

Revision of the Ochlesidae sensu stricto, including five new Australian species (Crustacea: Amphipoda)

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Abstract

Species of the Ochlesidae sensu stricto are revised. Based on new material from inshore and continental-shelf Australian marine habitats five new species are described: *Meraldia birgeri* n. sp., *M. madeleineae* n. sp., *M. yorki* n. sp., *Ochlesis caroleoninae* n. sp., and *O. morgani* n. sp. As these new species show remarkable sexual dimorphism, both sexes are described and fully illustrated. The world species are diagnosed, and a key to all species is provided.

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Introduction

The full revision of the world species, full descriptions and additional material of the new species, a key to all species, and 43 plates with illustrations are given in the accompanying Organisms Diversity and Evolution Electronic Supplement (<http://www.senckenberg.de/odes/06-04.htm>). The type and additional material is deposited in the Australian Museum, Sydney (AM) and Museum Victoria, Melbourne (NMV).

The new species

Meraldia birgeri n. sp.

Type material

Holotype: female 2.4 mm, AM P63614. Paratypes: 1 female 2.7 mm, AM P63617; 1 male 1.7 mm, AM

P63615; 4 males 1.9–2.2 mm, AM P63616. Two kilometers southeast of South Point, Two Peoples Bay, Western Australia, 34°58'S 118°12'E, brown bryozoans (*Scuticella plagiostoma*, *Orthoscuticella* sp., *Miniacina* sp. and *Iodictyum* sp.), 10.0 m, leg. J.K. Lowry, 16. Dec. 1983, WA 167.

Diagnostic characters

Female. Antenna 1 peduncular article 1 with posteroventral spine; peduncular article 2 long; peduncular article 3 posterior margin deeply telescoped into article 2. Antenna 2 peduncular article 4 ventral spine absent. Gnathopod 2 coxa anteroproximal margin produced; carpus distal lobe shorter than half propodus length. Pereopod 3 coxa ventrally subacute, anteroproximal margin strongly produced. Pereopod 4 coxa anteroproximal margin strongly produced. Pereopod 5 coxa posteroventral corner subquadrate.

Male (sexually dimorphic characters). Head anteroproximal margin straight. Pereopod 3 coxa ventrally rounded, anteroproximal margin straight. Pereopod 4

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coxa anteroproximal margin straight to weakly produced. Pereopod 5 coxa anteriorly produced, not tapering, rounded.

Remarks

Meraldia birgeri n. sp. is most similar to *M. madeleinae* n. sp. They both show a well-developed 'saddle', and the most extreme sexual dimorphism in the genus. *Meraldia birgeri* differs from *M. madeleinae* in having better developed and more discrete dorsal humps; antenna 1 has distoventral spines on peduncular articles 1 and 2 (absent in *M. madeleinae*); and antenna 2 is longer in *M. birgeri*.

Distribution

Victoria: Apollo Bay. Western Australia: Two Peoples Bay.

Meraldia madeleinae n. sp.

Type material

Holotype female 3.5 mm, AM P63620. Paratypes: 2 females 3.6 and 3.8 mm, AM P636440; 1 male 2 mm, AM P63621; 1 male 2.5 mm, AM P63622. Two kilometers southeast of South Point, Two Peoples Bay, Western Australia, 34°58'S 118°12'E, brown bryozoans (*Scuticella plagiotoma*, *Orthoscuticella* sp., *Miniacina* sp. and *Iodictyum* sp.), 10.0 m, leg. J.K. Lowry, 16. Dec. 1983, WA 167.

Diagnostic characters

Female. Antenna 1 peduncular article 3 posterior margin deeply telescoped into article 2. Antenna 2 shorter than peduncular article 1 of antenna 1. Pereon with mid-dorsal row of rounded knobs interrupted on pereonites 6 and 7, creating a 'saddle'. Gnathopod 1 coxa curved anteriorly, obliquely truncated ventrally. Gnathopod 2 carpus distal lobe slightly longer than half of propodus length. Pereopod 6 coxa posteroventral corner subquadrate. Pereopod 7 coxa longer than coxa 6. Pleon with epimeron 2 posteroventral corner rounded.

Male (sexually dimorphic characters). Pereon with more or less continuously rising keel up to pereonite 4, 'saddle' on pereonites 5 and 6. Gnathopod 1 coxa anterior margin straight. Pleonite 2 without dorsodistal carina. Epimeron 2 posteroventral corner subquadrate.

Remarks

Meraldia madeleinae n. sp. is most similar to *M. birgeri* n. sp. They both show a well-developed 'saddle', and the most extreme sexual dimorphism in the genus. In *Meraldia madeleinae* the dorsal humps are not as well developed as in *M. birgeri* and they are more continuous; distoventral spines are absent on peduncular

articles 1 and 2 of antenna 1 (present in *M. birgeri*); and antenna 2 is much shorter in *M. madeleinae*.

Distribution

Victoria: Portland; Warrnambool; Apollo Bay. South Australia: Flinders Island; Pearson Island. Western Australia: Two Peoples Bay; Kalbarri.

Meraldia yorki n. sp.

Type material

Holotype: female 2.5 mm, AM P63631. Paratypes: 2 females 1.7 and 1.8 mm; 4 males 1.3–1.7 mm, AM P63633; 1 male 2.1 mm, AM P63632. "The Hotspot" reef, northwest of Flinders Island, South Australia, 33°40'48"S 134°22'30"E, tufted red algae and soft erect Bryozoa, 21.0 m, leg. G.C.B. Poore on FV Lemnos, SCUBA, 20. Apr. 1985, NMV SA 72.

Diagnostic characters

Female. Rostrum with dorsal hump. Antenna 1 peduncular article 1 with very long posteroventral spine, longer than peduncular article 3; peduncular article 2 long; peduncular article 3 posterior margin not deeply telescoped into article 2. Antenna 2 peduncular article 4 ventral spine present. Pereon with uninterrupted mid-dorsal row of narrow subacute processes, with rows of dorsal, lateral and 2 rows of dorsolateral pointed processes. Gnathopod 1 coxa curved anteriorly; carpus elongate, more than twice as long as propodus. Pereopod 3 coxa anteroproximal margin strongly produced. Pereopod 4 coxa anteroproximal margin strongly produced. Pereopod 5 coxa anteriorly produced, tapering, apically subacute.

Male (sexually dimorphic characters). Antenna 1 peduncular article 2 short, about 0.8 times as long as broad. Gnathopod 1 coxa anterior margin straight. Pereopod 3 anteroproximal margin straight (weakly produced). Pereopod 4 coxa anteroproximal margin straight to weakly produced. Pereopod 5 coxa not anteriorly produced, anterior margin truncated, straight.

Remarks

Meraldia yorki n. sp. is the most unusual species of all ochlesids. The morphology resembles some epimeriids and even some 'gammarids' from Lake Baikal. The dorsal carina has developed into a row of long spines, and there are additional lateral rows of spines not found in other ochlesids. Gnathopod 1 has long, slender articles, also quite different from other ochlesids. However, the antennae, coxae and mouthparts are of the typical ochlesid type.

Distribution

Victoria: Portland. South Australia: Flinders Island; Pearson Island. Western Australia: Two Peoples Bay; Michaelmas Island.

Ochlesis caroleoninae* n. sp.*Type material**

Holotype: female 11.5 mm, AM P36446; Rapid Bay, South Australia, 35°32'S 138°11'E, submarine light, Keith Sheard collection, leg. Hanka, Cooper and Rau, 1. Jan. 1944. Paratype: male 5.5 mm, AM P36434; Vancouver Peninsula, near Mistaken Island, Albany, Western Australia, 35°04'S 117°56'E, stalked Ascidian, 3.0 m, leg. J.K. Lowry, 13. Dec. 1983, WA 109.

Diagnostic characters

Female. Antenna 1 peduncular article 1 without posteroventral spine; peduncular article 2 without posteroventral spine. Pereonite 7 with a broadly rounded, low mid-dorsal carina. Gnathopod 1 coxa curved anteriorly. Gnathopod 2 coxa anteroproximal margin produced (anterior margin sinuous); carpus distal lobe longer than half of propodus length. Pereopod 3 anteroproximal margin strongly produced. Pereopod 4 coxa ventral margin angular.

Pleon. Pleonite 1 with broadly rounded low mid-dorsal carina. Telson short.

Male (sexually dimorphic characters). Antenna 1 peduncular article 2 about twice as long as broad. Pereonite 7 without protrusion (but slightly elevated). Gnathopod 1 coxa very weakly curved anteriorly. Gnathopod 2 coxa anteroproximal margin straight. Pereopod 4 coxa anteroproximal margin straight to weakly produced. Pereopod 4 coxa ventral margin rounded. Pereopod 5 coxa anteriorly produced, not tapering, rounded.

Remarks

Ochlesis caroleoninae n. sp. is the biggest species in the family. In most species body length is 2–3 mm; the holotype of *O. caroleoninae*, at 11.5 mm, is at least 2 times longer than the longest known individual in any other species. In addition, *O. caroleoninae* differs from all other species in the remarkably developed carinae on pleonites 2 and 3, the slender antennae without any distoventral processes, and the shortened telson.

Distribution

South Australia: Rapid Bay. Western Australia: Vancouver Peninsula.

Ochlesis morgani* n. sp.*Type material**

Holotype: female 5.6 mm. Paratype: male 3.5 mm, NMV J48721. Forty-four kilometers E of Nowra, New South Wales, Australia, 34°55'47"S 151°08'04"E, muddy coarse shell, 466.0 m, leg. G.C.B. Poore et al., RV Franklin, 22. Oct. 1988, SLOPE 56, WHOI epibenthic sled, 34°55.79'S 151°08.06'E to 34°56.06'S 151°07.86'E, 429–466 m.

Diagnostic characters

Female. Rostrum laterocephalic margin with acute spine. Antenna 1 peduncular article 2 long (articles 1 and 2 are both very long, subequal in length). Pereonite 7 with a large angular dorsodistal spine. Gnathopod 2 coxa anteroproximal margin produced. Pereopod 3 coxa anteroproximal margin strongly produced. Pereopod 4 coxa ventral margin subacute, anteroproximal margin strongly produced. Pereopod 5 coxa anteriorly produced, tapering, apically subacute. Pereopod 6 coxa posteroventral corner subquadrate. Pleonites 1–3 with apically subacute, high mid-dorsal carina. Telson apically rounded.

Male (sexually dimorphic characters). Antenna 1 peduncular article 2 about 2.5 times as long as broad. Gnathopod 2 coxa anteroproximal margin straight. Pereopod 3 coxa anteroproximal margin straight to weakly produced. Pereopod 4 coxa anteroproximal margin straight to weakly produced. Pereopod 5 coxa anteriorly produced, not tapering, rounded.

Remarks

Ochlesis carinatus n. sp. and *O. morgani* n. sp. are the only species with well-developed carinae on pereonite 7 and pleonites 1–3, but the shapes of the carinae are different. *O. carinatus* does not have an acute postero-median process, and it has a longer telson than *O. morgani*. *Ochlesis lenticulosus* is also similar to *O. morgani* in having well-developed carinae on pleonites 1–3, but *O. lenticulosus* has a long telson.

Distribution

New South Wales: east of Nowra (Tasman Sea).