17.5, 33.9, cw 20.6, 40.8, mcw (broken), 62.3; 1 ♀, cl 36.4, cw 43.9, mcw 65.7 (MNHN-B 24427). — Stn 54, 13°59.5'N, 120°09.3'E, 170-174 m, 27 November 1980 : 1 ♂, cl 42.5, cw 52.3, mcw 77.5; 1 ♀, cl 24.5, cw 29.0, mcw 39.4 (MNHN-B 24428). — Stn 62, 14°00.4'N, 120°17'E, 186-189 m, 29 November 1980 : 2 ♀, cl 34.6, 35.3, cw 42.0, 42.3, mcw 64.0, 64.6; 2 juv. (MNHN-B 24429). — Stn 64, 14°01.5'N, 120°18.9'E, 191-195 m, 29 November 1980 : 1 ♂, cl 17.3, cw 20.9, mcw 32.3; 3 ♀, cl 17.8-37.9, cw 21.6-45.5, mcw 32.3-67.2 (MNHN-B 24430). — Stn 68, 14°01.9'N, 120°18.8'E, 195-199 m, 29 November 1980 : 1 ♂, cl 23.8, cw 29.4, mcw 43.2; 4 ♀, cl 33.2-36.1, cw 39.8-43.5, mcw 52.9 (broken)-63.8 (MNHN-B 24431). — Stn 72, 14°00.1'N, 120°17.8'E, 189-197 m, 30 November 1980 : 2 ♂, cl 32.5-45.6, cw 40.3-57.0, mcw 59.8-84.9; 5 ♀, cl 36.3-38.2, cw 44.9-45.7, mcw 64.9-70.7; 4 juv. (MNHN-B 24432).

MUSORSTOM 3 : stn 86, 14°00.4'N, 120°17.8'E, 187-192 m, 31 May 1985 : 2 ♂, cl 12.5, 33.4, cw 14.4, 41.0, mcw 21.4, 63.3 (MNHN-B 24433). — Stn 88, 14°00.5'N, 120°17.4'E, 183-187 m, 31 May 1985 : 11 juv. (MNHN-B 24434). — Stn 90, 14°00.1'N, 120°18.6'E, 195 m, 31 May 1985 : 2 ♀, cl 9.2, 35.7, cw 10.7, 43.7, mcw 15.7, 60.1 (MNHN-B 24435). — Stn 91, 14°00.1'N, 120°17.8'E, 190-203 m, 31 May 1985: 2 ♀, cl 34.4 34.6, cw 41.2, 42.2, mcw 60.4, 62.6 (MNHN-B 24436). — Stn 96, 14°00.3'N, 120°17.3'E, 190-194 m, 1 June 1985 : 2 ♀, cl 34.8, 35.7, cw 41.5, 42.4, mcw 60.5, 63.9; 5 juv. (MNHN-B 24437). — Stn 97, 14°00.7'N, 120°18.8'E, 189-194 m, 1 June 1985 : 2 ♀, cl 36.1, 36.2, cw 43.0, 44.1, mcw 64.1, 65.8 (MNHN-B 24438). — Stn 98, 14°00.2'N, 120°17.9'E, 194-205 m, 1 June 1985 : 1 juv. (MNHN-B 24439). — Stn 100, 14°00'N, 120°17.6'E, 189-199 m, 1 June 1985 : 1 ♂, cl 45.7, cw 56.8, mcw 82.9; 2 ♀, cl 24.7, 36.2, cw 30.4, 42.7, mcw 44.4, 64.6; 3 juv. (MNHN-B 24440). — Stn 103,

14°00.4'N, 120°18.15'E, 193-200 m, 1 June 1985 : 1 ♀, cl 35.8, cw 43.1, mcw 64.5 (MNHN-B 24441). — Stn 109, 14°00.2'N, 120°17.6'E, 190-198 m, 2 June 1985 : 2 ♂, cl 43.7, 44.3, cw 54.4, 54.6, mcw 77.3, 82.2 (MNHN-B 24442).

"Albatross" : stn 5278, Malavatuan Id., nr Luzon, 14°00.10'N, 120°17.15'E, 187 m, 17 July 1908 : 1 ♀ ovig., cl 34.6, cw 41.8, mcw 63.0; 1 ♀, cl 34.2, cw 41.0, mcw 60.3 (parasitized) (USNM).

New Caledonia. SMIB 6 : stn 114, 19°01.2'S, 163°28.8'E, 355-265 m, 2 March 1991 : 1 ♀, cl 33.2, cw 39.2, mcw 50.5 (tips broken) (MNHN-B 22375).

Loyalty Islands. MUSORSTOM 6 : stn 421, 20°26.27'S, 166°40.17'E, 245 m, 16 February 1989 : 1 ♀, cl 32.9, cw 39.1, mcw 56.0 (MNHN-B 24483).

TYPE LOCALITY. — Sagami Bay, Japan (PARISI, 1914).

DESCRIPTION. — Carapace 1.2 wide as long, surface granulate, granules diminishing in size anteriorly, posteriorly. Radial tubercules distinct. Median frontal lobe triangular, projecting forward beyond rounded lateral lobes. Supraorbital margin unifissured. Suborbital sinus v-shaped, suborbital tooth triangular, apex pointing inward. Anterolateral margins cristate, with ten nearly effaced, rounded teeth. Lateral spine 0.2 carapace width, minutely granulate, curved upwards. Posterolateral margin beaded, sinuous. Lateral lobes of posterior margin triangular, laminar, upcurved. Merus of cheliped trispinose, distal spine largest. Outer surface of chela closely granulate, with nine tubercles in three oblique rows and three tubercles near base of serrate upper crest, tubercles in lower row large, triangular, distalmost largest. Lower margin serrate, teeth smaller proximally. Dactylus granulate proximally on anterior margin. Upper margin of pereiopodal meri rounded, minutely granulate. Abdominal crest deeply cut, median lobe quadrate. Second male pleopod hook-shaped distally, tip upcurved.

Color. - Carapace and chelipeds orange-red, tubercles buff colored. Lateral spine on carapace and distalmost meral spine on cheliped dark red. Ambulatory legs pale coral. Interior palmar surface, near dactylar base with small red spot.

REMARKS. — *M. trispinosa* was described by PARISI (1914) as *M. armata trispinosa*, differing from *M. armata* in having three robust, aequidistant, triangular teeth on lower external surface of chela and shorter lateral spines on carapace. SAKAI's illustrations of *M. armata curtispina* (1936, 1937) are identical with PARISI's depiction, as indeed SAKAI acknowledged in later publications (1965, 1976).

DISTRIBUTION. — Korea, Japan, East China Sea, Philippines, New Caledonia; 70-355 m.

Genus ***PLATYMERA*** H. Milne Edwards, 1837

Platymera H. Milne Edwards, 1837b : 107. — LUCAS, 1840 : 109. — MILNE EDWARDS & LUCAS, 1844 : 28. — ALCOCK, 1899a : 24. — HOLMES, 1900 : 98. — RATHBUN, 1906 : 888.

TYPE SPECIES. — *Platymera gaudichaudii*, H. Milne Edwards, 1837, by monotypy.

DIAGNOSIS. — Carapace transversely oval, convex, regions poorly marked. Front as wide as orbit, tridentate. Anterolateral margin arcuate, carinate, dentate. Posterolateral margin sinuously diagonal, carinate. Posterior margin entire. Lateral spine well developed. Eye with stout calcareous stalk, hemispherical cornea. Antennules fold obliquely into subfrontal grooves. Basal article of antennae cylindrical, lying between antennular groove and quadrate suborbital tooth. Supraorbital margin fissured, setose. Suborbital margin medially interrupted by sinus opening unto obliquely set subhepatic canal. External maxilliped granulate, not reaching to anterior margin of buccal frame. Exognath columnar, its internal margin with small tooth. Ischium of endognath parallelogram, its internal margin dentate; merus deeply excavate at internal distal angle; endognathal palp triarticulate, setose, its basal segment fitting into meral excavation. Chelipeds massive, nearly equal. Merus anteriorly bispinose. Upper margin of palm crested, dentate. External surface of palm with a prominent ridge above cristate, granulate lower margin. Internal surface of dactylus granulose. Larger dactylus with proximal tooth fitting unto molariform process on immovable finger. Pereiopods long, laterally compressed, dactyls styliform. Sternum, near base of

chelipeds, bearing a prominent triangular projection. Male abdomen five segmented, second abdominal segment prominently carinate. First male pleopod short, outcurved, tapering distally. Second male pleopod long, slender, distally cornute.

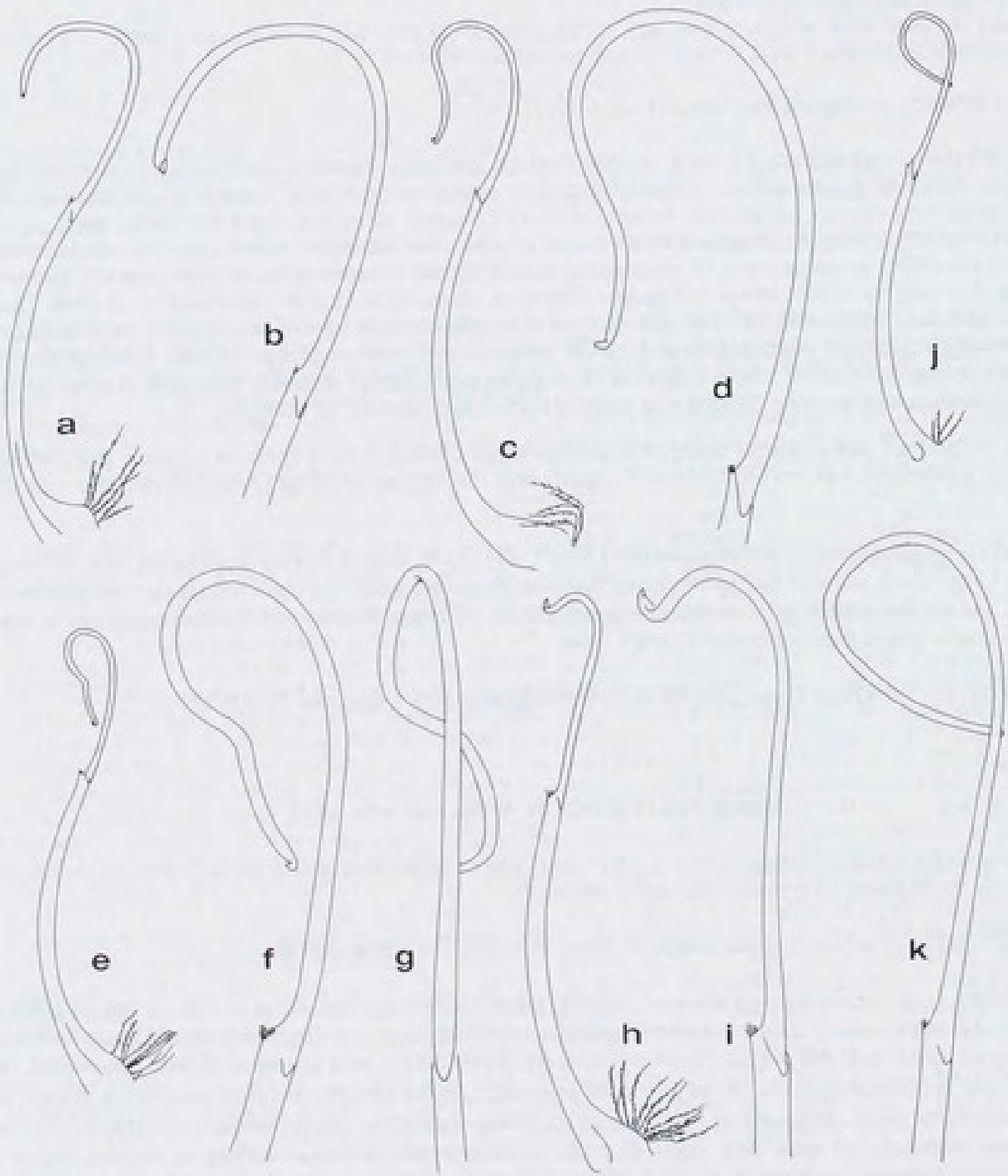


FIG. 10. — Second pleopod male with enlargement of distal part : **a-b**, *Mursia musorstomia* sp. nov., ♂, holotype, cl 19.7 mm, New Caledonia, 475 m (MNHN-B 24396). — **c-d**, *Mursia flamma* sp. nov., ♂, holotype, cl 57.9 mm, Madagascar, 370 m (MNHN-B 24371). — **e-g**, *Mursia spinimanus* Rathbun, 1906, ♂, holotype, cl 35.8 mm, Hawaiian Ids, 232 m (USNM 29922). — **h-i**, *Mursia trispinosa* (Parisi, 1914), ♂ cl 42.5 mm, Philippines, 170 m (MNHN-B 24428). — **j-k**, *Platymera gaudichii* H. Milne Edwards, 1837, ♂ cl 29.6 mm Mexico, (MNHN-B 20859).

REMARKS. — H. MILNE EDWARDS (1837b : 107) erected *Platymera* for a single specimen collected in Chile, which he described as "un crustacé très remarquable qui lie entre eux les Calappes et les Mursies". ALCOCK (1899a), discussing *M. bicristimana*, wrote "a comparison of this species (*M. bicristimana*) with specimens of *M. armata* and *Platymera gaudichaudii* leads to the belief that all three are congeneric". RATHBUN (1906) concurred : "I agree with Maj. ALCOCK that *Platymera* should be united with *Mursia*", and it was thus accepted by subsequent authors. *Platymera*, though closely allied to *Mursia*, differs from it in having the abdominal carina undivided into three lobes, a unidentate carinate ridge on the external surface of the palm, the third maxilliped merus deeply excavate anteriorly and lacking the stridulating organ formed by the dactylar milled ridge of the chela and the beaded row anteriorly on ischium of third maxilliped. Examination of these features led to reevaluation of its status - *Platymera* is herein reinstated as a distinct genus.

Platymera gaudichaudii H. Milne Edwards, 1837

Fig. 7 d, 9 g-h, 10 j-k

Platymera gaudichaudii H. Milne Edwards, 1837b : 108. — LUCAS, 1840 : 109. — H. MILNE EDWARDS & LUCAS, 1842, pl. 13 fig 1; 1844 : 28. — WHITE, 1847 : 45. — NICOLET, 1849 : 172. — CUNNINGHAM, 1871 : 493. — RATHBUN, 1898 : 610; 1904 : 170; 1910 : 593. — CANO, 1889a : 94; 1889b : 250. — FAXON, 1895 : 32. — HOLMES, 1900 : 99. — RATHBUN, 1904 : 170; 1910 : 593.

Platymera gaudichaudi - MIERS, 1881 : 71. — ORTMANN, 1892 : 563. — LENZ, 1902 : 750. — PORTER, 1906 : 132; 1921 : 422, pl. 38; 1925 : 318; 1936a : 153; 1936b : 338.

Platymera californiensis Rathbun, 1893 : 253.

Mursia gaudichaudii - WEYMOUTH, 1910 : 19. — SCHMITT, 1921 : 190, textfig. 118. — CRANE, 1937 : 99. — RATHBUN, 1937 : 220, pl. 66 figs 1-3, pl. 67 figs 1-6. — GARTH, 1946 : 361, pl. 62 figs 3-4; 1966 : 13. — HAIG, 1968 : 24.

Mursia gaudichaudi - PORTER, 1940a : 146; 1940b : 312; 1941 : 459. — GARTH, 1957 : 16.

MATERIAL EXAMINED. — **United States**. *"California"*. San Clemente Id., 35°25'N, 119°09'W, 91-110 m, 6 May 1976, id. M. WICKSTEN : 1 ♂, cl 50.3, cw 72.7, mcw 94.7; 1 juv., cl 15.0 (USNM 170405).

Mexico. Sinaloa, off Punta Piaxtla, 16 January 1982, coll. Estacion Mazatlan UNAM : 2 ♂ cl 28.5, 29.8, cw 43.0, 43.5, mcw 56.6, 57.7 (MNHN-B 20859).

Panama. Gulf of Tanama, *"Pillsbury"*, stn 513, 7°40.9'N, 79°42'W, 4 May 1967 : 3 ♂, cl 42-63; 18 juv. (NNM 23547). — Stn 515, 8°00.4'N, 79°40.8'W, 4 May 1967 : 1 ♂, cl 45.6; 8 juv. (NNM 25369). — Stn 531, 8°25.5'N, 79°10.7'W, 6 May 1967 : 3 ♂, cl 38-49 (NNM 23544).

Peru. San Lorenzo Id., nr Callao, 10 March 1952, coll. W. R. WEYRAUCH : 1 ♀, cl 28.9 (NNM 11061).

Chile. Coll. M. GAY : 1 ♂, cl 62.9, cw 92.4, mcw 119.7 (MNHN-B 87). — Coll. M. GAUDICHAUD : 1 ♂, cl 72.4, cw 112.7, mcw 135.8 (MNHN-B 3989); 1 ♀, cl 68, cw 95, mcw 116 (MNHN-B 85); 1 ♂, cl 45.9, cw 70.0, mcw 90.4 (MNHN-B 88). — Coll. M. FONTAINIER : 1 ♂, cl 62.7 (MNHN-B 86) (labelled Chine). — Valparaiso, coll. M. GAUDICHAUD : 1 ♂, cl 14.6, cw 20.7, mcw 31.6 (MNHN-B 91); 2 ♀, cl 19.4, 20.0, cw 27.3, 27.9 (MNHN); 2 juv. (MNHN-B 90). — 1878, id. H. MILNE EDWARDS : 1 ♂ (NNM). — Valparaiso, 22 January 1956 : 1 ♀, cl 41 (NNM 15622). — 200-300 m, July 1963, id. J. GARTH : 5 ♀, 19.6-41.1, cw 28.9-59.8, mcw 40.5-broken (USNM 156201).

TYPE LOCALITY. — Chile (H. MILNE EDWARDS, 1837).

DESCRIPTION. — Carapace 1.4-1.5 wide as long, shagreened, with seven nearly obsolescent radial ridges, bearing tubercles in juvenile specimens. Front, minutely granulate, lateral lobes triangular, divergent, projecting forward of rostrum. Anterolateral margins carinate, scalloped, with fifteen minute teeth. Lateral spine granulate, nearly one seventh carapace width, longer in young specimens. Posterolateral margin prominently carinate, granulate. Posterior margin minutely beaded. Supraorbital margin barely fissured, granulate. Suborbital tooth subquadrate, its anterior margin granulate, oblique. Subhepatic and pterygostomial regions granulate, densely setose. Proximal meral spine small, distal spine acuminate. External surface of carpus granulate, with beaded carinae proximally and three equidistant tubercles medially. External surface of palm granulate. Crest with six distad granular teeth. Medially on palm row of nearly effaced tubercles. Above lower margin a prominent granulous ridge, proximally unidentate. Lower margin beaded, crested. Dactylus granulate both on exterior and interior surfaces, with granulate crest anteriorly. Pereiopods with superior margin of meri granular, carpi and

propodi bicristate, beaded, dactyls carinate. First male pleopod densely spinose. Second male pleopod distally looped.

Color. - "Rougeâtre" (H. MILNE EDWARDS, 1837b). "Broccoli brown with spines and tubercles ochraceous. Hands lighter than carapace, lower margin white" (SCHMITT, 1921).

REMARKS. — RATHBUN (1893) established *P. californiensis* for specimens collected off the coast of California, differing only in insignificant details from H. MILNE-EDWARDS & LUCAS' not entirely accurate figure (1844). However, RATHBUN later (1937) recognized its similarity to *P. gaudichaudii* and placed *californiensis* as its junior synonym.

DISTRIBUTION. — Along the West coast of America from the Farrallone Islands, California to Chile; 22-399 m.

ACKNOWLEDGEMENTS

I am deeply thankful to A. CROSNIER for the invitation to come and study the ORSTOM material at the Muséum national d'Histoire naturelle, Paris and for bearing graciously repeated delays in submission of the resulting manuscript. The visit to Paris was generously supported by an ORSTOM grant. Additional material was obtained from P. CLARK (BMNH), L. B. HOLTHUIS (NNM) and R. B. MANNING (USNM), who loaned me valuable specimens from their collections. I am indebted to L. B. HOLTHUIS for his instructive comments on the synonymy of *M. cristiata* and to R. B. MANNING and P. DAVIE for painstakingly reviewing this manuscript.

REFERENCES

ADAMS, A., & A. WHITE, 1848. — Crustacea. *In* : A. Adams, *The Zoology of the voyage of H.M.S. Samarang . . . under the command of Captain Sir Edward Belcher during the years 1843-1846*. London : i-viii + 1-66, pls 1-13.

ALCOCK, A., 1896. — Materials for a carcinological Fauna of India. No. 2. The Brachyura Oxystoma. *J. Asiat. Soc. Bengal*, **65** (2) : 134-296, pls 6-8.

ALCOCK, A., 1899a. — An account of the Deep-Sea Brachyura collected by the Royal Indian Marine Survey Ship "Investigator". 85 p., pls 1-4.

ALCOCK, A., 1899b. — Crustacea. Part VII. *In*: Illustrations of the Zoology of the Royal Indian Marine Survey Ship Investigator, under the command of Commander T.H. Heming, R.N. Calcutta, pls 36-45.

ALCOCK, A., & ANDERSON, A. R. S., 1894. — An Account of a Recent Collection of Deep Sea Crustacea from the Bay of Bengal and Laccadive Sea. Natural History Notes from the H.M. Indian Marine Survey Steamer "Investigator", Commander C.F. Oldham, R.N., commanding. Series II, No 14. *J. Asiat. Soc. Bengal*, **63**, pt 2 (3) : 141-185, pl. 9.

ALCOCK, A., & ANDERSON, A. R. S., 1896. — Crustacea. Part IV. *In* : Illustrations of the Zoology of the Royal Indian Marine Surveying Steamer Investigator, under the command of Commander C. F. Oldham, R.N. Calcutta, pls 16-27.

ANDERSON, A. R. S., 1897. — An Account of the deep sea Crustacea collected during the season 1894-95. Natural History notes from the R.I.M. Survey Steamer "Investigator", Commander C.F. Oldham, R.N., commanding. Series II, No. 21. *J. Asiat. Soc. Bengal*, **65**, pt 2 (1-4), 1896 (1897) : 88-106.

ANDRÉ, M., 1931. — Crustacés Décapodes provenant de l'Institut Océanographique de Nha-Trang (Annam). *Bull. Mus. natn. Hist. nat., Paris*, (2), **3** (7) : 638-650.

BABA, K., 1986. — *In* : Baba, K., K.I. Hayashi & M. Toriyama. Decapod Crustaceans from Continental Shelf and Slope around Japan. The Intensive Research of Unexploited Fishery Resources on Continental Slopes. Japan Fish. Res. Conserv. Ass. Tokyo : 1-336, figs 1-22, pls 1-176. (Japanese and English text).

BALSS, H., 1922. — Ostasiatische Decapoden. III. Die Dromiaceen, Oxystomen und Parthenopiden. *Arch. Naturgesch.*, **88** A (3) : 104-140, figs 1-9.

BARNARD, K. H., 1926. — Report on a Collection of Crustacea from Portuguese East Africa. *Trans. R. Soc. S. Afr.*, **13**, pt 2 : 119-129, pls 10, 11.

BARNARD, K. H., 1950. — Descriptive Catalogue of South African Decapod Crustacea (Crabs and Shrimps). *Ann. S. Afr. Mus.*, **38** : 1-837, figs 1-154.

CAMPBELL, B. M., 1971. — New records and new species of crabs (Crustacea: Brachyura) trawled off southern Queensland: Dromiacea, Homolidea, Gymnopleura, Corystoidea and Oxystomata. *Mem. Qd Mus.*, **16** (1) : 27-48, pls 2-3.

CANO, G., 1889a. — Crostacei Brachiuri ed Anomuri raccolti nel viaggio della Vettor Pisani intorno al globo. Studio preliminaire. *Boll. Soc. Nat. Napoli*, (1), **3** : 79-105.

CANO, G., 1889b. — Viaggo della R. Corvetta Vettor Pisani attorno al globo. Crostacei Brachiuri ed Anomuri. *Boll. Soc. Nat. Napoli*, (1), **3** : 169-268, pl. 7.

CRANE, J. 1937. — The Templeton Crocker Expedition. III. Brachygnathous Crabs from the Gulf of California and the West Coast of Lower California. *Zoologica N. Y.*, **22**, pt 1 (3) : 47-78, pls 1-8.

CUNNINGHAM, R. O., 1871. — Notes on the Reptiles, Amphibia, Fishes, Mollusca, and Crustacea obtained during the voyage of H.M.S. " Nassau" in the years 1866-69. *Trans. Linn. Soc. Lond.*, **27** (4) : 465-502, pls 58-59.

DAI, A., & YANG, S., 1991. — Crabs of the China seas. China Ocean Press, Beijing and Springer-Verlag, Berlin : i-xxi, 1-682, 74 pls.

DANA, J. D., 1852. — Crustacea. *In* : United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of Charles Wilkes, U.S.N. Philadelphia, C. Sherman, **13**, pt 1, viii + 685 p.

DANG, Y., CHEN, Y., WANG, F., & LI, Z., 1986. — Preliminary report on Crustacea in east China Sea. *Trans. Chi. crust. Soc.*, **1** : 202-205.

DAVIE, P. J. ,& SHORT, J.W., 1989. — Deepwater Brachyura (Crustacea : Decapoda) from southern Queensland, Australia with descriptions of four new species. *Mem. Qd Mus.* **27** (2) : 157-187.

DESMAREST, A. G., 1823. — Crustacés Malacostracés. *In* : Dictionnaire des Sciences naturelles. F. G. Levrault et Le Normant, Strasbourg & Paris. **28** : 138-425, atlas, vol. 4, pls 1-58.

DESMAREST, A. G., 1825. — Considérations générales sur la classe des Crustacés, et description des espèces de ces animaux qui vivent dans la mer, sur les côtes, ou dans les eaux douces de la France. F. G. Levrault, Paris. xix + 446 p., pls 1-56, 5 tbls.

DOFLEIN, F., 1901. — Weitere Mitteilungen uber dekapode Crustaceen der k. bayerischen Staatssammlungen. *Sber. bayer. Akad. Wiss.*, **30**, 1900 (1901) : 125-145.

DOFLEIN, F., 1902. — Ostasiatische Dekapoden. *Abh. Bayer. Ak. Wiss.*, **21** : 613-670, pls 1-6.

DOFLEIN, F., 1904. — Brachyura. *In* : Wiss. Ergebn. dt. Tiefsee-Exped. "Valdivia", **6**, xiv + 314 p., atlas, pls 1-58.

FAXON, W., 1895. — The Stalk-eyed Crustacea. *In* : Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U.S. Fish Commission Steamer "Albatross", during 1891, Lieut.-Commander Z.L. Tanner, U.S.N., commanding. XV. *Mem. Mus. comp. Zool. Harv.*, **18** : 1-292, pls A-K & 1-57.

GARTH, J. S., 1946. — Littoral brachyuran fauna of the Galapagos Archipelago. *Allan Hancock Pac. Exped.*, **5** (10) : i-iv, 341-601, pls 49-87.

GARTH, J. S., 1957. — The Crustacea Decapoda Brachyura of Chile. *In* : Reports of the Lund University Chile Expedition 1948-52. 29. *Acta Univ. Lund*, (2), **53** (7) : 1-128, pls 1-4.

GARTH, J. S., 1966. — Oxystomatous and Allied Crabs from the West Coast of Tropical America. *In* : Eastern Pacific Expedition of the New York Zoological Society. XLVI. *Zoologica N. Y.*, **51** (1) : 1-16.

GORDON, I., 1931. — Brachyura from the coasts of China. *J. Linn. Soc.*, Zool., **37** (254) : 525-558.

GRINDLEY, J. R., 1961. — On some Crabs Trawled off the Natal Coast. *Durban Mus. Novit.*, **6** (10) : 127-134.

GUINOT-DUMORTIER, D., & DUMORTIER, B., 1960. — La stridulation chez les crabes. *Crustaceana*, **1** (2) : 117-155.

HAAN, W. DE, 1833-1850. — Crustacea. *In* : P.F. van Siebold, Fauna Japonica, sive Descriptio animalium, quae in itinere per Japoniam, jussu et auspiciis superiorum, qui summun in India Batava Imperium tenent, suscepto, annis 1823-1830 collegit, notis, observationibus et adumbrationibus illustravit. Lugduni Batavorum, fasc. 1-8 : i-xvii + i-xxxi + 1-243, pls 1-55, A-J, L-Q, circ., pl. 2.

HAIG, J., 1968. — A report on anomuran and brachyuran crabs collected in Peru during cruise 12 of R/V Anton Bruun. *Crustaceana*, **15** (1) : 19-30.

HOLMES, S. J., 1900. — Synopsis of California stalk-eyed Crustacea. *Occ. Pap. Calif. Acad. Sci.*, **7** : 1-262, pls 1-4.

IHLE, J. E. W., 1918. — Die Decapoda Brachyura der Siboga-Expedition. III. Oxystomata : Calappidae, Leucosiidae, Raninidae. *Siboga Exped.* Monogr. 39b2 : 159-322, figs 78-148.

KENSLEY, B. F., 1981a. — On the Zoogeography of Southern African Decapod Crustacea, with a Distributional Checklist of the Species. *Smithson. Contrib. Zool.*, (338) : i-iv + 1-64.

KENSLEY, B. F., 1981b. — The South African Museum's "Meiring Naude" Cruises, part 12. Crustacea Decapoda of the 1977, 1978, 1979 Cruises. *Ann. S. Afr. Mus.*, **83** (4) : 49-78, fig. 1-11.

KIM, H. S., 1970. — A checklist of the Anomura and Brachyura (Crustacea, Decapoda) of Korea. *Seoul Univ. J.*, Biol. Agric. (Serie B), **21** : 1-34, pls 1-5.

KIM, H. S., & PARK, K.B., 1972. — New Records of Ten Brachyuran Species (Crustacea, Decapoda) from Korea. *Kor. J. Zool.*, **15** (2) : 57-69, pl. 1.

KRAUSS, C. F. F., 1843. — Die Südafrikanischen Crustaceen. Eine Zusammenstellung aller bekannten Malacostraca, Bemerkungen über deren Lebensweise und geographische Verbreitung, nebst Beschreibung und Abbildung mehrerer neuen Arten. Stuttgart. 68 p., pls 1-4.

LATREILLE, M., 1829. — Les Crustacés, les Arachnides et les Insectes, distribués en familles naturelles, ouvrage formant les tomes 4 et 5 de celui de M. le Baron Cuvier sur le Règne Animal (deuxième édition). 2 vol. Paris. Volume 1, xxxii + 584 p.

LATREILLE, M., 1831. — Cours d'entomologie, ou de l'histoire naturelle des Crustacés, des Arachnides, des Myriapodes et des Insectes. Exposition méthodique des ordres, des familles et des genres des trois premières classes. Paris, xiii + 568 p., atlas 26 pp., 24 pls.

LAURIE, R. D., 1906. — Report on the Brachyura collected by Professor Herdmann, at Ceylon in 1902. *In* : W.A. Herdman, Report to the Government of Ceylon on the Pearl Oyster Fisheries of the Gulf of Manaar. With supplementary Reports upon the Marine Biology of Ceylon by others Naturalists. Part. V, suppl. Rep. 40 : 349-432, pls 1-2.

LENZ, H., 1902. — Die Crustaceen der Sammlung Plate (Decapoda und Stomatopoda). *In* : Plate, Fauna Chilensis, vol. 2, pt 3. *Zool. Jb.*, Suppl., 5 : 731-772, pl. 23.

LLOYD, R. E., 1907. — Contributions to the Fauna of the Arabian Sea, with descriptions of new Fishes and Crustacea. *Rec. Indian Mus.*, **1** : 1-12.

LUCAS, P. H., 1839. — Observations sur un nouveau genre de Crustacés de l'Ordre des décapodes brachyures. *Ann. Soc. ent. Fr.*, **8** : 573-581.

LUCAS, P. H., 1840. — Histoire Naturelle des Crustacés, des Arachnides et des Myriapodes. Paris. 1-600 p., pls 1-46.

MACPHERSON, E., 1983. — Crustáceos Decápodos capturados en las costas de Namibia. Res. Exped. cient. *Inv. Pesq.*, Supl., (11) : 3-80.

MANNING, R. B., & CHACE, F. A., 1990. — Decapod and Stomatopod Crustacea from Ascension Island, South Atlantic Ocean. *Smithson. Contrib. Zool.*, (503), v + 91 p.

MIERS, E. J., 1881. — Crustacea. *In* : Account of the Zoological Collections made during the Survey of H.M.S. "Alert" in the Straits of Magellan and on the Coast of Patagonia. *Proc. Zool. Soc. Lond.*, : 61-79, pl. 7.

MIERS, E. J., 1886. — Report on the Brachyura Collected by H.M.S. Challenger during the Years 1873-1876. *In* : Report on the Scientific Results of the Voyage of H.M.S. Challenger during the Years 1873-76, Zool., **17**, London, Edinburg and Dublin : L + 362 p., pls 1-29.

MILNE EDWARDS, H., 1837a. — Les Crustacés. *In* : G. Cuvier, Le Règne Animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée. Paris, 278 p., atlas, pls 1-80.

MILNE EDWARDS, H., 1837b. — Histoire naturelle des Crustacés, comprenant l'anatomie, la physiologie et la classification de ces animaux. Paris, II, 532 p. Atlas [1834, 1837, 1840], 32 p., pls 1-14, 14 bis, 15-25, 25 bis, 26-42.

MILNE EDWARDS, H., & LUCAS, H., 1842-1844. — Crustacés. *In* : A. d'Orbigny, Voyage dans l'Amérique méridionale dans le cours des années 1826-1833. Paris, **6** (1) : 1-39; atlas : 1-9, pls 1-17.

MIYAKE, S., 1983. — Brachyura. II. Japanese crustacean decapods and stomatopods in color. Hoikusha, Tokyo : 1-277, pls 1-64. (in Japanese).

NICOLET, H., 1849. — Crustaceos. *In* : C. Gay, Historia fisica y politica de Chile segun documentos adquiridos en esta republica durante doce años de residencia en ella y publicada bajo los auspicios del supremo gobierno. Paris and Santiago. Zoologia, **3** : 115-318, 4 pls.

ODHNER, T., 1923. — Marine Crustacea Podophthalmata aus Angola und Südafrika gesammelt von H. Skoog 1912. *Göteborgs K. vetensk.-o. VitterhSamnh. Handl.*, (4), **27** (5) : 1-39, pls 1-2.

ORTMANN, A. E., 1892. — Die Decapoden-Krebse des Strassburger Museums. V. Theil. Die Abtheilungen Hippidea, Dromiidea, und Oxystomata. *Zool. Jb.*, (Syst.), **6** : 532-588, pl. 26.

ORTMANN, A. E., 1894. — Crustaceen. *In* : Richard Semon, Zoologische Forschungsreisen in Australien und dem Malayischen Archipel. *Denkschr. med.-naturw. Ges. Jena*, **8** : 1-80, pls 1-3.

PARISI, B., 1914. — I Decapodi giapponesi del Museo di Milano. I. Oxystomata. *Atti Soc. ital. Sci. nat.*, **53** : 282-311, pls 11-13.

PORTER, C. E., 1906. — Materiales para la fauna carcinologica de Chile. V. Sobre algunos Crustaceos de Los Vilos. *Revta chil. Hist. nat.*, **10** : 128-138, figs 16-17, pls 11-12.

PORTER, C. E., 1921. — Materiales para la fauna carcinolójica de Chile. XVI. Familia Calappidae. *Revta chil. Hist. nat.*, **25** : 420-425, pl. 38.

PORTER, C. E., 1925. — Carcinologia Chilena. Sobre algunos Malacostráceos de la bahia de Taltal. *Revta chil. Hist. nat.*, **29** : 315-321, pl. 8.

PORTER, C. E., 1936a. — Carcinologia Chilena. Enumeración metódica de los Crustaceos podoftalmos de la bahia de Talcahuano. *Comun. Mus. Concepcion*, 1 : 150-154.

PORTER, C. E., 1936b. — Carcinologia Chilena. XXVII. Enumeración metódica de los Crustaceos podoftalmos de la bahia de Talcahuano. *Revta chil. Hist. nat.*, **40** : 336-339.

PORTER, C. E., 1940a. — Algunos Crustáceos de la costa de Antofagasta. *Revta chil. Hist. nat*, **44** : 145-147.

PORTER, C. E., 1940b. — Algunos Crustáceos de la costa de Antofagasta. *Revta Univ. Santiago*, **25** (3) : 311-313.

PORTER, C. E., 1941. — Algunos Crustáceos de la costa de Antofagasta. *Boln Mus. Hist. nat. "Javier Prado"*, **5** : 458-460.

RATHBUN, M. J., 1893. — Scientific Results of Explorations by the U.S. Fish Commission Steamer Albatross. XXIV. Descriptions of new genera and species of Crabs from the West Coast of North America and the Sandwich Islands. *Proc. U.S. natn. Mus.*, **16** (933) : 223-260.

RATHBUN, M. J., 1898. — The Brachyura collected by the U.S. Fish Commission Steamer Albatross on the voyage from Norfolk, Virginia, to San Francisco, California, 1887-1888. *Proc. U.S. natn. Mus.*, **21** (1162) : 567-616, pls 41-44.

RATHBUN, M. J., 1904. — Decapod crustaceans of the northwest coast of North America. *In* : Harriman Alaska Exped., **10** : 1-210, pls 1-10.

RATHBUN, M. J., 1906. — The Brachyura and Macrura of the Hawaiian Islands. *Bull. U.S. Fish Commn*, **23** (3), 1903 (1906) : 827-930 + i-viii, pls 1-24.

RATHBUN, M.J ., 1910. — The stalk-eyed Crustacea of Peru and the adjacent coast. *Proc. U.S. natn Mus.*, **38** (1766) : 531-620, pls 36-56.

RATHBUN, M. J., 1911. — Marine Brachyura. *In* : The Percy Sladen Trust Expedition to the Indian Ocean in 1905 under the Leadership of Mr. J. Stanley Gardiner. Vol. III (XI). *Trans. Linn. Soc. Lond.*, (Zool.), (2), **14** (2) : 191-261, pls 15-20.

RATHBUN, M. J., 1937. — The Oxystomatous and allied crabs of America. *Bull. U.S. natn Mus.* (166) : i-vi + 1-278, pls 1-86.

SAKAI, T., 1934. — Brachyura from the Coast of Kyusyu, Japan. *Sci. Rep. Tokyo Bunrika Daig.*, Section B, **1** (25) : 281-330, figs 1-26, pls 17-18.

SAKAI, T., 1936. — Crabs of Japan : 66 plates in life colours with descriptions. Tokyo, Sanseido, 1935 (1936) : 1-239, pls 1-66.

SAKAI, T., 1937. — Studies on the crabs of Japan. II. Oxystomata. *Sci. Rep. Tokyo Bunrika Daig.*, Section B, **3** : 67-192, pls 10-19.

SAKAI, T., 1965. — The crabs of Sagami Bay collected by His Majesty the Emperor of Japan. Tokyo, Maruzen Co. English text, xvi + 206 p.; Japanese text, 92 p.; Bibliography and Index, 32 p.; figs 1-27, pls 1-100.

SAKAI, T., 1976. — Crabs of Japan and the adjacent seas. Tokyo, Kodansha Ltd., [In 3 volumes : (1) English text, xxxix + 773 p., figs., 1-379, (2) Plates volume, 16 p., pls 1-251, (3) Japanese text, 461 p., figs 1-2].

SANKARANKUTTY, C., & SUBRAMANIAN, S., 1976. — Taxonomic notes on Crustacea Decapoda collected by deep-sea trawling off Dar es Salaam. *Univ. Sci. J. Dar es Salaam*, **2** (2) : 17-24.

SCHMITT, W. L., 1921. — The Marine Decapod Crustacea of California with special reference to the Decapod Crustacea collected by the United States Bureau of Fisheries Steamer Albatross in connection with the Biological Survey of San Francisco Bay during the Years 1912-1913. *Univ. Calif. Publs Zool.*, (23) : 1-469, pls 1-50.

SERÈNE, R., 1968. — The Brachyura of the Indo-West Pacific region. *In* : Prodromus for a Check List of the (non-planctonic) Marine Fauna of Southeast Asia. Unesco Singapore, Special publication N° 1, Fauna IIICc3 : 33-112.

SHEN, C. J., 1940. — The Brachyuran fauna of HongKong. *J. HongKong Fish. Res. Stn*, **1** (2) : 211-242.

STEBBING, T. R. R., 1900. — South African Crustacea, Cape of Good Hope (for the Marine Investigations in South Africa). Dept. of. Agriculture : 1-66, pls 1-4.

STEBBING, T. R. R., 1910. — General Catalogue of South African Crustacea (Part V. of S.A. Crustacea, for the Marine Investigations in South Africa). *Ann. S. Afr. Mus.*, **6** : 281-593, pls 15-22 [41-48].

STEBBING, T. R. R., 1914. — Stalk-eyed Crustacea Malacostraca of the scottish National Antarctic Expedition. *Trans. R. Soc. Edinb.*, **50**, part 2 (9) : 253-307, pls 23-32.

STUDER, T., 1883. — Verzeichniss der Crustaceen, welche während der Reise S.M.S. Gazelle an der Westküste von Afrika, Ascension und dem Cap der guten Hoffnung gesammelten wurden. *Abh. K. Akad. Wiss. Berl.* (2), 1882 (1883) : 1-32, pls 1-2.

TAKEDA, M., 1978. — Brachyura. *In* : Kikuchi, T., & S. Miyake, eds, Fauna and Flora of the Sea around the Amakusa Marine Biological Laboratory, Part II. Decapod Crustacea. *Contrib. Amakusa mar. biol. Lab. Kyushu Univ.*, (245) : 32-45.

TAKEDA, M., 1979. — Systematic and biogeographic Notes on the crabs obtained by Dredging at the Sea around Cape Shionomisaki, Kii Peninsula. *Mems natn. Sci. Mus.*, Tokyo, **12** : 151-157 (in Japanese with English summary).

TAKEDA, M., & KOYAMA, Y., 1974. — On some rare crabs from Kii Province. *Res. Crust.*, **6** : 103-121, pls 10-12.

UCHIDA, S., 1949. — Illustrated Encyclopedia of the fauna of Japan (Exclusive of Insects). Tokyo, 1898 p., figs 1-5213 (in Japanese).

WEYMOUTH, F. W., 1910. — Synopsis of the true crabs (Brachyura) of Monterey Bay, California. *Publ. Leland Standford Univ., Univ. Ser.*, (4) : 1-64, pls 1-14.

WHITE, A., 1847. — List of the specimens of Crustacea in the collections of the British Museum. London, viii + 143 p.

WHITELEGGE, T., 1900. — Crustacea, Part I. Scientific Results of the Trawling Expedition of H.M.C.S. Thetis off the coast of New South Wales in February and March, 1898. *Mem. Aust. Mus.*, **4** : 135-199, pls 33-35.

YOKOYA, Y., 1933. — On the Distribution of decapod Crustaceans inhabiting the Continental Shelf around Japan, chiefly based on the materials collected by S.S. Sôyô-Maru, during the Year 1923-1930. *J. Coll. Agric. Tokyo*, **12** (1) : 1-226.

ZARENKOV, N. A., 1990. — Plankton and benthos from the Nazca and Sala-Y-Gomez submarine ridges. *Trans. Shir. Inst. Ocean.*, **124** : 218-244 (in Rusian).

LÉGENDE DE LA PLANCHE EN COULEURS

FIG. 11. — *Mursia australiensis* Campbell, 1971. New Caledonia, MUSORSTOM 5, stn 261, 25°26.58'S, 159°45.88'E, 300 m. Photograph P. LABOUTE. ORSTOM.

FIG. 12. — *Mursia microspina* Davie & Short, 1989. New Caledonia, MUSORSTOM 5, stn 304, 22°10.34'S, 159°25.51'E, 385-400 m. Photograph P. LABOUTE ORSTOM.

FIG. 13. — *Mursia musorstomia* sp. nov. Loyalty Island, MUSORSTOM 6, stn 415, 20°40.32'S, 167°03.50'E, 461 m. Photograph P. LABOUTE ORSTOM.

11

12

13