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New species of desmosomatid isopods from Admiralty Bay, King George Island

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Abstract: Two new species of desmosomatid isopods, *Eugerdella margaretae* sp. n. and *Eugerdella celata* sp. n. are described from Admiralty Bay, King George Island, South Shetlands. Information is added to the original description of *Eugerdella falklandica* (Nordenstam, 1933) based on re-examination of the holotype. Both new species are similar to *E. falklandica,* for example by the body shape, the shape of pleotelson and presence of rows of four horn-like spines on the head. They are distinguished from *E. falklandica* by the number of setae on pereopod articles. *Eugerdella celata* sp. n. is distinguished by the presence of ventral spines on pereonites 1–4.

Key words: Antarctic, South Shetland Islands, Isopoda, Desmosomatidae, *Eugerdella*.

Introduction

Thirty years of scientific activity in Admiralty Bay (King George Island, the Antarctic) have resulted in a comprehensive knowledge of the zoobenthos of this bay and the species list includes now over 1300 taxa. Polychaeta, Amphipoda, Tanaidacea, Cumacea and Echinodermata are the best recognized groups (Arnaud *et al.* 1986; Błażewicz and Jażdżewski 1995; Blażewicz-Paszkowycz and Sekulska-Nalewajko 2004; Siciński *et al.* 2011; ABBED database) while Isopoda are one of the least studied group of this area.

Generally, the fauna of the South Shetland Islands region is characterised by high species richness (Brandt *et al.* 2005).This pattern can be influenced by the faunal exchange from South America via the Scotia Arc and by polar emergence, resulting in a high number of isopod species (Brandt *et al.* 2005). Isopod species richness was observed in samples taken from this area (Brandt 2004; Brandt *et al.*

2007a, b) during the ANDEEP I–III (Antarctic Benthic Deep-sea Biodiversity) and EASIZ II (Ecology of the Antarctic Sea Ice Zone) expeditions.

The family Desmosomatidae Sars, 1897 is recognized to have a deep-sea origin with the examples of shallow-water polar emergence (Raupach *et al*. 2004).

Desmosomatids are globally distributed and appear to be a very common group among deep-sea isopods (Malyutina and Kussakin 1996; Brandt 2004; Brandt *et al* 2005, 2007a, b). Most species are described from the North Atlantic and Arctic Ocean (Hessler 1970; Svavarsson 1988, 1993; Kussakin 1999a, b). Recently, several species have been described from the South Atlantic Ocean (Brix 2007; Kaiser and Brix 2007; Schnurr and Brix 2011) and from the Southern Ocean (Brix 2006a), Australian waters (Brix 2006b), New Zealand (Brix and Bruce 2008) and the Pacific Ocean (Golovan 2007). The genus *Eugerdella* Kussakin, 1965 has received much attention in these recent publications, being hitherto reported worldwide with 15 described species occurring from shallow water (*Eugerdella coarctata* (Sars, 1899) from 24 m in Skagerrak) to the deep-water (*Eugerdella serrata* Brix, 2006a found at 6000 m in the Antarctic). Until now, only two species have been described from the Southern Ocean: *Eugerdella serrata* from the Weddell Sea (Brix 2006a) and *E. falklandica* (Nordenstam, 1933) from the Falkland Islands; with two new species described in this paper, the world wide distributed genus *Eugerdella* includes now 17 species.

Two new species presently described were collected using Van Veen grab in Admiralty Bay, King George Island, during the 2007 Polish Antarctic Expedition on board of m/v *Polar Pioneer*. Material was taken in the Ezcurra Inlet from depths of about 100 m.

Morphological methods

Drawings were made using compound microscope with a camera lucida. Specimens were oriented according to the guidelines of Hessler (1970); methods follow Brix (2006a).

Terminology of setal types used follows Hessler (1970) and Wilson (2008). Figures were drawn with Adobe Illustrator CS2 and WACOM digitizer boards following Coleman (2003).

The holotype of *Eugerdella falklandica* was used for the dorsal habitus drawing and the appendages. All appendages were drawn attached to the type. For the description of *Eugerdella margaretae* sp. n. and the holotype of *E. celata* sp. n. drawings of the dorsal and lateral habitus and appendages dissected from paratypes were used as indicated in the figure captions.

Holotypes and paratypes of *E. margaretae* sp. n. and *E. celata* sp. n. are deposited in Zoological Museum, Hamburg.

The following type material was compared:

Eugerdella serrata Brix, 2006, holotype, ZMH K-401004; paratypes, ZMH K-40106 and ZMH K-40105.

Eugerdella falklandica (Nordenstam, 1933), holotype, SMNH-type 766 (described as *Desmosoma falklandicum*).

Abbreviations used in the present study: A1, antennule; A2, antenna; l/rMd, left or right mandible; Mx1, maxilla 1; Mx2, maxilla 2; Lm, *lacinia mobilis*; Mp, molar process; Ip, incisior process; Mxp, maxilliped; Phar, pharynx; Op, operculum; PI–VII, pereopods I–VII; Plt, pleotelson; PlpI–V, pleopods I–V; Prn1–7, pereonites 1–7; Urp, uropods; EBS, Epibenthic-sledge samples, ZMH, Zoological Museum, Hamburg; SMNH, Swedish Museum of Natural History.

Taxonomy

Family Desmosomatidae Sars, 1897
Subfamily Eugerdellatinae Hessler, 1970
Genus *Eugerdella* Kussakin, 1965
Eugerdella falklandica (Nordenstam, 1933)
(Fig. 1)

Desmosoma falklandicum Nordenstam, 1933: 263–264, figs 75a–f.

Material. — Holotype, adult female, 2.5 mm in length (SMNH-type 766), St. 40 Falkland Islands, Berkeley Sound, 51°33’ S 58°00’ W, depth 16 m, 10 July 1902 (all slides with appendages dissected from the holotype by Nordenstam were empty).

Diagnosis. — Body length 3.2 times as long as the body width, carpus of PI with seven unequally bifid setae, propodus of PI dorsally with four distally bifid setae, carpus of PII ventrally with ten setae. Prn1–4 without ventral spines. Plt oval.

Description amended. — Habitus (Fig. 1): body 3.2 times as long as the Prn2 width. Head (Fig. 1) with veritical row of four horn-like setae on anteriolateral margins (Fig. 1). Prn5 rectangular, anterior margin slightly convex, width of anterior margin 0.7 of its length. Prn6 and 7 trapezoid. Plt oval, 1.5 times as long as wide.

Antennule (Fig. 1) length 0.1 of the body length, with five articles. Article 1 with two long broom setae and one simple seta. Article 2 2.6 times as long as it is wide, with two long and one short broom setae distally. Article 3 without setation, article 4 with one broom seta. Distal article terminally with aesthetasc, one broom and two long slender setae. Articles 2–5 length relative to article 1: 1.4: 0.6: 0.6: 0.2.

Antenna (Fig. 1) broken, only four basal articles present. Articles 1–2 without setae, article 3 with two simple setae (one broken). Article 4 with one simple seta.

Pereopod I (Fig. 1) ischium ventrally with four simple setae, dorsally with row of five simple setae. Merus as long as wide, with one simple seta dorsally, and one unequally bifid seta and two small simple setae ventrally. Carpus as long as wide,

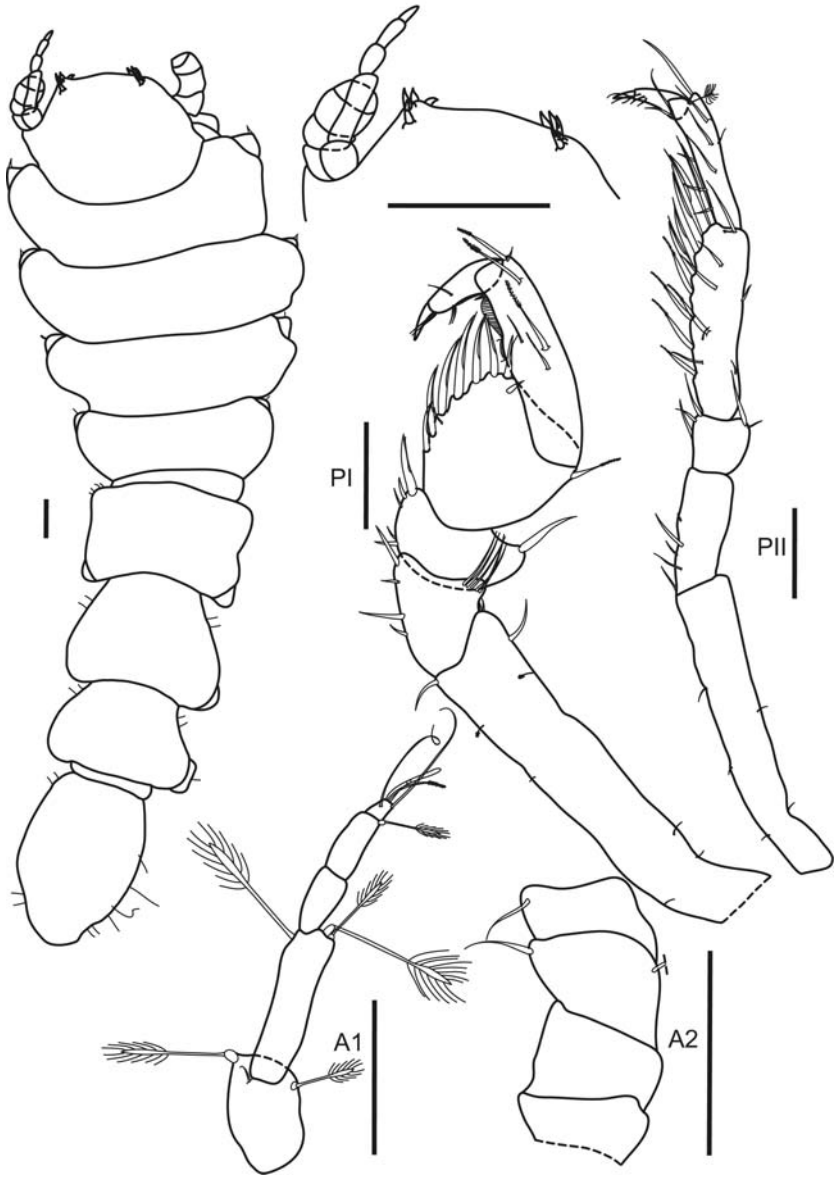

Fig. 1. *Eugerdella falklandica* (Nordenstam, 1933), holotype female (SMNH-type 766), scale bars 0.1 mm.

ventrally with row of seven robust, unequally bifid, distally setulate setae and two small simple setae. Distodorsally one distally setulate seta. Propodus 3.5 times as long as wide, dorsally with four distally setulate setae, ventrally combs of fine hairs inserted in cuticular membrane. Dactylus ventrally with comb of fine hairs inserted in cuticular membrane, distally with three simple setae. Claw of dactylus with one cuspidate and two long setae.

Pereopod II (Fig. 1) merus 1.1 times as long as wide, distodorsally one slender seta and one short, simple seta, ventrally three simple setae. Carpus 4.1 times as long as wide, ventral margin with four distally setulate setae on proximal half and five unequally bifid setae, dorsally one simple seta midway, one simple seta and one broom seta distally. Outer surface with row of five distally setulated setae. Propodus 2.7 times as long as wide, dorsally with four simple setae midway, distally one broom seta. Dactylus 3.2 times as long as wide, distally three small setae. Claw with one conate and two slender setae.

Eugerdella margaretae sp. n.
(Figs 2–6)

Material. — Holotype, adult female, 2.3 mm in length (ZMH K-42701), dissected in one slide (ZMH K-42702), King George Island, Admiralty Bay, St. BIV/5, 62°09.459' S 58°29.746' W, depth 112 m, 28 March 2007. Paratype, one adult female, 2.2 mm in length (ZMH K-42703), King George Island, Admiralty Bay, St. BII/3, 62°09.624' S 58°30.157' W, depth 116 m, 27 March 2007.

Etymology. — Named in memory of the first author's grandmother Margaret.

Diagnosis. — Body four times as long as the Prn2 width. Carpus of PI with row of eight unequally bifid setae on the ventral margin. Propodus of PI with three distally setulated setae dorsally. Carpus of PII ventrally with nine setae.

Description of the holotype female. — Habitus (Fig. 2) body four times as long as the Prn2 width. Head with vertical row of four horn-like setae on each lateral frontal corner. Prn1 width 1.3 times as long as the cephalon width in dorsal view. Prn1 0.7 times as long as the Prn2 length, 0.9 times as long as the Prn2 width. Prn4 0.9 times as long as the Prn3 length, its width 0.8 times as wide as the Prn3 width. Prn5 width 1.8 times as wide as its length, lateral margins of Prn4 and Prn5 slightly convex. Prn6 and Prn7 width approximately 1.6 times as wide as their lengths, lateral margins straight. Coxae 1–4 produced, tipped with short stout setae. Prn5–7 anterolateral angles with short simple setae. Plt 1.5 times as long as wide, oblong. Lateral margins slightly convex, with short setae.

Antennule (Figs 3, 6) length 0.1 of the body length, with five articles. Article 1 with two long broom setae and two simple setae distally. Article 2 2.7 times as long as wide, as long as the article 1 length, with two simple setae and two long broom setae distally. Article 3 with one simple seta distally, article 4 without setae. Distal article terminally with aesthetasc, three long slender setae and one broom seta. Articles 2–5 length relative to article 1: 1.0: 0.5: 0.5: 0.2.

Antenna (Fig. 3) broken, only four basal articles present. Articles 1 and 2 without setae, article 3 with two simple setae. Article 4 with one simple seta. Relative length of articles 1: 0.6: 0.8: 0.4.

Mouthparts. Mandible (Fig. 3) palp article 1 of lMd without setation, article 2 with row of tiny setae on outer margin and two plumose setae distally. Ip with three

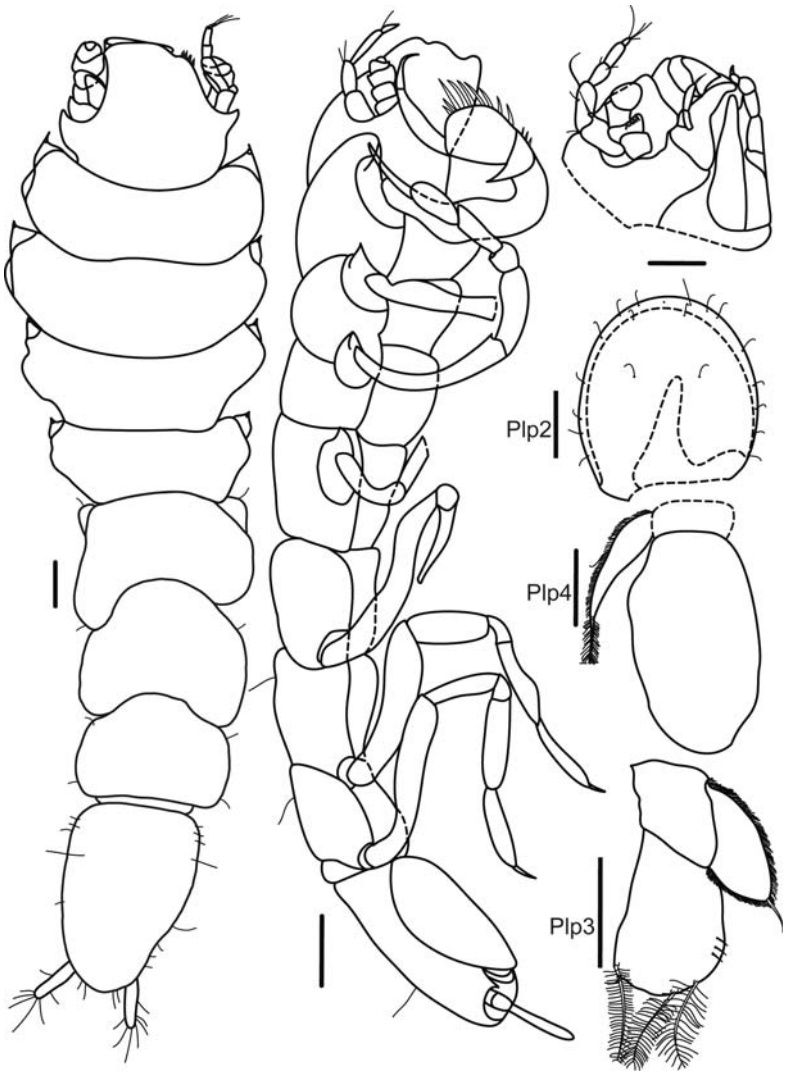

Fig. 2. *Eugerdella margaretae* sp. n., holotype female (ZMH K-42701and ZMH K-42702), scale bars 0.1 mm.

lobes. Left Lm with three teeth. Spine row with three compound setae. Mp triangular with 14 setae. Spine row of rMd with five compound setae. Maxilla 1 (Fig. 3) inner lobe slightly smaller than outer lobe (0.9 times as long as the outer lobe length), with row of 14 simple setae on the inner margin, terminally seven short simple setae. Outer lobe four times as long as wide, marginally with 12 tooth-like setae. Maxilla 2 (Fig. 3) inner lobe 3.3 times as long as wide, with rows of short simple setae, terminally eight simple setae. Medial lobe 9.5 times as long as wide, terminally with three setae, outer lobe six times as long as wide with four rows of small setae, terminally four long simple setae.

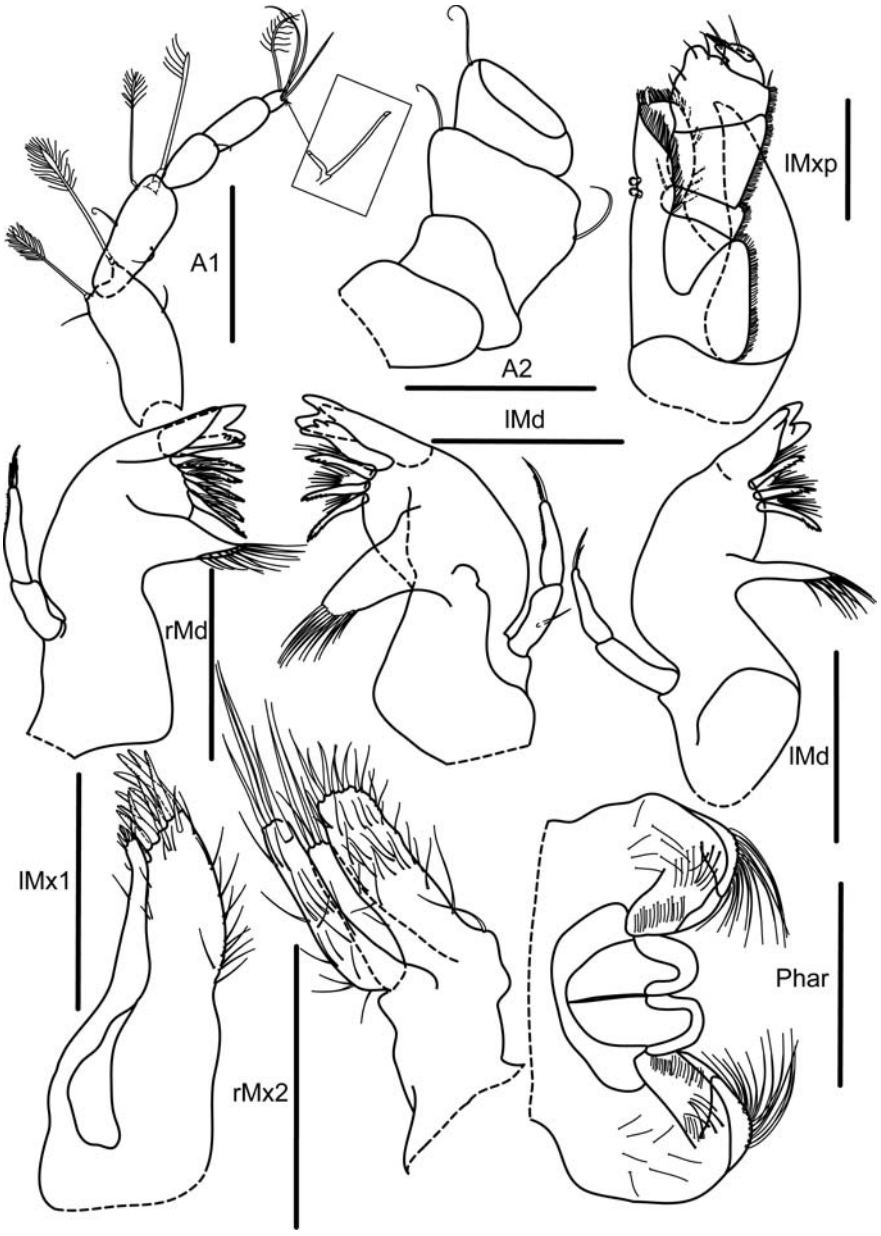

Fig. 3. *Eugerdella margaretae* sp. n., holotype female (ZMH K-42702), scale bars 0.1 mm.

Maxilliped (Fig. 3) epipodite three times as long as wide, 1.1 times as long as the basis length. Endite with two coupling hooks, terminally with numerous fine setae and two robust fan setae. Palp article 1 0.3 times as long as wide, article 2 as long as wide, article 3 0.4 times as long as wide, article 4 0.5 times as long as wide, article 5 2.8 times as long as wide. Outer margin of endite and palp articles 1–3 hir-

sute. Article 1 with one simple seta, article 2 without setae. Inner margin of article 3 with five simple setae, article 4 with three setae, article 5 with one seta.

Pereopod I (Figs 4, 6) basis four times as long as wide, with seven small simple setae and one small broom seta. Ischium 1.2 times as long as wide, dorsally with one simple seta, ventrally with two unequally bifid setae and one simple seta, distally with row of five simple setae. Merus 0.7 times as long as wide, distally with one simple seta, ventrally with two simple setae and one unequally bifid, distally setulate seta. Carpus 1.4 times as long as wide, ventrally with a row of eight robust unequally bifid distally setulate setae. Outer surface with row of four tiny setae. Distolaterally one simple seta. Propodus 2.4 times as long as wide, ventrally with five simple setae and combs of fine hairs inserted in a cuticular membrane, dorsally three long unequally bifid, distally setulated setae. Dactylus 2.8 times as long as wide, ventrally with comb of fine hairs inserted in a cuticular membrane, distally with one simple seta and one long slender seta. Claw of dactylus with one cuspidate seta and two setae.

Pereopod II (Fig. 4) basis 5.1times as long as wide, with few small setae. Ischium 1.9 times as long as wide, distodorsally with one simple seta, ventrally three simple setae. Merus 1.1 times as long as wide, distodorsally one slender seta, ventrally one simple seta and one slender seta. Carpus 2.5 times as long as wide, ventrally three distally setulate setae and five unequally bifid setae, dorsally one simple seta midway and one simple seta and one broom seta distally. Outer surface with row of five slender setae. Propodus 2.9 times as long as wide, dorsally with four simple setae midway, distally two slender setae. Ventral margin with five simple setae. Dactylus 3.5 times as long as wide, distally two small setae. Claw with one seta.

Pereopod III (Fig. 4) basis 4.1 times as long as wide, with few small setae, dorsally one small broom seta, distolaterally one distally setulate seta. Ischium 2.5 times as long as wide, ventrally two simple setae, distodorsally one distally setulate seta. Merus as long as wide, ventrally with two simple setae, dorsally one long, simple seta. Carpus three times as long as wide, dorsally two simple setae, ventrally six long, simple setae and two unequally bifid setae and three short setae. Outer surface with row of three simple setae and one distally setulate seta. Propodus 2.2 times as long as wide, dorsally with five long slender setae and one distally setulate seta, ventrally two simple setae. Dactylus 2.3 times as long as wide, distally three short slender setae. Claw of dactylus with one conate and two slender setae.

Pereopod IV (Fig. 4) basis 3.8 times as long as wide, ventrally two simple setae and one broom seta. Ischium 2.5 times as long as wide, ventrally two simple setae. Merus 1.2 times as long as wide, distodorsally two simple setae, ventrally three long slender setae. Carpus 2.4 times as long as wide, ventrally six unequally bifid, distally setulate setae. Dorsally one simple seta, distally one slender seta. Outer surface with a row of six simple setae. Propodus 4.4 times as long as wide, ven-

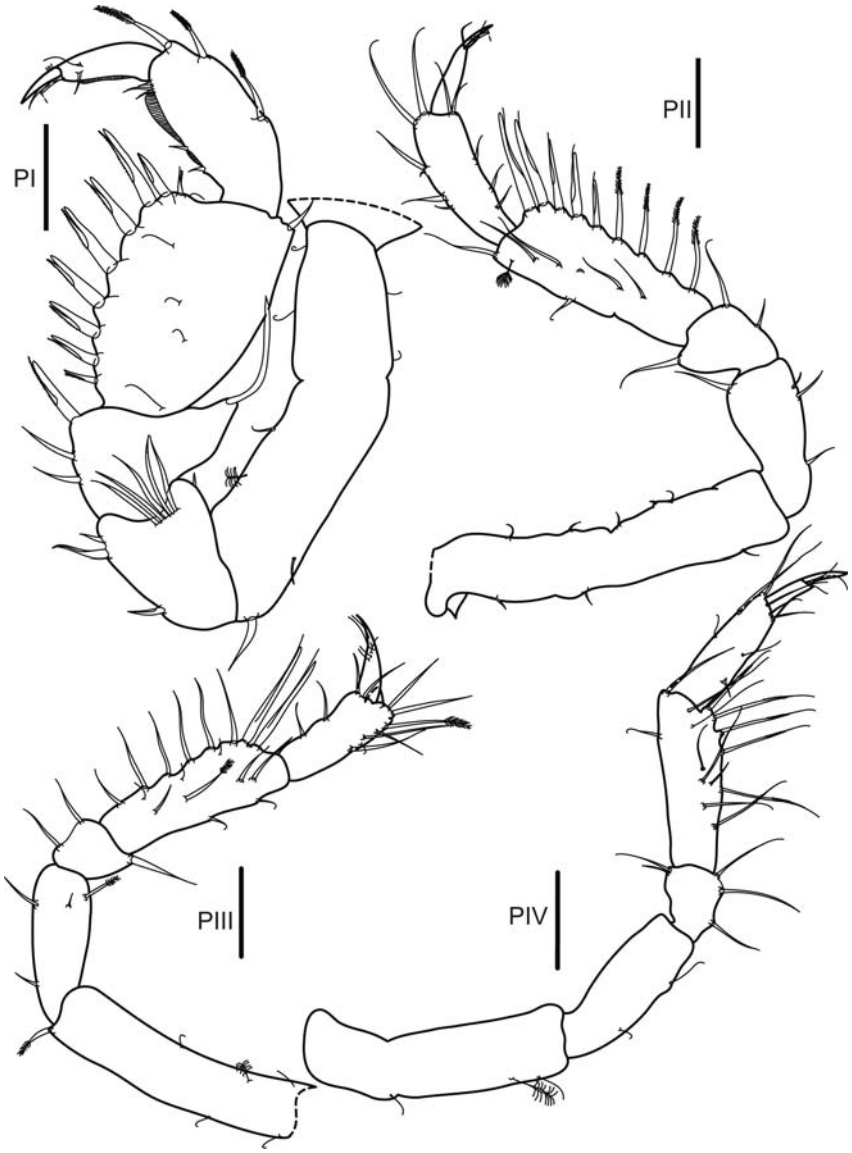

Fig. 4. *Eugerdella margaretae* sp. n., holotype female (ZMH K-42702), scale bars 0.1 mm.

trally two small setae. Dorsally one short seta and one long slender seta. Distal margin with four slender setae. Dactylus 2.8 times as long as wide. Claw with one conate and three slender setae.

Pereopod V (Fig. 5) broken above merus. Basis 4.2 times as long as wide, dorsally two simple setae and two broom setae. Ventrally three simple setae and one long broom seta midway. Ischium 2.5 times as long as wide, ventrally three short simple setae, dorsally one simple seta and one unequally bifid, distally setulate

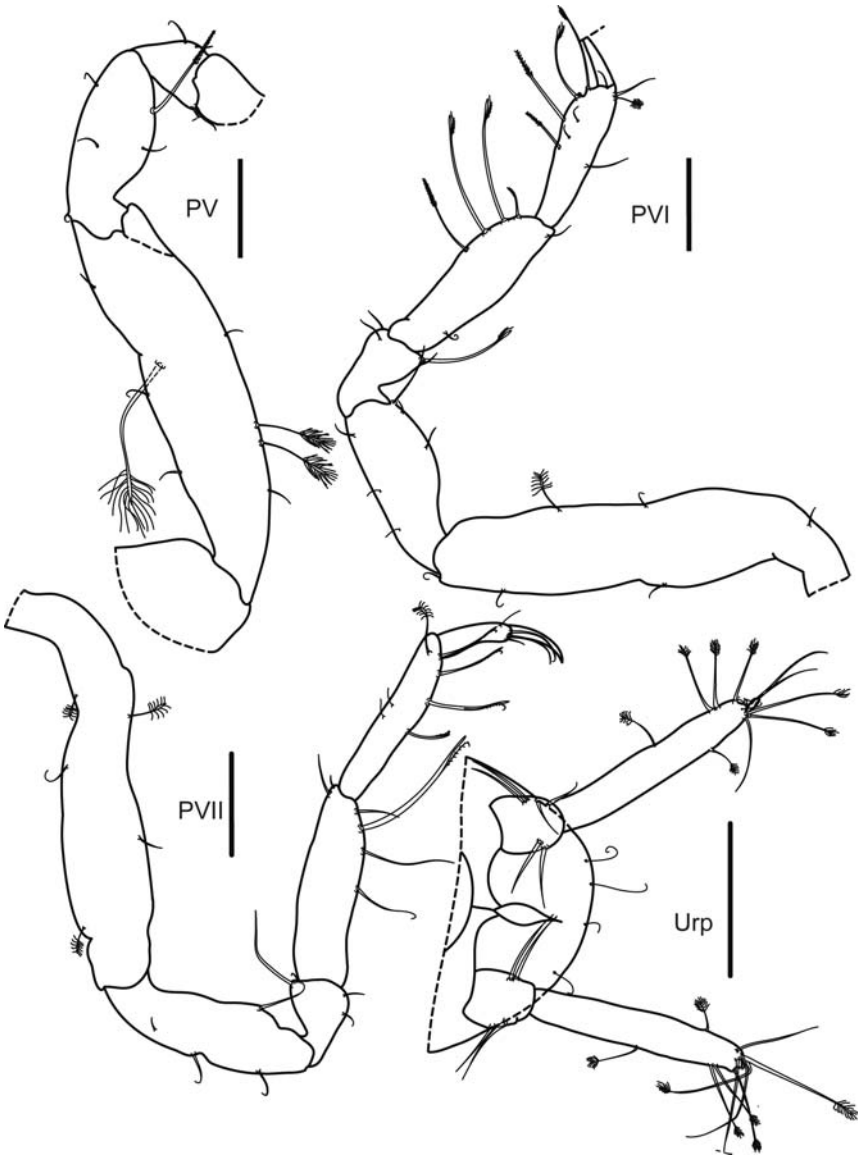

Fig. 5. *Eugerdella margaretae* sp. n., holotype female (ZMH K-42702), scale bars 0.1 mm.

seta. Merus 0.9 times as long as wide, dorsally with two simple setae, ventrally two simple setae.

Pereopod VI (Fig. 5) basis 4.5 times as long as wide, with few small setae, dorsally one broom seta. Ischium 2.4 times as long as wide, ventrally three simple setae, dorsally two short setae and one long slender seta. Merus 1.5 times as long as wide, distoventrally two simple setae, distodorsally one simple seta and one unequally bifid distally setulate seta. Carpus three times as long as wide, dorsally two

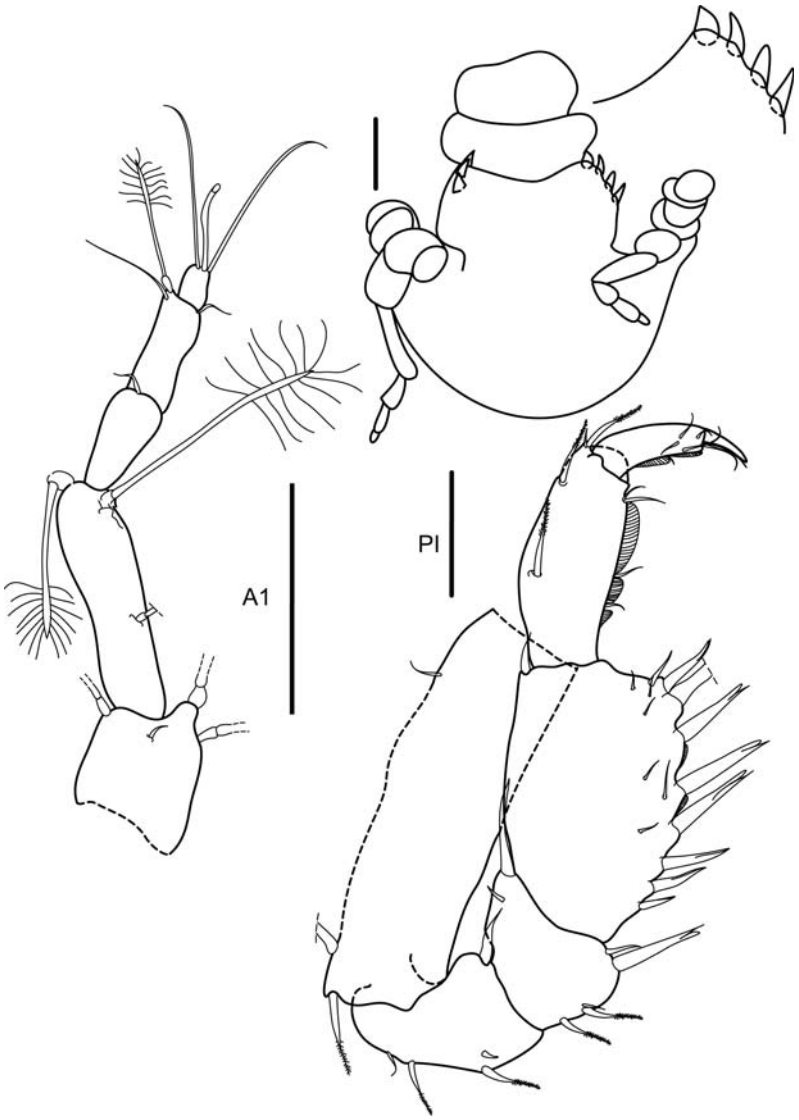

Fig. 6. *Eugerdella margaretae* sp. n., paratype female (ZMH K-42703), scale bar 0.1 mm.

simple setae, ventrally one distally setulate seta and three unequally bifid distally setulate setae. Propodus 3.4 times as long as wide, dorsally two simple setae and one broom seta. Ventral margin with two distally setulate setae and two unequally bifid distally setulate setae and three simple setae. Dactylus broken.

Pereopod VII (Fig. 5) basis 4.9 times as long as wide, ventrally two broom setae and one simple seta. Dorsally one simple seta and one broom seta. Ischium 3.4 times as long as wide, ventrally three simple setae, dorsally one long simple seta. Merus 1.3 times as long as wide, dorsally one long simple seta and one short

seta, ventrally two short simple setae. Carpus 3.1 times as long as wide, distodorsally two simple setae, ventrally three slender simple setae and one long unequally bifid distally setulate seta. Propodus 4.9 times as long as wide, dorsally two simple setae, distodorsally one broom seta. Ventral margin with four unequally bifid distally setulate setae. Dactylus 2.9 times as long as wide, distal margin with two simple setae, claw with one conate and two slender setae.

Pleopod II (operculum) (Fig. 2) as long as wide, with 16 marginal setae, ventral surface with four setae.

Pleopod III (Fig. 2) endopod 1.4 times as long as wide, with three distal long plumose setae. Exopod 1.1 times as long as wide, outer margin hirsute, one simple seta distally.

Pleopod IV (Fig. 2) endopod oval, 1.8 times as long as wide. Exopod 3.5 times as long as wide, lateral margin hirsute with one simple seta, one plumose seta distally.

Uropod (Fig. 5) uniramous, 0.4 times as long as the Plt length. Protopod 1.1 times as long as wide, with six slender simple setae. Endopod 9.8 times as long as wide, medially with one small broom seta, terminally with six broom setae, three long slender setae and one short simple seta.

Eugerdella celata sp. n.
(Figs 7–9)

Material. — Holotype, adult female, 3.5 mm in length (ZMH K-42711), King George Island, Admiralty Bay, St. BIV/5, 62°09.459’ S 58°29.746’ W, depth 112 m, 28 March 2007. Paratypes: one adult female, 3.2 mm in length (ZMH K-42712), dissected in one slide (ZMH K-42713), King George Island, Admiralty Bay, St. BIII/2 62°09.535’ S 58°30.011’ W, depth 126 m, 28 March 2007; one adult female, 3.4 mm in length (ZMH K-42714), King George Island, Admiralty Bay, St. BIII/4, 62°09.500’ S 58°30.043’ W, depth 145 m, 28 March 2007.

Etymology. — From the Latin *celare* which means to hide.

Diagnosis. — Body 3.7 times as long as the Prn2 width. Prn1–4 ventrally with spines. Carpus of PI with row of seven unequally bifid setae on the ventral margin. Propodus of PI with three distally setulated setae dorsally. Carpus of PII ventrally with eight setae.

Description of the female. — Habitus (Figs 7, 8) body length 3.7 times as long as the Prn2 width. Head with vertical row of four horn-like setae on each lateral frontal corner. Prn1–4 laterally with spines. Prn1 1.6 times as wide as the cephalon width in dorsal view. Prn1 as wide as Prn2 width. Prn4 0.7 times as long as the Prn3 length and 0.7 times as long as the Prn3 width. Prn5 width is 1.9 of its length. Prn6 1.8 times as long as wide. Prn7 oval, 1.6 times as long as wide. Coxae 1–4 produced, tipped with short simple setae. Plt 1.6 times as long as wide, oblong, posterolateral short setae. Lateral margins straight.

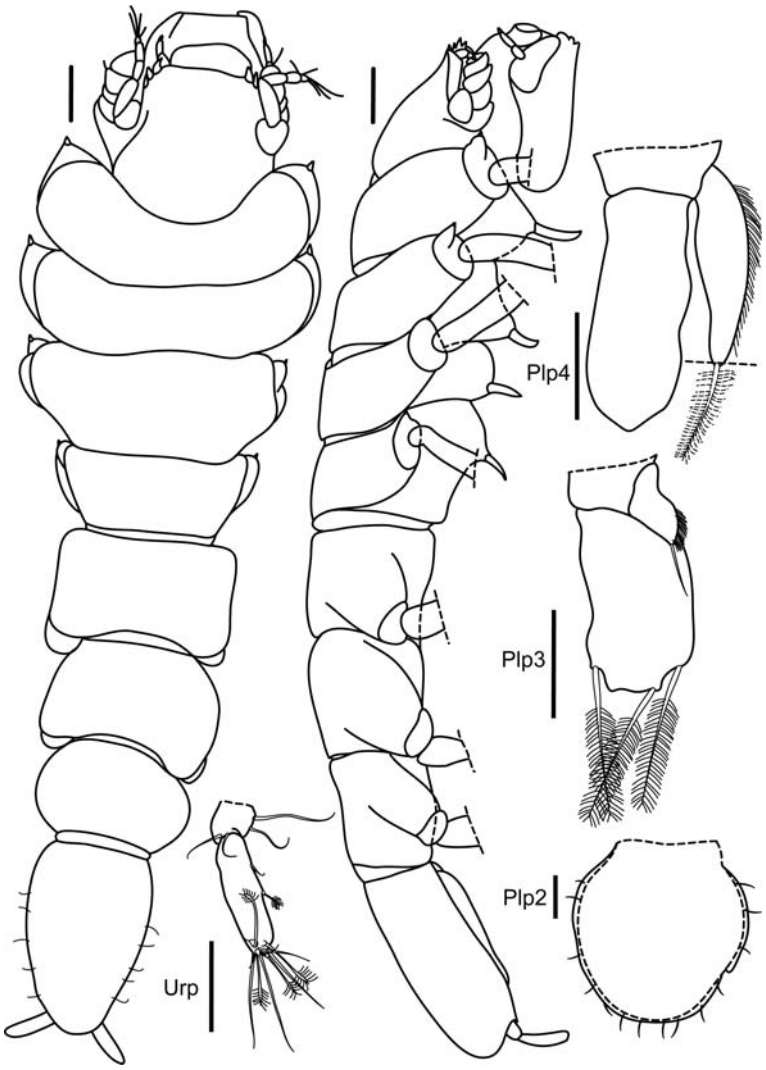

Fig. 7. *Eugerdella celata* sp. n., holotype female (ZMH K-42711 and ZMH K-427013), scale bars 0.1 mm.

Antennule (Fig. 8) 0.1 times as long as the body length, with five articles. Article 1 with one long and one short broom seta and one simple seta. Article 2 2.3 times as long as wide, 1.4 times as long as the article 1 length, terminally with two broom setae and one short simple seta. Article 3 with one broom seta, article 4 with one broom seta. Distal article terminally with aesthetasc and two long slender setae. Articles 2–5 length relative to article 1: 1.2: 0.6: 0.7: 0.2.

Antenna broken, only four first joints exist.

Mouthparts. Mandible (Fig. 8) palp article 1 of lMd with one simple seta, second article with row of tiny setae on outer margin and two plumose setae. Ip with

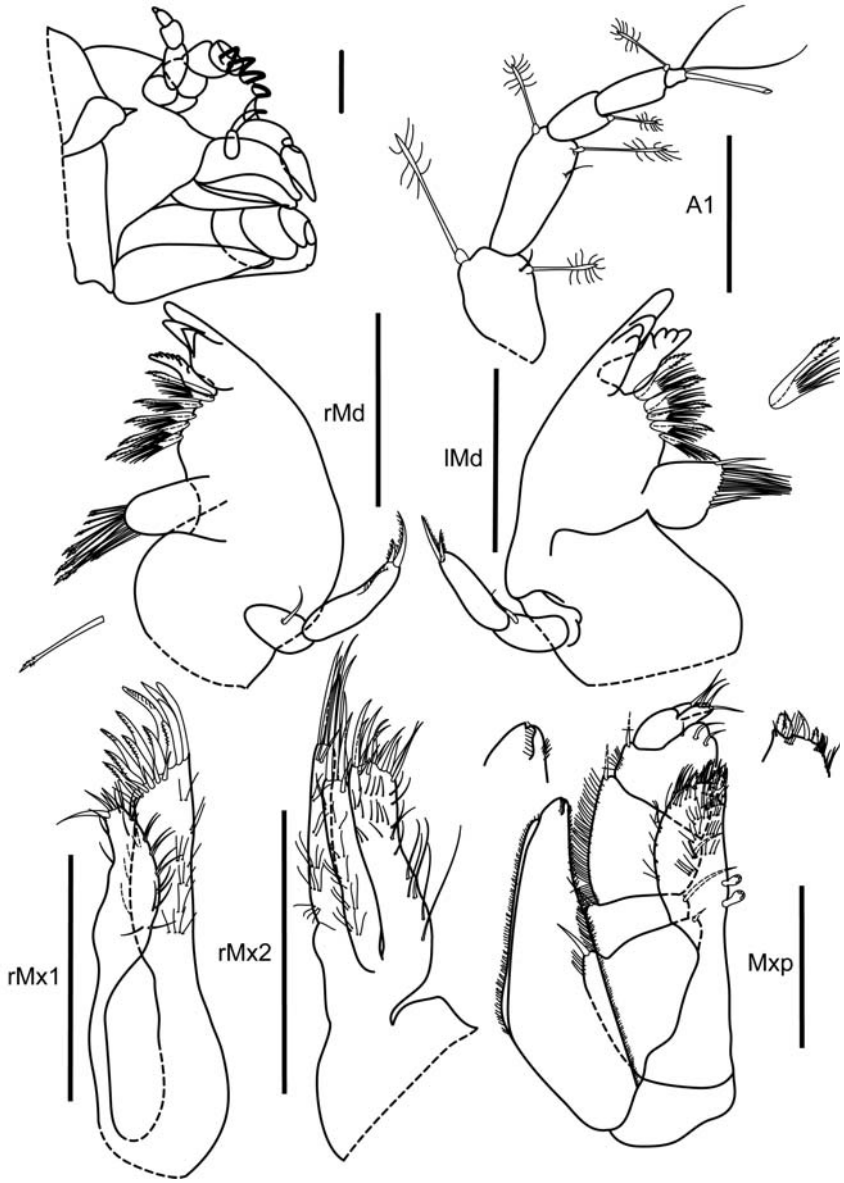

Fig. 8. *Eugerdella celata* sp. n., paratype female (ZMH K-42713), scale bars 0.1 mm.

four lobes. Left Lm with four teeth. Spine row with five composed setae. Left Mp triangular with 14 setae. Right Mp with 12 setae. Spine row of five composed setae, Lm-like structure present. Maxilla 1 (Fig. 8) inner lobe slightly smaller than outer lobe (0.9 times as long as the outer lobe length), terminally one long, simple seta and three slender, simple setae. Outer margin with eight rows of two simple setae. Outer lobe marginally with 11 tooth-like setae and row of five short simple

setae. Outer margin with six rows of slender setae. Maxilla 2 (Fig. 8) inner lobe 5.4 times as long as wide, with rows of short simple setae and five slender setae on the inner margin, terminally ten simple setae and two short simple setae. Medial lobe 6.1 times as long as wide, with five rows of four short simple setae, terminally five simple setae. Outer lobe seven times as long as wide, with five rows of four small setae, terminally four long simple setae.

Maxilliped (Fig. 8) epipodite 3.1 times as long as wide, as long as the basis length, margins hirsute. Endite with two coupling hooks, rows of tiny setae, terminally with numerous fine setae and three robust spinose setae. Palp article 1 0.8 times as long as wide, article 2 0.3 times as long as wide, article 3 as long as wide, article 4 as long as wide, article 5 2.7 times as long as wide. Outer margin of endite and palp articles 1–4 hirsute. Article 1 with two simple setae, article 2 with two simple setae. Inner margin of article 4 with four simple setae.

Pereopod I (Fig. 9) merus distally with one simple seta, ventrally with two short simple setae and one unequally bifid seta. Carpus 1.4 times as long as wide, ventrally with a row of seven robust unequally bifid, distally setulate setae and one short, simple seta distally. Three short simple setae in the middle of ventral margin. Distolaterally one simple seta. Propodus 1.9 times as long as it is wide, ventrally with three simple setae and combs of fine hairs inserted in a cuticular membrane, dorsally three long unequally bifid, distally setulate setae. Dactylus 3.1 times as long as wide, ventrally with comb of fine hairs inserted in a cuticular membrane, distally with three simple setae. Claw of dactylus with one cuspidate seta and two simple setae.

Pereopod II (Fig. 9) basis 4.6 times as long as wide, with four small setae, distoventrally one simple seta. Ischium 3.1 times as long as wide, distodorsally with one simple seta and one short seta, ventrally two simple setae. Merus 0.9 times as long as wide, dorsally one slender seta and one short seta, ventrally two simple setae and one short seta. Carpus 2.7 times as long as wide, ventrally three distally setulate setae and five unequally bifid setae, dorsally one simple seta. Outer surface with a row of five slender setae (four of them broken). Propodus 3.1 times as long as wide, dorsally with three distally setulate setae. Ventral margin with one simple seta and one distally setulate seta and comb of fine hairs inserted in a cuticular membrane, distally with two simple setae. Dactylus 4.2 times as long as wide, distally three simple setae. Claw of dactylus with one cuspidate seta and two slender setae.

Pereopod III (Fig. 9) basis 5.4 times as long as wide, with few small setae, ventrally one simple seta (broken). Ischium 2.4 times as long as wide, ventrally two simple setae, distodorsally one simple seta. Merus as long as wide, ventrally with three simple setae, dorsally one simple seta. Carpus 3.1 times as long as wide, dorsally two simple setae and one long, simple seta distally. Ventrally five distally setulate setae (one broken) and two unequally bifid setae. Outer surface with row of five simple setae (one broken). Propodus 2.9 times as long as wide, dorsally with one simple seta and four unequally bifid setae and one broom seta distally. Ventrally two simple

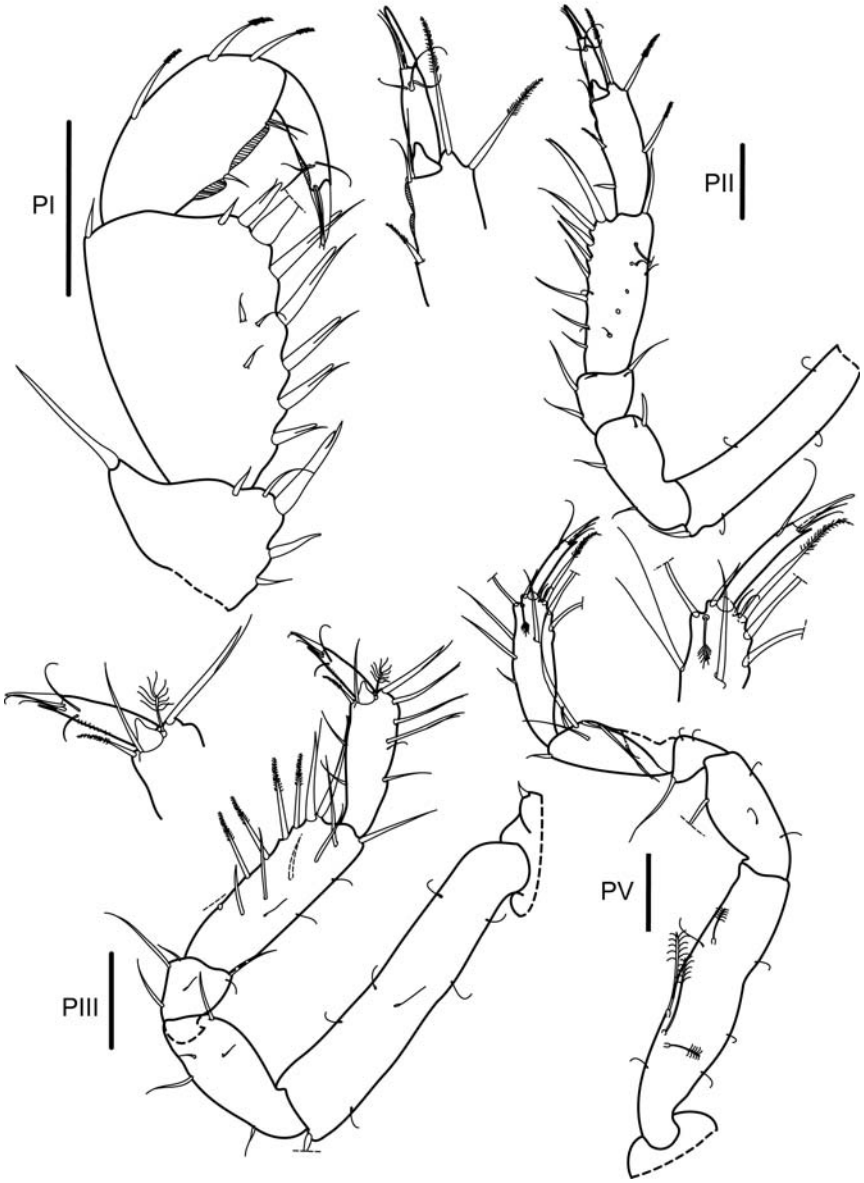

Fig. 9. *Eugerdella celata* sp. n., paratype female (ZMH K-42713), scale bars 0.1 mm.

setae and one distally setulate seta. Dactylus 3.7 times as long as wide, distally two simple setae. Claw of dactylus with one conate and two slender setae.

Pereopod V (Fig. 9) basis 4.4 times as long as wide, ventrally three short simple setae. Dorsally four broom setae and two short simple setae. Ischium 2.3 times as long as wide, dorsally one broken seta, ventrally three short simple setae. Merus 0.9 times as long as wide, dorsally one simple seta, ventrally two short simple setae. Car-

pus 2.9 times as long as wide, ventrally with five unequally bifid setae and two simple setae. Distodorsally one short seta. Propodus 3.4 times as long as wide. Dorsally five simple setae and one broom seta. Ventrally with two broken setae, one distally setulate seta and two short setae. Dactylus 6.1 times as long as wide, with one slender seta. Claw of dactylus with one conate and three slender setae.

Pleopod II (operculum) (Fig. 7) as long as wide, with 14 marginal setae.

Pleopod III (Fig. 7) endopod 1.8 times as long as wide, terminally with three plumose setae. Exopod 2.2 times as long as wide, outer margin hirsute, terminally one simple seta.

Pleopod IV (Fig. 7) endopod 2.7 times as long as wide. Exopod 3.6 times as long as wide, lateral margin hirsute with one plumose seta.

Uropod (Fig. 7) uniramous, 0.3 times as long as the Plt length. Protopod 0.8 times as long as wide, with four simple setae. Endopod 3.7 times as long as wide, with five broom setae, four slender setae and terminally two short simple setae.

Discussion

All four species discussed in the present paper were found in the Scotia Arc region: *E. falklandica* from the Falkland Islands, *E. serrata* from the Weddell Sea and two new species from King George Island.

Within the genus *Eugerdella* only four species show horn-like spines on their head: *E. serrata*, *E. falklandica* and the two species described in the present paper.

Eugerdella falklandica can be separated from the newly described species by the features summarized in Table 1. In the original description (Nordenstam 1933) there are some differences between the descriptive text and the figures which have been clarified here by drawing the type specimen (Fig. 1). The number of setae on the ventral margin of the carpus of the right pereopod I is eight in the description text but in the figure drawn by Nordenstam (1933) there are only seven. All slides of appendages and legs were empty. The type shows seven setae (Fig. 1) on the remaining pereopod I. Thus, we could not compare the original description and figures with the original slides.

Table 1

Comparison of features of the discussed *Eugerdella* species

Eugerdella species Features	*Eugerdella falklandica*	*Eugerdella margaretae* sp. n.	*Eugerdella celata* sp. n.
PI propodus dorsally	4 setae	3 setae	3 setae
PI carpus ventrally	7 setae	8 setae	7 setae
PII carpus ventrally	10 setae	9 setae	8 setae
Prn1–4 vetral spines	absent	absent	present

Within the genus both new species are most similar to *E. falklandica*, for example they show similarities in body shape, the shape of pleotelson and presence of vertical row of four horn-like spines on the head.

Eugerdella serrata from the Weddell Sea has a serrated margin on the pleotelson and a cephalic spine row on the head, while *E. falklandica*, *E. margaretae* sp. n. and *E. celata* sp. n. have smooth margins on the pleotelson.

Eugerdella margaretae sp. n. can be clearly distinguished from all other species of the genus by the number of setae on the carpus of pereopod I. The ventral side of the carpus of pereopod I has eight unequally bifid setae while the most similar species *E. falklandica* and *E. celata* sp. n. have seven setae. The carpus of pereopod II has nine unequally bifid setae ventrally while in *E. falklandica* the number of setae is ten.

The other new species, *E. celata* sp. n., presents features which do not occur in other *Eugerdella* species, including ventral spines on pereonite 1–4 and eight setae on the ventral side of pereopod II. The distinguishing features of the discussed Antarctic species are shown in Table 1.

The present paper adds two more *Eugerdella* species from the Antarctic region to the two previously-described species, *E. falklandica* and *E. serrata.* For now four *Eugerdella* species has been recorded as occurring in the Southern Ocean; however samples taken during recent expeditions to the Southern Ocean such as ANDEEP I–III and BIOPEARL I–II (Biodiversity dynamics, Phylogeography, Evolution and Radiation of Life in Antarctica) suggest that more than 22 additional *Eugerdella* species new to science await description.

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