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Pycnogonida collected in recent years around New Caledonia and Vanuatu

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ABSTRACT

Twenty-eight species of Pycnogonida (plus one unidentifiable juvenile) are recorded from New Caledonia and Vanuatu (formerly the New Hebrides, some 400 km NE of New Caledonia), mostly from deep waters, but some in the littoral and infra-littoral zones. They belong to the families Ammotheidae (8 species, of which two, in the genera *Ascorhynchus* and *Cilunculus*, are new), Colossendeidae (7 species, of which one, in the genus *Colossendeis*, new), Nymphonidae (2 species in the genus *Nymphon*, both new), Callipallenidae (1 species), Phoxichilidiidae (10 species), and Pycnogonidae (1 species). In addition to the species new to Science, several others are new to the area and represent extensions of the previously known ranges.

A key to all known species of *Cilunculus* is presented.

RÉSUMÉ

Pycnogonides récoltés durant ces dernières années autour de la Nouvelle-Calédonie et du Vanuatu.

Vingt-huit espèces de Pycnogonides (sans compter un jeune non identifiable) sont signalées de la Nouvelle-Calédonie et du Vanuatu (autrefois les Nouvelles-Hébrides, à 400 km environ au N. E. de la Nouvelle-Calédonie). Les récoltes proviennent surtout des eaux profondes, mais quelques-unes du littoral et de l'infralittoral. Ces espèces appartiennent aux familles Ammotheidae (8 espèces, dont deux, dans les genres *Ascorhynchus* et *Cilunculus*, sont nouvelles), Colossendeidae (7 espèces, dont une, dans le genre *Colossendeis*, nouvelle), Nymphonidae (2 espèces de *Nymphon*, l'une et l'autre nouvelles), Callipallenidae (1 espèce), Phoxichilidiidae (10 espèces) et Pycnogonidae (1 espèce). Outre les espèces nouvelles pour la Science, plusieurs autres sont nouvelles pour la région.

Une clé d'identification de toutes les espèces du genre *Cilunculus* est proposée.

INTRODUCTION

After the completion of an earlier paper (STOCK, 1991b) on the Pycnogonida of New Caledonia and its surroundings, a number of new samples collected in the same area and off Vanuatu, were available. These

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collections partly containing the same species as previously recorded, yielded also a good many surprises. They form the subject of the present report.

I have to thank Bertrand RICHER DE FORGES, ORSTOM Nouméa, for collecting most of these new samples and Alain CROSNIER, ORSTOM Paris, for sorting and entrusting me the material. Almost the entire collection has been deposited in the Paris Museum (MNHN), but for some duplicates which have been retained for the Zoölogisch Museum, Amsterdam (ZMA).

The hierarchical arrangement of the families, genera and species is the same as in a previous publication (STOCK, 1994), *i.e.*, the families and genera are in phylogenetic order, the species in alphabetical sequence.

In the lists of Material examined, the names of the cruises are in capital letters. The names of vessels are in italic letters and quoted. Station numbers are preceded by two capital letters, denoting the gear used: DW means Warren dredge, CP beam trawl.

SYSTEMATIC ACCOUNT

The collection contains the following species from New Caledonia (NC) and Vanuatu (V):

Family Ammotheidae: *Ascorhynchus orthorhynchus* Hoek, 1881 (NC and V); *A. constrictus* sp. nov. (V); *A. seticauda* Stock, 1991 (NC); *Cilunculus scaurus* sp. nov. (NC); *Ammothella indica* Stock, 1954 (NC); *Achelia assimilis* (Haswell, 1885) (NC); *A. nana* (Loman, 1908) (NC); *A.* sp. juv. (NC).

Family Colossendeidae: *Colossendeis colossea* Wilson, 1881 (V); *C. leptorhynchus* Hoek, 1881 (NC and V); *C. macerrima* Wilson, 1881 (V); *C. pipetta* Stock, 1991 (NC); *C. sinuosa* sp. nov. (NC); *Rhopalorhynchus filipes* Stock, 1991 (NC); *Hedgpethia tibialis* Stock, 1991 (NC).

Family Nymphonidae: *Nymphon fortunatum* sp. nov. (NC); *N. spinifex* sp. nov. (NC).

Family Callipallenidae: *Callipallene fallax* Stock, 1994 (NC).

Family Phoxichilidiidae: *Pallenopsis (P.) angusta* Stock, 1991 (NC); *P. (P.) dentifera* Stock, 1983 (NC); *P. (P.) spinipes* Carpenter, 1907 (V); *P. (P.) virgata* Loman, 1908 (V); *Pallenopsis (Bathypallenopsis) juttingae* Stock, 1964 (NC); *P. (B.) longirostris* Wilson, 1881 (V); *P. (B.) mollissima* (Hoek, 1881) (V); *P. (B.) ?oculotuberculosis* Hilton, 1942 (V); *P. (B.) t. tydemani* Loman, 1908 (V and Indonesia); *Endeis mollis* (Carpenter, 1904) (NC).

Family Pycnogonidae: *Pycnogonum occa* Loman, 1908 (NC).

Family AMMOTHEIDAE

Genus *ASCORHYNCHUS* Sars, 1877

In agreement with the International Code of Zoological Nomenclature, art. 30(a)(iii), the generic name is treated here as masculine.

Ascorhynchus orthorhynchus Hoek, 1881

Fig. 1

Ascorhynchus orthorhynchus Hoek, 1881: 57-59, pl. 5 figs 11-13, pl. 6 figs 1-4, pl. 15 figs 14-15. — LOMAN, 1908: 31 (no new records). — STOCK, 1953b: 301.

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 1: stn CP 702, 20°55.97'S, 165°34.67'E, 591-660 m, 18.03.1993: 1 ♀ (MNHN-Py 863).

BATHUS 4: stn CP 946, 20°33.81'S, 164°58.35'E, 386-430 m, 10.08.1994: 2 ♀ (MNHN-Py 864, ZMA Pa. 202.062).

Vanuatu. MUSORSTOM 8: stn DW 1019, 17°38.25'S, 168°33.91'E, 397-430 m, 28.09.1994: 1 ♀ (MNHN-Py 865). — Stn 1131, 15°38.41'S, 167°03.52'E, 140-175 m, 11.10.1994: 1 young ♀ (MNHN-Py 866).

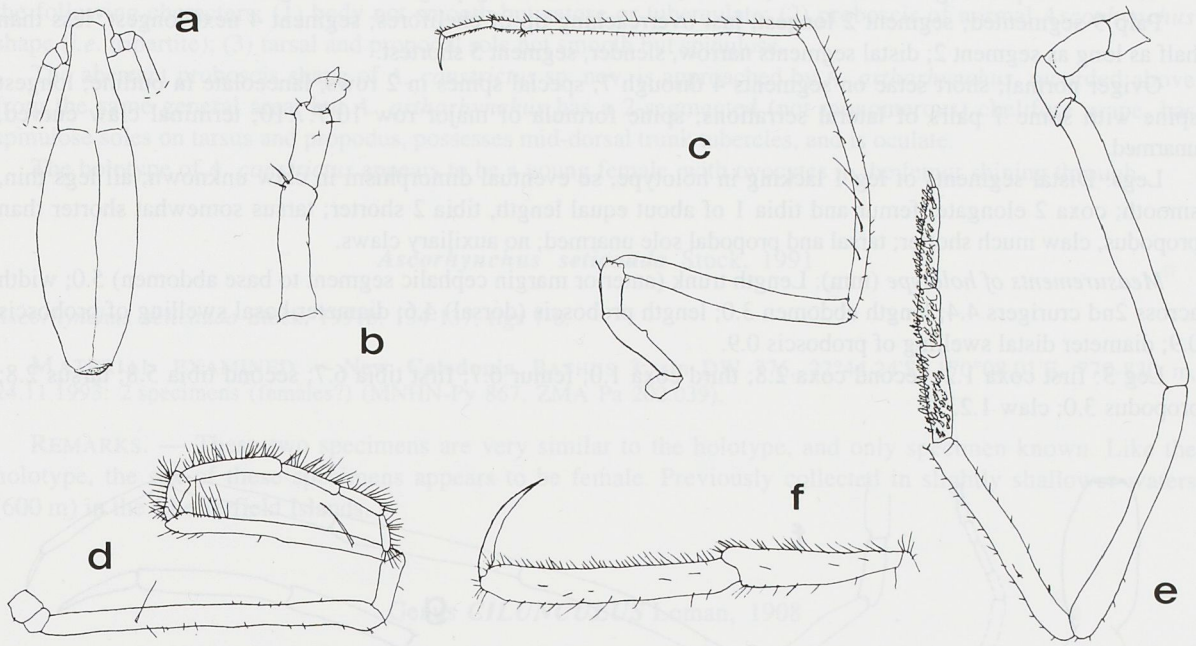

FIG. 1. — *Ascorhynchus orthorhynchus* Hoek, 1881 (♀, BATHUS 1, Stn CP 702): **a**, proboscis, ventral; **b**, chelifore; **c**, leg 4; **d**, palp; **e**, oviger; **f**, distal segments of leg 3.

REMARKS. — This species has been found only twice before, on *"Challenger"* Stn 219, 01°50'S, 146°42'E, 274 m (= N. of New Guinea), and on *"Albatross"* Stn 5577, 05°20'36"N, 119°58'51"E, 439 m (= N.E. of Borneo), thus the present specimens constitute a considerable range extension to New Caledonia and Melanesia. HOEK's description and figures suffice completely to recognize *A. orthorhynchus*, showing the spiniform processes on the mid-dorsal line of the trunk and crurigers, the long abdomen, the club-shaped proboscis, the 2-segmented chelifore scape (of which the distal segment is the longest), the relatively long tarsus, the dense spinulation of tarsus and propodus, the slender claw, etc.

The claw of leg 1 (lacking in HOEK's material) is slightly less elongate than that of the remaining legs, but it is not rudimentary or vestigial. The adult specimen from Vanuatu has somewhat longer setae on tibia 1 of the legs.

Some new drawings of the animal are presented in this paper, to complement HOEK's illustrations.

Ascorhynchus constrictus sp. nov.

Fig. 2

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 1080, 15°57.30'S, 167°27.73'E, 799-850 m, 5.10.1994: 1 ♀ holotype (MNHN-Py 923).

DESCRIPTION. — Trunk completely segmented, smooth, without tubercles or spurs; articulation lines with cuff-like, overlapping rims. Abdomen vaguely articulated with 4th trunk segment. Crurigers longer than central trunk diameter; separated by intervals narrower than their own diameter. Neck with "crop" (i.e. anterior end wider than posterior end). Eye tubercle inconspicuous low swelling, with small tubercle left and right on top; no eyes; implanted slightly in front of oviger implantations. Proboscis with almost stalk-like, narrow basal part, gonflate next portion, then pinched markedly, and swollen distal portion; entire proboscis thus bipartite rather then the usual tripartite.

Chelifore scape 1-segmented, narrow, slender; chela small, with gaping, smooth fingers.

Palp 9-segmented; segment 2 longest, just overreaching tip of chelifores; segment 4 next longest, less than half as long as segment 2; distal segments narrow, slender, segment 5 shortest.

Oviger normal; short setae on segments 4 through 7; special spines in 2 rows, lanceolate in outline; longest spine with some 7 pairs of lateral serrations; spine formula of major row 10:7:7:10; terminal claw curved, unarmed.

Legs: Distal segments of leg 1 lacking in holotype, so eventual dimorphism in claw unknown; all legs thin, smooth; coxa 2 elongate; femur and tibia 1 of about equal length, tibia 2 shorter; tarsus somewhat shorter than propodus, claw much shorter; tarsal and propodal sole unarmed; no auxiliary claws.

Measurements of holotype (mm): Length trunk (anterior margin cephalic segment to base abdomen) 5.0; width across 2nd crurigers 4.4; length abdomen 3.0; length proboscis (dorsal) 4.6; diameter basal swelling of proboscis 0.9; diameter distal swelling of proboscis 0.9.

Leg 3: first coxa 1.2; second coxa 2.8; third coxa 1.0; femur 6.7; first tibia 6.7; second tibia 5.8; tarsus 2.8; propodus 3.0; claw 1.2.

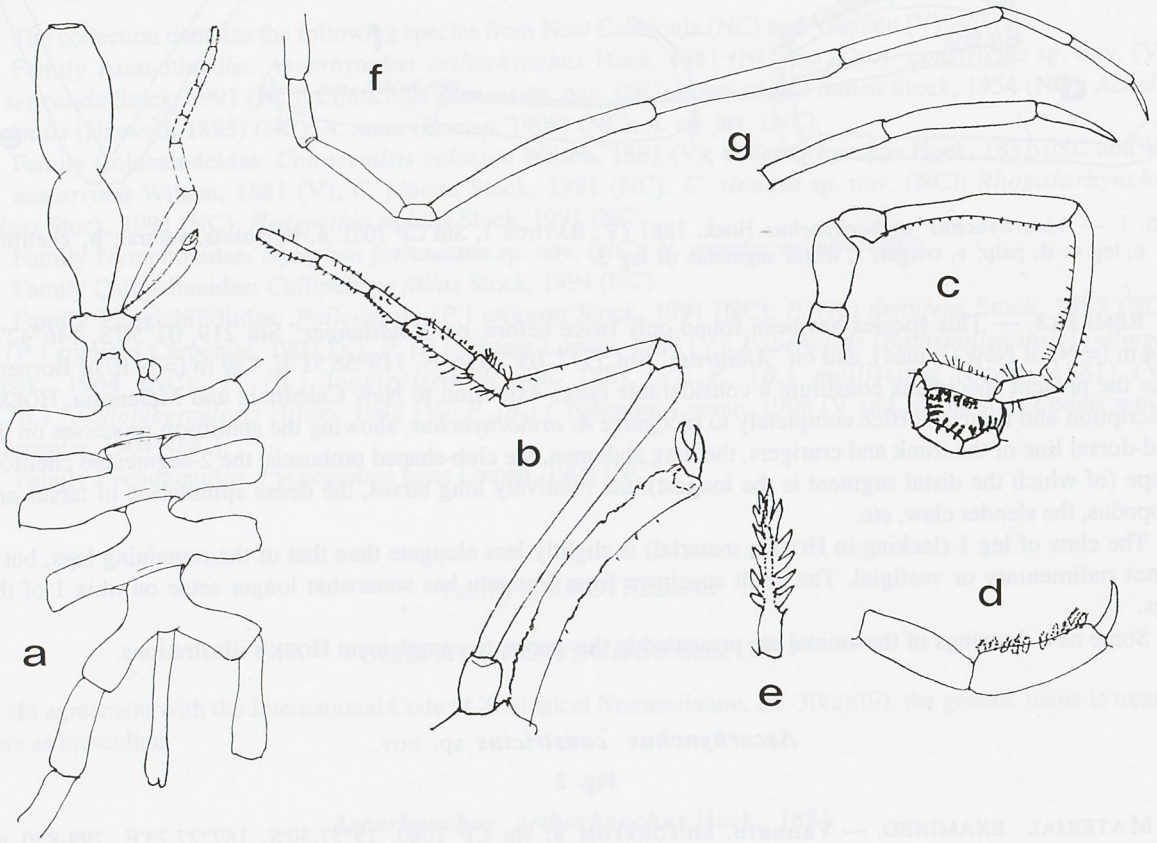

FIG. 2. — *Ascorhynchus constrictus* sp. nov. (♀ holotype): **a**, trunk, dorsal; **b**, chelifore and palp; **c**, oviger; **d**, distal oviger segments; **e**, third special spine of oviger segment 7; **f**, leg 3; **g**, distal segments of leg 3.

ETYMOLOGY. — The specific name, *constrictus*, alludes to the shape of the proboscis, with its narrow basal portion and central constriction.

REMARKS. — There are quite a few blind, longitarsal *Ascorhynchus* species (e.g. *A. bucerus* Turpaeva, 1971, *birsteini* Turpaeva, 1971, *breviscapus* Stock, 1968, *fragilis* Stock, 1991, *ovicoxa* Stock, 1975, *ios* Bamber &

Thurston, 1993, *levimani* Turpaeva, 1994). These species do not look like the present species, because of one of the following characters: (1) body not smooth but setose or tuberculate; (2) proboscis of normal *Ascorhynchus* shape (*i.e.* tripartite); (3) tarsal and propodal sole not smooth but spinulose.

The aberrant proboscis shape of *A. constrictus* sp. nov. is approached by *A. orthorhynchus,* recorded above from the same general area, but *A. orthorhynchus* has a 2-segmented (not monomerous) chelifore scape, has spinulose soles on tarsus and propodus, possesses mid-dorsal trunk tubercles, and is oculate.

The holotype of *A. constrictus* appears to be a young female, with ovocytes in the femur shining through.

Ascorhynchus seticauda Stock, 1991

Ascorhynchus seticauda Stock, 1991b: 134-137, figs 7-8.

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 3: stn DW 776, 22°44.24'S, 170°08.01'E, 770-830 m, 24.11.1993: 2 specimens (females?) (MNHN-Py 867, ZMA Pa 202.039).

REMARKS. — These two specimens are very similar to the holotype, and only specimen known. Like the holotype, the sex of these specimens appears to be female. Previously collected in slightly shallower waters (600 m) in the Chesterfield Islands.

Genus *CILUNCULUS* Loman, 1908

Cilunculus scaurus sp. nov.

Fig. 3

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 2: stn CP 823, 23°22.76'S, 167°51.60'E, 980-1000 m, 29.11.1993: 1 ♂, 1 ♀ (holo- and allotype, MNHN-Py 868) and 1 ♂ (paratype, ZMA Pa. 202.038).

DESCRIPTION. — Body completely segmented, segments 1 to 3 with slightly swollen posterior margin, overlapping the next body segment. Allotype with minute mid-dorsal tubercles, holotype without. Crurigers separated by narrow intervals, with several spiniferous tubercles in holotype, less spinous in allotype. Small, pointed tubercle ("horn") at each side of frontal margin of cephalic segment. Cephalic hood overlapping slightly scape segment 1. Ocular tubercle tapering, rounded, low; eyes well-pigmented. Proboscis oval, fat; carried on ventral side of body (not visible in dorsal view). Abdomen reaching to middle of coxa 1 of leg 4, armed with 2 long and some smaller setae.

Chelifore scape 2-segmented; first segment unarmed; second segment with low swelling and several spines. Chela ovate, fingers strongly reduced.

Palp 10-segmented; 2 short basal segments; segments 3 and 5 elongate; segment 5 with longitudinal spine row; segments 6 to 10 pubescent.

Oviger (♂) with elongate segments 2, 4, and 5; segments 6 to 10 with irregular setation; compound spines on segments 8 to 10, according to formula 3:2:3: no terminal claw. Largest compound spines lanceolate, with 4 or 5 pairs of marginal teeth.

Legs: Coxa 1 with spiniform tubercles; femur with some low tubercles; cement gland cone very large, pointed, on dorsal surface of femur; distal end of femur with several long setae; propodus (both sexes) of characteristic shape: convex (dorsal) margin with conspicuous hump in basal quarter; 2 or 3 heel spines (but no well-developed heel); 2 to 3 longer spines in central part of sole and several smaller spines in distal part; size and number of spines variable with specimens; claw about half as long as propodus; auxiliary claws less than one-third of main claw.

Measurements of holotype (mm): Length trunk (frontal margin cephalic segment to tip of abdomen) 10.8; width across second crurigers 4.0. Fourth leg: first coxa 1.0; second coxa 1.6; third coxa 1.0; femur 4.2; first tibia 5.0; second tibia 5.1; tarsus + propodus 2.6.

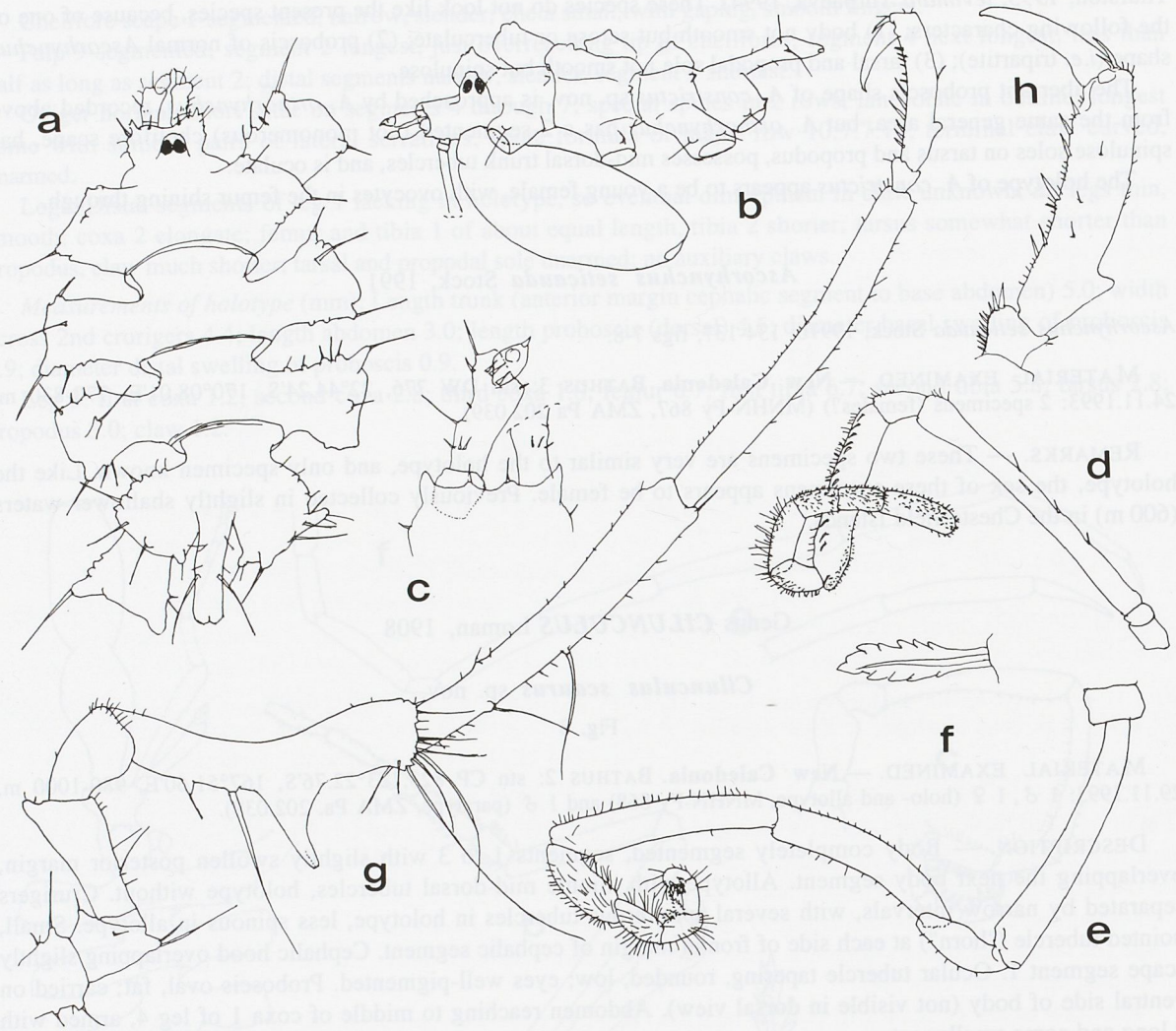

FIG. 3. — *Cilunculus scaurus* sp. nov. (♂ holotype, ♂ paratype, and ♀ allotype, BATHUS 3, Stn CP 823): **a**, trunk of holotype, dorsal; **b**, trunk of allotype, from the left; **c**, anterior end of cephalon with chelifore of paratype; **d**, palp of paratype; **e**, oviger of paratype; **f**, distal compound spine of oviger segment 8 of paratype; **g**, leg 3 of paratype (to same scale as fig. 3a); **h**, distal segments of leg 3.

ETYMOLOGY. — The hump on the foot (= propodus) has inspired the Latin name *scaurus*, meaning "club-foot" (Horatio).

REMARKS. — The new species, *C. scaurus*, shares superficially many characters with another New Caledonian species, *C. compactus* Stock, 1991. The latter has, however, many more, and stronger spiniform processes on crurigers and abdomen, much stronger mid-dorsal trunk tubercles, a much shorter male cement gland cone, slenderer distal palp segments, a more pronounced cephalic hood, etc. *C. scaurus* differs from all other *Cilunculus* species, and as point of fact from any other pycnogonid known, in the presence of a dorsal hump on the propodus.

In the last few years the number of species in this genus has greatly increased, from 5 (STOCK, 1955b), or 12 (STOCK, 1978a), to 28 (present situation). Therefore a new key to all species actually known is presented in this paper.

Artificial key to the species of *Ciluncul us*

1. Uniunguiculate **2**
— Auxiliary claws present **3**

2. Chelifore scape 2-segmented. Mid-dorsal line of trunk somites 1 to 3 with tubercle .....
..... ***C. acanthus*** Fry & Hedgpeth, 1969
— Chelifore scape 1-segmented. Mid-dorsal line without tubercles .....
..... ***C. kravcovi*** Pushkin, 1973

3. Auxiliary claws much less than half as long as main claw **4**
— Auxiliary claws at least half as long as main claw **11**

4. Scape 1-segmented **5**
— Scape 2-segmented **6**

5. Mid-line of trunk bald. Ocular tubercle absent .. ***C. battenae*** Bamber & Thurston, 1993
— Mid-line of trunk with long setae placed on pedestal. Ocular tubercle tall .....
..... ***C. frontosus*** Loman, 1908

6. Propodus with conspicuous hump on convex margin ..... ***C. scaurus*** sp. nov.
— Propodal margin evenly convex **7**

7. Crurigers widely separated ..... ***C. pedatus*** Stock, 1991
— Crurigers separated by ≤ own diameter **8**

8. Crurigers with strong processes on anterior and posterior margin. Frontal cephalic hood covering chelifores in dorsal view ..... ***C. compactus*** Stock, 1991
— Anterior and posterior margins of crurigers unadorned. Chelifore extending beyond hood ...
..... **9**

9. Pointed tubercles or rounded humps on mid-dorsal line of trunk. Suture lines of trunk clearly visible. Crurigers with some setae. Auxiliary claws weak (≤ 25% of main claw) ...
..... **10**
— Dorsum of trunk smooth. Suture lines obscure. Crurigers naked. Auxiliary claws about one-third of main claw ..... ***C. profundus*** (Hedgpeth, 1949)

10. Mid-dorsal trunk tubercles tall. Crurigers tuberculate, with short setae. Chela not hidden in distal excavation of scape. Cephalic segment tuberculate, but without anterior horns ....
..... ***C. sewelli*** Calman, 1938
— Mid-dorsal trunk tubercles low. Crurigers not tuberculate, with long distal seta. Chela partly hidden in distal excavation of scape. Anterior cephalic horns not well-developed .....
..... ***C. hirsutus*** Clark, 1963
— Posterior margin of trunk segments swollen, not forming well-defined tubercles. Anterior cephalic horns strongly developed ..... ***C. perspicax*** Loman, 1908

11. Scape 1-segmented **12**
— Scape 2-segmented **19**

12. Median line of trunk adorned with tubercles, spine row, or tubular spines **13**
— Median line of trunk unadorned **15**

13. Median line of trunk with transverse spine row. Anterior and posterior margins of crurigers with short spine ..... ***C. spinicristus*** Child, 1987
— Median line of trunk with tubercles, bearing tubular spine. Anterior and posterior margins of crurigers with some setae ..... ***C. galeritus*** Nakamura & Child, 1991

— Median line of trunk with unarmed tubercle. Anterior and posterior margins of crurigers with pointed processes **14**

14. Chelifore scape with long setae. Crurigers separated by more than their own diameter. Ocular tubercle vestigial ..... ***C. crinitus*** Stock, 1991
— Chelifore scape with some short setules. Crurigers closely together. No ocular tubercle .... ***C. achelioides*** Stock, 1991
— Chelifore scape with some minute setae. Crurigers closely together. Ocular tubercle tall ... . ***C. alcicornis*** Stock, 1978

15. Auxiliary claws at least two-thirds of length of main claw **16**
— Auxiliary claws half as long as main claw ..... ***C. haradai*** Nakamura & Child, 1983

16. Ocular tubercle bifurcate, without eyes **17**
— Ocular tubercle cylindrical, with eyes ..... ***C. sekiguchii*** Nakamura & Child, 1983
— Ocular tubercle vestigial, no eyes ..... ***C. europaeus*** Stock, 1978

17. Propodal sole with few (*ca.* 4) spinules. Second coxa 2-3 times as long as wide .... ***C. bifidus*** (Stock, 1968)
— Propodal sole with many (> 10) spines. Second coxa 5-6 times as long as wide **18**

18. Second tibia with many setae. Propodus feebly curved. Chelifore hardly extending beyond cephalic hood ..... ***C. tubicinis*** Child, 1982
— Second tibia poorly setose. Propodus strongly curved. Chelifore well extending beyond cephalic hood ..... ***C. antillensis*** Stock, 1955

19. No mid-dorsal trunk tubercles. No anterior "horns". Chelifores about two-thirds of length of proboscis ..... ***C. gracilis*** Nakamura & Child, 1991
— With mid-dorsal trunk tubercles, with anterior "horns". Chelifores short **20**

20. Long setae on dorsal tubercles and crurigers ..... ***C. cactoides*** Fry & Hedgpeth, 1969
— With short setae only **21**

21. Anterior "horns" smooth. Mid-dorsal tubercles low ..... ***C. armatus*** (Böhm, 1879)
— Anterior "horns" with setae. Mid-dorsal tubercles tall ..... ***C. australiensis*** Clark, 1963

Genus ***AMMOTHELLA*** Verrill, 1900

Ammothella indica Stock, 1954

Ammothella indica - STOCK, 1994: 27 (refs).

MATERIAL EXAMINED. — **New Caledonia**. Récif Senez, 7 m, 7.09.1992, coll. P. BOUCHET: 1 ♂ (MNHN-Py 869).

REMARK. — A widely distributed shallow-water species in the Indo-West Pacific.

Genus ***ACHELIA*** Hodge, 1864

Achelia assimilis (Haswell, 1885)

Achelia assimilis - STOCK, 1994: 32-33, fig. 9 (lit., syn.).

MATERIAL EXAMINED. — **New Caledonia**. SMIB 4: stn DW 55, Norfolk rise, 23°21.4'S, 168°04.5'E, 260 m, 9.03.1989: 1 ♂ (MNHN-Py 871).
Koumac, between the mainland and l'Infernet, 13 m, 4-9.10.1993, coll. B. RICHER DE FORGES: 1 ♀ (MNHN-Py 870).

REMARKS. — A variable and widely distributed species in tropical and cooler waters of the Southern Hemisphere, possibly a catch-all for an unresolved complex of sibling species.

Achelia nana (Loman, 1908)

Achelia nana - STOCK, 1991b: 161 (refs); 1992, fig. 6c; 1994: 35-36.

MATERIAL EXAMINED. — **New Caledonia**. Nouville, intertidal zone, 29.08.1992, coll. B. RICHER DE FORGES: 2 ♂, 5 ♀, 1 juv. (MNHN-Py 872). — Récif Senez, depth 7 m, 7.09.1992, coll. P. BOUCHET: 1 ♂ (MNHN-Py 873).

REMARK. — Frequently recorded from the Indo-West Pacific, in depths from 0 to 435 m.

Achelia sp.

MATERIAL EXAMINED. — **New Caledonia**. OPÉRATION MONTROUZIER: Touho, SCUBA-diving at sandy island, 7.09.1993, coll. B. RICHER DE FORGES: 1 juv. (MNHN-Py 874).

Family COLOSSENDEIDAE

Genus *COLOSSENDEIS* Jarzynsky, 1870

Colossendeis colossea Wilson, 1881

Colossendeis colossea - FRY & HEDGPETH, 1969: 53-54, figs 7-8 (refs).

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 1075, 15°53.26' S, 167°27.21' E, 956-944 m, 4.10.1994, coll. B. RICHER DE FORGES: 1 spm (MNHN-Py 924). — Stn CP 1076, 15°53.81'S, 167°30.42'E, 1100-1191 m, 4.10.1994, coll. B. RICHER DE FORGES: 1 spm (MNHN-Py 925).

REMARK. — A widely distributed, large-sized, common deep-sea species.

Colossendeis leptorhynchus Hoek, 1881

Colossendeis leptorhynchus Hoek, 1881: 64, pl. 8 figs 3-7. — STOCK, 1978b: 401, 402, fig. 2*l* (redescr. types); 1981c: 454-455; 1983: 299-300; 1986b: 417. — AUSTIN, 1985: 429. — NAKAMURA & CHILD, 1990: 308-309. — CHILD, 1992: 42. — TURPAEVA, 1994: 95.
Colossendeis pennata Pushkin, 1970: 1490-1492, fig. 2.

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 3: stn DW 794, 23°48.35'S, 169°49.10'E, 751-755 m, 26.11.1993, coll. B. RICHER DE FORGES: 1 spm (MNHN-Py 875).
Vanuatu. MUSORSTOM 8: stn CP 992, 18°52.34'S, 168°55.16'E, 775-758 m, 24.09.1994, coll. B. RICHER DE FORGES: 1 spm (MNHN-Py 876).

REMARKS. — Because of its confused synonymy, older records of *C. leptorhynchus* and its look-alike *C. macerrima* may not be reliable. TURPAEVA (1994) suspects that the two are identical.

Recent records from all over the Atlantic, and from the western and eastern Pacific show that *C. leptorhynchus* is a rare, but wide-spread species. Nearest to the New Caledonia are STOCK's (1983) and NAKAMURA & CHILD's (1990) records from the Indonesian/Philippine region.

Colossendeis macerrima Wilson, 1881

Colossendeis macerrima - STOCK, 1994: 39 (refs).

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 990, 18°51.63'S, 168°50.98'E, 980-990 m, 24.09.1994: 1 spm (MNHN-Py 926). — Stn CP 1036, 18°01.00'S, 168°48.20'E, 920-950 m, 29.09.1994: 1 spm

(MNHN-Py 877). — Stn CP 1037, 18°03.70'S, 168°54.40'E, 1058-1086 m, 29.09.1994: 2 spms (MNHN-Py 878). — Stn 1075, 15°53.26'S, 167°27.31'E, 956-944 m, 4.10.1994: 1 spm (MNHN-Py 927). — Stn CP 1080 15°57.30'S, 167°27.73'E, 799-850 m, 5.10.1994: 1 spm (MNHN-Py 928). — Stn CP 1129, 16°00.73'S, 166°39.94'E, 1014-1050 m, 10.10.1994: 2 spms (MNHN-Py 879). — Stn CP 1131, 15°38.41'S, 167°03.52'E, 140-175 m, 11.10.1994: 1 spm (MNHN-Py 880).

REMARK. — Station CP 1131 is very shallow indeed for this bathyal species.

Colossendeis pipetta Stock, 1991

Colossendeis pipetta Stock, 1991b: 164-166, fig. 28.

MATERIAL EXAMINED. — **New Caledonia**. BERYX 11: stn CP 32, 23°38'S, 167°43'E, 420-460 m, 18.10.1992: 1 spm (MNHN-Py 881).

SMIB 8: stn DW 168, 23°37.7'S, 168°42.5'E, 433-450 m, 29.01.1993: 1 spm (MNHN-Py 882). — Stn DW 177, Banc Jumeau Ouest, 23°39'S, 168°00'E, 320-370 m, 29.01.1993: 1 spm (MNHN-Py 883). — Stn DW 178, Banc Jumeau Est, 23°45.1'S, 168°17'E, 400 m, 30.01.1993: 2 spms (MNHN-Py 884). — Stn DW 183, Banc Aztèque, 23°18.3'S, 168°04.9'E, 330-367 m, 31.01.1993: 1 spm (MNHN-Py 885). — Stn DW 186, Banc Aztèque, 23°24.9'S, 168°05.7'E, 57-59 m, 31.01.1993: 1 spm (MNHN-Py 886). — Stn DW 189, Banc Aztèque, 23°17.6'S, 168°05.5'E, 400-402 m, 31.01.1993: 1 spm (MNHN-Py 887). — Stn DW 198, Île des Pins, S.E. south reef, 22°51.6'S, 167°12.4'E, 410-330 m, 1.02.1993: 1 spm (MNHN-Py 888).

BATHUS 3: stn CP 805, 23°41.30'S, 168°01.08'E, 278-310 m, 27.11.1993: 4 spms (MNHN-Py 889). — Stn CP 806, 23°42.31'S, 168°00.52'E, 308-312 m, 27.11.1993: 2 spms (MNHN-Py 890). — Stn CP 811, 23°41'S, 168°15'E, 383-408 m, 28.11.1983: 7 spms (6 spms MNHN-Py 929, 1 spm. ZMA). — Stn CP 812, 23°43.38'S, 168°15.98'E, 391-440 m, 12.11.1993: 2 spms (MNHN-Py 891). — Stn DW 817, 23°42.38'S, 168°15.51'E, 405-410 m, 28.11.1993: 2 spms (MNHN-Py 892). — Stn DW 830, 29°19.75'S, 168°01.45'E, 361-365 m, 29.11.1993: 1 spm (MNHN-Py 893). — Stn CP 831, 23°04.47'S, 166°55.57'E, 650-658 m, 30.11.1993: 1 spm (MNHN-Py 894).

BATHUS 4: stn DW 925, 18°54.55'S, 163°23.75'E, 340-405 m, 7.08.1994: 1 spm (MNHN-Py 930).

REMARKS. — A frequently collected species around New Caledonia, in depths between 270 and 1475 m (upper slope). Station DW 186 (see above) forms an exception, the material coming only from 57-59 m (perhaps contamination of the net used at Stn DW 185?).

Colossendeis sinuosa sp. nov.

Fig. 4

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 3: stn DW 809, 23°39.39'S, 167°58.94'E, 650-730 m, 27.11.1993: 1 holotype (MNHN-Py 895), 2 paratypes (MNHN-Py 896 and ZMA Pa. 202.037).

BERYX 11: stn DW 34, 23°33'S, 167°17'E, 560-570 m, 19.10.1992: 1 ♀ (fragmentary, lacking distal part of proboscis), possibly this species (MNHN-Py 897).

DESCRIPTION OF HOLOTYPE (sex uncertain). — Very similar to *C. pipetta* Stock, 1991b. Ocular tubercle rather tall, pointed; eyes well-pigmented. Proboscis of characteristic shape: in lateral view it is not regularly down-curved (as in *C. pipetta*), but more sinuous.

Palp segments 3, 5, 7, 8, and 9 less elongate than in *C. pipetta*. Tarsus much less elongate, *ca.* 1.5 times as long as propodus (in *C. pipetta* almost twice as long).

Measurements of holotype (mm): Body length (frontal margin cephalic segment to tip abdomen 6.2; width across second crurigers 2.0; length proboscis 7.1. First leg: first coxa 0.9; second coxa 0.9; third coxa 1.0; femur 11.7; first tibia 13.2; second tibia 18.0; tarsus 2.2; propodus 1.5; claw 0.6.

ETYMOLOGY. — The specific name *sinuosa* (Latin for sinuous) has been inspired by the proboscis shape.

REMARKS. — At first, it was thought that these animals were just damaged or regenerated, slightly aberrant specimens. But the presence of three specimens of similar morphology at the same station, plus 1 more specimen at another, but not at any of the numerous other stations, seems to rule this out. Therefore, a new species was

created for the form with the aberrant proboscis, and with slightly different slenderness of the palp segments and of the distal leg segments.

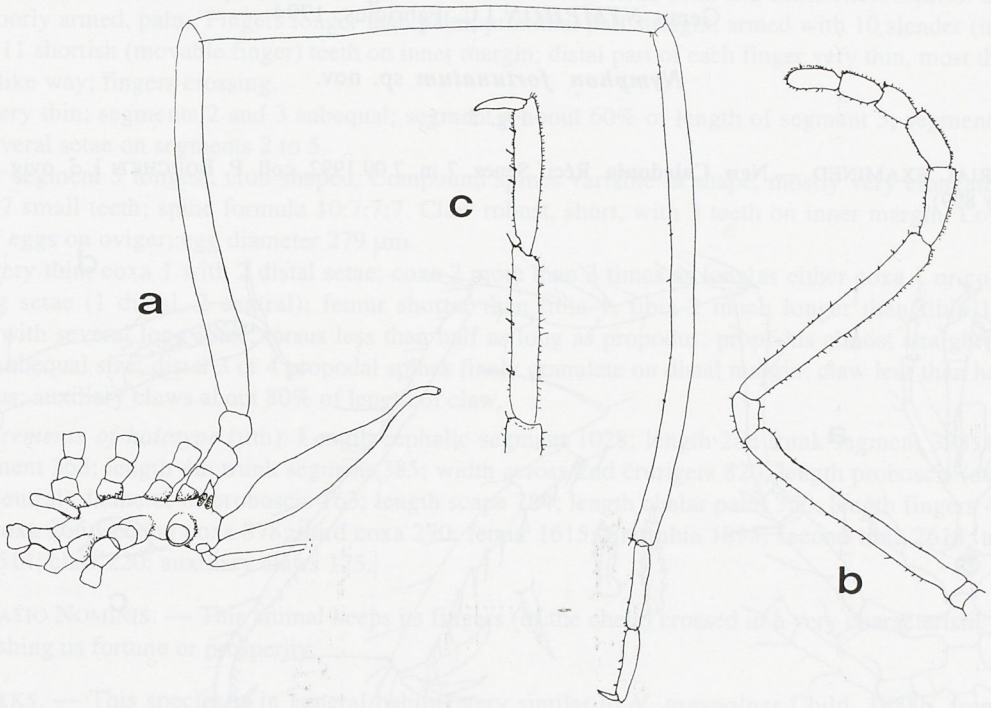

FIG. 4. — *Colossendeis sinuosa* sp. nov. (holotype, BATHUS 3, Stn DW 809): **a**, trunk and first leg, from the right; **b**, palp; **c**, distal segments of first leg.

Genus ***RHOPALORHYNCHUS*** Wood-Mason, 1873

Rhopalorhynchus filipes Stock, 1991

Rhopalorhynchus filipes Stock, 1991b: 161-163, fig. 27; 1994: 39.

MATERIAL EXAMINED. — **New Caledonia**. MUSORSTOM 5: stn CP 293, 23°09.35'S, 159°30.80'E, 280 m, 11.10.1986: 2 ♂, 2 ♀ (MNHN-Py 898).

REMARK. — Previously described from New Caledonia, and later recorded from Indonesia (Tiger Islands).

Genus ***HEDGPETHIA*** Turpaeva, 1973

Hedgpethia tibialis Stock, 1991

Hedgpethia tibialis Stock, 1991b: 166-168, figs 29-30. — TURPAEVA, 1993: 22 (text only).

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 4: stn DW 931, 18°55.38'S, 163°24.36'E, 360-377 m, 4.08.1994: 1 spm (MNHN-Py 931).

REMARK. — Previous records were also from New Caledonia.

Family NYMPHONIDAE

Genus *NYMPHON* J.C. Fabricius, 1794

Nymphon fortunatum sp. nov.

Fig. 5

MATERIAL EXAMINED. — **New Caledonia**. Récif Senez, 7 m, 7.09.1992, coll. P. BOUCHET: 1 ♂ ovig. (holotype) (MNHN-Py 899).

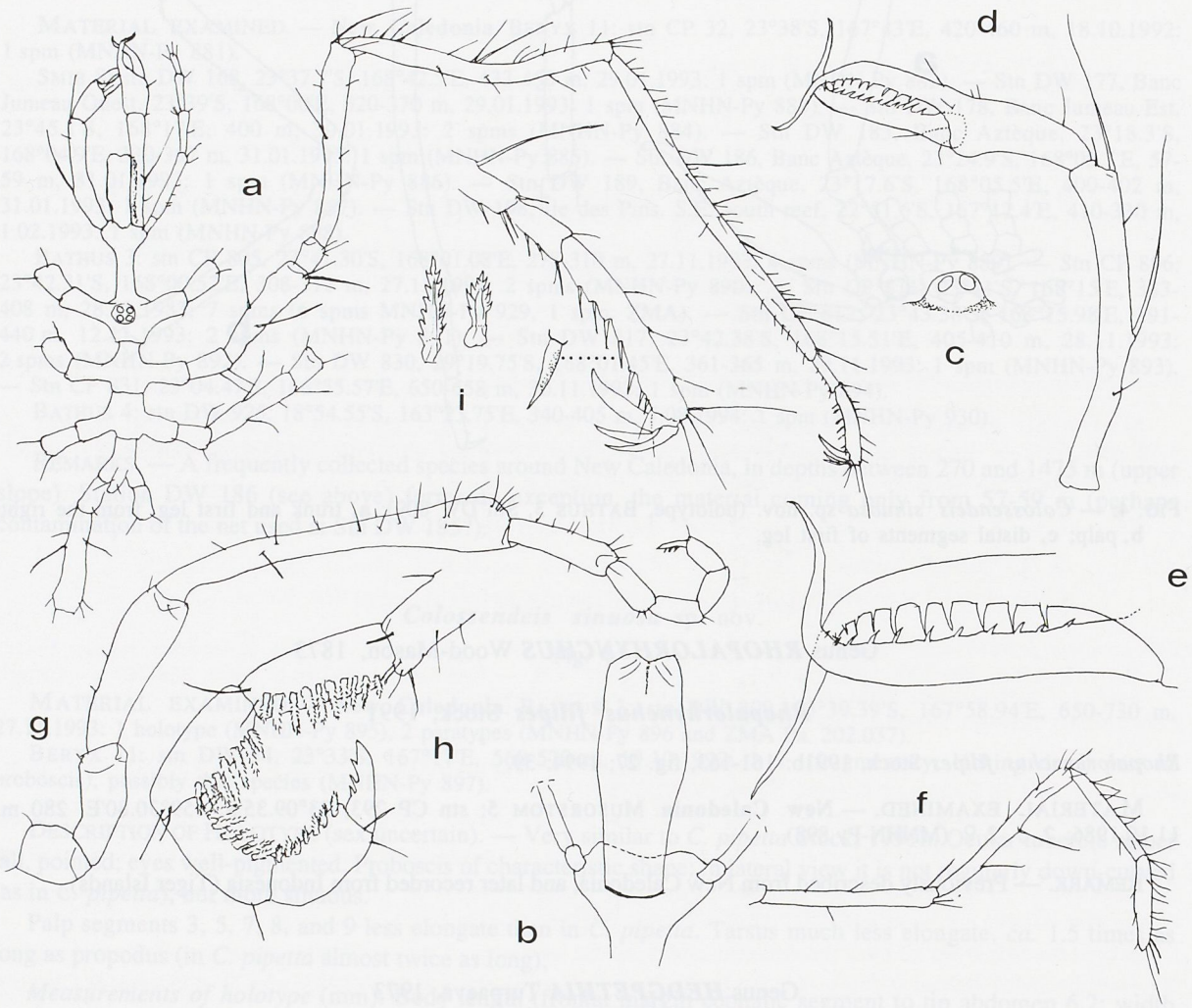

FIG. 5. — *Nymphon fortunatum* sp. nov. (♂ holotype, Récif Senez, New Caledonia): **a**, trunk and leg 2, dorsal; **b**, proboscis, ventral; **c**, ocular tubercle, from the right; **d**, chelifore; **e**, tip of chela; **f**, palp; **g**, oviger; **h**, distal part of oviger; **i**, compound spines of oviger segment 7.

DESCRIPTION. — Body and appendages thin and slender. Crurigers unarmed, longer than trunk diameter, separated by twice their own diameter. Neck slender, anterior part strongly widened; narrow part, in front of ocular

tubercle, parallel-sided; oviger implantation in contact with first cruriger. Ocular tubercle low, rounded; eyes present. Abdomen hardly overreaching 4th crurigers. Proboscis slightly swollen in central part.

Chelifore thin, slender. Scape with 1 long, central seta, 1 long distal seta, and some short setules. Chela with narrow, poorly armed, palm. Fingers longer than palm; proximal part straight, armed with 10 slender (immovable finger) or 11 shortish (movable finger) teeth on inner margin; distal part of each finger very thin, most thread-like, bent in S-like way; fingers crossing.

Palp very thin; segments 2 and 3 subequal; segment 4 about 60% of length of segment 3; segment 5 shorter than 4. Several setae on segments 2 to 5.

Oviger segment 5 longest, club-shaped. Compound spines variable in shape, mostly very elongate; margins with 5 to 7 small teeth; spine formula 10:7:7:7. Claw robust, short, with 3 teeth on inner margin. Low number (4 to 6) of eggs on oviger; egg diameter 279 µm.

Legs very thin; coxa 1 with 2 distal setae; coxa 2 more than 3 times as long as either coxa 1 or coxa 3, with some long setae (1 distal, 2 central); femur shorter than tibia 1, tibia 2 much longer than tibia 1; all long segments with several long setae; tarsus less than half as long as propodus; propodus almost straight; all 7 sole spines of subequal size; distal 3 or 4 propodal spines finely granulate on distal margin; claw less than half as long as propodus; auxiliary claws about 80% of length of claw.

Measurements of holotype (µm): Length cephalic segment 1028; length 2nd trunk segment 398; length 3rd trunk segment 368; length 4th trunk segment 385; width across 2nd crurigers 820; length proboscis (dorsal) 560; greatest (central) diameter of proboscis 163; length scape 784; length chelar palm 350; length fingers 493. Third leg: first coxa 266; second coxa 878; third coxa 270; femur 1615; first tibia 1895; second tibia 2613; tarsus 163; propodus 514; claw 220; auxiliary claws 175.

DERIVATIO NOMINIS. — This animal keeps its fingers (of the chela) crossed in a very characteristic way, as if it were wishing us fortune or prosperity.

REMARKS. — This species is in general habitus very similar to *N. tanypalpes* Child, 1988b, from Aldabra Atoll. Differences were only clear after dissection of the appendages, and pertain to: (1) number of teeth on chelar fingers (10-11 in *fortunatum*, 33-35 in *tanypalpes*); (2) shape of the fingers (S-shaped, strongly curved in *fortunatum*; only slightly curved in *tanypalpes*); (3) number of teeth on oviger claw (3 in *fortunatum*, 10 in *tanypalpes*); (4) relative lengths of palp segments (2 subequal to 3 in *fortunatus*, 2 more than twice as long as 3 in *tanypalpes*).

Nymphon spinifex sp. nov.

Fig. 6

MATERIAL EXAMINED. — **New Caledonia**. BIOCAL: stn. CP 60, 24°01.45'S, 167°08.43'E, 1530 m, 2.09.1985: 1 ♂ (holotype) (MNHN-Py 900).

DESCRIPTION OF HOLOTYPE. — A very spinous and setose, blind *Nymphon*. Trunk completely segmented. Posterior rim of trunk segment 2 with 3 long, mid-dorsal setae, that of segment 3 with 2 such setae. Crurigers 1 and 4 with 1 long, terminal seta; crurigers 2 and 3 with 1 to 3 terminal setae. Oviger implantation in contact with first cruriger. Distance between crurigers slightly more than their own diameter. Frontal part of neck ("crop") enlarged, abruptly merging into narrow posterior part, with 2 minute tubercles on frontal margin. Ocular tubercle and eyes lacking, but 2 minute, pointed tubercles situated at place of ocular tubercle. Abdomen unarmed, somewhat overreaching 4th crurigers, carried horizontally. Proboscis almost perfectly cylindrical.

Chelifore scapes divergent, with several long setae. Chela with many long setae on hand and immovable finger. Fingers longer than hand, regularly curved, tips crossing; movable finger with 7 slender, slightly curved teeth, immovable finger with 8 shorter, slightly curved teeth.

Palp segments 2 and 3 elongate, 2 > 3; segments 4 and 5 short, 4 < 5; many setae on segments 2 through 5.

Oviger (♂): segment 4 club-shaped, with swelling in basal part and dilated at distal end; segment 5 very elongate and slender, distal end swollen; segment 6 setose; segments 7 to 10 small, armed with very low number

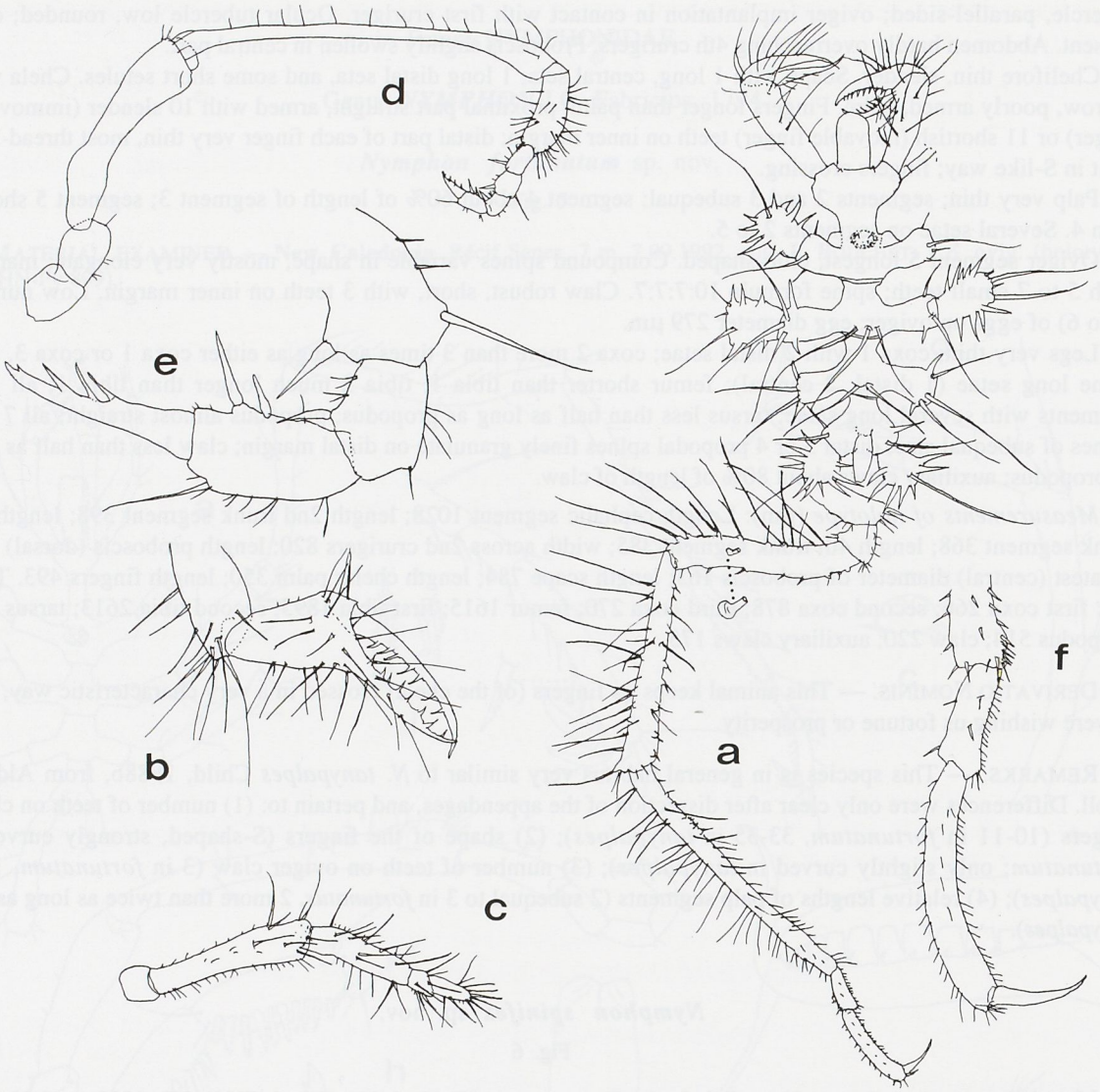

FIG. 6. — *Nymphon spinifex* sp. nov. (♂ holotype, BIOCAL Stn CP 80): **a**, trunk and leg 4, dorsal; **b**, chela; **c**, palp; **d**, oviger; **e**, distal part of oviger; **f**, distal segments of leg 4.

of "special spines" (which are simple, not denticulate), according to formula 1:1:1:2; terminal claw longer than segment 10, almost straight, with 3 larger and 1 smaller endal teeth.

Legs: Coxa 1 with 3 or 4 large spiniferous processes on anterior and posterior margins, and 1 or 2 smaller processes + 1 or 2 long setae on distal margin. Coxa 2 with rounded, low genital process at ventrodistal end. Femur < tibia 1 < tibia 2, with numerous very long setae on dorsal surface, and several spinules, often placed on top of low tubercle on ventral surface. Tarsus 37% of length of propodus. Propodal sole evenly concave, armed with numerous spinules of equal size. Claw less than half as long as propodus, thin. Auxiliary claws present, but very short. Cement gland discharging through one flask-shaped duct at about two-thirds of femur of all legs.

Measurements of holotype (μm): Length first trunk segment 1331; length second trunk segment 745; length third trunk segment 778; length fourth trunk segment (to tip lateral process) 713; width across 2nd lateral processes 2029; length abdomen 647; length proboscis (dorsal) 808; greatest diameter proboscis 454; length scape

1782; length chela 1337. Leg 4: first coxa 466; second coxa 731; third coxa 416; femur 2355; first tibia 2293; second tibia 3427; tarsus 422; propodus 1135; claw 490; auxiliary claws 101.

ETYMOLOGY. — The specific name, *spinifex*, is derived from the Latin words *spina* (= spine) and *ferre* (= to bear), and alludes to the thorny coxa 1 of this species.

REMARKS. — I do not know where to place this species in the large (235 species) genus *Nymphon.* Its setose body, chelifores and legs suggest relationship with the *australe*-group (see CHILD, 1995a) or with the Southern Hemisphere forms formerly united in the (now abandoned) genus *Chaetonymphon.* However, these forms have a male oviger of type II (GORDON, 1932: 27 and table III; 1944: 17), whereas the New Caledonian species has a type Ib.

There are several points of agreement between the new species and *N. adareanum* Hodgson, 1907, from the (Sub)Antarctic, especially in (1) the low number of special oviger spines (< 10), which are simple instead of foliate/denticulate; (2) the smallish oviger segments 7 to 10, and (3) the relative length of the palp segments. However, HODGSON's species has a type Ia (not Ib) male oviger, long auxiliary claws, and a non-setose trunk.

The resemblance to *N. chaetochir* Utinomi, 1971, from the Chatham Rise (E. of New Zealand) is rather superficial. It differs from *N. spinifex* in the possession of denticulate compound spines on the oviger, slenderer distal palp segments, a larger tarsus, and complete absence of auxiliary claws.

Nymphon spinifex is well-characterized by the numerous spiniform processes, in particular on coxa 1, which give it a superficial resemblance to members of the genus *Achelia.*

Another feature of *N. spinifex* is the absence of eyes and of an ocular tubercle. In this respect, it agrees with *N. australe* var. *caecum* Gordon, 1944 considered as a deep-water "subspecies" (1200-3204 m) of the circum-antarctic typical form (CHILD, 1995a: 11), but it was recently recorded by STIBOY-RISCH (1993: 261) from two *"Polarstern"* stations in 158-222 m. This "var. *caecum*" is apparently not closely related to *N. spinifex* (oviger with numerous teeth, coxae without spines, male oviger of type II, etc.).

Family CALLIPALLENIDAE

Genus ***CALLIPALLENE*** Flynn, 1929

Callipallene fallax Stock, 1994

Callipallene fallax Stock, 1994: 47-48, fig. 18.

MATERIAL EXAMINED. — **New Caledonia**. Nouville, intertidal zone, 29.08.1992: 2 ♂ ovig. (1 ♂ MNHN-Py 901, 1 ♂ ZMA Pa. 202.040).

REMARK. — Recently described from 2 females collected in Indonesia (Misoöl and Sangihe islands), between 1 and 18 m.

Family PHOXICHILIDIIDAE

Genus ***PALLENOPSIS*** (subgenus ***PALLENOPSIS*** *s. str.)* Wilson, 1881

Pallenopsis (Pallenopsis) angusta Stock, 1991

Pallenopsis (Pallenopsis) angusta Stock, 1991b: 195-197, figs 47-48; 1994: 49.

MATERIAL EXAMINED. — **New Caledonia**. SMIB 8: stn DW 180, Banc Jumeau Est, 23°47.7'S, 168°18.1'E, 460-525 m, 30.01.1993: 1 ♂ (MNHN-Py 902). — Stn DW 189, Banc Aztèque, 23°17.6'S, 168°05.5'E, 400-402 m,

31.01.1993: 1♂ (MNHN-Py 903). — Stn DW 198, 22°51.6'S, 167°12.4'E, 413-430 m, 1.02.1993: 1 ♂ (MNHN-Py 904).

BATHUS 1: stn CP 701, 20°57.54'S, 165°35.86'E, 302-335 m, 18.03.1993: 1♂ (MNHN-Py 905).

BATHUS 2: stn DW 717, 22°44.02'S, 167°16.58'E, 350-393 m, 11.05.1993: 1 ♂, 1 ♀ (MNHN-Py 906).

BATHUS 3: stn CP 805, 23°41.30'S, 168°01.08'E, 278-310 m, 27.11.1993: 1 ♂, 1 ♀ (MNHN-Py 907). — Stn CP 806, 23°42.31'S, 168°00.52'E, 308-312 m, 27.11.1993: 3 ♂ (MNHN-Py 908). — Stn DW 830, 23°19.75'S, 168°01.45'E, 361-365 m, 29.11.1993: 1♂ (MNHN-Py 809). — Stn CP 847, 23°02.53'S, 168°58.18'E, 405-411 m, 1.12.1993: 2 ♂, 1 ♀ (MNHN-Py 910).

BATHUS 4: stn CP 955, 21°45.71'S, 166°37.47'E, 242-250 m, 11.08.1994: 1 ♂ (MNHN-Py 911).

REMARK. — A large pycnogonid, common on the lower shelf and particularly on the upper slope around New Caledonia, and in Indonesia.

Pallenopsis (Pallenopsis) dentifera Stock, 1983

Pallenopsis (Pallenopsis) dentifera Stock, 1983: 300-304, figs 1-10. — CHILD, 1988a: 23.

MATERIAL EXAMINED. — **New Caledonia**. OPÉRATION MONTROUZIER: Passe de Touho, dredged in 100 m, 8.09.1993: 1 ♀ (MNHN-Py 912).

REMARKS. — The denticulation of the immovable finger of the chela resembles that of the female described by CHILD (1988a).

The species was previously recorded from the lower shelf (143-172 m) on two places in the Philippines. It is new to New Caledonia.

Pallenopsis (Pallenopsis) spinipes Carpenter, 1907

Pallenopsis (Pallenopsis) spinipes - STOCK, 1994: 49-51, fig. 19 (refs).

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 1001, 18°48.97'S, 168°59.83'E, 150-250 m, 25.09.1994: 1 ♂, 1 ♀ (MNHN-Py 913).

REMARKS. — A widely distributed species of variable morphology, collected between 0 and 300 m in great parts of the Indo-West Pacific (STOCK, 1994).

Pallenopsis (Pallenopsis) virgata Loman, 1908

Pallenopsis (Pallenopsis) virgata - NAKAMURA & CHILD, 1991: 41 (refs). — STOCK, 1991b: 197; 1991c: 223-224.

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 1084, 15°50.29'S, 167°17.48'E, 207-280 m, 5.10.1994: 1 young ♀ (MNHN-Py 914).

REMARKS. — Distributed from Japan, through the Philippines and Indonesia, to New Caledonia. The present record from Vanuatu constitutes an eastward extension of the known range. The species is restricted to the shelf and upper slope.

Genus *PALLENOPSIS* (subgen. *BATHYPALLENOPSIS* Stock, 1975)

Pallenopsis (Bathypallenopsis) juttingae Stock, 1964

Pallenopsis (Pallenopsodon) juttingae Stock, 1964: 46-51, fig. 2a-g. — ARNAUD, 1974: 148-149, figs 3.
Pallenopsis (Bathypallenopsis) juttingae - STOCK, 1975: 1032.
Pallenopsis juttingae - BAMBER & THURSTON, 1995: 139-140.

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 1: stn CP 702, 22°55.97'S, 165°34.67'E, 591-660 m, 18.03.1993: 1 ♂ (MNHN-Py 915).

REMARKS. — This specimen has the propodi of all four legs of similar, *juttingae*, morphology. The remaining characters, such as the shape of the chelae, the setosity of the legs, and the structure of the cement gland aperture, agree likewise with *juttingae*.

The question whether *P. (B.) juttingae* is a synonym of *P. (B.) scoparia* Fage, 1956, is fully open now again. The discovery that the latter could have propodal dimorphism (STOCK, 1988, 1991b) seemingly solved the problem, but propodal dimorphism is lacking in the present specimen from New Caledonia. BAMBER & THURSTON (1995) were also unable to shed new light on the question. A possibility, still to be proved, is that males have a *juttingae* morphology (all legs alike, propodal sole 'normal'), whereas females have a *scoparia* morphology (propodus of legs 1 to 3 with dense brush of sole spinules, that of leg 4 'normal').

P. (B.) juttingae is a bathypelagic species recorded so far only from the Bay of Biscay (STOCK, 1964; ARNAUD, 1974), but its look-alike *P. (B.) scoparia* is known from deeper waters in all three major oceans, including the New Caledonian region (STOCK, 1991b).

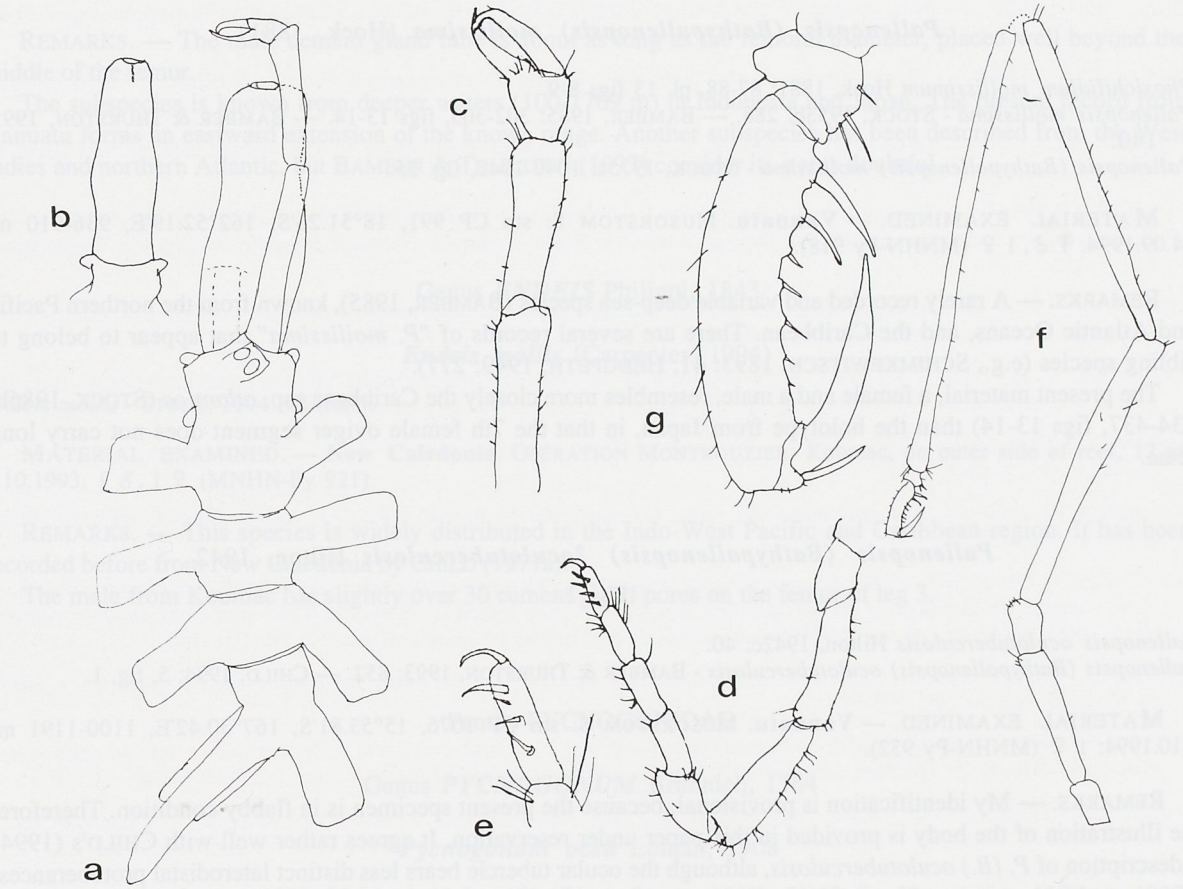

FIG. 7. — *Pallenopsis (Bathypallenopsis) ?oculotuberculosis* Hilton, 1942, ♀: **a**, trunk, dorsal; **b**, proboscis, ventral; **c**, chelifore; **d**, oviger; **e**, distal part of oviger; **f** leg 3; **g**, distal segments of leg 3.

Pallenopsis (Bathypallenopsis) longirostris Wilson, 1881

Pallenopsis longisrostris Wilson, 1881; 252-253, pl. 4 figs 19-22, pl. 5 figs 24-25. — GILTAY, 1942: 459. — NEEDLER, 1943: 13, fig. 16. — HEDGPETH, 1948: 210-211, fig. 21a-b. — ARNAUD, 1974: 150. — STOCK, 1981c: 462-463, fig. 5 (distinction & synonymy). — ARNAUD & CHILD, 1988: 142.

Pallenopsis (Bathypallenopsis) longirostrum - STOCK, 1975a: 1032.

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 957, 20°33.48'S, 169°35.69'E, 1180-1160 m, 20.09.1994: 1 ♂ (MNHN-Py 916). — Stn CP 1008, 18°53.29'S, 168°52.65'E, 919-1000 m, 25.09.1994: 1 ♂ (ZMA Pa. 202.061). — Stn CP 1082, 15°52.62'S, 167°20.36'E, 540-465 m, 5.10.1994: 1 ♀ (MNHN-Py 917).

REMARKS. — This deep-water species is mainly recorded from the northern Atlantic Ocean. There is one record (ARNAUD & CHILD, 1988) from the Zululand area (Southern Africa). BARNARD (1954: 122) records it, according to ARNAUD & CHILD (1988), under the name of *P. oscitans* (HOEK, 1881) from waters off Cape Point, but TURPAEVA (1991) and STOCK (1994) believe that this material is referable to *P. californica* Schimkewitsch, 1893, and neither to *P. longirostris* nor to *P. oscitans*.

So, it appears that the present records form the first from the Pacific Ocean. *P.(B.) longirostris* belongs to a closely knit group of sibling species. It differs from *P. (B.) safari* Stock, 1984 (Sri Lanka) in the shape of the chela, and from *P. (B.) oscitans* (Atlantic Ocean) in the armature of the 10th oviger segment.

Pallenopsis (Bathypallenopsis) mollissima (Hoek, 1881)

Phoxichilidium mollissimum Hoek, 1881: 87-88, pl. 13 figs 8-9.
Pallenopsis mollissima - STOCK, 1953b: 288. — BAMBER, 1985: 302-305, figs 13-14. — BAMBER & THURSTON, 1995: 140.
Pallenopsis (Bathypallenopsis) mollissima - STOCK, 1975a: 1040-1042, fig. 35.

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 991, 18°51.26'S, 162°52.19'E, 936-910 m, 24.09.1994: 1 ♂, 1 ♀ (MNHN-Py 918).

REMARKS. — A rarely recorded and variable deep-sea species (BAMBER, 1985), known from the northern Pacific and Atlantic Oceans, and the Caribbean. There are several records of *"P. mollissima"* that appear to belong to sibling species (e.g., SCHIMKEWITSCH, 1893: 41; HEDGPETH, 1949: 277).

The present material, a female and a male, resembles more closely the Caribbean ssp. *atlantica* (STOCK, 1986b: 434-437, figs 13-14) than the holotype from Japan, in that the 7th female oviger segment does not carry long setae.

Pallenopsis (Bathypallenopsis) ?oculotuberculosis Hilton, 1942

Fig. 7

Pallenopsis oculotuberculosis Hilton, 1942c: 40.
Pallenopsis (Bathypallenopsis) oculotuberculosis - BAMBER & THURSTON, 1993: 852. — CHILD, 1994: 5, fig. 1.

MATERIAL EXAMINED. — **Vanuatu**. MUSORSTOM 8: stn CP 1076, 15°53.81'S, 167°30.42'E, 1100-1191 m, 4.10.1994: 1 ♀ (MNHN-Py 932).

REMARKS. — My identification is provisional, because the present specimen is in flabby condition. Therefore, the illustration of the body is provided in this paper under reservation. It agrees rather well with CHILD's (1994) redescription of *P. (B.) oculotuberculosis*, although the ocular tubercle bears less distinct laterodistal protuberances. Moreover the Vanuatu specimen differs in the much longer proboscis.

The female oviger (fig. 7d), not illustrated in CHILD's paper, bears a strikingly curved terminal seta or spine, oviger segment 6 (♀) is swollen, and the propodal heel spines are very long (fig. 7g).

There is also some resemblance to *P. (B.) antipoda* Clark, 1972b, but this resemblance might be due to the fact that the holotype of *antipoda* is, like the Vanuatu specimen, a flabby female. At any rate, *antipoda* differs from the present material in the propodal armature, consisting of scarce and strong sole spines, and in the 6th oviger segment (♀), which is slender and elongate. Parenthetically, it should be noted that *antipoda* might be a junior synonym of *P. (B.) pacifica* Hilton, 1942, of which CHILD (1995b) recently has redescribed the holotype.

Measurements of female from MUSORSTOM 8 Stn CP 1076 (mm): Length trunk (frontal margin cephalic segment to tip abdomen) 4.7; width across 2nd crurigers 3.0; length abdomen 2.6; length proboscis (ventral) 4.8; greatest diameter proboscis 2.0.

Third leg: femur 8.5; first tibia 9.0; second tibia 12; tarsus + propodus 2.3.

Pallenopsis (Bathypallenopsis) t. tydemani Loman, 1908

Fig. 8

Pallenopsis (Bathypallenopsis) t. tydemani - STOCK, 1994: 53 (refs).

MATERIAL EXAMINED. — **Indonesia**. KARUBAR: stn CP 91, Tanimbar Island, 08°44'S, 131°05'E, 884-891 m, 5.11.1991: 1 ♂ (MNHN-Py 919).

Vanuatu. MUSORSTOM 8: stn CP 1127, 15°58.86'S, 166°37.82'E, 1052-1058 m, 10.10.1994: 1 ♂ (MNHN-Py 920).

REMARKS. — The male cement gland tube is about as long as the femoral diameter, placed well beyond the middle of the femur.

The subspecies is known from deeper waters (100-1709 m) in Indonesia and Japan. The present record from Vanuatu forms an eastward extension of the known range. Another subspecies has been described from the West Indies and northern Atlantic, but BAMBER & THURSTON (1993) consider its status doubtful.

Genus *ENDEIS* Philippi, 1843

Endeis mollis (Carpenter, 1904)

Endeis mollis - STOCK, 1994: 68 (refs).

MATERIAL EXAMINED. — **New Caledonia**. OPÉRATION MONTROUZIER: Koumac, on outer side of reef, 12 m, 7.10.1993: 1 ♂, 1 ♀ (MNHN-Py 921).

REMARKS. — This species is widely distributed in the Indo-West Pacific and Caribbean region. It has been recorded before from New Caledonia by CHILD (1977a).

The male from Koumac has slightly over 30 cement gland pores on the femur of leg 3.

Family PYCNOGONIDAE

Genus *PYCNOGONUM* Brünnich, 1764

Pycnogonum occa Loman, 1908

Pycnogonum occa Loman, 1908: 35-36, pl. 12 figs 171-174. — STOCK, 1968b: 61-62, fig. 22c-e (refs). — CHILD, 1988: 27.

MATERIAL EXAMINED. — **New Caledonia**. BATHUS 4: stn DW 923, 18°51.51'S, 163°24.17'E, 502-470 m, 6.08.1994: 1 ♀ (MNHN-Py 922).

REMARKS. — Apparently of variable morphology. The present specimen agrees better with *P. occa* than with any other *Pycnogonum* species. It appears to be closely related to *P. africanum* Calman, 1938, but differs at first sight by its widely separated crurigers.

P. occa was previously recorded from waters of 567-2470 m in the Philippines, Indonesia, and the Kermadec Trench.

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