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***Biremia ambocerca* n. gen., n. sp., the First Record of the Marine Isopod Crustacean Family Bathynataliidae from Australian Waters**

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ABSTRACT. *Biremia ambocerca* n. gen., n. sp. is described and figured; it is distinguished from other bathynataliid genera by lacking operculate first pleopods, and in having biramous uropods. The genus is unique within the Isopoda in having a second endite on the maxilliped. The single specimen was taken off Lady Elliot Island, southern Great Barrier Reef, and is the first record of the family from beyond the south-western Indian Ocean. A new family diagnosis is provided, and a key is given for the 3 monotypic genera of the Bathynataliidae.

BRUCE, N.L., 1985. *Biremia ambocerca* n. gen., n. sp., the first record of the marine isopod crustacean family Bathynataliidae from Australian waters. Records of the Australian Museum 37(5): 295–299.

KEYWORDS: taxonomy, marine Isopoda, Bathynataliidae, Great Barrier Reef.

The family Bathynataliidae Kensley, 1978 was previously known from two monotypic genera recorded only from South Africa (Kensley, 1978, 1979). The occurrence of the family in eastern Australia greatly expands its known range. There are many morphological differences between the Australian specimen and the South African genera, and a new genus is established to accommodate the species. The new genus differs from the other genera in possessing a second endite on the maxilliped, pleonite 1 not visible in dorsal view and uropods with reduced rami. The family diagnosis is here emended.

Family Bathynataliidae Kensley, 1978

Diagnosis. Body dorsoventrally flattened. Cephalon, anterolateral margins expanded; posterior margin fused with pereonite 1. Pereonites 2 to 7 distinct, coxae present on at least pereonites 2 to 6. Pleon with 4 or 5 visible pleonites and large pleotelson; at least 2 pleonites with free lateral margins. Mandible with molar process absent (*Bathynatalia*, *Biremia* n. gen.) or vestigial (*Naudea*), lacinia present on left (*Biremia* n. gen., *Naudea*) or right (*Bathynatalia*) mandible. Maxillule with 10 or 11 stout spines. Maxilla, inner ramus uni- or bilobed. Maxilliped palp 3-articled, endite with distinct basal suture and single large coupling hook.

Pereopod 1 robust, subchelate; pereopods 2 to 6 or 2 to 7 slender. Pleopods lying in chamber formed by thickening of ventrolateral margins of pleotelson; pleopods 1 to 3 with large peduncles, rami setose; pleopods 4 and 5 with small peduncles, rami setation reduced. Uropod insertion subterminal, rami small (smaller than peduncle) or absent.

Type-species. *Bathynatalia gilchristi* Barnard, 1957.

Remarks. The family Bathynataliidae now consists of three genera: *Bathynatalia* Barnard, 1957, *Naudea* Kensley, 1979 and *Biremia* n. gen. As indicated by Kensley (1978, 1979) the family is most closely allied to the Serolidae. The serolid genus *Basserolis* Poore, 1985 further emphasises the similarity of the two families. *Basserolis*, whilst having reduced mouthparts that differ markedly to those of *Serolis* (see Harrison & Poore, 1984), has pereopods and pleopods that are essentially the same as those of *Biremia*.

All serolid genera are easily identified by the fourth pair of pleopods being operculate (Harrison & Poore, 1984; Poore, 1985). In the Bathynatalidae the pleopods are all lamelliform, or the first pair is operculate. In *Biremia* there is an abrupt change in the morphology of pleopods 1 to 3 and 4 and 5, with pleopods 4 and 5 being larger and broader than 1 to 3, a condition approaching that shown by the serolids. Most serolids have a pleon of 3 visible segments and the uropods

lateral in position. However, in *Serolis elliptica* Sheppard, and *Serolis scythei* Lütken (see Moreira, 1974, 1977) the uropods are subterminal, a position similar to that found in bathynataliids. The monotypic serolid genus *Ceratoserolis* Cals has uniramous uropods, while some species of *Serolis* have reduced rami (Menzies, 1962), again a condition similar to that of bathynataliids.

Characters which separate the two families are: pleopods 1 to 3 separated by pleonal tergites in serolids, while in bathynataliids they are mutually adjacent; pleopods laterally enclosed by the pleotelson in the bathynataliids, in serolids they are unenclosed; and mouth parts in the bathynataliids having a large mushroom shaped coupling hook on the maxilliped endite and a large lacinia, both of these being absent from serolids.

Key to Genera of Bathynataliidae

1. Pleopod 1 lamelliform *Biremia* n. gen.
—Pleopod 1 operculate, indurate 2
2. Pereonite 7 with free lateral margins and coxae
. *Bathynatalia*
—Pereonite 7 without free lateral margins and coxae
. *Naudea*

Biremia n. gen.

Diagnosis. Pereonite 7 small, lateral margins overlapped by pereonite 6. Pleonite 1 not visible; pleonites 3 and 4 with free lateral margins. Maxilliped with second endite. Pereopod 7 present. Uropods biramous, with reduced rami.

Type-species. *Biremia ambocerca* n. sp.

Etymology. The name is derived from the Latin word *remus* (oar) combine with the prefix *bi-*, and alludes to the biramous uropods. Gender is feminine.

Remarks. The genus is easily distinguished from others in the family by the first pair of pleopods not being operculate and indurated, in having biramous uropods and in being the only genus with eyes.

Of the other two genera *Biremia* is most similar to *Naudea* in somatic morphology, both genera being similar in appearance to serolids. *Bathynatalia* differs from *Biremia* and *Naudea* in having a nodulose body surface and strongly produced acute coxae. Both *Bathynatalia* and *Naudea* share the apomorphic characters of operculate first pleopods, uniramous uropods and lack of eyes. In *Biremia* these characters show the plesiomorphic condition. It is apparent therefore that *Biremia* occupies a place apart within the family.

The single specimen of *Biremia* was taken at a depth of 150 m, substantially shallower than the other two genera which have been recorded from depths between 800 and 900 m (Kensley, 1978, 1979).

Biremia ambocerca n. sp.

Figs 1-3

Type-material. HOLOTYPE, female, 5.0 mm, northeast of Lady Elliot Island, Bunker Group, Great Barrier Reef, 24°03.7' S, 152°49.4' E, 4 July 1984, depth 150 m, rubble bottom with many disc corals, coll. P.H. Coleman, G. Hangay and S. Keable on H.M.A.S. Kimbla (AM P35697).

Description. Body about 1.3 times as long as wide; widest at pereonites 2 and 3. Cephalon with eyes at posterolateral angles. Pereonites 2 to 4 with median dorsal tubercle near posterior margin of segments; pereonites 5 and 6 short, less than half length of pereonite 4; pereonite 7 almost entirely concealed by pereonite 6. Pleon short, about 10% of total body length. Pleonite 1 not visible, pleonites 2 and 3 fused medially, pleonite 4 with median tubercle; pleonite 5 very short, narrower than anterior margin of pleotelson. Pleotelson slightly longer than wide, anterior two thirds with 7 longitudinal ridges; posterior third abruptly depressed, with 6 longitudinal ridges; posterior margin with 2 subterminal excisions and acute median point.

Antennal peduncle 4-articled, article 2 shorter than 1, article 3 longer than 2, article 4 one third length of article 3, articles 3 and 4 with plumose setae; flagellum with 11 articles, distal 2 articles very small; articles 8-10 each with single aesthetasc. Antenna peduncle article 1 short; articles 4 and 5 subequal in length and longest; flagellum with 10 articles, shorter than peduncle.

Clypeus triangular, anteromedial point produced. Mandible palp article 1 very short, article 2 about 6.5 times longer than 1, article 3 twice as long as 1; right incisor with 5 cusps, left incisor with 4 cusps and transversely broad lacinia with 6 short cusps; both mandibles lack molar process; left mandible spine row with 2 spines, right with 4. Maxillule exopod with 10 stout spines, endopod simple lobe with single small seta. Maxilla entire, exopod and palp each with 2 pectinate spines, endopod with 3 spines. Maxilliped palp article 3 with 2 stout terminal setae; second endite present on dorsal side of basis, with single distal spine.

Pereopod 1 prehensile; dactylus slender, extending to posterior of carpus, base of unguis with prominent slender spine; propodus slightly more than twice as long as wide, palm provided with row of 17 stout spines, simple spines alternating with bifid spines; carpus with 2 spines on posterior margin. Pereopods 2 to 7 similar, all slender, increasing in length from 2 to 6; pereopod 7 shorter and with fewer spines than pereopod 6.

Pleopods 1 to 5 peduncles becoming progressively shorter and narrower. Peduncles 1 to 3 with coupling hooks on medial margins. Pleopod 1 rami narrow; endopod slightly longer than exopod, with 9 plumose setae on lateral and distal margins. Pleopod 2 endopod with 5 plumose setae, exopod with plumose setae along lateral and distal margins. Pleopod 3 endopod tapering to truncate apex with 5 plumose setae, exopod with transverse suture, plumose setae along lateral and distal margins. Pleopod 4 rami basally broad, tapering to apical point; endopod without setae, exopod with

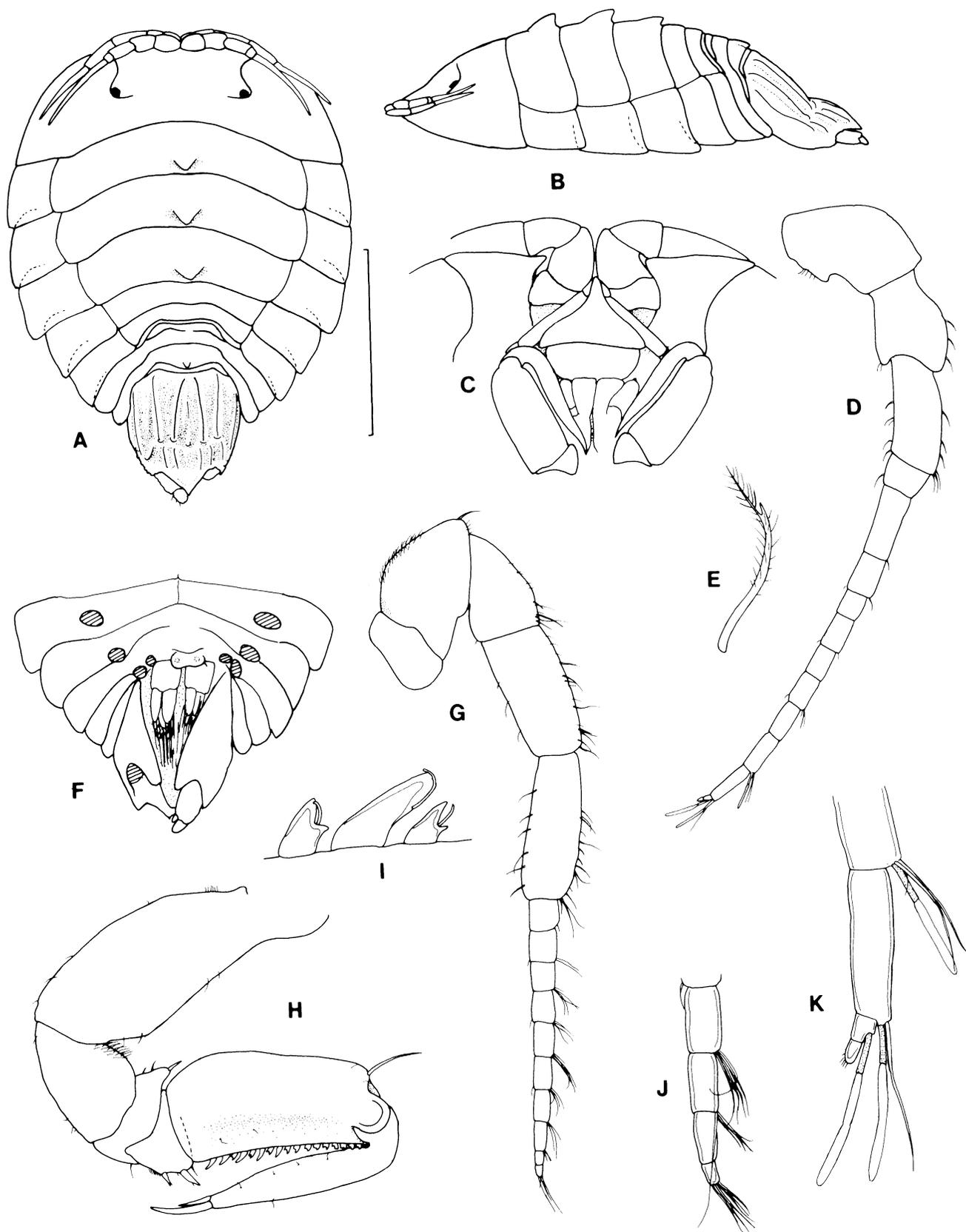


Fig 1. *Biremia amboerca* n. gen. n. sp., holotype. **A**, dorsal view; **B**, lateral view; **C**, clypeal region; **D**, antennule; **E**, seta from antennule peduncle article 3; **F**, ventral view of posterior pereonites, pleon and pleotelson, showing points of insertion of pereopods and thickened margins of pleotelson; **G**, antenna; **H**, pereopod 1; **I**, spines from pereopod 1 palm; **J**, antennal flagellum, terminal articles; **K**, antennule flagellum, terminal articles. Scale line represents 2.0 mm.

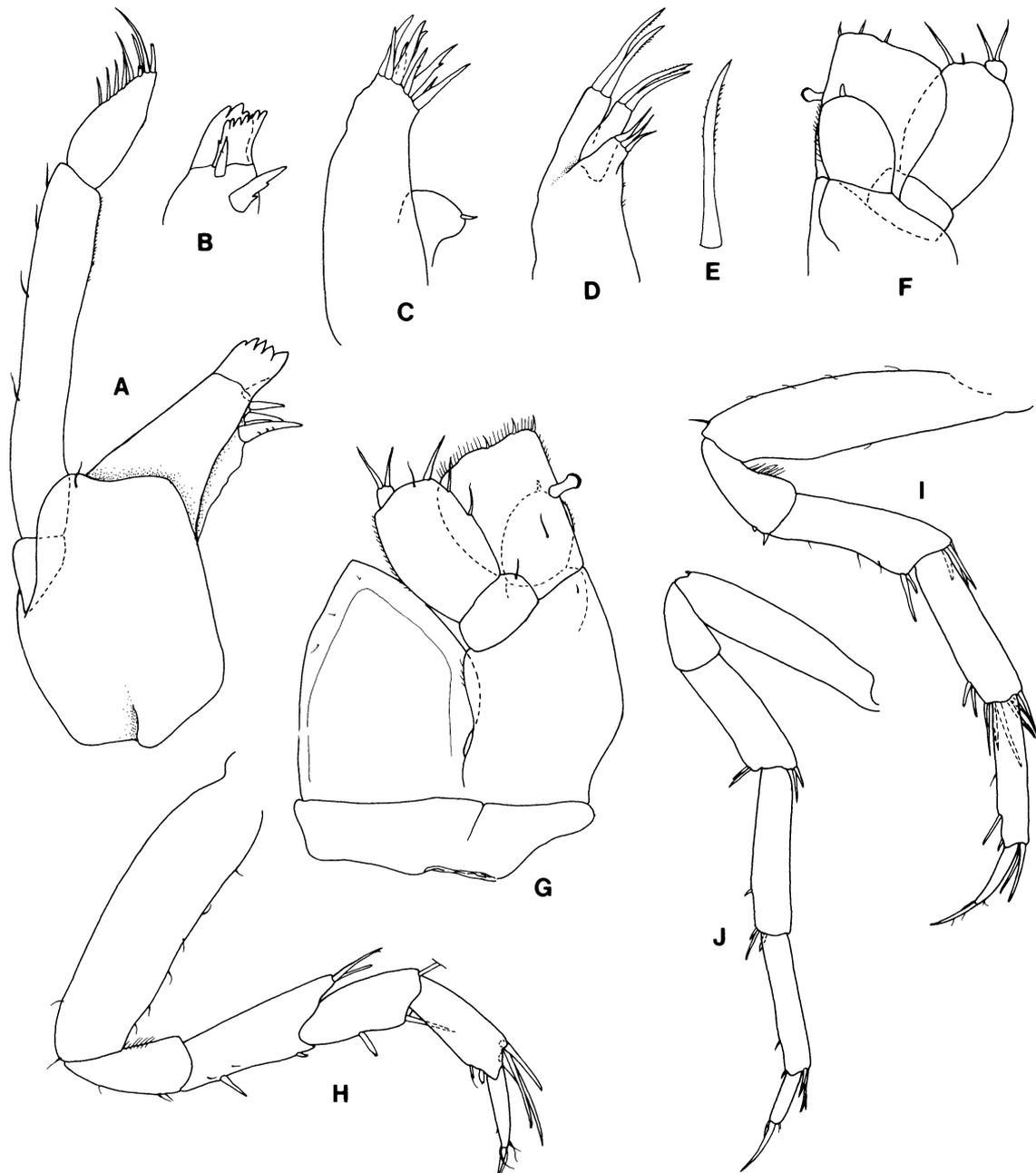


Fig. 2. *Biremia ambocerca* n. gen., n. sp., holotype. **A**, right mandible; **B**, left mandible, incisor, lacinia; **C**, maxillule; **D**, maxilla; **E**, maxilla palp seta; **F**, maxilliped, dorsal aspect; **G**, maxilliped, ventral aspect; **H**, pereopod 2; **I**, pereopod 6; **J**, pereopod 7.

transverse suture and 2 setae on lateral margin. Pleopod 5 similar to 4 but without setae. Uropod peduncle about 3 times as long as wide; rami short, endopod about half as long as exopod.

Etymology. The specific name is derived from the Greek words *ambon* (ridge) and *kerkos* (tail).

Remarks. The shape and sculpture of the pleotelson together with vestigial uropod rami prevents confusion with the other genera and similar looking serolid isopods. The second endite arising from the dorsal side

of the maxilliped basis (present on both maxillipeds) is unique within the family, and also appears unique within the Isopoda.

The single specimen of *B. ambocerca* was taken from a sample rich in isopods that included *Serolis* spp., sphaeromatids, *Gnathia* spp. and valviferans.

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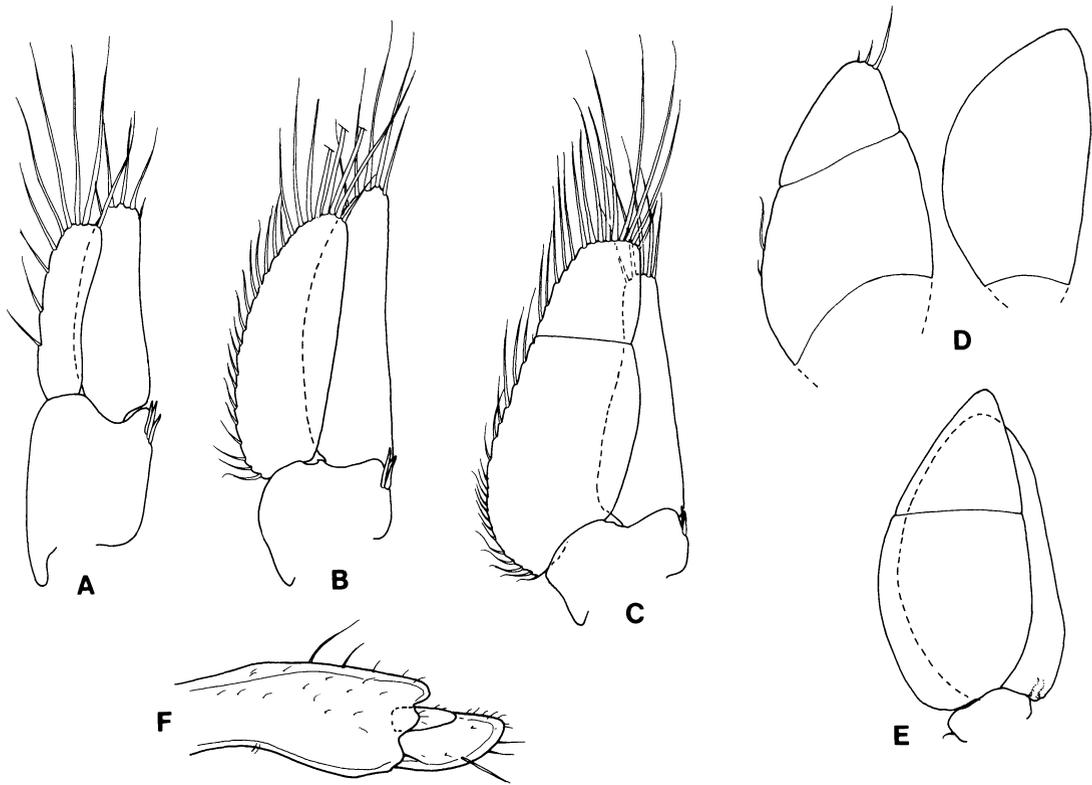


Fig. 3. *Biremia ambocerca* n. gen., n. sp., holotype. A-E, pleopods 1-5 respectively; F, uropod.

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