

for New Caledonia. Although the collection is very small and consists mainly of common tropical or warm temperate species it does contain two species of note. *Megalanceola stephensi*, a rare species, is represented by eight specimens including some very large females and two males, only one specimen of which has been recorded previously (SHOEMAKER, 1945), providing the opportunity to present here more complete illustrations (Fig. 1). *Paratyphis promontorii* is a new record for the south western Pacific.

There are no previous studies of hyperiids dealing specifically with the area covered by the present collections. However, some "historical" expeditions have passed through the general area and provide information on hyperiids collected e.g. "Challenger" (STEBBING, 1888), "Dana" (FAGE, 1960; SHIH, 1969) and "Siboga" (PIRLOT, 1930, 1938). Additional information on the Physosomata, from some parts of the study area, is provided by VINOGRADOV (1960) and ZEIDLER (1990).

In the following station list, the depths given refer to bottom depths, the specimens having been caught during bottom trawling or, being pelagic animals, most likely when the net was coming up. The precise depth of capture is therefore unknown. The systematic arrangement of families follows that of BOWMAN and GRÜNER (1973) except for Brachyscelidae which like VINOGRADOV *et al.* (1982), I have recognised as a separate family. The genera and species are arranged alphabetically. For each species only the original reference and synonymy is given. Specimen length was measured along a lateral parabolic line drawn from the anterior extremity of the head through the middle of the body to the posterior limit of the telson. All specimens are in the collection of the Muséum national d'Histoire naturelle, Paris.

LIST OF STATIONS

MUSORSTOM 1. Philippines.

Station 47. — 25.03.1976, 13°40.7'N, 120°30.0'E, 757-685 m : *Phronima sedentaria*.

CORINDON 2. Indonesia.

Station 201. — 30.10.1980, 01°10.2'S, 117°06.1'E, 21 m : *Platyscelus armatus*.

Station 231. — 04.11.1980, 0°04.9'N, 119°47.8'E, 980-1080 m : *Megalanceola stephensi*.

Station 281. — 08.11.1980, 01°57.5'S, 119°02.0'E, 1120-1150 m : *Megalanceola stephensi*.

MUSORSTOM 2. Philippines.

Station 50. — 27.11.1980, 13°37.0'N, 120°33.0'E, 810-820 m : *Megalanceola stephensi*.

Station 54. — 27.11.1980, 13°59.5'N, 120°09.3'E, 174-170 m : *Vibilia propinqua*.

MUSORSTOM 3. Philippines.

Station 95. — 01.06.1985, 13°56.0'N, 119°59.0'E, 865 m : *Phronima sedentaria*.

Station 106. — 02.06.1985, 13°47.0'N, 120°30.0'E, 640-668 m : *Megalanceola stephensi*.

Station 114. — 02.06.1985, 13°34.0'N, 120°29.0'E, 1000-1040 m : *Megalanceola stephensi*.

Station 129. — 05.06.1985, 11°43.0'N, 121°46.0'E, 1350 m : *Phronima sedentaria*.

Station 135. — 05.06.1985, 11°58.0'N, 122°02.0'E, 486-551 m : *Phronima sedentaria*.

BIOCAL. New Caledonia.

Station 4. — 11.08.1985, 21°16.0'S, 166°40.0'E, 2340 m : *Brachyscelus cruscolum*, *Paratyphis promontorii*, *Primno latreillei*, *Streetsia challengeri*.

Station 5. — 11.08.1985, 21°16.0'S, 166°44.0'E, 2340 m : *Phronima sedentaria*.

Station 42. — 30.08.1985, 23°46.0'S, 167°13.0'E, 380 m : *Phronima sedentaria*.

Station 59. — 02.09.1985, 23°56.0'S, 166°41.0'E, 2650 m : *Platyscelus serratulus*, *Vibilia propinqua*.

Station 62. — 02.09.1985, 24°19.0'S, 167°49.0'E, 1395-1410 m : *Phrosina semilunata*.

Station 74. — 04.09.1985, 22°14.0'S, 167°29.0'E, 1300-1475 m : *Phronima sedentaria*, *Scina crassicornis*.

Station 104. — 08.09.1985, 21°31.0'S, 166°21.0'E, 375-450 m : *Scina crassicornis*.

MUSORSTOM 4. **New Caledonia.**

Station 236. — 02.10.1985, 22°11.3'S, 167°15.0'E, 495-550 m : *Phronima sedentaria*.

Station 238. — 02.10.1985, 22°13.0'S, 167°14.0'E, 500-510 m : *Phronima sedentaria*.

MUSORSTOM 5. **New Caledonia.**

Station 335. — 15.10.1986, 20°03.24'S, 158°45.35'E, 315 m : *Phrosina semilunata*.

Station 340. — 16.10.1986, 19°48.5'S, 158°40.9'E, 675-680 m : *Phrosina semilunata*.

Station 363. — 19.10.1986, 19°47.9'S, 158°44.3'E, 700-685 m : *Phronima sedentaria*.

Station 382. — 21.10.1986, 19°37.39'S, 158°43.29'E, 580 m : *Phronima sedentaria*.

Station 389. — 22.10.1986, 20°44.95'S, 160°53.67'E, 500 m : *Phronima sedentaria*.

CHALCAL 2. **New Caledonia.**

Station 3. — 30.10.1986, 23°39.03'S, 167°43.11'E, 424 m : *Phronima sedentaria*.

SPECIES LIST

Scina crassicornis (Fabricius, 1775)

Megalanceola stephensi (Chevreux, 1920)

Vibilia propinqua Stebbing, 1888

Phronima sedentaria (Forskål, 1775)

Phrosina semilunata Risso, 1822

Primno latreillei Stebbing, 1888

Brachyscelus crusculum Bate, 1861

Streetsia challengerii Stebbing, 1888

Paratyphis promontori Stebbing, 1888

Platyscelus armatus (Claus, 1879)

Platyscelus serratulus Stebbing, 1888

SYSTEMATIC ACCOUNT

Infraorder PHYSOSOMATA Pirlot, 1929

Superfamily SCINOIDEA Bowman & Gruner, 1973

Family SCINIDAE Stebbing, 1888

Scina crassicornis (Fabricius, 1775)

Astacus crassicornis Fabricius, 1775 : 415.

Hyperia cornigera Milne-Edwards, 1830 : 387.

Clydonia gracilis Dana, 1853 : 834, pl. 55, fig. 6 a,b.

Tyro atlantica Bovallius, 1885 : 14.

Tyro sarsii Bovallius, 1885 : 15.

Scina edwardsi Garbowski, 1896 : 103, pl. 1, fig. 2; pl. 3, figs 19-33; pls 4-7; pl. 8, figs 97-109.

Scina crassicornis var. *bermudensis* Shoemaker, 1945 : 228, fig. 31.

MATERIAL EXAMINED. — **New Caledonia.** BIOCAL : stn 74, 1300-1475 m : 1 ♀ 12.4 mm. — Stn 104, 375-450 m : 1 ♀ 14 mm (approx. - damaged).

REMARKS. — This is a relatively common, cosmopolitan species occurring approximately between the polar circles (BRUSCA, 1978). It is often found near the surface (VINOGRADOV, 1957) particularly at night (THURSTON, 1976).

Superfamily LANCEOLOIDEA Bowman & Gruner, 1973

Family LANCEOLIDAE Bovallius, 1887

Megalanceola stephensi (Chevreux, 1920)

Fig. 1

Lanceola sp. Stebbing, 1888 : 1308, fig. 27.*Lanceola stephensi* Chevreux, 1920 : 4-7, figs 1-3.*Megalanceola terrae-novae* Pirlot, 1935 : 2, figs 1-4.

MATERIAL EXAMINED. — **Indonesia.** CORINDON 2 : stn 231, 980-1080 m : 1 ♀ 95 mm. — Stn 281, 1120-1150 m : 1 ♀ 90 mm.

Philippines. MUSORSTOM 2 : stn 50, 810-820 m : 1 ♀ 71 mm, 1 ♂ 53 mm.

MUSORSTOM 3 : stn 106, 640-668 m : 1 ♀ 68 mm, 1 ♂ 56 mm (approx. - damaged). — Stn 114, 1000-1040 m : 2 ♀ 68 and 81 mm.

REMARKS. — This appears to be a rare species as it has only been recorded in the literature on 5 previous occasions. From the Banda Sea STEBBING (1888), near the Azores (CHEVREUX, 1920), near Newfoundland (PIRLOT, 1935), near Bermuda (SHOEMAKER, 1945) and from the "Southern Ocean" (HERRING, 1981). Regarding STEBBING's record (as *Lanceola* sp.) the figures accompanying STEBBING's remarks, made by WILLEMOES SUHM, are rather crude but I am in agreement with SHOEMAKER in that they represent this species. The material from CORINDON 2 confirms the presence of this species in Indonesian waters.

The present collection is significant for the presence of very large females (up to 95 mm) and two males. Previously the largest female, recorded by SHOEMAKER (1945), measured only 73 mm, not taking into account the bent nature of the anterior part of the animal. SHOEMAKER also recorded the first and only known male specimen (48 mm) of this species and provided some illustrations. As SHOEMAKER's illustrations are limited I have provided more detailed drawings of one of the males for future reference. The males differ from the females mainly in the shape and size of the first antenna which is relatively larger in males. Mature males also have distinct penial projections on the ventral surface of pereonite 7 adjacent to the seventh pereopod.

Infraorder PHYSOCEPHALATA Bowman & Gruner, 1973

Superfamily VIBILIOIDEA Bowman & Gruner, 1973

Family VIBILIIDAE Dana, 1852

Vibilia propinqua Stebbing, 1888

Figs 2-3

Vibilia propinqua Stebbing, 1888 : 1279, pl. 147.*Vibilia milnei* Stebbing, 1888 : 1284, pl. 148A.*Vibilia* sp. Stebbing, 1888 : 1285, pl. 148B, figs C, D.

MATERIAL EXAMINED. — **Philippines.** MUSORSTOM 2 : stn 54, 174-170 m : 1 ♀ 6.3 mm.

New Caledonia. BIOCAL : stn 59, 2650 m : 1 ♀ 8.0 mm.

REMARKS. — The genus *Vibilia* is in a state of considerable taxonomic confusion and a revision is long overdue. VINOGRADOV *et al.* (1982) recognise 17 valid species and provide a useful key but specific determination,

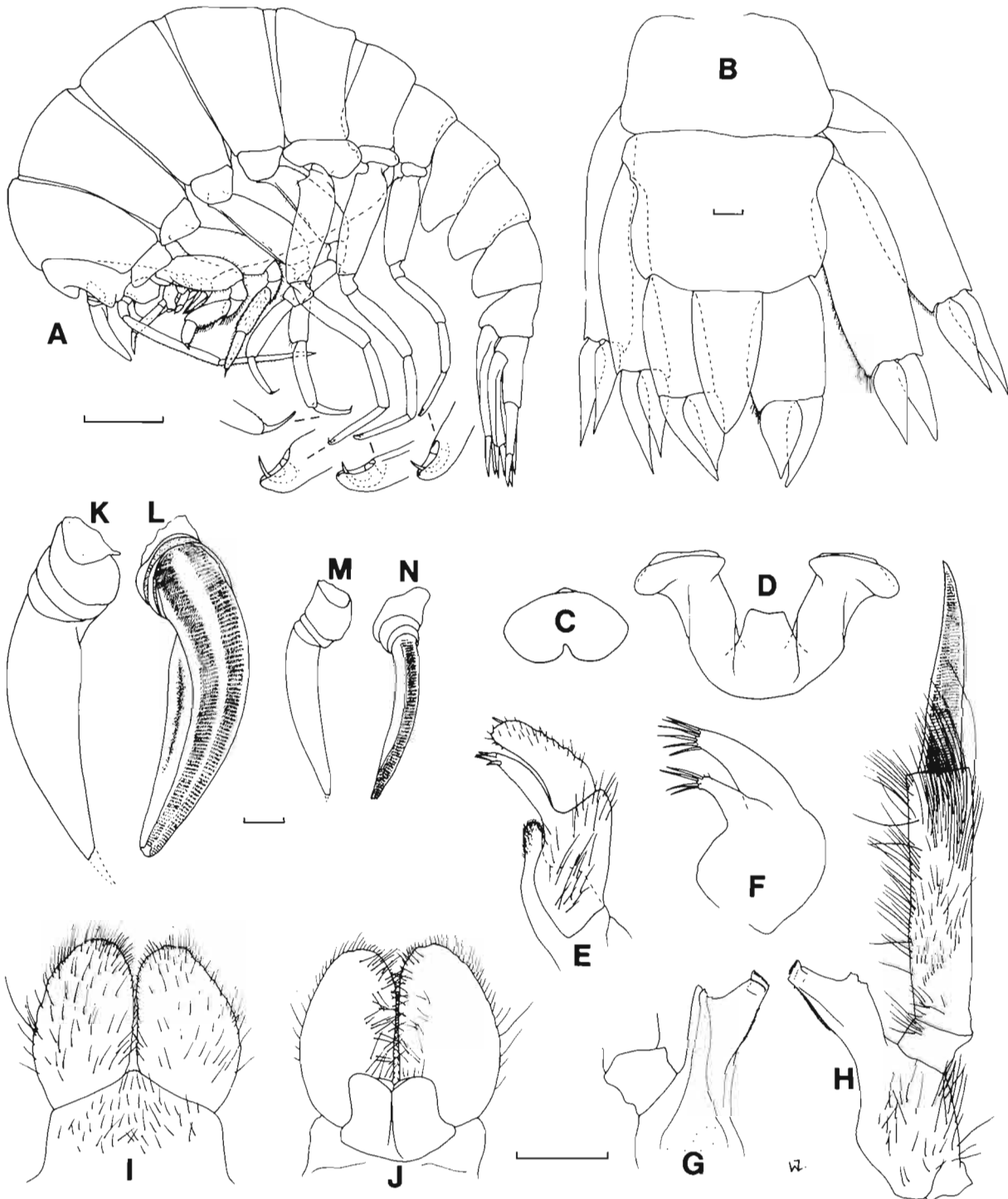


FIG. 1. — *Megalanceola stephensi* (Chevreux, 1920) : A, lateral view of ♂ 53 mm, MUSORSTOM 2, Stn 50 (scale = 5.0 mm); B-L, ♂ 58 mm, MUSORSTOM 3, Stn 106 (scales = 1.0 mm); B, urosome; C, upper lip; D, lower lip; E, first maxilla; F, second maxilla; G, mandible, inner face; H, mandible, outer face; I, maxilliped, outer face; J, maxilliped, inner face; K, first antenna, outer face; L, first antenna, inner face; M-N, outer and inner face of first antenna, ♀ 68 mm, MUSORSTOM 3, Stn 106.

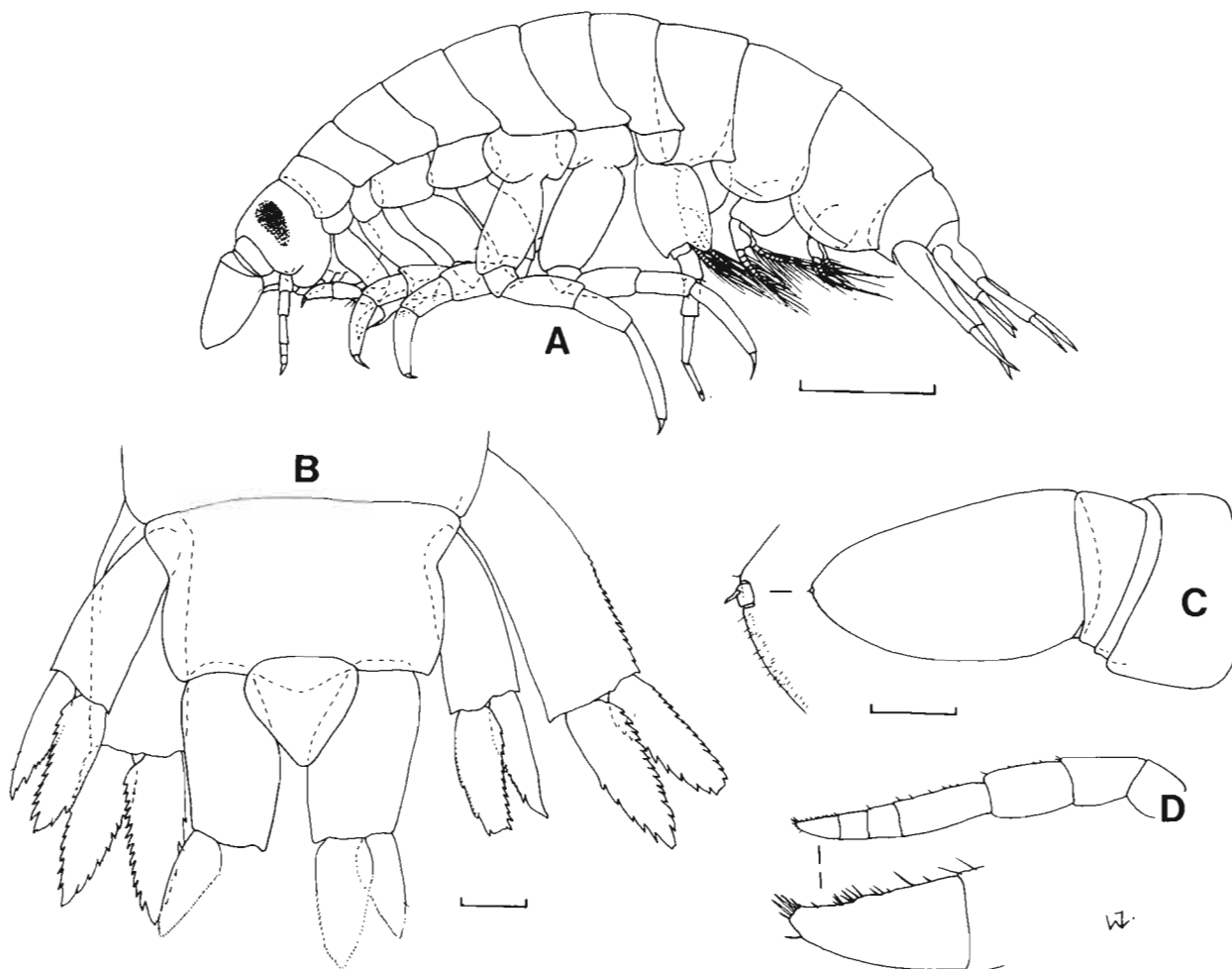


FIG. 2. — *Vibia propinqua* Stebbing, 1888, ♀ 6.5 mm, BIOCAL, Stn 59 : **A**, lateral view; **B**, urosome; **C**, first antenna; **D**, second antenna. (Scale A = 1.0 mm; B-D = 0.2 mm).

except for a few distinctive species, is still very difficult. The present specimens most closely resemble *V. propinqua* and are most likely this species but because there is some doubt I have figured one of the specimens for future reference.

A relatively common species, widely distributed in tropical and temperate regions.

Superfamily PHRONIMOIDEA Bowman & Gruner, 1973

Family PHRONIMIDAE Dana, 1852

Phronima sedentaria (Forskål, 1775)

Cancer sedentarius Forskål, 1775 : 95.

Phronima custos Risso, 1816 : 121, pl. 2, fig. 3.

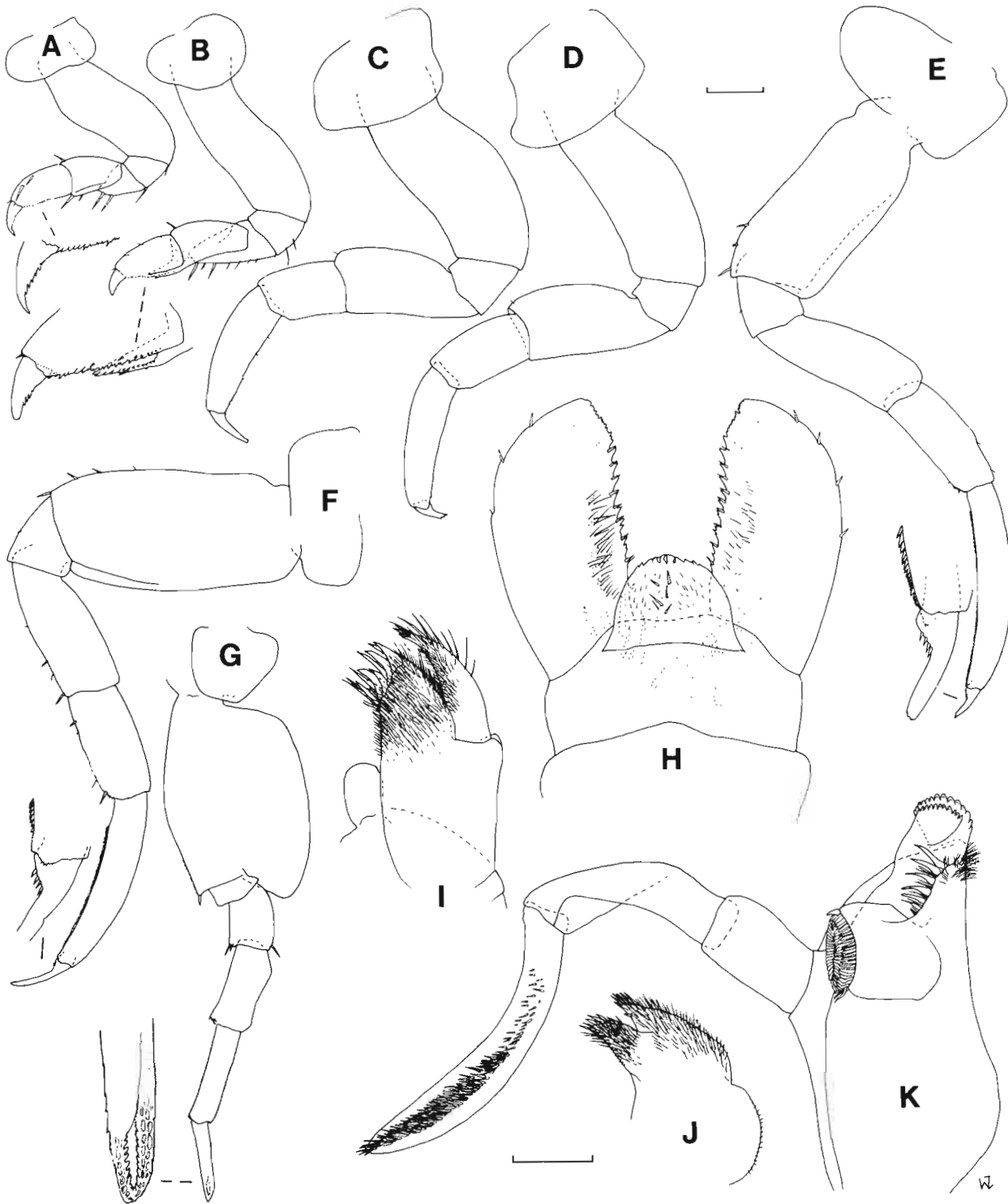


FIG. 3. — *Vibia propinqua* Stebbing, 1888, ♀ 6.5 mm, BIOCAL, Stn 59: A-G, first to seventh pereopods (Scale = 0.2 mm); H, maxilliped, inner face; I, first maxilla; J, second maxilla; K, mandible (palp twisted). (Scale H-K = 0.1 mm).

- Phronima borneensis* Bate, 1862 : 318, pl. 51, fig. 3.
Phronima novaezealandiae Powell, 1875 : 294, pl. 21, figs 1,2.
Phronima spinosa Bovallius, 1887 : 25.
Phronima tenella Stebbing, 1888 : 1354, pl. 161A.
Phronima affinis Vosseler, 1901 : 20, pl. 1, figs 12-16.

MATERIAL EXAMINED. — **Philippines.** MUSORSTOM 1 : stn 47, 757-685 m : 1 ♀ 30.0 mm.
 MUSORSTOM 3 : stn 95, 865 m : 1 ♀ 45.6 mm. — Stn 129, 1350 m : 1 ♀ 36.0 mm. — Stn 135, 486-551 m : 1 ♀ 30.4 mm.
New Caledonia. BIOCAL : stn 5, 2340 m : 1 ♀ 18.0 mm. — Stn 42; 380 m : 1 ♀ 25.4 mm. — Stn 74, 1300-1475 m : 1 ♀ 27.2 mm.
 MUSORSTOM 4 : stn 236, 495-550 m : 1 ♀ 34.5 mm. — Stn 238, 500-510 m : 2 ♀ 29.7 and 30.2 mm.
 MUSORSTOM 5 : stn 363, 700-685 m : 2 ♀ 23.7 and 28.0 mm. — Stn 382, 580 m : 1 ♀ 32.6 mm. — Stn 389, 500 m : 1 ♀ 38.5 mm.
 CHALCAL 2 : stn 3, 424 m : 2 ♀ 20.0 and 31.8 mm.

REMARKS. — This is the most common and largest species of the family; widely distributed in tropical and temperate regions. It is often found in association with salps and pyrosomes and its ability to build and live in "barrels" made from these organisms is well documented in the literature (LAVAL, 1978).

Family PHROSINIDAE Dana, 1853

Phrosina semilunata Risso, 1822

- Phrosina semilunata* Risso, 1822 : 245.
Dactylocera nicaeensis Milne-Edwards, 1830 : 393.
Phrosina longispina Bate, 1862 : 320, pl. 5, fig. 7.
Phrosina pacifica Stebbing, 1888 : 1430.
Phrosina australis Stebbing, 1888 : 1431.

MATERIAL EXAMINED. — **New Caledonia.** BIOCAL : stn 62, 1395-1410 m : 1 ♀ 15.5 mm.
 MUSORSTOM 5 : stn 335, 315 m : 1 ♀ 13.1 mm. — Stn 340, 675-680 m : 1 ♀ 14.8 mm.

REMARKS. — A very common, cosmopolitan species favouring tropical and temperate regions.

Primno latreillei Stebbing, 1888

- Primno latreillei* Stebbing, 1888 : 1445-1447, pl. 179A.

MATERIAL EXAMINED. — **New Caledonia.** BIOCAL : stn 4, 2340 m : 1 ♀ 5.5 mm.

REMARKS. — The genus *Primno* was revised by BOWMAN (1978) who recognised 4 species previously lumped as *P. macropa*. Two additional species were described later, one by BOWMAN (1985) and the other by SHEADER (1986). The present specimen is readily identified as typical *P. latreillei*, distinct from the very closely related species *P. johnsoni* Bowman, 1978.

The distribution of this species is difficult to determine due to past confusion with *P. macropa* but BOWMAN (1978) records it from the central North Pacific, southeast Gulf of Guinea, eastern Mediterranean and the Red Sea and I have recorded it from eastern Australia (ZEIDLER, 1978).

Superfamily PLATYSCELOIDEA Bowman & Gruner 1973

Family BRACHYSCELIDAE Stephensen, 1923

Brachyscelus crusculum Bate, 1861

- ? *Orio Zancleus* Natale, 1850 : 12.
Brachyscelus crusculum Bate, 1861 : 7, pl. 2, figs 1,2.
Thamyris antipodes Bate, 1862 : 335, pl. 50, fig. 4.
 ? *Thamyris lycaeoides* Claus, 1887 : 60, pl. 21, figs 1,2.
 ? *Thamyris mediterranea* Claus, 1887 : 60, pl. 16, figs 11-18.
Brachyscelus acuticaudatus Stebbing, 1888 : 1555-1556, pl. 197C.
Brachyscelus stebbingi Boone, 1935 : 226-230, pls 67, 68.

MATERIAL EXAMINED. — **New Caledonia**. BIOCAL : stn 4, 2340 m : 1 ♀ 7.7 m.

REMARKS. — The genus *Brachyscelus* is in a state of considerable taxonomic confusion and a revision is long overdue. According to MADIN and HARBISON (1977) at least 17 species have been described, most of which are synonyms of *B. crusculum*. VINOGRADOV *et al.* (1982) recognised only 4 species. *B. crusculum* is the most common species of the genus being widely distributed in tropical and temperate regions.

Family OXYCEPHALIDAE Bate, 1861

Streetsia challengerii Stebbing, 1888

- Streetsia challengerii* Stebbing, 1888 : 1603-1606, pl. 207.
 ? *Oxycephalus pronoides* Bovallius, 1887 : 37.
Streetsia stebbingi Chevreux, 1900 : 161, pl. 18, fig. 4.
Streetsia washingtoni Senna, 1902 : 15, pl. 2.
Streetsia sabauda Colosi, 1918 : 218, pl. 17, figs 5-9.
Streetsia gaussi Spandl, 1927 : 184, fig. 17.

MATERIAL EXAMINED. — **New Caledonia**. BIOCAL : stn 4, 2340 m : 1 ♀ 11.0 mm (approx. - damaged; ovigerous).

REMARKS. — This is a very common, widely distributed species recorded mainly from tropical regions. FAGE (1960) gives more details regarding the biology of this species.

Family PLATYSCELIDAE Bate, 1862

Paratyphis promontorii Stebbing, 1888

- Paratyphis promontorii* Stebbing, 1888 : 1476-1479, pl. 209D.
 ? *Paratyphis theelii* Bovallius, 1887 : 47.

MATERIAL EXAMINED. — **New Caledonia**. BIOCAL : stn 4, 2340 m : 1 ♀ 3.5 mm.

REMARKS. — Four species of *Paratyphis* are currently recognised (VINOGRADOV *et al.*, 1982) but specific determination is difficult and the genus is in need of revision. The best distinguishing character of *P. promontorii* appears to be the form of the gnathopods.

This is a relatively rare species known mainly from the Atlantic in tropical and temperate areas. STEBBING (1888) and DICK (1970) record it from around South Africa and SPANGL (1927) records it from the Red Sea (misidentified as *P. maculatus*). According to VINOGRADOV *et al.* (1982) it has also been recorded from the south eastern Pacific Ocean but I have been unable to verify this from the literature. The present specimen is the first record from the south-west Pacific.

This species is usually found near the surface; 0-150 m (THURSTON, 1976).

***Platyscelus armatus* (Claus, 1879)**

Eutyphis armatus Claus, 1879 : 10.

Eutyphis inermis Claus, 1887 : 37.

MATERIAL EXAMINED. — **Indonesia**. CORINDON 2 : stn 201, 21 m : 1 ♀ 15.0 mm.

REMARKS. — This species is easily distinguished from its congeners by the lateral process on the fifth and sixth coxal plates. It is a relatively rare species known from widely scattered records from tropical and warm temperate regions.

***Platyscelus serratulus* Stebbing, 1888**

Eutyphis serratus Claus, 1879 : 11.

Platyscelus serratulus Stebbing, 1888 : 1470-1471.

Platyscelus dubius Shoemaker, 1925 : 51, figs 20, 21.

MATERIAL EXAMINED. — **New Caledonia**. BIOCAL : stn 59, 2650 m : 1 ♀ 4.4 mm.

REMARKS. — This is a widely distributed species occurring in tropical and subtropical regions.

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