A new deep water leucosiid genus (Crustacea, Decapoda, Brachyura)

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ABSTRACT
A new genus, Ancylodactyla n. gen., is established for two deep water species excluded from Praebebalia Rathbun, 1911, P. elongata Zarenkov, 1969, and P. elata Zarenkov, 1994, and for Randallia nana Zarenkov, 1990, provisionally assigned to Randallia s.s. A study of the extensive collection of leucosiid crabs made by French expeditions to the Indo-Pacific Ocean has increased the known geographic and bathymetric ranges of these species. The new genus is distinguished from Praebebalia and from Randallia s.s. in having male abdominal somites 3-6 fused, and the second male pleopod longer than first pleopod. The species are redescribed, fully illustrated, synonymies are discussed, and a key for their identification is provided.

KEY WORDS
Crustacea, Decapoda, Brachyura, Leucosiidae, Indo-Pacific Ocean, deep water, new genus.

RÉSUMÉ
Un nouveau genre de Leucosiidae d’eau profonde (Crustacea, Decapoda, Brachyura).


MOTS CLÉS
Crustacea, Decapoda, Brachyura, Leucosiidae, océan Indo-Pacifique, eau profonde, nouveau genre.
INTRODUCTION

In revising Praebebalia Rathbun, 1911, Galil (2001) excluded 10 of the dozen species assigned to that genus at the time the manuscript was submitted for publication, but was unable to refer the excluded species to existing genera due to the unsettled and confusing leucosiid systematics. Three additional species were described recently: P. fujianensis Chen & Fang, 2000, P. nanhaiensis Chen & Sun, 2002, and P. bidentata Chen & Sun, 2002. In revising Randallia Stimpson, 1857, Galil (2003) restricted the genus to its type species, R. ornata (Randall, 1839), and 12 other species, including R. nana Zarenkov, 1990, pending further revision.

A study of the extensive collections of the MNHN made possible the examination of long series of specimens from across the Indo-Pacific Ocean. A new genus is established for two deep water species excluded from Praebebalia: P. elongata Zarenkov, 1969, and P. elata Zarenkov, 1994; and for Randallia nana Zarenkov, 1990. Two additional species, P. semblatae Chen, 1989, and P. bidentata Chen & Sun, 2002, are synonymized with P. elongata. All material examined is from the MNHN collections.

ABBREVIATIONS

cl. carapace length, measured along the vertical median line of the carapace;
coll. collected by;
MNHNMuséum national d'Histoire naturelle, Paris;
stn station.

SYSTEMATICS

Family LEUCOSIIDAE Samouelle, 1819

Genus Ancylodactyla n. gen.

TYPE SPECIES. — Praebebalia elongata Zarenkov, 1969, by present designation.

ETYMOLOGY. — From the Greek, ankylos, bent, crooked, and dactylos, finger, for the proximally arched cheliped dactyl.

DIAGNOSIS

Carapace subhexagonal, globose, granulate; regions of carapace excluding hepatic region indistinct. Front produced, bilobed, uptilted. Postorbital region concave. Antennula folded diagonally into antennular fossa, basal antennular segment sealing lower portion of fossa. Antenna short, inserted into orbit, between antennular fossa and ventral orbital tooth. Orbital margin bifissured dorsally, V-shaped fossa ventrally, triangulate tooth proximally on ventral margin. Eyes retractible. Anterior margin of efferent branchial channel laminate, projecting, unifissured, visible in dorsal view. External maxillipeds concealing trapezoid buccal opening, granulose; exognath shorter, more slender than endognath; merus nearly as long as ischium.

Anterolateral margin of carapace sinuous, posterolateral margin rounded. Posterior margin prominent, transverse. Intestinal region tumescent.

Chelipeds very long, nearly equal, slender, subcylindrical; longer, more robust, in adult male than in female specimens. Cheliped merus bearing small knob proximally on posterior margin. Propodus somewhat thicker distally; fingers long, their cutting edge unevenly denticulate. Cheliped dactyl of adult male proximally arched.

Pereiopods slender, short; dactyls longer than propodi, lanceolate.

Male abdominal sulcus deep, elongate, nearly reaching buccal cavity. Male abdomen with segments 3-6 fused, narrowing distally, basolaterally inflated, bearing subdistal tooth, telson triangular; its lateral margin bearing medially vertical ridge fitting into suture between thoracic segments 4 and 5. Adult female abdomen with segments 3-6 fused, greatly enlarged, shield-like; telson laciniate. Shaft of male first pleopod flanged on interior margin, elongate, slender, tapering distally. Second male pleopod longer than first pleopod, filiform.

REMARKS

Ancylodactyla n. gen. differs from Praebebalia emend. in having the male abdomen with segments 3-6, rather than 3-5, fused; lateral margins of carapace
rounded rather than medially tuberculate, male second pleopod filiform, longer than first pleopod, rather than short and distally scoop-like; and in lacking spines laterally on the posterior margin of the carapace (Galil 2001). Ancylodactyla n. gen. differs from Randallia s.s. in having the male abdominal somites 3-6 fused, antennular operculum sealing only the lower portion of the antennular aperture, the anterior margin of efferent branchial channel bilobate, and the second male pleopod longer than first pleopod (Galil 2003).

Ancylodactyla elata (Zarenkov, 1994) n. comb. (Figs 1A; 2A)


Material examined. — Indonesia. Kai I., KARUBAR, stn DW 2, 05°47'S, 132°13'E, 209-240 m, 22.X.1991, 1 ♂ 5.5 mm cl.; — Kai I., KARUBAR, stn DW 18, 05°18'S, 133°01'E, 205-212 m, 24.X.1991, 1 ♂ 3.8 mm cl.; 4 ♀♀ 4.3-5.2 mm cl. — Tanimbar I., KARUBAR, stn DW 49, 08°00'S, 132°59'E, 210-206 m, 29.X.1991, 3 ♂♂ 3.4-3.7 mm cl.; 10 ♀♀ 3.5-3.6 mm cl.

New Caledonia. BATHUS 1, stn CP 687, 20°34.62'S, 165°07.30'E, 408-440 m, 16.III.1993, 5 ♂♂ 3.7-4.1 mm cl.; 10 ♀♀ 3.3-3.8 mm cl. — BATHUS 1, stn CP 694, 20°35.88'S, 164°58.28'E, 410-430 m, 17.III.1993, 48 ♂♂ 4.7-5.1 mm cl.; 13 ♀♀ 3.7-4.7 mm cl. — BATHUS 1, stn CP 695, 20°34.59'S, 164°57.88'E, 410-430 m, 17.III.1993, 1 ♂♂ 5.0 mm cl. — BATHUS 2, stn CP 705, 21°02.25'S, 167°26.20'E, 240 m, 21.II.1989, 1 ♂♂ 4.8 mm cl. — Loyalty Islands. MUSORSTOM 6, stn DW 461, 21°06'S, 167°26.20'E, 240 m, 21.II.1989, 1 ♀♀ 4.8 mm cl.

Distribution. — Mozambique, Indonesia, New Caledonia, Loyalty Islands; 206-533 m depth.

Description

Dorsal surface of carapace uniformly paved with minute rounded granules. Frontal lobes subtruncate, slightly sinuuous. Hepatic region slightly tumid. Anterolateral margins medially constricted. Epi-branchial lobe convex, prominent; margin prominently lamellate. Intestinal region inflated, prominent, laterally demarked by shallow grooves. Posterior margin lamellate. Anterior margin of efferent branchial channel narrowly slit medially. Third maxilliped minutely granulate. Chelipeds minutely granulate; merus in adult male about 1.5 as long as carapace; fingers about half as long as propodus. Lower margin of propodus of first pereiopod granulate. Abdominal sternites, somites closely set with minute granules. Subdistal denticle on fused male abdominal segment prominent, medially sulcate. Male first pleopod slightly curved, distally with few marginal setae; second pleopod sinuous, distally curved.

Remarks

Zarenkov’s (1994) description and illustrations of Praebebalia elata emphasize the lamellate lateral margins of the carapace, as well as the prominent intestinal region, the keeled pterygostomian margin, the basio-lateral protuberances on fused male abdominal segment, and the shape of the first and second male pleopods. These findings greatly increase the known range of the species.

Ancylodactyla elongata (Zarenkov, 1969) n. comb. (Figs 1B; 2B)


Praebebalia semblatae Chen, 1989: 192, fig. 31e, pl. 5.1. — Tan 1996: 1023.

Praebebalia bidentata Chen & Sun, 2002: 268, fig. 116.

Material examined. — Philippines. MUSORSTOM 3, stn DR 126, 11°49'N, 121°22'E, 266 m, 4.VI.1985, 1 ♀ 4.6 mm cl. (MNHN B17975), holotype of Praebebalia semblatae Chen, 1989.

Indonesia. Tanimbar I., KARUBAR, stn DW 50, 07°59'S, 133°02'E, 184-186 m, 29.X.1991, 1 ♂ 4.9 mm cl.; 1 ♀ 4.7 mm cl.

New Caledonia. BATHUS 2, stn DW 717, 22°44.02'S, 167°16.58'E, 350-393 m, 11.V.1993, 3 ♂♂ 4.2-5.2 mm cl.; 3 ♀♀ 4.3-4.8 mm cl. — BATHUS 2, stn DW 724, 22°47.85'S, 167°25.77'E, 344-358 m, 11.V.1993, coll. Richer de Forges, 1 ♀.
FIG. 1. — A, Ancylodactyla elata (Zarenkov, 1994) n. comb., ♀ 4.7 mm cl., New Caledonia, BATHUS 1, stn CP 695, 20°34.59'S, 164°57.88'E, 410-430 m, 17.III.1993 (MNHN), dorsal view; B, A. elongata (Zarenkov, 1969) n. comb., ♀ 5.1 mm cl., New Caledonia, BATHUS 4, stn DW 942, 19°04.26'S, 163°27.36'E, 270-264 m, 8.VIII.1994 (MNHN), dorsal view; C, A. nana (Zarenkov, 1990) n. comb., ♂ 9.3 mm cl., New Caledonia, BATHUS 2, stn DW 737, 23°03.42'S, 166°39.97'E, 350-400 m, 13.V.1993 (MNHN), dorsal view.
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5.4 mm cl. — BATHUS 4, stn DW 941, 19°02.03'S, 163°26.93'E, 270 m, 8.VIII.1994, coll. Richer de Forges, 1♂ 4.3 mm cl. — BATHUS 4, stn DW 942, 19°04.26'S, 163°27.36'E, 270-264 m, 8.VIII.1994, coll. Richer de Forges, 5♂ 4.6-5.1 mm cl.; 1♀ 4.0-4.9 mm cl. — BATHUS 4, stn DW 902, 19°00.84'S, 163°14.83'E, 341-351 m, 4.VIII.1994, coll. Richer de Forges, 1♀ 5.6 mm cl.

**Loyalty Islands.** MUSORSTOM 6, stn DW 399, 21°41.80'S, 167°00.20'E, 282 m, 14.III.1989, 1♀ 5.1 mm cl. — MUSORSTOM 6, stn DW 453, 21°00.50'S, 167°26.90'E, 250 m, 20.II.1989, 1♀ 4.8 mm cl. — BATHUS 2, stn DW 730, 23°02.56'S, 166°58.30'E, 397-400 m, 12.V.1993, 1♂ 3.6 mm cl.

**Tonga.** Tongatapu, BORDAU 2, stn CP 1509, 21°05'S, 175°22'W, 456-510 m, 31.V.2000, coll. Bouchet, Warén & Richer de Forges, 1♀ 4.8 mm cl. — Eua I., BORDAU 2, stn CP 1541, 21°15'S, 175°14'W, 319-333 m, 5.VI.2000, coll. Bouchet, Warén & Richer de Forges, 1♀ 5.0 mm cl.; 1♀ 5.5 mm cl. — BORDAU 2, stn CP 1543, 21°16'S, 175°18'W, 471-508 m, 4.VI.2000, coll. Bouchet, Warén & Richer de Forges, 1♀ 5.6 mm cl.; 1♀ 5.5 mm cl. — BORDAU 2, stn CP 1547, 21°24'S, 174°59'W, 349-351 m, 2.VI.2000, coll. Bouchet, Warén & Richer de Forges, 1♀ 3.6 mm cl. — MUSORSTOM 4, stn 171, 18°57.8'S, 163°14.0'E, 435-440 m, 13.VIII.1985, 1♀ 5.2-6.8 mm cl.; 7 juvs (MNHN B18429). — BIOCAL, stn DW 38, 23°00'S, 167°13'E, 360 m, 30.VIII.1985, 1♀ 5.1 mm cl. (MNHN B18429). — MUSORSTOM 5, stn 305, 22°09.27'S, 159°24.42'E, 430-440 m, 12.X.1986, 1♀ 5.5 mm cl. (MNHN B18462). — MUSORSTOM 5, stn 329, 20°22.9'S, 158°46.50'E, 320 m, 15.X.1986, 3♂ 5.2-6.8 mm cl.; 6♀ 5.1-7.1 mm cl. (MNHN B18447). — MUSORSTOM 5, stn 334, 20°06.27'S, 158°47.62'E, 315-320 m, 15.X.1986, 3♂ 5.4-7.5 mm cl.; 8♀ 5.2-6.8 mm cl. (MNHN B18445). —

**REMARKS**

Zarenkov’s (1969) description and illustrations of *Praebebalia elongata* emphasize the bidentate subdistal denticle on the fused male abdominal segment. The detailed illustrations of *P. bidentata* (Chen & Sun 2002) depict the bidentate denticle on the male abdomen, as well as the granulate carapace and cheliped, the keeled lower margin of first pereiopod, and the shape of first and second male pleopods. Examination of Chen’s (1989) single female type specimen of *P. semilatae* (MNHN B17975) left no doubt that it is identical with *A. elongata* n. comb. These findings greatly increase the known range of the species.

**Ancyloactyla nana** (Zarenkov, 1990) n. comb.

(Figs 1C; 2C)

**Randallia nana** Zarenkov, 1990: 220, pl. 3.

**MATERIAL EXAMINED.** — **New Caledonia.** CHALCAL, Coriolis, stn CP 11, 20°04.40'S, 158°47.41'E, 300 m, 22.VII.1984, 4♂ 5.9-6.9 mm cl.; 1♀ 6.9 mm cl. (MNHN B18429). — BIOCAL, stn DW 38, 23°00'S, 167°15'E, 360 m, 30.VIII.1985, 1♀ 7.5 mm cl. (MNHN B18413). — BIOCAL, stn CP 42, 23°46'E, 167°13'E, 380 m, 30.VIII.1985, 10♂ 6.2-8.3 mm cl.; 7♀ 5.6-8.3 mm cl.; 2 juvs (MNHN B18397). — MUSORSTOM 4, stn 171, 18°57.8'S, 163°14.0'E, 425 m, 17.IX.1985, 14♂ 6.3-7.7 mm cl.; 9♀ 6.0-8.7 mm cl.; 4 juvs (MNHN B18395). — MUSORSTOM 4, stn 174, 19°00.3'S, 163°18.5'E, 365 m, 17.IX.1985, 4♀ 6.6-8.1 mm cl. (MNHN B19179). — MUSORSTOM 5, stn 305, 22°09.27'S, 159°24.42'E, 430-440 m, 12.X.1986, 1♀ 5.5 mm cl. (MNHN B18462). — MUSORSTOM 5, stn 329, 20°22.9'S, 158°46.50'E, 320 m, 15.X.1986, 3♂ 5.2-6.8 mm cl.; 6♀ 5.1-7.1 mm cl. (MNHN B18447). — MUSORSTOM 5, stn 334, 20°06.27'S, 158°47.62'E, 315-320 m, 15.X.1986, 3♂ 5.4-7.5 mm cl.; 8♀ 5.2-6.8 mm cl. (MNHN B18445). —

**DESCRIPTION**

Dorsal surface of carapace uniformly paved with minute rounded granules. Frontal lobes subtruncate, slightly concave. Hepatic region slightly tumid. Anterolateral margins mediately constricted. Epibranchial lobe convex, prominent; margin prominently granulate. Intestinal region inflated, laterally demarked by shallow grooves. Posterior margin lamellar. Anterior margin of efferent branchial channel narrowly slit medially. Third maxillipeds minutely granulate. Chelipeds minutely granulate; merus in adult male about 1.6 as long as carapace; fingers 0.7 as long as propodus. Lower margin of propodus of first and second pereiopods in adult males bearing triangular carina medially. Abdominal sternites, somites closely set with minute granules. Subdistal denticle on fused male abdominal segment prominent, mediately sulcate. Male first pleopod slightly curved, distally with few marginal setae; second pleopod sinuous, distally curved.
Fig. 2. — A, Ancylodactyla elata (Zarenkov, 1994) n. comb., 4.7 mm cl., New Caledonia, BATHUS 4, stn CP 946, 20°33.81'S, 164°58.35'E, 386-430 m, 10.VIII.1994 (MNHN), first and second pleopods; B, A. elongata (Zarenkov, 1969) n. comb., 5.1 mm cl., New Caledonia, BATHUS 4, stn DW 942, 19°04.26'S, 163°27.36'E, 270-264 m, 8.VIII.1994 (MNHN), first and second pleopods; C, A. nana (Zarenkov, 1990) n. comb., 9.3 mm cl., New Caledonia, BATHUS 2, stn DW 737, 23°03.42'S, 166°39.97'E, 350-400 m, 13.V.1993 (MNHN), first and second pleopods. Scale bars: 1 mm.
1613, 23°03'S, 175°47'W, 331-352 m, 17.VI.2000, coll. Bouchet, Warén & Richer de Forges, 2 ♂♂ 5.9, 8.0 mm cl. — BORDAU 2, stn CP 1628, 23°22'S, 176°18'W, 400-416 m, 19.VI.2000, coll. Bouchet, Warén & Richer de Forges, 10 ♂♂ 5.4-8.4 mm cl.; 12 ♀♀ 5.4-7.0 mm cl.; 5 juvs. — BORDAU 2, stn CP 1632, 22°01'S, 175°42'W, 613-618 m, 20.VI.2000, coll. Bouchet, Warén & Richer de Forges, 2 ♂♂ 6.3 mm cl. — BORDAU 2, stn CP 1643, 21°05'S, 175°22'W, 487 m, 22.VI.2000, coll. Bouchet, Warén & Richer de Forges, 2 ♂♂ 5.6, 7.1 mm cl.

**DISTRIBUTION.** — New Caledonia, Fiji, Coral Sea, Tonga, Sala-y-Gomez and Nazca ridges; 218-618 m depth.

**DESCRIPTION**

Dorsal surface of carapace uniformly paved with minute flattened granules. Frontal lobes subtruncated, slightly concave. Hepatic region slightly tumid. Anterolateral margins medially constricted. Epibranchial lobe convex, prominent; margin carinate, beaded. Intestinal region slightly inflated, laterally demarked by shallow grooves. Posterior margin lamellar. Anterior margin of efferent branchial channel narrowly slit medially. Third maxillipede minutely granulate. Chelipeds minutely granulate; merus in adult male about 1.5 as long as carapace; fingers 0.7 as long as propodus. Lower margin of propodus of first pereiopod smooth. Abdominal sternites, somites closely set with minute granules. Subdistal denticle on fused male abdominal segment lozenge-shaped. Male first pleopod distally angled distad, margin of proximal lobe setose; second pleopod curved, distally coiled.

**REMARKS**

The description and the illustrations of the specimens identified by Zarenkov (1990) as *Randallia nana* differ from *Randallia s.s.* (Galil 2003) in having the antennular operculum sealing only the lower part of the antennular aperture, the anterior margin of effenter branchial channel bilobate rather than trilobate, and the segments 3-6 of the male abdomen fused, rather than segments 3-5. *Ancylodactyla nana* n. comb. differs from *A. elongata* n. comb. in its finer granulation on the carapace, lozenge-shaped rather than bidentate subdistal denticle on fused male abdominal segment, and distally coiled second male pleopod. It differs from *A. elata* n. comb. in lacking lamellate epibranchial margins. These findings greatly increase the known range of the species.

**KEY TO SPECIES OF ANCYLODACTYLA N. GEN.**

1. Lateral margin of carapace lamellar, intestinal region prominent, prominent basiolateral protuberances on fused male abdominal segment ................. *A. elata* n. comb.
   — Lateral margin of carapace rounded, intestinal region somewhat inflated, basiolateral regions of fused male abdominal segment slightly inflated .......................... 2

2. Dorsal surface of carapace closely set with rounded granules, subdistal denticle on fused male abdominal segment medially sulcate, lower margin of first and second pereiopods in male bearing a denticle, second pleopod sinuous, distally curved ................................................................. *A. elongata* n. comb.
   — Dorsal surface of carapace closely set with fine, flattened granules, subdistal denticle on fused male abdominal segment lozenge-shaped, lower margin of first and second pereiopods in male lacking denticle, second pleopod sinuous, distally coiled ................................................................. *A. nana* n. comb.
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REFERENCES


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