



Prethura hutchingsae, New Genus, New Species, an Asellote Isopod from the Great Barrier Reef, Australia (Crustacea: Isopoda: Pleurocopidae)

Author(s): Brian Kensley

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**PRETHURA HUTCHINGSAE, NEW GENUS, NEW SPECIES, AN
ASELLOTE ISOPOD FROM THE GREAT BARRIER REEF,
AUSTRALIA (CRUSTACEA: ISOPODA: PLEUROCOPIDAE)**

Brian Kensley

A B S T R A C T

Prethura hutchingsae, new genus, new species, is described from a shallow-water habitat at Lizard Island, Great Barrier Reef, Australia. The species is placed in the Pleurocopidae, and the relationships between several asellote families are discussed.

Literature on Australian asellotes is almost nonexistent after Hale's 1929 handbook, so it is hardly surprising that while collecting small crustaceans at Lizard Island on the Great Barrier Reef, a species of small but striking asellote was found, which could not be placed in a family or genus with any ease. This species is described here. The value of the scanning electron microscope in assisting with the description of small crustaceans is again demonstrated.

Family Pleurocopidae Fresi and Schiecke, 1972

Antiasidae (sic) Menzies, 1962: 59.

Abyssianiridae Menzies, 1956: 12 (part); Sivertsen and Holthuis, 1980: 88.

Emended Diagnosis.—Cephalon broader than long. Eyes (or at least ocular peduncles) present. Mandible with or without palp; molar truncate. Maxillipedal palp segments narrow, less than half width of endite. At least coxae 5-7 visible dorsally. Pereopods 2-7 with one or two claws on dactylus. Pleopod 1 in male not sagittate. Uropod pedunculate, biramous (or with one ramus fused with protopod), inserted laterally, or slightly dorso- or ventrolaterally.

Remarks.—As Sivertsen and Holthuis (1980) correctly point out, the asellote isopod generic name *Antias* Richardson is preoccupied, and they propose the name *Santia* for this genus. Sivertsen and Holthuis (1980) follow Wolff (1962) in regarding the Antiadidae as synonymous with the Abyssianiridae, but Wilson (1980) provides strong argument (with which I concur) for maintaining both families. Thus Pleurocopidae Fresi and Schiecke, 1972, is the name now used for the heterogeneous assemblage of *Santia* Sivertsen and Holthuis, 1980, *Kuphomunna* Barnard, 1914, *Pleurocope* Walker, 1901, and the new genus here described.

***Prethura*, new genus**

Diagnosis.—Antennule of 5 articles. Antennal flagellum of 8 articles. Well-developed eyes on short peduncles. Mandibular palp lacking, molar truncate. Maxillipedal palp segments narrow, less than half width of endite. Coxae of pereonites 5-7 barely visible dorsally. Pereopod 1 prehensile, with single dactylar spine. Pereopods 2-7 biunguiculate, ambulatory. Pleopod 1 ♂ distally twisted, apically acute. Pleopod 2 ♂ enormously expanded. Uropods pedunculate, protopod enlarged, inserted ventrolaterally; inner ramus short.

Etymology.—The generic name derives from a combination of the Greek "pretho," to swell, and "oura," a tail, and refers to the condition in the male pleon.

Type-species.—*Prethura hutchingsae*, new species.

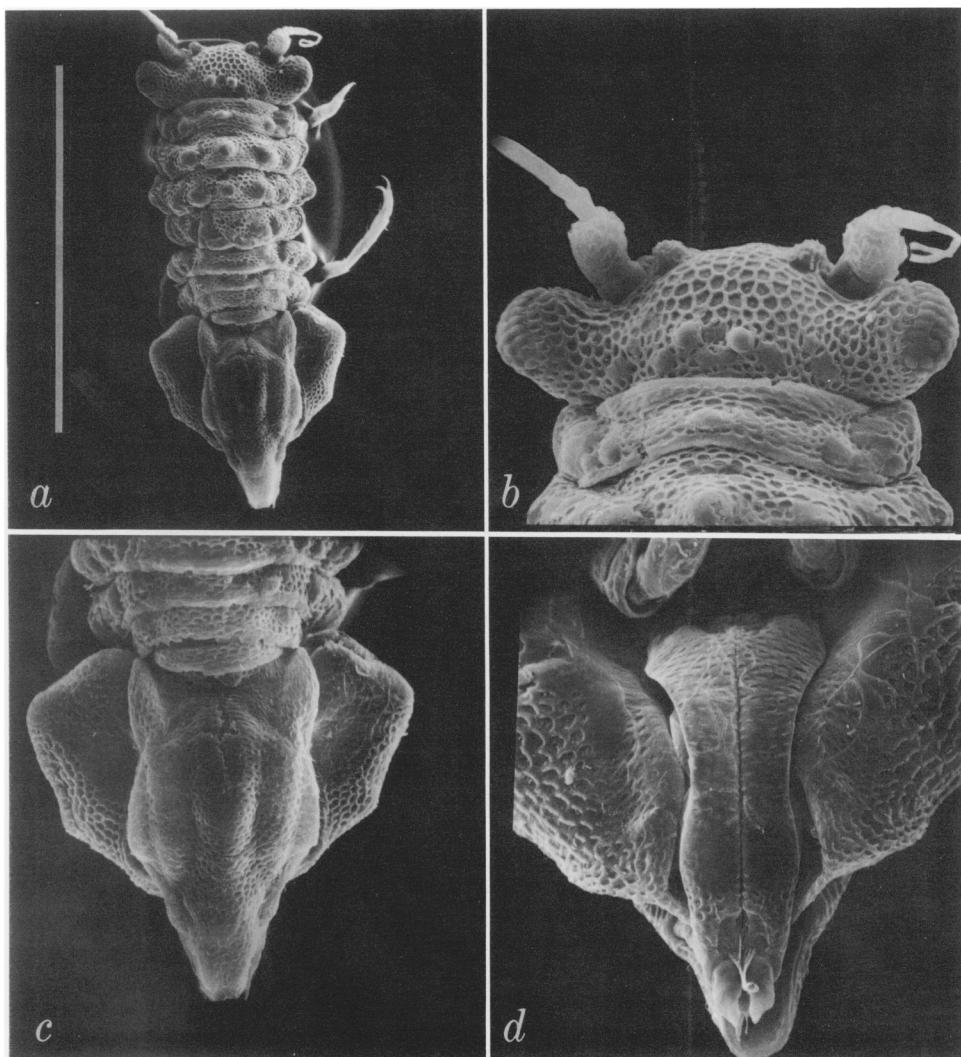


Fig. 1. *Prethura hutchingsae*, new genus, new species, male. a, dorsal view (scale = 1 mm); b, cephalon in dorsal view; c, pleon in dorsal view; d, pleon in ventral view.

***Prethura hutchingsae*, new species**
Figs. 1a-d, 2 a-d, 3 a-m

Material.—Holotype ♂ 1.25 mm, allotype ovigerous ♀ 1.30 mm, paratypes 2 ♂♂ 1.35 mm, 0.95 mm, 2 ♀♀ 1.20 mm, 0.90 mm, National Museum of Victoria; paratypes 2 ♀♀ 1.05 mm, 0.80 mm, 1 ovigerous ♀ 1.00 mm, 1 ♀ 1.00 mm, Queensland Museum; paratypes 2 ♀♀ 1.25 mm, 0.95 mm, 1 ovigerous ♀ 1.25 mm, 1 ♀ 1.05 mm, National Museum of Natural History, USNM 181859.

Locality.—Between Palfrey and South Islands, off Lizard Island, 14°40'S 145°28'E, Great Barrier Reef, Queensland, Australia.

Habitat.—Relatively sheltered reef flat area between two islands, in coarse rubble consisting of coralline algal, coral, and molluscan shell fragments, with scattered *Halimeda* species and encrusting red algae, in 30 cm water depth; collected along with numerous isopods, cumaceans, pycnogonids, and ostracodes.

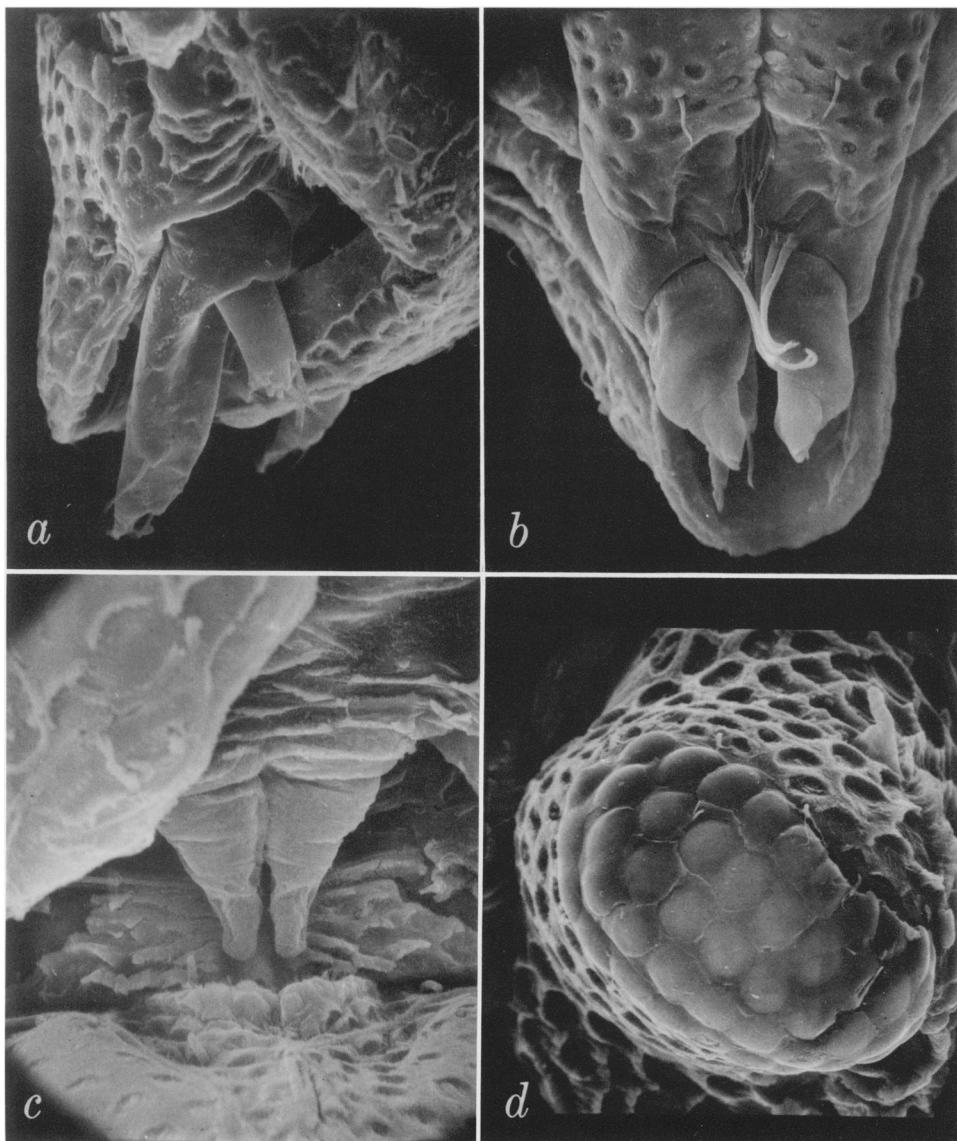


Fig. 2. *Prethura hutchingsae*, new genus, new species, male. a, uropod; b, apices of pleopod 2; c, penile papillae; d, eye.

Description.—Male: Integument moderately indurate, with finely reticulate sculpturing and pitting (Fig. 1a) (barely visible with light microscope) on cephalon, pereon, pleon, mandible, maxilliped, and pleopods 1 and 2. Cephalon (Fig. 1b) with rounded protuberance medial to antennular base; group of low rounded protuberances near posterior margin; ocular peduncle short, cylindrical, eyes with 5 rows of ommatidia (Fig. 2d). Pereonites 1–4 subequal in length and breadth, each with low rounded mediodorsal and lateral prominence; pereonites 5–7 subequal, shorter than preceding pereonites, coxae barely visible dorsally; pereonite

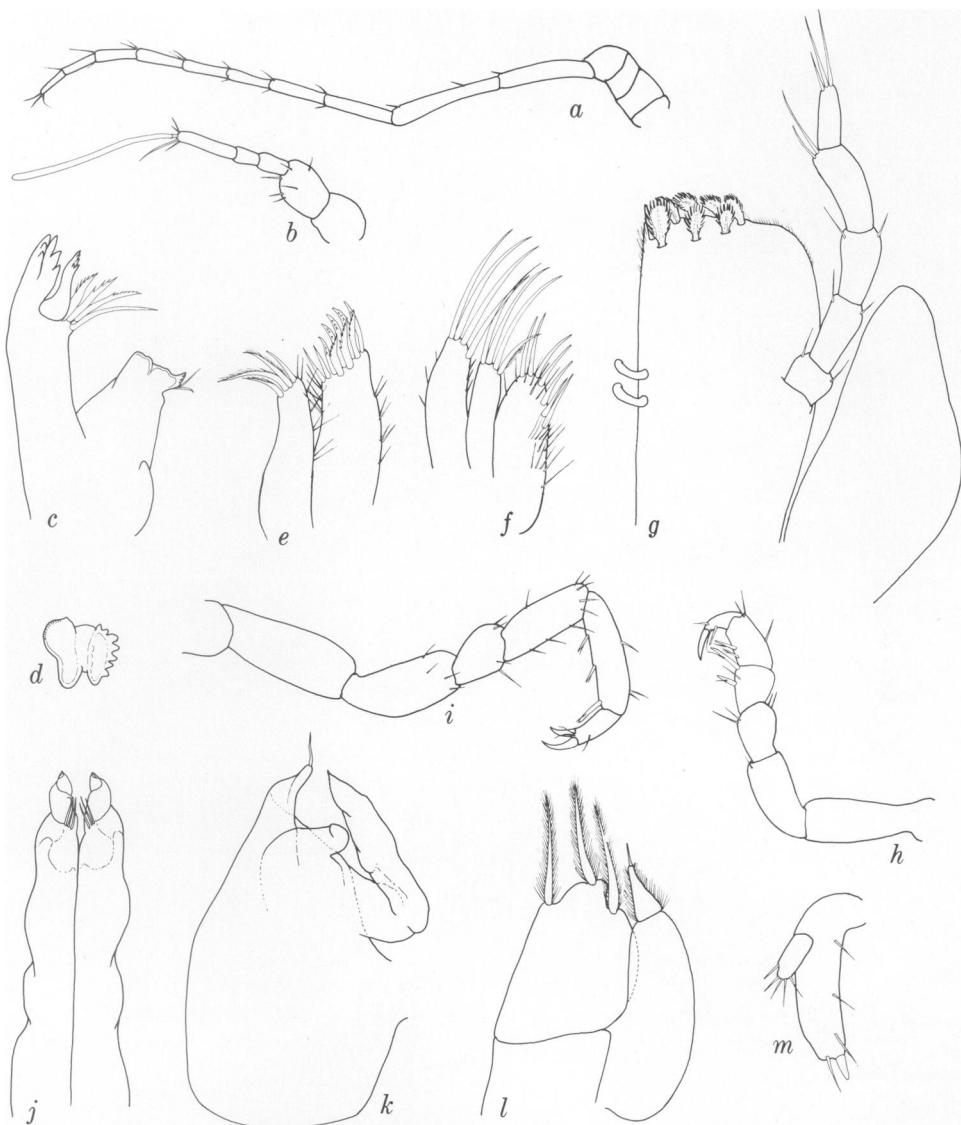


Fig. 3. *Prethura hutchingsae*, new genus, new species, male. a, antenna; b, antennule; c, mandible; d, grinding face of mandibular molar; e, maxilla 1; f, maxilla 2; g, maxilliped; h, pereopod 1; i, pereopod 7; j, pleopod 1; k, pleopod 2; l, pleopod 3; m, uropod.

7 laterally concealed by bases of pleopod 2. Pleon (Fig. 1 c, d) consisting of short free pleonite lacking free lateral areas, plus pleotelson; latter with 2 rounded proximolateral ridges, and medial rounded ridge in distal two-thirds; apically narrowly rounded.

Antennule (Fig. 3b) with 2 proximal broad subequal peduncular segments, 3 narrow distal articles, terminal article slightly longer than 2 subterminal articles together, bearing single elongate aesthetasc. Antenna (Fig. 3a) with 4 short proximal peduncular anteriorly directed segments, 2 distal peduncular segments sub-

equal, slender, elongate; flagellum of 8 dorsally directed articles. Mandible (Fig. 3c) lacking palp; incisor of 6 cusps; lacinia stout, with 4 or 5 cusps; spine row with one simple and 3 dentate spines; molar truncate, grinding face bipartite, medial half with 7 marginal cusps and 2 setae. Maxilla 1 (Fig. 3e) outer ramus with 8 dentate spines, few simple spines; inner ramus with 4 distal fringed setae. Maxilla 2 (Fig. 3f) outer lobes each with 4 elongate spines, inner lobe with 7 spines and several setae. Maxillipedal palp (Fig. 3g) segments relatively narrow; endite broad, with 7 broad fringed spines mediodistally, 2 coupling hooks. Pereopod 1 (Fig. 3h) shorter than following legs; unguis half length of dactylus, latter strongly curved; propodus with 2 sensory spines on posterior margin; carpus with strong posterodistal sensory spine. Pereopods 2–7 (Fig. 3i) biunguiculate; propodus with elongate sensory posterodistal spine and 2 shorter spines on posterior margin. Pereonite 7 ventrally with pair of conical contiguous penile papillae (Fig. 2c) ending very close to base of pleopod 1. Pleopod 1 (Fig. 3j) elongate, strongly dorsoventrally curved; distally having undergone double twist, apically acute. Pleopod 2 (Figs. 2b, 3k) strongly inflated, especially proximally, extending laterally well beyond pereonal and pleonal margins. Pleopod 3 (Fig. 3l) endopod 2-segmented, distal segment with 3 plumose setae; exopod with short triangular distal segment bearing single seta and several fine marginal setules. Uropod (Figs. 2a, 3m) ventrolateral, scarcely visible dorsally, biramous, with short ramus articulating proximally, bearing 5 distal setae; remaining ramus may be elongate protopod (exopod therefore lacking), with 4 setae and strong terminal spine.

Ovigerous female: Cephalon, mouthparts, and pereopods as in male. Pereon roughly lozenge-shaped, widest at pereonite 3. Brood pouch formed by 4 pairs of oostegites, containing about 8 ova. Pleon distally more broadly rounded than in male. Operculum broad proximally, with rounded midventral bulge, narrowed distally.

Etymology.—The species is named for Dr. Patricia Hutchings of the Australian Museum, Sydney, in thanks for her hospitality during my visit in 1980.

Remarks.—The present species provides yet another example of the difficulties encountered in clarifying the taxonomy of several asellote families, including the Munnidae, Pleurocopidae, Abyssaniridae, and Pleurogoniidae.

Wilson (1980) redefined the Munnidae and Pleurogoniidae, discussed the position of the Abyssaniridae and Antiasidae, and provided new criteria for separating families and genera. Hooker (unpublished M.S. thesis) has brought further light to bear especially on the Pleurocopidae.

Prethura lacks both a sagittate pleopod 1 ♂ and an enlarged third article of the antenna; the penile papillae are externally visible, and a large uropodal protopod is present. These features exclude *Prethura* from the Pleurogoniidae as defined by Wilson (1980). As the Abyssaniridae possess a pleopod 1 ♂, penile papillae, and a covered anus as in the Pleurogoniidae, *Prethura* is also excluded from this family. The large uropodal protopod, the general body shape, and the unusual apex of pleopod 1 ♂ exclude *Prethura* from the Munnidae. By elimination, this leaves the Pleurocopidae to be considered.

Santia usually possesses a biramous pedunculate uropod (although the uropod is uniramous in one species), while in *Prethura* only one ramus is articulated; the coxae of pereonites 2–7 are generally visible dorsally in *Santia*, while only those of pereonites 5–7 are visible in *Prethura*.

Kuphomunna has a strongly projecting serrate epistome, which is absent in *Prethura*.

Pleurocope has a single terminal claw on pereopods 2–7, and spinose coxae visible on most pereonites; *Prethura* has biunguiculate pereopods 2–7, and coxae barely visible on pereonites 5–7. *Prethura* further differs from all the above three genera in the twisted apex of pleopod 1 ♂, and in the very inflated pleopod 2 ♂.

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Address: Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.