

## A NEW GENUS AND SPECIES OF CIROLANID ISOPOD FROM THE WESTERN INDIAN OCEAN (CRUSTACEA: PERACARIDA)

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*Abstract.*—*Seychellana expansa* new genus, new species, is diagnosed and described from shallow water off the Seychelles Islands, western Indian Ocean. The genus is characterized by the possession of a slender, blade-like frontal lamina, a somewhat reduced pereopod 7, a strongly bipartite epimeron on pleonite 2, a broadly expanded epimeron on pleonite 3, and a ventrally inserted uropod.

Records of the cirolanid isopod fauna of the western Indian Ocean are scattered through a number of publications (see Bruce & Jones 1978, Bruce & Javed 1987, Javed & Yasmeen 1990); the steady stream of new taxa being described, though, would indicate that many new forms await discovery. To date, the majority of records are from coastal intertidal and very shallow waters. Very little is known of the peracaridan fauna of the tropical oceanic islands of the Indian Ocean, as is demonstrated by the present record of a new genus from what is relatively shallow water in the Seychelles, an area that has received less attention than some.

The material was collected in the course of an environmental survey carried out for the government of the Republic of Seychelles, and was submitted to the Smithsonian Institution for identification.

Suborder Flabellifera  
Family Cirolanidae  
*Seychellana*, new genus

*Diagnosis.*—Cephalon lacking rostrum. Frontal lamina slender, blade-like, posteriorly well separated from flattened, non-projecting clypeus. Mandibular molar not reduced; incisor broad. Maxillipedal endite having 2 coupling hooks. Pereopods 1–3 with merus anterodistally somewhat pro-

duced. Pereopods 4–7 ambulatory, articles not markedly flattened, bases lacking natatory setae. Pereopod 7 noticeably shorter and more slender than pereopod 6. Epimeron of pleonite 2 bipartite, consisting of strong acute dorsal and ventral parts. Epimeron of pleonite 3 enormously enlarged, overlapping pleonites 4 and 5 laterally. Pleonite 5 with free lateral margin overlapped by epimeron 3. Endopods of pleopods 3 and 4 with marginal setae, of pleopod 5 lacking setae; all exopods with marginal setae. Uropod inserted ventrally; peduncle produced along mesial margin of endopod; latter fairly slender, lateral margin excavate.

*Type species.*—By present designation, *Seychellana expansa*, new species.

*Discussion.*—The present material essentially resembles a species of *Eurydice*, overlain with a number of specializations. The similarities with *Eurydice* can be seen in the structure of the frontal lamina, clypeus, antennule, pleon, and in the ventral insertion of the uropods. The specializations include the reduced pereopod 7 (one-third shorter and less robust than pereopod 6); the lack of a complete transverse suture on any of the pleopodal rami; the strongly bipartite epimeron of pleonite 2 embracing that of pleonite 3; the enormously enlarged epimeron of pleonite 3 which completely overlaps those of pleonites 4 and 5. While some

of these features appear individually in some other cirrolanid genera, e.g., the slender frontal lamina of *Pseudolana*, *Eurydice*, and *Natatolana*, the plate-like epimera of pleonites 2 and 3 in *Booralana*, the strongly expanded epimeron of pleonite 3 as in *Aatolana schioedtei* (Miers 1884) (see Bruce 1986, fig. 135c; 1993:5, 9), none of the presently recognized genera exhibit all of these specializations, along with a considerably reduced pereopod 7 (compared to pereopod 6), and ventrally inserted uropods.

*Etymology.*—The generic name is a combination of Seychelles, the type locality, and 'lana', the suffix frequently used in cirrolanid taxonomy.

*Seychellana expansa*, new species

Figs. 1–4

*Material.*—Holotype, USNM 252889, ♂ tl 6.6 mm, Paratypes, USNM 252890, ♂ tl 6.3 mm, ♀ tl 4.2 mm, sta C2R1, 6/1/92; ♂ tl 6.0 mm, SEM whole mount, sta C2R2; ♂ tl 6.4 mm, sta C2R3, 6/1/92 (dissected); 4°41'N, 55°33'E, 30 m, Van Veen grab on sandy bottom, off Anse aux Pins, Mahé, Seychelles, coll. J. Elliott, S. Elliott, & P. Harper, 1 Jun 1992.

*Description.*—Male: Body length about 3 times greatest width at pereonite 3. Red-brown chromatophores scattered over most of dorsum of cephalon, pereonites and pleonites, pleotelson dorsally almost unpigmented. Cephalon with anterior margin mesially broadly rounded but lacking distinct rostrum; bases of antennules separating cephalon from frontal lamina; latter anteriorly rounded in ventral view, posteriorly elongate, narrowed, well separated from broadly rounded clypeus. Eyes large, well pigmented. Coxal plates of pereonites 2 and 3 posteriorly truncate, of pereonites 4–6 becoming larger and slightly produced, of pereonite 7 posteriorly acute, much smaller than and almost hidden by coxa of pereonite 6. Posterior margins of pereonites and pleonites finely denticulate. Pleonites 1–5 free;

pleonite 1 short, with very short free epimeron; pleonites 2–4 subequal in length, epimeron of pleonite 2 bipartite, with strong acute dorsal and ventral portions embracing enlarged epimeron of pleonite 3; latter broadly ovate, reaching posteriorly beyond pleonites to protopod of uropod, completely covering short epimera of pleonites 4 and 5; pleonite 5 longer than 4, with posterior margin mesially convex. Pleotelson as long as wide, strongly arched, with finely crenulate posterior margin broadly rounded, bearing 12 short plumose setae; lateral and posterior margins directed ventrally.

Antennular peduncle with articles 2 and 3 each bearing 2 spines on inner (ventral) surface; flagellum consisting of 9 articles, row of 3 or 4 aesthetascs on articles 2–7, penultimate article with single aesthetasc. Antennal peduncle articles 1 and 2 short, articles 3–5 increasing in length distally, article 4 with 2 stout distal spines, article 5 with 5 distal spines; flagellum of 21 articles, reaching posteriorly to level of pereonite 5. Mandibular incisor of 3 cusps on each side, mesial cusp somewhat elongate and acute, 2 lateral cusps rounded; 7 or 8 spines in spine row; molar having row of 20 spines on upper surface; palp of 3 articles, article 1 subequal in length to article 3; article 2 2.5 times length of article 1, bearing 10 setae on distal half of lateral margin; article 3 bearing 13 fringed spines increasing in length distally. Maxilla 1, endopod having 3 stout mesiodistal circumplumose setae; exopod having 8 distal entire, comb, and denticulate setae. Maxilla 2, palp bearing 2 distal elongate setae; exopod with 7 mesiodistal setae; endopod broadly rounded, with several simple and circumplumose setae on mesial margin. Maxillipedal endite reaching base of article 2 of palp, bearing 4 sparsely plumose setae distally, 2 coupling hooks on mesial margin of both left and right appendage; palp articles 2–5 bearing setae on mesial and lateral margins.

Pereopod 1, merus somewhat anterodistally produced, bearing strong terminal

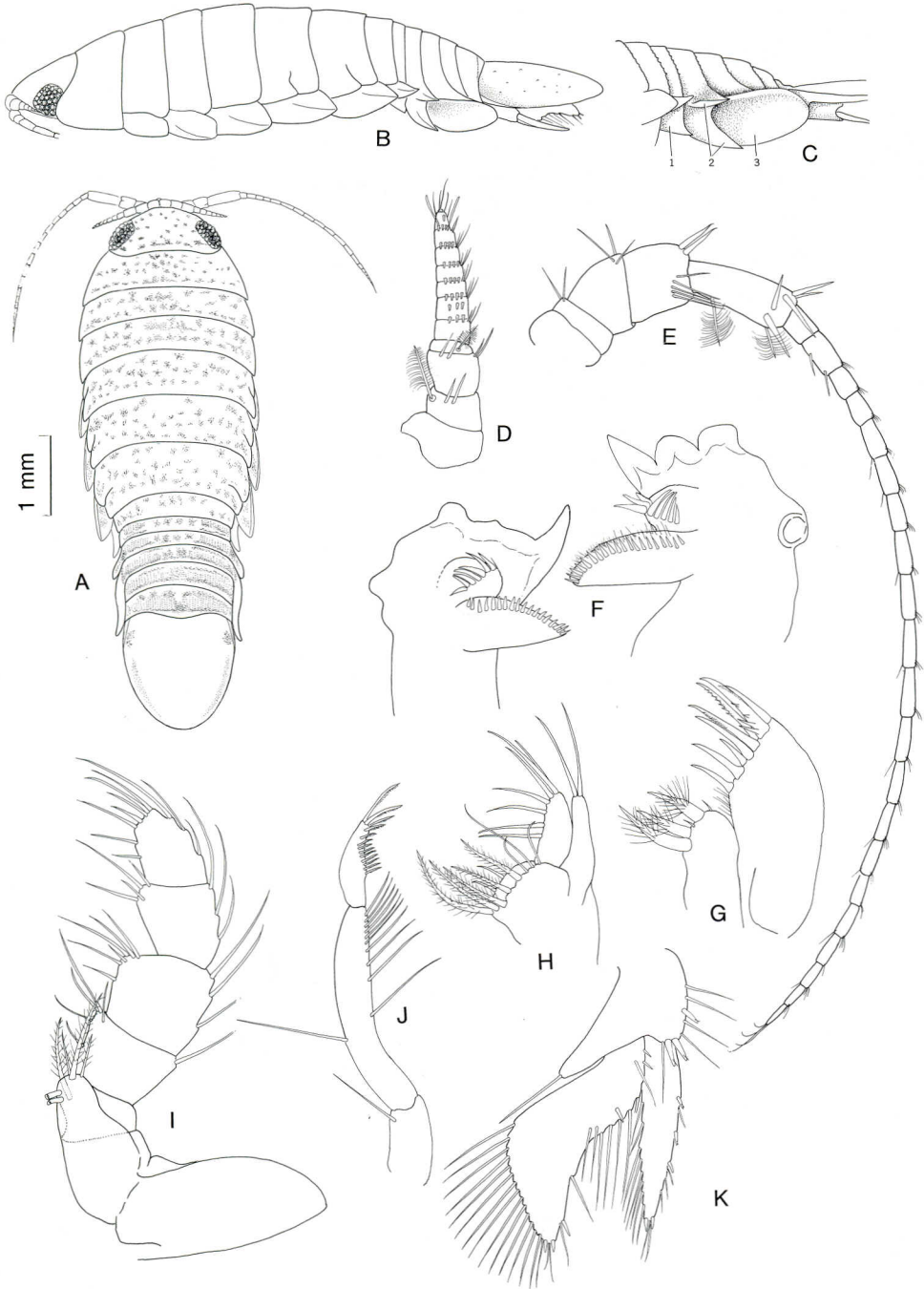


Fig. 1. *Seychellana expansa*. A, Holotype in dorsal view, scale = 1 mm; B, Holotype in lateral view; C, Lateral pleon enlarged, with epimera 1, 2, and 3 indicated. D, Antennule; E, Antenna; F, Left and right mandibles; G, Maxilla 1; H, Maxilla 2; I, Maxilliped; J, Mandibular palp; K, Uropod.

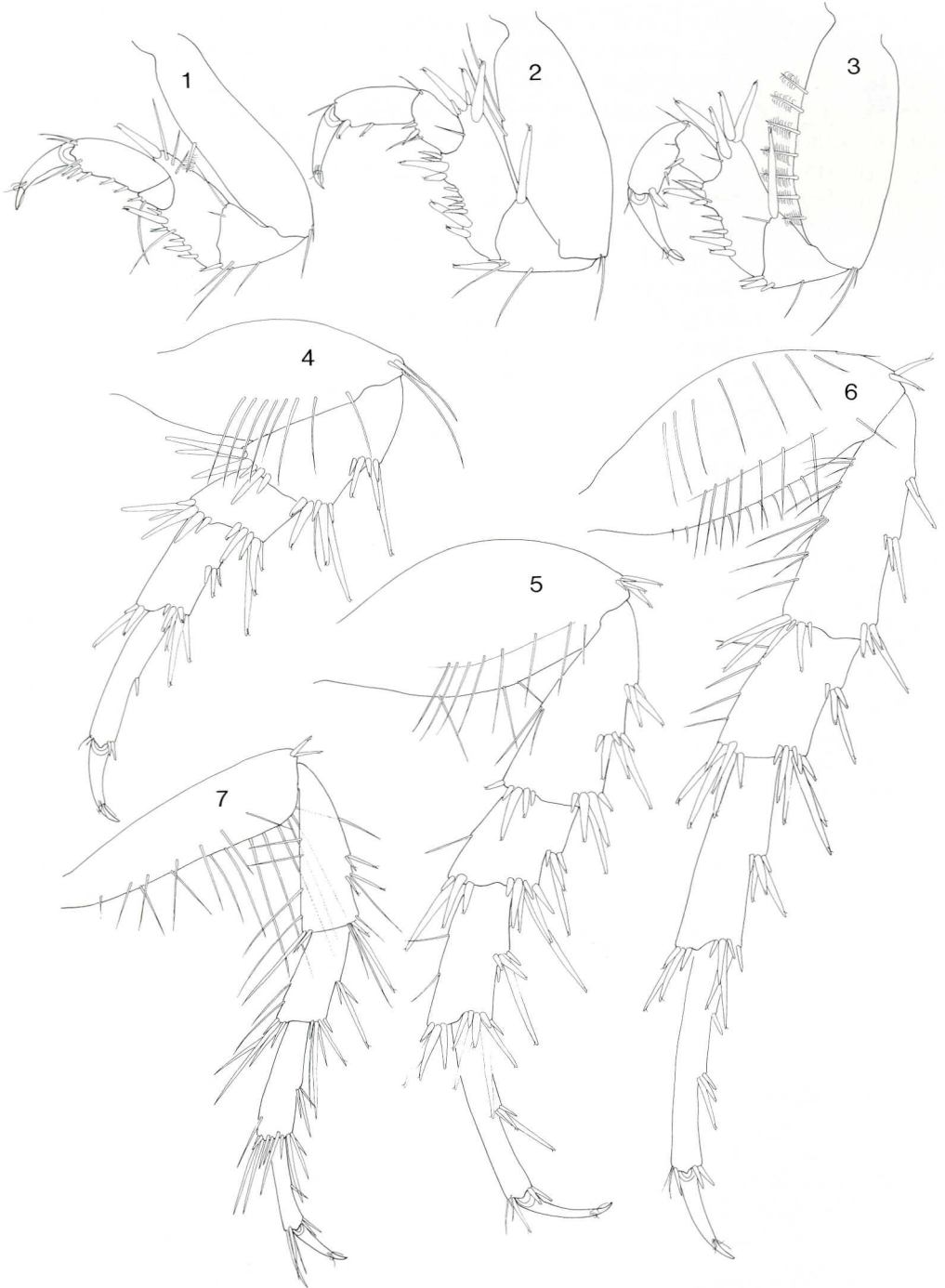


Fig. 2. *Seychellana expansa*. Pereopods 1-7.

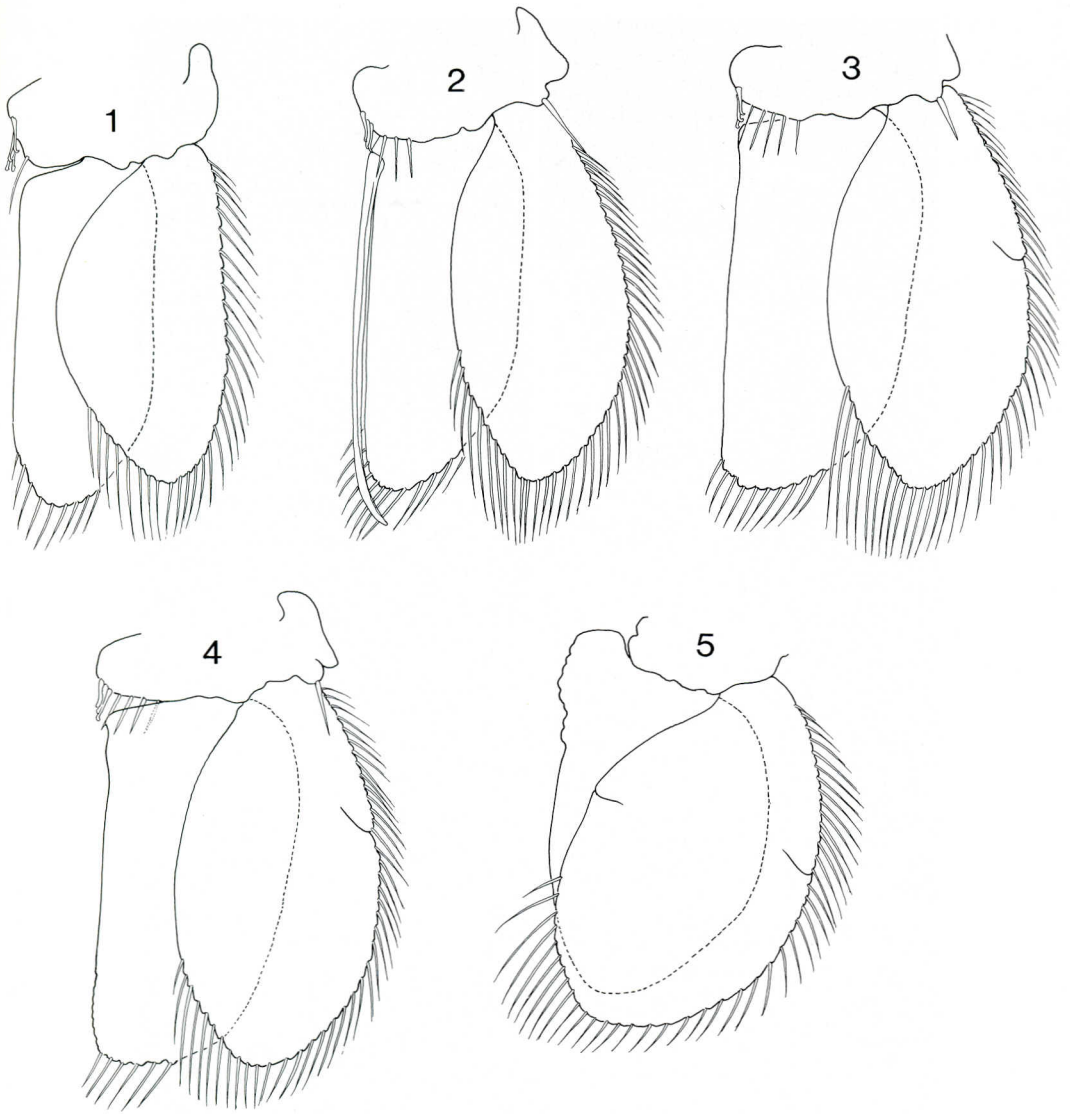


Fig. 3. *Seychellana expansa*. Pleopods 1-5.

spine, posterior margin having single elongate and several short spines; carpus short, triangular, lacking free anterior margin; propodus with 5 short spines on posterior margin; dactylar unguis lacking accessory spine. Pereopod 2, basis with 2 elongate setae on anterior margin; ischium with single strong anteromesial and posteromesial spine; merus with short anteromesial lobe

bearing several spines; carpus having free anterior and posterior margin, with 2 short posterodistal spines; propodus with 2 posterodistal spines. Pereopod 3, basis with row of palmate setae on anterior margin; ischium with few small spines at posterodistal angle, single strong spine at anterodistal angle; merus with several strong anterodistal spines, posterior margin sinuous, bearing

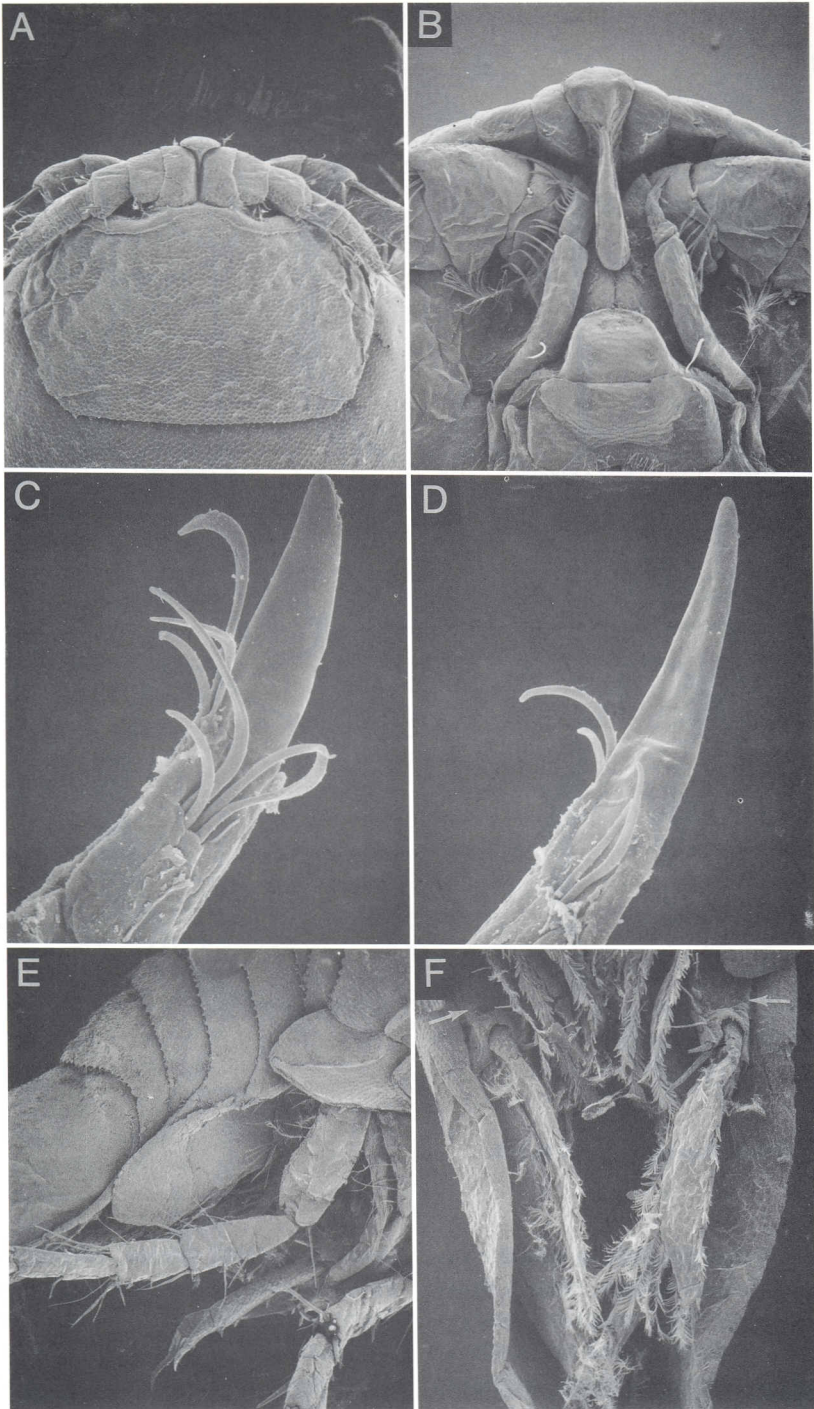


Fig. 4. *Seychellana expansa*. A, Cephalon, antennular bases, and apex of frontal lamina in dorsal view; B, Anterior cephalon in ventral view; C, Dactylar unguis of pereopod 1; D, Dactylar unguis of pereopod 5; E, Pleon in lateral view; F, Pleon in ventral view, showing ventral insertion of uropods (protopods indicated by arrows).

about 7 short and long spines; carpus, propodus, and dactylus as in pereopod 2. Pereopod 4, basis with row of elongate setae on lateral surface; ischium with anterodistal clump of spines, clump of spines at midlength and at posterodistal angle of posterior margin; merus and carpus each with anterodistal and posterodistal clump of spines; propodus slender, elongate, with single spine at about midlength of posterior margin, 2 small posterodistal spines. Pereopods 5 and 6 similar, basis with double row of setae; ischium with 3 clumps of spines on posterior margin, clump of anterodistal spines; merus and carpus with clump of spines at midlength of posterior margin, plus anterodistal and posterodistal clump; propodus with clump of spines at midlength of posterior margin, 2 small posterodistal spines. Pereopod 7 about one-third shorter and less robust than pereopods 5 and 6, basis with double row of setae; ischium with slender spines and setae on anterior and posterior margins; merus with clumps of slender spines at midlength of posterior margin, anterodistal and posterodistal angles; carpus with numerous slender distal spines; propodus with single spine at midlength of posterior margin, 2 spines at posterodistal and anterodistal angles. Penes on sternite 7 well separated low rounded structures.

Pleopod 1, protopod with 4 retinaculae; endopod slightly longer and narrower than exopod, with few distal plumose marginal setae; exopod ovate, with distal third of mesial margin and all of lateral margin bearing plumose setae. Pleopod 2, protopod with 3 retinaculae; copulatory stylet articulating at base of endopod, slender, distally curved and barely surpassing apex of rami; ovate exopod with plumose marginal setae on distal third of mesial margin and all of lateral margin. Pleopods 3 and 4 similar, protopod with 3 retinaculae; endopod with mesial margin straight, few plumose marginal setae distally; exopod ovate, with plumose marginal setae on distal third of mesial margin

and all of lateral margin, latter having incomplete suture forming small notch at about midlength. Pleopod 5, protopod lacking retinaculae; endopod ovate, having rounded proximomesial lobe; exopod ovate, bearing plumose marginal setae on distal third of mesial margin and all of lateral margin, with incomplete suture forming small notch just short of midlength of both mesial and lateral margins. Uropodal protopod inserted ventrally and completely hidden by pleotelson in dorsal view, produced distomesially for about one-third length of endopod; latter with lateral margin excavate, ramus appearing flexed, with numerous setae on distomesial margin, few spines and setae on lateral margin; exopod slender, lanceolate, with 4 short spines and few setae along lateral margin, several setae along mesial margin, apex having 2 short spines.

*Etymology.*—The specific epithet, from the Latin *expansus*, expanded or spread out, refers to the expanded character of the epimeron of pleonite 3.

#### Acknowledgments

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#### Literature Cited

- Bruce, N. L. 1986. Cirolanidae (Crustacea: Isopoda) of Australia.—Records of the Australian Museum, supplement 6:1–240.

- . 1993. Two new genera of marine isopod crustaceans (Ciro lanidae) from Madang, Papua New Guinea.—*Memoirs of the Queensland Museum* 31(1):1–15.
- , & W. Javed. 1987. A new genus and two new species of cirolanid isopod Crustacea from the northern Indian Ocean.—*Journal of Natural History* 21:1451–1460.
- , & D. A. Jones. 1978. The systematics of some Red Sea Isopoda (Family Cirolanidae) with descriptions of two new species.—*Journal of Zoology*, London 185:395–413.
- Javed, W., & R. Yasmeen. 1990. A new species of cirolanid isopod of the genus *Neocirolana* from Pakistan with a review of the genus.—*Crustaceana* 58(1):67–73.
- Miers, E. J. 1884. Crustacea. Isopoda. Pp. 299–311, Report of the zoological collections made in the Indo-Pacific Ocean during the voyage of H.M.S. "Alert," 1881–1882. Trustees of the British Museum (Natural History), London.

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