

extension and sternal process extending to pleopod bases.

Epistome not projecting between antennule bases, not anteriorly produced. Antennule peduncle articles 1 and 2 robust, calcified, article 3 slender, flagellum shorter than peduncle. Antenna peduncle slender, articles 1–3 short, 5 longest; flagellum shorter than peduncle. Mandible incisor prominently tridentate, prominent tridentate lacinia mobilis present on left mandible, spine row with 5 (left) or 7 (right) pectinate spines; molar process prominent with abundant marginal teeth, gnathal surface weakly nodulose. Maxilla mesial lobe with 4 large serrate spines, and 2 small spines; lateral lobe with 10 spines, some of which are serrate. Maxilla entire, setae on lateral and middle lobes very finely serrate. Maxilliped palp articles 2–4 mesial margin forming finger-like lobes; endite distal margin subtruncate with slender circumplumose setae, single smooth spine at distomesial angle.

Pereopods all robust, ambulatory, dactylus with short acute accessory spine; articles generally without long setae, or prominent spines; pereopod 1 shorter and stouter than pereopods 2–7 which are subsimilar.

Penes short, set well apart, not reaching pleonal sternite.

Pleopods 1–3 with PMS on both rami, 4 and 5 without PMS. Pleopod 1 endopod triangular, exopod with truncate distal margin; both rami with longitudinal axes oblique to peduncle; peduncular coupling hooks short and stout. Pleopod 2 rami similar to pleopod 1, but exopod distolateral margin with toothed, distal margin with prominent plumose spines; endopod with appendix masculina in medial position. Pleopod 3 endopod collinear with peduncle; exopod oblique, without transverse suture. Pleopod 4 exopod with small scaled patch on mesial margin, both rami with distinct clearly defined ridges. Pleopod 5 exopod with simple setae on lateral margin, 3 scale lobes distally; both rami with distinct clearly defined ridges. Uropod rami distal margins deeply serrate, not acute or produced, extending slightly beyond pleotelson apex.

Female. Ovigerous females not present in the material examined. Non-ovigerous females differ from males in lacking three acute points on the posterior of the pleotelson, having instead an apically produced, ventrally open notch.

Remarks. The principal differential characters recognized by Baker (1926) and used in the key of Harrison and Ellis (1991) were the produced

unflattened anterior margin to the cephalon, article 1 of the antennule peduncle without an acute process (i.e. distal margin blunt) and the bluntly rounded distal margin of the uropodal exopod (not truncate as stated by Harrison and Ellis, 1991). To these, the following characters can be added: pleopod 1 rami without serrate margins, pleopod 2 exopod distal margin with about 8 prominent spines (rather than the usual PMS), pleopod 3 exopod without transverse suture; uropodal rami with deeply serrate distal margins.

The genus is monotypic.

Exocerceis nasuta (Whitelegge)

Figures 12–15

Cerceis nasuta Whitelegge, 1902: 276, figs 36a–b.

Exocerceis nasuta - Baker, 1926: 272, pl. 48 figs. 10–12.

Exocirceis nasuta - Nierstrasz, 1931: 217 (lapsus?).

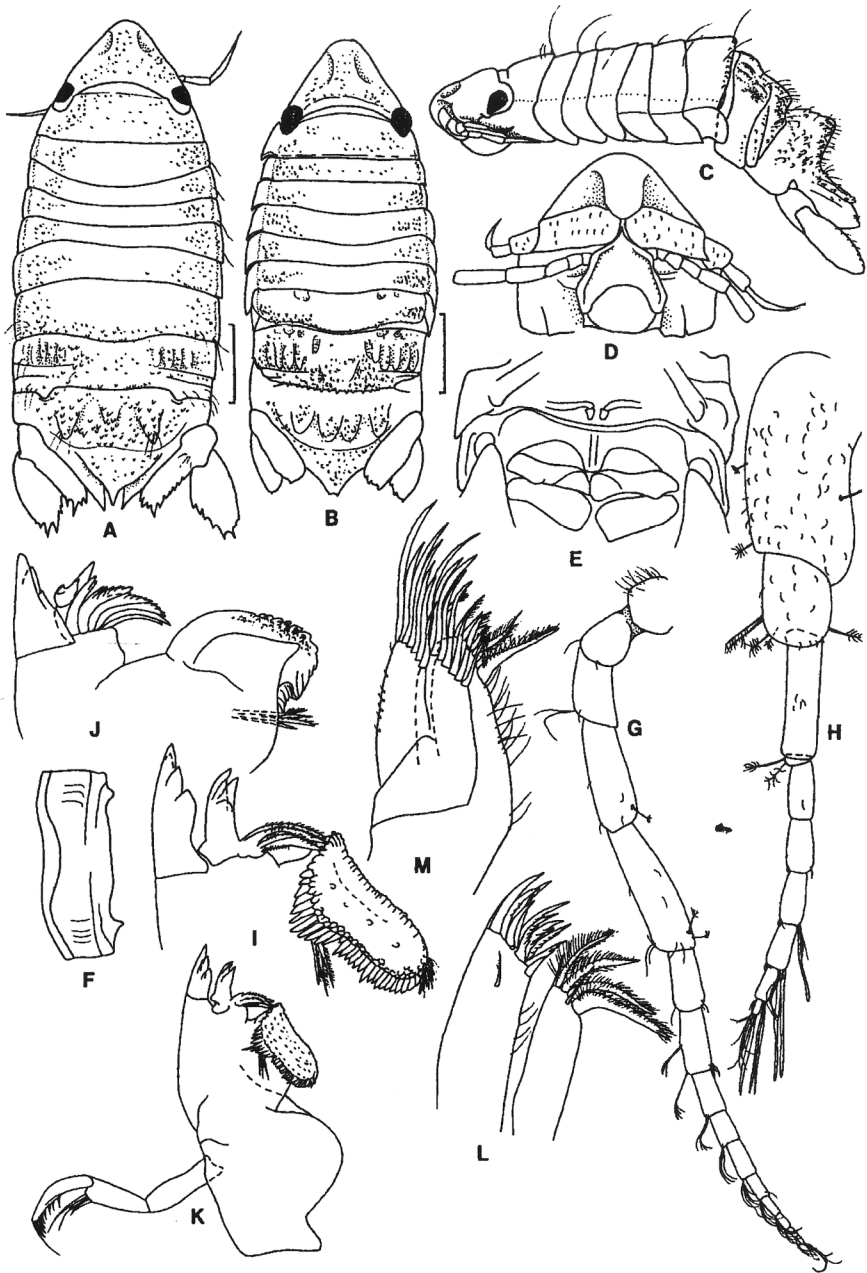
Material examined. Syntypes. 4 ♀ (non-ovig. 4.7, 5.8 mm, 1 dissected, 1 without head), 6 km E of Wattamola, NSW, 34°10'S, 151°11'E, 22 Mar 1898, 99–108 m, mud, E. R. Waite on H.M.C.S. *Thetis* (AM G2279). ♂ (poor condition, + appendages), 2 km E of Crookhaven R., NSW, 34°14'S, 150°48'E, 20–27 m, sand and rock, E. R. Waite on H.M.C.S. *Thetis* (AM G2277).

Other material. Queensland. 1 (crushed), off Moreton I., 27°27'S, 153°39'E, 29, Mar 1969, 77 m (AM P41857).

New South Wales: ♂ (5.6 mm), 6 manca (1.5–1.7 mm, post partum), off Newcastle, 32°53'S, 152°35'E, 15 Aug 1985, 175 m, FRV *Kapala* (AM P41859). 2 ♀ (non-ovig. 3.4, 5.0 mm), E of Long Reef, 33°43'S, 151°46'E, 14 Dec 1985, 174 m, J. K. Lowry and R. T. Springthorpe on FRV *Kapala* (AM P41277). 2 ♂ (5.6 dissected, 6.0 mm), 22 ♀ (non-ovig. 3.4–5.2 mm, mean = 4.3 mm; 25 unmeasured), E of Long Reef, 33°43'S, 151°46'E, 20 Dec 1985, 174 m, J.K. Lowry et al., on FRV *Kapala* (AM P41856, P41858). ♀ (non-ovig. 5.2 mm), off Nowra, 34°59.52'S, 151°05.94'E, 14 Jul 1986, 204 m, coarse shell, G. C. B. Poore et al. (NMV J19154).

Description of male. Body about 2.3 times as long as wide; widest at pereonite 6. Pleon with 4 or 5 sublateral granular longitudinal ridges. Pleotelson with 2 large bilaterally compressed bosses.

Antennule peduncle article 1 longest, 2.3 times as long as article 2, 1.8 times as long as article 3; flagellum with 6 articles, extending to posterior of pereonite 1. Antenna peduncle article 4 1.8 times as long as 3, article 5 1.3 times as long as 4; flagellum shorter than peduncle, with 10 articles, extending to pereonite 2. Mandible palp article 2 with about 4 serrate setae on distolateral margin, article 3 with 10 serrate setae on distolateral margin. Maxilla with 7 and 8 setae on lateral and middle lobes; mesial lobe with 2 prominent and about 8 smaller stout plumose spines setae. Maxilliped endite distal margin with 3 sub-



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 Figure 12. *Exocerceis nasuta*. A, C-F, male 6.0mm. G-L, male 5.6mm (AMP41858), unless otherwise indicated. A, dorsal view; B, 5.8 mm ♀ syntype (AM G2279); C, lateral view; D, frons; E, pleonal sternite and penes; F, pleonal sutures; G, antennule; H, antenna; I, left mandible, distal portion; J, right mandible; K, mandible; L, maxillule; M, maxilla. Scale lines 1.0mm.

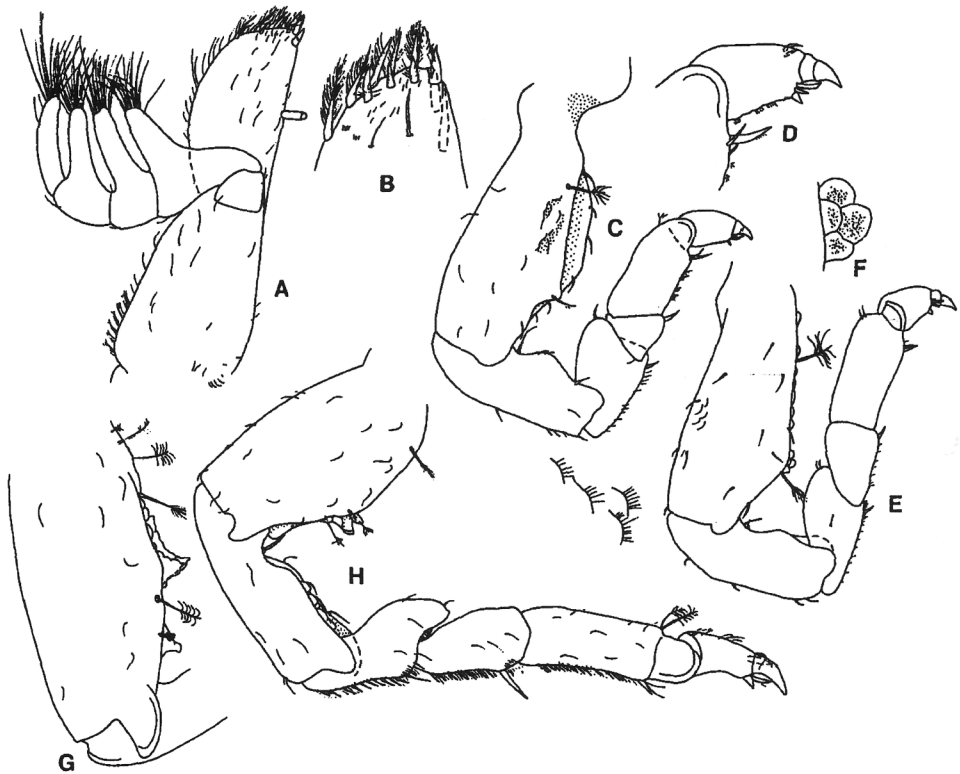


Figure 13. *Exocerceis nasuta*. All figs, male 5.6 mm (AMP41858). A, maxilliped; B, maxilliped endite, detail; C, pereopod 1; D, pereopod 1, dactylus; E, pereopod 2 (plus detail of cuticular scales); F, pereopod 2, cuticular scale, anterior margin of basis; G, pereopod 6, basis; H, pereopod 7.

marginal plumose spines, 4 acute marginal spines and 1 simple and one cactus spine; dorsal distomesial margin with 2 densely plumose spines; endite with about 12–14 setae each on lobes of articles 2–5.

Pereopod 1 robust, propodus and merus subequal in length, carpus short, triangular; dactylus about 0.6 as long as propodus, unguis short, about 0.3 as long as dactylus; accessory unguis small, acute; basis anterior margin with cuticular process; posterior margin with single acute spine at posterodistal angle of merus, carpus and propodus. Pereopod 2 similar to 1 but more slender; posterior margin of basis with epicuticular nodule on anterior margin. Pereopod 3 merus to carpus more elongate than in pereopods 1 and 2; posterior margin of merus, carpus and ischium with scales and setules; pereopods 4 to 7 generally similar to 3, becoming progressively longer.

Penes short, set wide apart, distally rounded. Pleopod exopod with about 26 PMS, endopod with 11.

Pleopod 2 appendix masculina slightly shorter (0.94) than length of endopod mesial margin, straight apex bluntly rounded; exopod with 15 PMS and distally 6 stout plumose spines; distolateral angle with 2 prominent serrations, endopod with 20 PMS. Pleopod 3 exopod with about 32 PMS, endopod with 14. Uropod with prominent simple spines on endopod surface, lateral surface of peduncle and lateral margin of exopod; lateral margin of endopod and mesial margin of exopod with short PMS; both rami with deeply bifid apices.

Female. Similar to male except dorsal surface of pleotelson appears to have 4 indistinct longitudinal ridges and posterior margin formed into



Figure 14. *Exocerceis nasuta*. All figs, male 5.6mm (AMP41858). A-E, pleopods 1-5 respectively; F, uropod.

ventrally open, posteriorly directed tube, lacking the three acute lobes of male. Ovipigerous females not present in material examined.

Colour. Pale cream in alcohol.

Size. Males 5.6-6.0mm, non-ovigerous females 3.4-5.8mm.

Distribution. Off Moreton I., south-eastern Queensland (one record) to central NSW coast between Nowra and Newcastle, at depths between 20 and 204 metres.

Remarks. While superficially similar to some *Cerceis* species, the blunt anterior margin of the cephalon and uropod exopod being bluntly

rounded immediately identifies both the genus and the species, as does the presence of prominent plumose spines on the pleopod 2 endopod,

The description is based primarily on specimens from off Long Reef (AM P41858).

Acknowledgments

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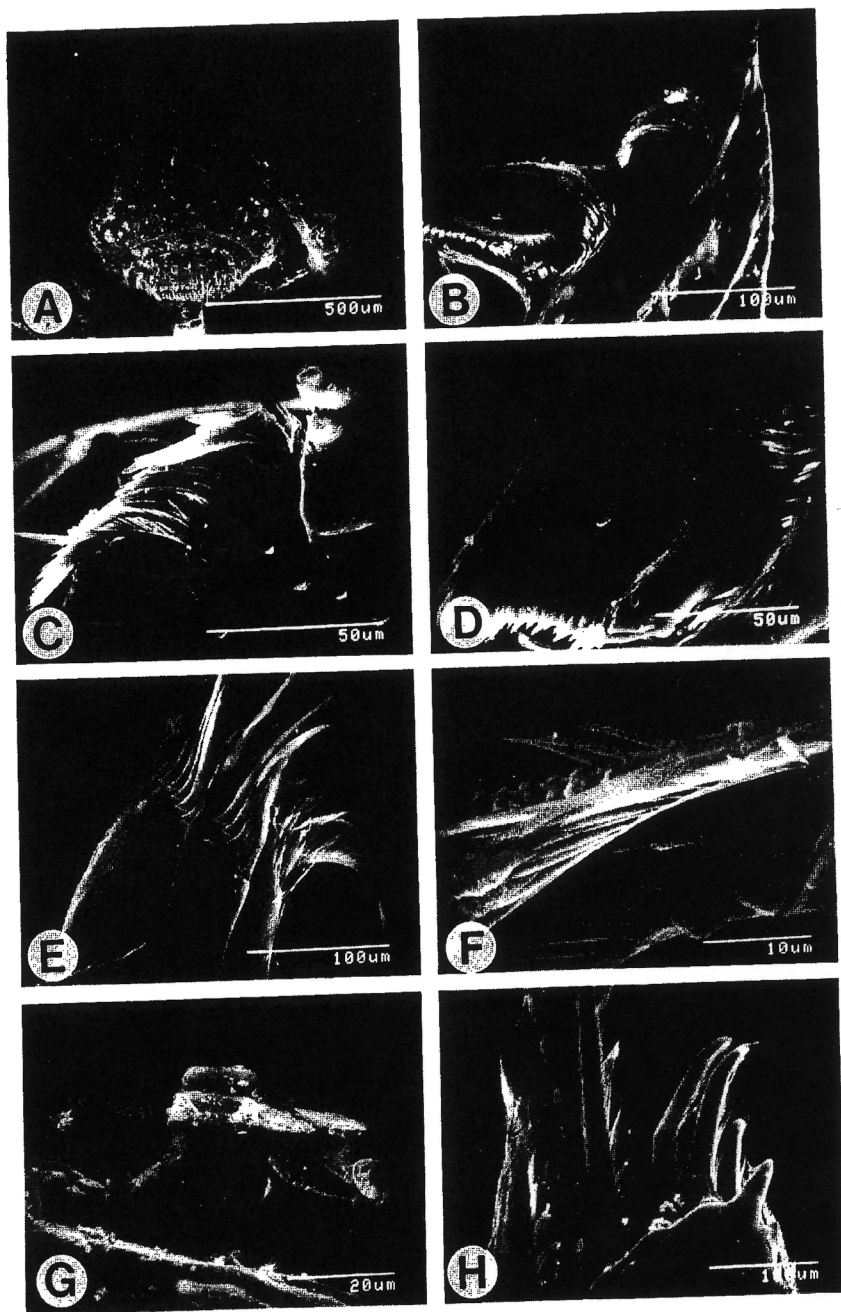


Figure 15. *Exocerceis nasuta*. ♀ (AM P41858). A, frons; B, left mandible, distal portion; C, spine row, left mandible; D, molar, *en face*; E, maxilla; F, spines, maxillule, mesial lobe; G, cuticular scales, pereopod 7; H, pleopod 2, exopod spines.

References

- Baker, W.M., 1908. Notes on some species of the isopod family Sphaeromatidae, from the South Australian coast. *Transactions and Proceedings of the Royal Society of South Australia* 32: 138-162.
- Baker, W.M., 1926. Species of the isopod family Sphaeromatidae, from the eastern, southern, and western coasts of Australia. *Transactions and Proceedings of the Royal Society of South Australia* 50: 247-279, plates 38-53.
- Beddard, F.E., 1886. Report on the Isopoda collected by H.M.S. Challenger during the years 1873-76. Part II. *Report of the Scientific Results of the Voyage of H.M.S. Challenger 1873-76* 17: 1-175.
- Bosc, L.A.G., 1802. Histoire Naturelle des Crustacés, contentent leur description et leur moers. Vol. 2. pp. 1-296 in *Histoire Naturelle de Buffon, classée . . . d'après le système de Linné . . . par R. R. Castel . . . nouvelle édition. (Suite) 1801-1803*. Butta, G.L.L. de Déterville: Paris [n.v.].
- Bruce, N.L., 1992. A new genus of hemibranchiate sphaeromatid isopod crustacean from tropical Western Australia. *Journal of Natural History* 26: 1263-1272.
- Bruce, N.L., 1994. Cassidiniinae (Crustacea: Isopoda: Sphaeromatidae) of Australia. *Journal of Natural History* 28 (in press).
- Ellis, J., 1981. Some type specimens of Isopoda (Flabellifera) in the British Museum (Natural History), and the isopods in the Linnaean collection. *Bulletin of the British Museum of Natural History (Zoology)* 40: 121-128.
- Harrison, K., 1984. The morphology of the sphaeromatid brood pouch (Crustacea: Isopoda: Sphaeromatidae). *Zoological Journal of the Linnean Society* 82: 363-407.
- Harrison, K. and Ellis, J., 1991. The genera of the Sphaeromatidae (Crustacea: Isopoda): a key and distribution list. *Invertebrate Taxonomy* 5: 915-952.
- Haswell, W.A., 1885. A revision of the Australian Isopoda. *Proceedings of the Linnean Society of New South Wales* 9: 1001-1014.
- Iverson, E.W., 1982. Revision of the isopod family Sphaeromatidae (Crustacea: Isopoda: Flabellifera). I. Subfamily names with diagnoses and key. *Journal of Crustacean Biology* 2: 248-254.
- Kussakin, O.G., 1967. Isopoda and Tanaidacea from the coastal zones of the Antarctic and Subantarctic. *Biological Results of the Soviet Antarctic Expedition (1955-1958)* 3: 220-380. [*Issledovaniya Fauny Morei* 4, in Russian]
- Leach, W.E., 1815. A tabular view of the external characters of four classes of animals, which Linné arranged under Insecta; with the distribution of the genera composing three of these classes into orders, etc. and descriptions of several new genera and species. *Transactions of the Linnean Society of London* 11: 306-400.
- Milne-Edwards, A., 1840. *Histoire Naturelle des Crustacés, comprenant l'Anatomie, la Physiologie et la Classification de ces Animaux*. Vol. 3. Librairie Encyclopedique de Roret: Paris. 605 pp.
- Nierstrasz, H.F., 1931. Die Isopoden de Siboga-Expeditie. III. Isopoda Genuina. II. Flabellifera. *Siboga Expeditie Monographs* 32c: 123-233, 2 pls.
- Poore, G.C.B., Just, J. and Cohen, B., in press. Composition and diversity of Crustacea Isopoda of the southeastern Australian continental slope. *Deep-Sea Research*.
- Stebbing T.R.R., 1893. *A History of the Crustacea. Recent Malacostraca*. Keegan, Paul and Trench: London. xvii, 466 pp., 19 pls.
- Whitelegge, T., 1901. Scientific results of the trawling expedition of H.M.C.S. 'Thetis' 1898. Crustacea Part II. Isopoda Part 1. *Memoirs of the Australian Museum* 4: 203-246.
- Whitelegge, T., 1902. Scientific results of the trawling expedition of H.M.C.S. 'Thetis' 1898. Crustacea Part III. Isopoda Part II. *Memoirs of the Australian Museum* 4: 249-283.
- Woodward, H., 1877. Crustacea. *Encyclopaedia Britannica* (9th edition) 6: 632-666.